14.0 Environmental Management Plan

14.1 Introduction

Potential environmental issues requiring management and monitoring have been identified during the impact assessment process as detailed in this EIS. The strategic-level environmental management plan (EMP) outlined in this section integrates the environmental management commitments made throughout the impact assessment study. It describes the environmental management procedures that Gladstone Pacific Nickel Limited (GPNL) and its contractors will use to construct and operate all components of the Gladstone Nickel Project (GNP).

This strategic EMP relates to the construction and operational phases of the pipelines, refinery and residue storage facility (RSF) and will be used as the basis for detailed EMP. The appropriate time to prepare the detailed EMP is during the detailed design stage when more accurate information is available to detail the specifics of the proposed management procedures. It is likely that the EMP will be incorporated into an Integrated Environmental Management System in accordance with the requirements of the *Environmental Protection Act 1994* (EP Act).

The EMP is intended to be a dynamic document which will be reviewed and revised as the project progresses through the detailed design phase to construction and then to operations

14.2 Objectives

The objectives of the EMP are to provide:

- The project management team with evidence of practical and achievable plans to ensure that the project's environmental requirements are complied with.
- An integrated plan for monitoring, assessing and controlling potential impacts.
- Local, State and Commonwealth authorities with a framework to confirm compliance with policies and requirements.
- The community with evidence that the GNP will be managed in an environmentally acceptable manner.

The detailed EMP will be reviewed and periodically updated, if necessary, to reflect knowledge gained during the course of the project's construction and operations. Changes to the detailed EMP will be implemented in consultation with the relevant authorities where necessary.

14.3 Legislation

Environmental requirements of all relevant legislation will be addressed in the detailed EMP. The requirements of local government, the community and other stakeholders will also be addressed.

The refinery will require an environmental authority from the Environmental Protection Agency (EPA) for both construction and operation in accordance with the provisions of the *Environmental Protection Act 1994* and the *Integrated Planning Act 1997*. Environmental authority conditions will require GPNL to address a number of environmental issues such as water quality, air quality, noise, and waste management. Contingency planning will be incorporated into the detailed EMP (covering for example stormwater and waste minimisation).

GPNL will construct the pipelines in accordance with the Australian Pipeline Industry Association's *Code of Environmental Practice – Onshore Pipeline Construction.*

Following the issue of environmental authorities, licences and/or permits under relevant environmental legislation, the detailed EMP will be amended to incorporate the environmental conditions imposed as part of such approvals.

14.4 Responsibilities

GPNL will be responsible for implementing the EMP.

All staff will be responsible for the environmental performance of their activities and for complying with the general environmental duty as outlined in the EP Act. Section 319(1) of the EP Act 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 prevent or minimise the harm'.

14.4.1 Construction Phase

The Construction Manager will be responsible for the environmental management of the project's construction and for ensuring compliance with the construction phase EMP.

The construction contractors for the refinery, the RSF and the pipelines will be responsible for implementing the construction phase EMP and for undertaking all work in a manner which complies with all relevant environmental procedures, adheres to all legislative requirements, and ensures that all environmental objectives associated with the contract are achieved. Contract documents will include all necessary environmental specifications and commitments and require compliance with the EMP, construction specifications, technical drawings and the general environmental duty.

The pipelines construction contractor will appoint an Environmental and Land Management Representative who will be responsible for monitoring and reporting the daily implementation of the construction phase EMP and for the continual measurement of the environmental performance of personnel and equipment involved in pipeline construction. The Environmental and Land Management Representative will be suitably qualified and experienced and will report to the Construction Manager. The Environmental and Land Management Representative will also be responsible for contact with landholders along the pipelines alignments.

The refinery construction contractor will appoint a Construction Environmental Manager who will be responsible for monitoring and reporting the daily implementation of the construction phase EMP and for the continual measurement of the environmental performance of personnel and equipment for the construction of both the refinery and the RSF. The Construction Environmental Manager will be suitably qualified and experienced and will report to the Construction Manager.

Compliance audits will be conducted by GPNL against the requirements of the construction phase EMP, the construction procedures, relevant legislation, license and permit conditions and industry standards.

14.4.2 Operations Phase

The Refinery Manager will be responsible for ensuring that all environmental commitments are complied with for the refinery, RSF and pipelines. An Environmental Manager will be appointed to be responsible for day-to-day implementation of the operations phase EMP and will report on its implementation and performance to the Refinery Manager. The Environmental Manager will be supported by the superintendents, process supervisors and shift supervisors, who will all be responsible for health, safety and environmental performance of their areas of responsibility.

14.5 Reporting and Auditing

During construction and operations there will be frequent inspections of the work areas and individuals and work crews will be required to demonstrate that the pertinent requirements of the EMP are being adhered to. Reviews of practices resulting from inspections and audits will be ongoing.

The Construction Environmental Manager, the Environmental and Land Management Representative (pipelines construction) and the Environmental Manager (operations) will keep all inspection and audit reports of environmental performance, which will be made available to the relevant regulatory authorities as required.

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

- During construction, internal audits will be undertaken at regular intervals to verify that all work is proceeding in accordance with the EMP.
- A post-construction audit of the pipelines will be conducted annually for two years following construction to evaluate revegetation, erosion and soil stability, weed control, watercourse alteration prevention and success of bed and bank re-profiling.
- During operations, internal audits of environmental compliance will be undertaken annually.

Section 37 of the EP Act requires that any person who becomes aware of an event that may cause or has caused environmental harm, reports the event/incident to their employer. Details of the nature and circumstances of the event must be provided. Any environmental non-conformances, environmental incidents or environmental complaints will be recorded on a non-conformance form and the Construction Manager / Refinery Manager will be notified. The Construction Manager / Refinery Manager will ensure that the relevant regulatory agencies are notified within the appropriate timeframe.

Relevant records supporting inspections and audits (in addition to monitoring and other critical aspects of the management system) will be generated and maintained.

14.6 Training and Communications

All managers and supervisors will be responsible for ensuring that personnel under their control have the requisite competencies, skills and training to carry out their assigned tasks in accordance with the requirements of the EMP. They will also be responsible for identifying additional training and competency requirements.

All staff will complete a comprehensive project induction. The induction will include safety, access and a comprehensive review of environmental requirements and standards. All project supervisors and managers will have additional detailed training on the use and implementation of the EMP.

All managers and supervisors will hold regular toolbox meetings with personnel to discuss issues associated with their scheduled work. This will include highlighting and discussing relevant environmental issues.

14.7 Review

The EMP is a dynamic document. It will be reviewed regularly and revised as the project progresses to construction and through to operations. Revisions will include, but not be limited to:

- Inclusion of final organisational structures for construction and operational staff and the allocation of responsibilities in line with the organisational structure.
- Inclusion of relevant approval conditions arising from the project's approval and subsequent permits, authorities and/or licences.
- Review of the operations EMP at the end of the construction phase.

Additional revisions will occur on an as-needs basis, including revisions to address items identified during incident investigations, inspections or audits.

GPNL will be responsible for regular review of the environmental management system to achieve continuous improvement in environmental performance.

14.8 Pipelines Construction Environmental Management Plan

14.8.1 Objectives

The pipelines construction EMP has been developed to assist all parties involved in the construction of the pipelines to meet the following objectives:

- Minimise the impact of clearing and grading on the right-of-way (ROW).
- Preserve topsoil for redistribution on completion of construction.
- Preserve seed stock in areas of vegetation for redistribution.
- Minimise ground surface and vegetation destruction/disturbance.
- Protect at-risk species of flora and fauna.
- Protect against erosion.
- Prevent adverse impacts on cultural and historical heritage sites.
- Maintain access for landholders.
- Maintain security of fencing and utilities.
- Ensure that construction activities on the ROW and the use of access roads etc, are managed.
- Minimise activities occurring in areas not on the ROW.
- Prevent the spread of noxious weeds.

14.8.2 EMP Structure

The pipelines construction EMP is comprised of:

- Specific management aspects for various elements of construction.
- Management plans covering specific environmental aspects.
- Specific management aspects for third party infrastructure.
- Special Area Plans (SAPs) for areas with special requirements over and above standard measures set out in other sections of the EMP. 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 the EMP and a SAP, the SAP shall prevail.

The EMP and SAPs are detailed below. Management system elements covering health and safety, emergency response and incidents are also described in this section.

The EMP will be supported by construction specifications, which are standard pipeline documents that include engineering and environmental information. The EMP will form part of the construction specifications. This approach reinforces to the contractor that environmental management is an integral part of the development and is equally as important as the engineering design specifications.

The construction specifications will be supported by:

- Alignment drawings – define the alignment of the pipelines and used as a graphical “key” to supporting documentation.

- Line list – used to advise construction personnel of landholder requirements such as access, stock management, pasture protection and soil conservation.

14.8.3 Construction Management

14.8.3.1 Access and Site Selection Management Plan

Access and Site Selection Management Plan	
Policy	To utilise, to the extent practicable, existing cleared areas and access tracks so as to: • Minimise impacts to native flora and fauna. • Minimise impacts to soil and water. • Reduce the likelihood of the spread of weeds. • 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.
Performance Criteria	• Access tracks and work areas/sites are readily manageable and able to be rehabilitated using standard techniques. • No significant complaints from land owners, authorities and public. • No unplanned disturbance of vegetation. • Erosion and sediment control in place.
Implementation Strategy	• Route alignment, location of campsites, storage and additional work areas and new access tracks have been/will be based on, to the extent practicable, the following criteria: – Avoiding unduly steep or rugged terrain; – Minimising impacts on sensitive vegetation, erosion prone soils and watercourse crossings; – Avoiding significant remnant vegetation (Briglalow, Eucalypt Woodland and Cyprus Pine Woodland). • Existing roads and tracks will be used where practicable. • Only designated access tracks will be used by construction vehicles, including personnel vehicles. • Property access will be provided for landholders at all times. • Temporary gates will be installed where fences are breached during construction. • Property fences and gates will be installed, maintained and reinstated to a condition at least equal to the pre-existing condition. • Gates will be left as found. If closed gates are required to be open for a period of time, these will not be left unattended unless by prior agreement with the landholder. • Where there is a risk of land degradation, access along the easement during wet weather will be undertaken in consultation with the relevant landholder and Construction Representative. • Unless otherwise requested by the landholder, temporary access tracks will be rehabilitated to a condition compatible with the surrounding land use upon completion of pipeline construction. • Public and private access tracks will be reinstated to the pre-construction condition. • Workforce education, signage and boundary demarcation will be used to ensure vehicles remain on designated access tracks, within the pipeline construction area. • Temporary access tracks will be signposted during construction, but will not be signposted post-construction to discourage use of the tracks.
Monitoring and Auditing	• During construction the entire length of the construction area and associated work areas will be regularly inspected to assess the effectiveness of protection measures with particular attention to erosion control, topsoil management and waste management.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports (as appropriate) will be recorded and reviewed by each supervisor/manager. • Non -compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Construction Manager or delegate.

14.8.3.2 Clearing and Grading Management Plan

Clearing and Grading Management Plan	
Policy	To manage the impact of site clearing and disturbance such that: • Impacts on vegetation and ecological communities are minimised. • Cleared material is stored appropriately and able to be effectively used during restoration activities. • The rehabilitation success of the disturbed areas is optimised.
Performance Criteria	• No unplanned or unapproved damage to flora and fauna. • Installation and maintenance of erosion control and soil containment devices. • Soils and vegetation stored appropriately to allow for restoration of disturbed areas to equivalent to surrounding area after construction.
Implementation Strategy	• No clearing of protected vegetation will occur until appropriate permits have been obtained. • All infrastructure, such as powerlines, will be identified on construction drawings and made safe and protected during construction. • All clearing boundaries will be clearly illustrated on construction drawings and clearly marked in the field. • The location of all sensitive areas close to the ROW will be marked on construction drawings and physically marked in the field. • Where practical, trees will be trimmed rather than felled. Individual trees to be retained or preserved on the ROW will be clearly marked in the field, before clearing activities begin. • Clearing in riparian vegetation or wetlands will be kept to the minimum required to safely construct the pipelines and meet other environmental requirements (e.g. erosion control, spoil storage). • Blade clearing of trees will occur to retain the root mass wherever practicable. • Cleared vegetation will be stockpiled (not burnt) for respreading during rehabilitation. • Cleared vegetation will be stockpiled outside watercourses behind the floodline. • Cleared vegetation or soil will not to be pushed up against trunks of trees. • Cleared vegetation and soil will not be stored against fencelines. • Topsoil will be graded from the ROW to a depth of 5 cm and between 20-25 cm over the trench line. • Graded soil will be stockpiled behind the floodline, where it can be readily recovered for respreading and where loss through wind or water erosion or other means will be minimised. • Where appropriate, containment devices (e.g. silt fences) will be used to preserve stockpiled soils to prevent siltation of any land surface water or blockage of any existing drainage channels. • Soil stockpiles will not be placed within the bed or banks of watercourses. • The stockpiles will be breached in appropriate locations (coinciding with designated access roads or tracks, fencelines) to allow vehicular, stock and wildlife access. Vehicular movement over stockpiled soil will not be allowed. • Soil and surface stability will be maintained at all times (e.g. temporary erosion control berms, drains and sediment barriers will be installed as necessary and maintained until final construction clean-up is completed). • Water trucks will be used (particularly in hot and windy conditions) on the ROW and, where necessary, on access roads to reduce dust generation. • Vehicle speeds will be restricted on unsealed roads.
Monitoring and Auditing	• 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.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.3 Trenching Management Plan

Trenching Management Plan	
Policy	To manage the impacts of trenching activities such that:

Trenching Management Plan	
	• Topsoil quality is protected, • Third party infrastructure is identified and protected, • Disruption of landholders, their activities and domestic stock is limited, • Adverse impacts to native fauna are minimised.
Performance Criteria	• Subsoil segregated from topsoil and vegetation. • Ramps and fauna exit points installed and maintained. • Access for landholders and third parties maintained. • No unplanned or uncontrolled disturbance to third party infrastructure. • Temporary sediment and erosion control devices reinstated.

Implementation Strategy	• The location of the existing third party infrastructure in the ROW will be accurately identified on the alignment sheets and marked physically on the ground prior to trenching activities.
	• Crossing of infrastructure will be completed in accordance with agreements reached with infrastructure holders.
	• Known contaminated areas will be avoided.
	• Trenching Supervisor will be instructed in process for handling previously unidentified contaminated areas (e.g. dip, waste pit) or acid sulphate soil (ASS) in the event that any such areas are uncovered during trenching. These will include:
	  • Cessation of trenching at the location.
	  • Relocation and recommencement of trenching 50 m ahead.
	  • Advising Construction Manager and completing an assessment of the potential contamination. This may require the collection and analysis of the soil.
	  • Initiating appropriate remedial action based on the assessment. This may include deviating around the site.
	• Trench spoil (sub soils) will be stockpiled separately to topsoil and vegetation.
	• Areas of potential ASS will be clearly marked on construction drawings. Where potential or actual ASS is disturbed during trenching, trench spoil must be stockpiled within a contained area.
	• Trench spoil will be stockpiled 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.
	• Regular gaps and spaces in the topsoil, subsoil and vegetation stockpile will be provided for fauna movement.
	• The distances between gaps in stockpiles will be reduced at approaches to stream crossings.
	• Trench plugs will be utilised at appropriate intervals to minimise erosion and allow access across the ROW.
	• The pipeline trenches will be left 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 or watercourses.
	• Ramps will be installed in the trench to allow the easy egress of fauna from the trench at a minimum of 500 m intervals, and at any other locations conjunctive with track crossings etc. In areas of high fauna density, additional ramps, branches, hessian sacks or similar devices to enable small fauna to exit the trench may be used.
	• Temporary sediment and erosion control devices will be reinstated.
	• All major road and rail crossings will be bored.
	• Open cut crossing of minor roads and tracks will be managed in consultation with landholders and third parties and alternative traffic management plans developed and implemented.

Monitoring and Auditing	• 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. • The open trench will be surveyed on a daily basis by qualified fauna spotters and handlers.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management . • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.4 Boring and Drilling Management Plan

Boring and Drilling Management Plan	
Policy	• To protect the quality of local land and water and land resources during pipeline boring and drilling.
Performance Criteria	• Clearing boundaries delineated. • No discharge of drilling fluids to land or waters.
Implementation Strategy	• Access to, and the location of, the drill sites will be selected in accordance with Section 14.8.3.1. • Geotechnical studies and investigations will be conducted prior to construction to determine appropriateness of method for crossing. • A detailed site plan will be prepared for each drill prior to mobilisation to site. • The extent of the drill pad will be clearly delineated. The size of the cleared area will be minimised, but will be adequate to allow for the safe conduct of the drilling operations. • All vegetation, excluding that which is flagged for avoidance or earmarked for timber salvage, will be cleared and stockpiled within the drill pad area for respreading, mulching or disposal during rehabilitation works. • Topsoil will be graded from the site and stockpiled separately within the drill pad area for respreading during rehabilitation works. • The site will be graded as required. However, graded material will not be placed or pushed into vegetation or other areas where it cannot be readily recovered, mixed with vegetation or topsoil stockpiles, or stockpiled outside the defined drill pad area. • Appropriate erosion control devices such as silt fences, will be installed and maintained to contain runoff from the drill pad and to prevent watercourse siltation as a result of the drilling activities. • Drilling fluids will be contained within the fluid circulation system (i.e. mud tanks, fluid pump system, drill point bell holes and drilling orifice). • Drilling will be designed and operated to avoid loss of drilling fluids (e.g. through rock faults and fissures, etc), and contingency procedures will be in place to halt and/or plug fluid loss should it occur. • The solids, spoil material and any liquid wastes/sludge will be disposed of by a method acceptable to the Local Council. • All containment areas, equipment and carriers will be maintained to prevent leakage. Any leakage will be immediately reported and action taken to contain the spill and prevent a similar event occurring. • Vehicle entry will not be located on the topographical low point of the area. • Entire drilling site will be enclosed by earthen bund. • Bund height will be doubled at vehicle crossing points to allow for compaction by vehicle crossings. • Site will be reinstated and revegetated at conclusion of construction of crossing. • Silt fencing will remain until the site is stable and re-vegetated.
Monitoring and Auditing	• All drilling sites will be audited once during installation. • Daily work records to be maintained by drilling supervisor and reviewed daily by the Construction Manager.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management to ensure prompt rectification and change management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.5 Pipe Stringing and Welding Management Plan

Pipe Stringing and Welding Management Plan	
Policy	To carry out pipe stringing and welding in a safe and responsible manner with minimal interference to the landowner or risk to the environment.
Performance Criteria	• No uncontrolled fires. • No significant complaints from landholders/occupiers. • Debris removed from ROW.
Implementation	• Pipe will be strung, allowing gaps for access across the line of pipe. Gaps will coincide with access

Pipe Stringing and Welding Management Plan	

Strategy	roads or tracks, boundary fences and gaps in stockpiled vegetation, and will be located in consultation with relevant landholders.
	• Dust and noise impacts related to pipe transport traffic will be minimised by scheduling deliveries during daylight hours.
	• 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:
	  • The construction area along the ROW will be cleared of combustible vegetation to 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 will be available to all appropriate crew members.
	• '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.

Monitoring and Auditing	• The entire length of the ROW will be regularly inspected to assess the effectiveness of protection measures, with particular attention to debris control and availability of fire fighting equipment and crew preparedness.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.6 Pipe Laying and Backfilling Management Plan

Pipe Laying and Backfilling Management Plan	
Policy	To manage the impacts of pipelaying and backfilling such that : • The likelihood of erosion or subsidence is minimised. • Disturbance to landholders/occupiers and third parties is minimised. • Topsoil is preserved for rehabilitation, • There are no significant barriers to the reestablishment of overland flow of water.
Performance Criteria	• Subsoil returned to trench prior to topsoil. • No inversion of subsoil and topsoil. • No subsoil at surface on completion of back filling. • Well compacted trench line with appropriately installed trench breakers and contour banks. • No significant landholder complaints regarding access, quality of soil and buried services.
Implementation Strategy	• The period of time between trenching and backfilling will be minimised to prevent erosion of exposed soils. • 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. • Pipelaying crews will prepare for identified third party crossings and will have materials and equipment available. • Gentle crown to be left over the trench line to allow for future settlement of soils, with appropriate breaks to allow for natural surface water flows across the ROW. • Measures including pipeline markers and landholder liaison will be used to alert third parties to the presence of the buried pipelines. Markers will be installed with appropriate regard to land use. • Topsoil will not be used as bedding material. • Topsoil will only be reinstated after the excavated spoil has been backfilled and compacted. • Compaction is to be relieved prior to spreading topsoil. • Erosion berms will be constructed across the ROW on slopes to divert rainfall runoff away from the ROW and to discharge onto stabilised areas.

Pipe Laying and Backfilling Management Plan	
Monitoring and Auditing	• The entire length of the ROW will be regularly inspected to assess the effectiveness of protection measures with particular attention to areas such as soils management and trench compaction.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.7 Hydrotesting Management Plan

Hydrotesting Management Plan	
Policy	• To protect the quality of local land and water resources during pipeline hydrotesting.
Performance Criteria	• Appropriate permits obtained prior to drawing water. • No existing water sources depleted to provide hydrotesting water. • No adverse impacts on soil or surface water as the result of discharging hydrotesting water.
Implementation Strategy	• Relevant permits to draw water obtained. • Pipe sections crossing water bodies will 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. • Biocides, where required, will be biodegradable. • Where biocides are added, discharge water will be aerated. • Prior to discharge of hydrotesting water, the Construction Manager, or delegate, will 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. • Hydrotesting water discharged to land will be discharged 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). • Discharge of hydrotesting water will comply with all regulatory and landholder requirements.
Monitoring and Auditing	• Inspections of hydrotesting water source against requirements of relevant permits and discharge locations.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.3.8 Clean Up and Rehabilitation

Clean Up and Rehabilitation	
Policy	To restore land to surrounding condition and restore land use as far as practicable and compatible with pipelines operation.
Performance Criteria	• No new weed species introduced. • Revegetation re-established similar to surrounding condition. • No significant change in drainage pattern. • ROW stabilised with no significant erosion events. • Reinstated drainage patterns.
Implementation Strategy	• Rehabilitation of disturbed areas will be undertaken progressively as works progress. • Subsoil will be respread and compacted over the trench, with crown development, and used for the

Clean Up and Rehabilitation	
	construction of contour banks on steep slopes and above banks at water crossings. • Areas of the ROW will be deep ripped to relieve compaction. • The pipelines construction area will be re-profiled to original or stable contours, re-establishing surface drainage lines and other land features. • Topsoil application will only take place after subsoil respreading and will be evenly spread and left with a slightly rough surface. • Driving vehicles on freshly topsoiled ROW will be prohibited. • Revegetation will take place as soon as practicable after topsoil spread. • 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 ROW repairs, and will only be used with landholder approval. • Flagging used to identify clearing boundaries and sensitive features will be removed. • 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. • 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. • Native groundcover and shrubs will be encouraged to revegetate wherever appropriate to minimise habitat barrier effects in significant habitat areas. • Trees will be permitted to grow within 3 metres of the pipelines as long as pipeline integrity is not affected. • Environmental features such as rocks and dead timber will be replaced in the pipelines construction area where appropriate. • A reseeding plan based on soil types, existing local vegetation characteristics and landholder preferences will be developed. • Seeding will be utilised in areas where rapid restoration is required e.g. watercourse crossings and areas of high erosion potential. • Where disturbed areas are to be re-planted or reseeded, preference will be given to local native species. However, non-native and non-invasive grass seed stock may be used where approved by the landholders to provide environmentally acceptable short term surface stability. • Ecologically sensitive areas will be reseeded with local provenance bluegrass (Dicanthium sericeum), seed if available, or purchased bluegrass seed from other parts of Central Queensland (subject to landholder preferences). • Trees and shrubs will be allowed to regenerate naturally on cleared areas not required to be kept tree free for pipeline protection and maintenance. • Where applied, seed will be evenly dispersed over the entire disturbed area. • Seeding will take place as soon as practicable following clean-up and topsoil placement. • Fertilisers and soil supplements will be used only as necessary with the agreement of landholders and authorities. • Permanent pipeline warning signs will be erected along the easement. • All waste materials and equipment will be removed from the pipelines construction area once backfilling and tie-ins are completed. • Temporary access roads will be closed and rehabilitated to a condition compatible with the surrounding land use. • Where access routes are to be retained, but are not public access, the entry will be disguised (e.g. by dog-legging, brush spreading). • Disused silt fences will be removed. • Fences or other barriers will be installed where appropriate and where approved by the landholder to minimise unauthorised easement access.

Clean Up and Rehabilitation	
Monitoring and Auditing	• Regular inspections will be undertaken during the pipelines construction period and operations to monitor for trench subsidence, presence of weeds, revegetation success and stability of the ROW. • 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 percentage cover and species diversity on the ROW with that of adjoining land. • Monitoring will also include an assessment of the effectiveness of weed control measures. • The process of monitoring and rehabilitation will only conclude when the site becomes stable.
Reporting and Corrective Action	• Any sites not displaying stability (after 12 months) will undergo additional rehabilitation using a method approved by the relevant authority or landholder. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management to ensure prompt rectification and change management . • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.8.4 Issue Specific Management

14.8.4.1 Flora and Fauna Management Plan

Flora and Fauna Management Plan	
Policy	To appropriately minimise and manage impacts to the ecological values of the project area and to rehabilitate disturbed areas to as close as practical to the pre-construction condition.
Performance Criteria	• Minimal disturbance of terrestrial flora and fauna during construction of the pipelines, associated tracks, services and campsites. • No unplanned or unapproved damage to flora and fauna. • Restoration of disturbed areas to equivalent to surrounding area after construction. • Relevant permit is in place before removing any protected species.
Implementation Strategy	**Planning** • The route has been selected to avoid disturbance to endangered, vulnerable and rare (EVR) flora species as far as possible and to minimise fragmentation and habitat disturbance of protected fauna species. • The site of construction camps, additional work areas, storage areas and access roads will be selected to avoid clearing of significant remnant vegetation (Brigalow, Eucalypt Woodland and Cyprus Pine Woodland). • A preconstruction vegetation survey will be completed in targeted areas of the final alignment to identify for flagging individual EVR species and trees that contain hollows that are located within the easement and that may be avoided during construction. • Appropriate permits for the clearing of vegetation, including any marine vegetation, will be obtained prior to the commencement of construction. • The location of vegetation to be retained will be clearly indicated on all construction drawings. • Flagging of clearing boundaries though areas of significant vegetation will be completed during the pre-construction pegging of the pipeline alignment. • Construction will be scheduled for the dry season wherever possible, but particularly in the vicinity of the Fitzroy River and the wetland/waterbodies between KP101-140. **Construction** • Disturbance will generally be restricted to a 35 m ROW (2 pipelines) and 50 m (4 pipelines) and designated work areas. • Physical barriers will be installed around significant vegetation areas in order to restrict access and avoid disturbance. • Trenching will occur progressively to minimise the length of time the trench is open.

Flora and Fauna Management Plan	
	• Clearing of hollow bearing trees will be avoided as far as possible. • Clearing and disturbance in riparian areas and wetland/waterbody areas between KP101-140 will be minimised to that necessary to safely construct the pipelines and meet other environmental requirements (e.g. separation of stockpiles, erosion control). • Removed vegetation will be respread over the ROW. • Trees and shrubs will be allowed to regenerate naturally on cleared areas not required to be kept clear for pipeline protection and maintenance (subject to landholder agreement). • Fauna escape ramps or ladders and water soaked, sawdust filled hessian sacks (used to support pipes prior to lay-in) will be placed at regular intervals along the open trench. • Cleared native vegetation and timber will be respread over the ROW to aid regeneration and provide fauna habitat (subject to landholder agreement). • Controls to prevent permanent barriers to fish movement will be implemented.
Monitoring and Auditing	• 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 and clearing boundaries. • The open trench will be surveyed on a daily basis by qualified fauna spotters and handlers. • Ongoing monitoring will be undertaken to assess the success and integrity of construction and rehabilitation measure and ensure appropriate follow-up rehabilitation measures are implemented.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and immediate corrective action initiated (including reporting to relevant agencies where this is warranted/required) will be implemented by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management .

14.8.4.2 Weed Management Plan

Weed Management Plan	
Policy	• To prevent the introduction and spread of weed species in association with the construction and operation of the pipelines.
Performance Criteria	• No new weed infestation in the ROW as a result of construction activities. • No spread of weeds from infested areas to previously weed-free areas. • ROW restored to a state that minimises the potential for weed colonisation of disturbed areas.
Implementation Strategy	• A weed inspection of the ROW will be completed prior to construction and the location of declared plants and other noxious weeds recorded. • Weed control of the ROW and relevant access tracks will be undertaken prior to construction. • Upon arrival at the construction area all vehicles, equipment and portable infrastructure (including trailers, generators, workshop and accommodation huts etc.) will be washed at a designated weed washdown area. • Access roads to the ROW will be defined to minimise the potential for the spread of weed species and protocols established for washdown of vehicles travelling along the ROW. • Cleaning procedures will be thorough to remove all soil or organic matter from the surfaces of vehicles, equipment and portable infrastructure, including the undercarriage. Personnel will also ensure all soil and organic matter is removed from clothing and footwear. • Washdown by air or water of a vehicle and/or portable equipment will be supervised by trained personnel and the vehicles details recorded in a vehicle washdown register to be maintained by the construction contractor. • All vehicles will be certified and registered as clean before these are permitted access to the pipeline ROW. • Topsoil and vegetation material will be respread in the immediate vicinity of the area of origin to limit the potential spread of weeds and pathogens.

Weed Management Plan	
Monitoring and Auditing	• The ROW, work areas and access tracks will be regularly inspected to assess the effectiveness of protection measures with particular attention to access to and travel along the ROW, washdown activities and records and restoration activities. • Pre-construction weed survey and weed control. • Post-construction weed survey and weed control.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Areas left bare due to weed control will be reseeded in consultation with the landholder. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action implemented (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.3 Water Management Plan

Water Management Plan	
Policy	To appropriately minimise and manage adverse impacts to ground and surface waters and watercourse crossings by: • Preventing significant alteration to hydrological conditions, • Protecting ground and surface water from contamination by fuel, chemicals and other hazardous substances, • Minimising short term and preventing long term interruption or modification to surface drainage patterns, • Maintaining groundwater qualify and flow requirements, • Minimising disturbance to watercourse beds and banks.
Performance Criteria	• No significant change to saturation or ponding patterns as a result of construction. • No spillage of fuels or chemicals to land or waters. • No significant release of sediment to surface water bodies. • Surface drainage paths returned to original contours. • Watercourse banks effectively reinstated to prevent scouring. • Watercourse flows and channel crossings not altered. • Erosion and sediment control techniques implemented on-site where necessary.

Implementation Strategy	**Planning**
	• Crossing points will be selected to, where possible,:
	  • Minimise the extent of clearing of riparian vegetation;
	  • Avoid unstable and/or steep incised banks;
	  • Avoid bends in the channel and confluence with other channels;
	  • Avoid permanent and semi-permanent waterholes.
	• Detailed crossing plans will be prepared for crossings once the crossing methodology has been selected.
	• Findings of engineering geotechnical studies will be utilised in the design of crossings, to ensure that the hydrological flow regimes are maintained.
	• Horizontal directional drilling (HDD) will be used on selected watercourses, where practicable, taking into account environmental, engineering, logistical and geotechnical issues and advice from the drilling operator.
	• Relevant approvals and permits will be obtained for the crossings prior to construction.
	• Crossings will, where practicable, be constructed in no or low flow conditions, and rehabilitation completed prior to the wet season.
	• The crossings will typically be at right angles to the direction of water flow to minimise scour potential.
	• The disturbance corridor for the bed, bank and approaches to watercourses will be the narrowest practicable for safe construction. However, a wider ROW and work area will be required for

Water Management Plan	
	watercourses with deep and steep banks to install the pipelines at the required depth and to restore as close to the original contour as practicable. • Additional work areas will be required at crossing locations for equipment operation and stockpiling of excavated material. These will be located outside the riparian area. **Construction** • Regional weather conditions and river flow levels will be monitored during construction to pre-empt changes in weather patterns and flow regimes to minimise impacts associated with wet weather. • Storage and loading / decanting areas for fuels and chemicals will be bunded and located outside the floodplain of the stream channels (i.e. approximately 50 m away from the top bank). • The staging area will be limited to the narrowest area feasible and located outside the stream channel and riparian area. • Large mature trees will be retained where possible and trees will be trimmed in preference to removal to retain the root stock for stabilisation of the bank. • Clearing of the slopes leading to the watercourses will be delayed until the construction of the crossing is imminent. Where this is not possible, other soil protection measures will be applied. • All stockpiles (vegetation, watercourse bed material, watercourse bank material) will be stockpiled and stored separately in areas above the top of the bank and outside the riparian area where it will not be buried or damaged (i.e. free from traffic). • Stream bed material consisting of rocks, pebbles or course gravel overlaying finer material will be stockpiled separately for replacement during restoration. • Silt fences will be located on the lower side of topsoil and bed and bank stockpiles and installed between the watercourse and the construction area to minimise sediment releases. • Soils will be graded away from the watercourse, not towards it. • Sediment and erosion control measures will be installed as required on watercourse approaches and banks to prevent any runoff from entering watercourses. • Diversion banks will be used at the crest of, and on the slopes of, approaches to stream crossings to divert sheet flow away from backfilled trenches. • Each diversion bank will have a stabilised outlet to disperse channelised flows on the downstream side of the easement. • Hard trench plugs will be placed in trenches close to flowing streams, or in times of potential inundation, to limit the potential for stream flow into the trench. **Restoration** • Watercourse crossings will be rapidly stabilised following construction. • The bed and bank of watercourses will be restored as near as practical to the original profile and banks compacted to ensure stability. • Topsoil will be respread over the area from where it was removed. • Where required, sandbags, gabion or other scour protection measures will be installed, ensuring these are placed to conform as far as possible with existing natural contours. • Where required and agreed by landholders, access to the crossings will be restricted (i.e. by fencing or barriers). • Where required, terracing or surface water diversion berms will be placed along the top and intermediate points down the bank slope to encourage runoff to discharge on to stable (i.e. vegetated) areas or via sediment settling basins and not directly to the watercourse. • Silt and sediment fences will be installed on slopes where appropriate to filter surface runoff water even if the watercourse is dry. • Watercourses will be stabilised (e.g. rock gabion, jute matting) as required. • Drainage will be reinstated. • "Snags" and other structures of potential fishery value disturbed during construction will be replaced.

Monitoring and Auditing	• Watercourse crossings will be regularly inspected to assess the effectiveness of protection measures with particular attention to clearing of riparian area, location of work activities with respect to watercourses, timing of construction of crossings and restoration activities.
	• Erosion control and sediment collection devices will be inspected regularly, particularly following heavy rain.
	• Monitoring of water quality during crossing construction upstream and downstream of the construction area on wet crossings will include:
	  • Observation of sediment plumes and surface sheen; and
	  • Measurement of turbidity, suspended solids, pH and dissolved oxygen.
	• Monitoring of the watercourses post-construction will be carried out to ensure that rehabilitation works

Water Management Plan	
	and stability of the watercourses is at least equal to the pre-construction condition.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action implemented (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.4 Soil Management Plan

Soil Management Plan	
Policy	To appropriately minimise and manage adverse impacts to soils by: • Limiting the occurrence and extent of trench subsidence, soil erosion and sedimentation, • Preventing soil inversion, • Developing a stable, vegetated ROW post-construction.
Performance Criteria	• No evidence of uncontrolled erosion following high rainfall. • No evidence of sedimentation in watercourses. • Erosion controlled and limited to that consistent with “natural processes” such that pipeline cover is maintained and land capacity is not reduced. • All topsoil stockpiled separately and no spoil occurs on surface after restoration. • All access contained to designated areas. • Prompt reinstatement of disturbed areas.
Implementation Strategy	**Topsoil and Subsoil** • Topsoil will be stripped to a depth of 5 cm across the ROW and between 20-25 cm over the trench. • Topsoil and subsoil will be stockpiled separately with a separation distance of at least 1 between stockpiles. • Stripped vegetation will be stockpiled separately and at least 1 m away from soil stockpiles. • Topsoil will be placed on the high side of the ROW on hills and slopes. • Stockpiles will not exceed 2 m in height and will have gaps every 50 m for drainage and possible stock and wildlife movement. • Topsoil will not be used for backfill. • Where possible, additional topsoil and subsoil from places where cut and fill is required will be stockpiled in a temporary work space. • Soil stockpiles near drainage lines will be bound with silt fencing on the down slope and placed at least 10 m away (where possible) from banks. **Erosion** • Temporary and permanent erosion control banks will be installed across slopes and in the vicinity of drainage lines along the easement as necessary. • Sediment control devices will be emptied after heavy rain. • Permanent trench breakers will be placed at regular intervals along sloping trenches, at the bases of slopes, adjacent to water bodies and wetlands and at road crossings. • Location of trench breakers will be marked prior to backfilling. • Final diversion banks will be installed immediately down slope of the trench breaks so that seepage water will be diverted away from the easement. • Earth banks across entire disturbed width will be installed every 20 -70 m on slopes (depending on gradient and soil type) immediately following clear and grade. • Banks will be high enough to collect water but low enough to drive over safely. • Banks will be restored, if damaged, until permanent establishment (sandbags replaced regularly can be used as an alternative). • Water will be discharged down slope to undisturbed vegetation where possible or into a silt fence. • Erosion control measures in place prior to construction will be recontoured to the original conditions as

Soil Management Plan	

	soon as practicable following construction, in consultation with the landholder.
	Acid Sulphate Soils
	• A targeted ASS survey will be completed where there is the potential to disturb potential ASS (PASS) or ASS (Ragland Creek and Inkerman Creek) and the results will be considered in the design of the watercourse crossings.
	• Where identified, all areas of ASS or PASS will be clearly shown on construction plans.
	• If ASS is identified, site specific mitigation measures will be developed such as:
	  • Minimising time the trench spoil is stockpiled,
	  • Neutralising trench spoil with lime,
	  • Containing runoff from stockpile areas in holding ponds or bunded areas,
	  • Disposing of trench water only after analysis,
	  • Burying of soil below the water table,
	  • Compacting the backfill to prevent acid leach migration.
	Land Contamination
	• Consultation will continue with landowners prior to construction to determine whether any potential areas of contamination are located within the ROW.
	• Site specific and contaminant specific management measures will be developed for any areas that are not avoidable though realignment of the route.
	• If suspect contamination is found during earthworks, work in that area will stop until a suitably qualified person has inspected the site, the hazard has been assessed and appropriate action has been taken.
	• EPA approval will be obtained if contaminated material must be removed from the work area.
	• All personnel will be made aware of potential contamination issues during induction training.

Monitoring and Auditing	• The entire length of the easement will be regularly inspected to assess the effectiveness of protection measures with particular attention to management of soil and spoil stockpiles, erosion control devices and effectiveness of controls following rainfall.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.5 Waste Management Plan

Waste Management Plan	
Policy	• Minimise waste generation. • Dispose of waste in the most appropriate manner. • Minimise impacts related to waste management.
Performance Criteria	• Minimal waste generated by construction of the pipelines. • No inappropriate disposal or management of waste. • No contamination of soil, air or water as a result of any spillages.
Implementation Strategy	**General** • Management strategies for specific waste streams will be developed by the construction contractor prior to construction commencing. • On completion of each section of the pipelines, all waste material will be removed from the workplace. No wastes will be buried on the ROW or disposed of on-site without local government and/or EPA approval. • The Construction Manager will advise designated disposal areas for each section of the easement. • General waste will be collected and transported generally to local Council approved disposal sites. • Food wastes will be collected, where practicable, considering health and hygiene issues, for disposal off-site.

Waste Management Plan	

	• Refuse containers will be located at each worksite.
	• Where practical, wastes will be segregated and reused/recycled (e.g. scrap metal).
	• All personnel will be instructed in project waste management practices and procedures as a component of the environmental induction process.
	• Suppliers will be requested to minimise packaging where practicable.
	• A high emphasis will be placed on housekeeping and all work areas will be maintained in a neat and orderly manner.
	• All equipment and facilities will be maintained in a clean and safe condition.
	Liquid Waste
	• Sewage and grey water will either be collected for treatment and disposal off-site or treated via an on-site treatment system and disposed of to effluent absorption beds or irrigation fields.
	• The treatment method will be selected in consultation with the relevant Council and EPA and the relevant environmental authority obtained.
	• Sewage effluent absorption beds and/or irrigation fields will be selected and designed to ensure that:
	  • Sensitive areas are avoided.
	  • There is no ponding or runoff of effluent.
	  • The receiving environment has the capacity to assimilate the contaminants.
	Hazardous Waste
	• Chemical wastes will be collected (e.g. spent pipeline x-ray film developer chemicals) in 200 litre drums (or similar sealed container), appropriately labelled, for safe transport to an approved chemical waste depot or collection by a liquid waste treatment service.
	• Storage, transport and handling of all chemicals will be conducted in accordance with all legislative requirements.
	• Containment bunds and/or sumps will be drained periodically to prevent overflow and subsequent pollution of the surrounding land and/or water body.
	• All hazardous wastes will be appropriately stored in bunded areas away from watercourses and in accordance with legislative requirements.
	• Hazardous wastes, such as solvents, rust proofing agents and primer will be managed in accordance with the requirements of relevant legislation and industry standards.
	• A hazardous materials inventory for the construction period will be prepared.
	• Material Safety Data Sheets (MSDS) for hazardous materials will be available on-site during construction.
	• Hydrocarbon wastes, including lube oils, will be collected for safe transport off-site for reuse, recycling, treatment or disposal at approved locations.

Monitoring and Auditing	• Housekeeping checks to ensure waste is being stored correctly and that no littering is occurring. • Camp sites and construction areas will be inspected after relocation to ensure that no waste material remains. • The quality characteristics of treated effluent (if discharged to land) will be monitored in accordance with the environmental authority conditions.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.6 Chemical and Dangerous Goods Management Plan

Chemical and Dangerous Goods Management Plan	
Policy	To ensure that storage and handling of chemicals and dangerous goods on-site does not cause environmental harm or harm to persons.
Performance Criteria	• No hazardous goods contamination of the environment.

Chemical and Dangerous Goods Management Plan	
	• Storage and handling procedures correct and appropriate.
Implementation Strategy	• Spill control procedures will be prepared and personnel trained. • Dangerous goods will be stored and handled as per the requirements of relevant Australian Standards. • Dangerous goods will, where appropriate (e.g. outside locations) be stored in bunded areas away from watercourses. • Explosives will be stored in magazines constructed and located as prescribed in AS 2187. • MSDSs for chemicals and dangerous goods will be available on-site. • Waste dangerous goods, which cannot be recycled, will be transported to a designated disposal site as approved by local council. • 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 are used and stored and personnel trained in the correct use. • Protective clothing, appropriate to the materials in use, will be provided • Relevant permits will be held and conditions of permits met.
Monitoring and Auditing	• Regular inspections to ensure that chemical storage facilities continue to meet Australian Standards. • Audits will include inspection of dangerous goods storage areas.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and immediate corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.7 Noise and Vibration Management Plan

Noise and Vibration Management Plan	
Policy	To construct the pipelines in a manner to minimise the impact of construction related noise and vibrations on surrounding residences and industry.
Performance Criteria	• No noise related complaints received from residents and landholders during construction. • Evidence of consultation and planning for atypical noise events.
Implementation Strategy	• High noise events such as blasting will be scheduled for times of least impact to the local community and adequate community notice provided of any scheduled atypical noise events. • Any blasting will be carried out in accordance with relevant state legislation. • A blasting plan will be prepared prior to the commencement of any blasting activities, giving consideration of potential air blast pressure and vibration and will include mitigation measures. • Equipment will be fitted with noise control devices.
Monitoring and Auditing	• Landholder complaints relating to noise and vibration will be recorded and closed out by the Project Manager or delegate.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.8 Air Quality Management Plan

Air Quality Management Plan	
Policy	To complete the installation of the pipelines in a manner to maintain ambient air quality of the local area.
Performance Criteria	• No excessive dust emissions during windy/dry periods and construction activities. • No air quality related complaints from neighbouring residential areas and industry.
Implementation Strategy	• Consult with and advise any residents or landholders with the potential to be impacted by temporary construction dust emissions prior the commencement of activities. • Vehicles and machinery will be fitted with appropriate exhaust systems and emission control devices. The devices will be maintained in good working. • Construction sites and access roads will be watered 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). • Vehicle access routes to construction areas will be clearly defined and located to avoid areas of bull dust as far as possible. • The potential for generation of bull dust will be reduced through management and control e.g. watering, mulching cleared vegetation to provide a stable surface. • The extent and period of exposure of bare surfaces will be minimised. • The disturbed corridor will be promptly restored following construction to stabilise the disturbed surface and limit the potential for dust generation. • A “no burning” policy will be implemented.
Monitoring and Auditing	• The entire length of the easement and associated access areas will be regularly inspected to assess the effectiveness of air quality protections. • Regular visual monitoring of dust emissions will be conducted and watering frequency altered as required.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.9 Pest Management Plan

Pest Management Plan	
Policy	To prevent further spread of the eastern red imported fire ant (RIFA) beyond the project boundaries and assist in the eradication of RIFA. The pipelines enter the Yarwun Fire Ant Restricted Area from KP 175 to end.
Performance Criteria	No sightings / evidence of RIFA.
Implementation Strategy	The following strategies will be implemented for construction within declared fire ant restricted areas to aid in reducing the spread of RIFA: **Site Survey** A survey of the last 5 km of the pipelines construction areas will be conducted by the Department of Primary Industries & Fisheries (DPIF) within 28 days prior to the commencement of works to ensure that there are no active nests. The survey will be signed-off in accordance with the provisions of DPIF Approved Risk Management Plan for the control of risks associated with RIFA. **Movement Certification** All high risk items (including fill gained through earthworks) to be transported within the restricted areas or to a DPIF-approved disposal site will be accompanied by a movement certificate. **Vehicle Movements**

Pest Management Plan	
	DPIF requirements for the movement of vehicles from a restricted area will be followed. Such requirements may include inspection and washdown. **Staff Education and Awareness** All personnel will be trained in the required practices through a training and awareness program developed in consultation with DPIF.
Monitoring and Auditing	Regular visual inspections will be conducted by the Environmental and Land Management Representative, in accordance with DPIF guidelines, and by DPIF. If there is a suspected RIFA nest, DPIF will be notified within 24 hours and an inspection will occur.
Reporting	The Environmental and Land Management Representative will be responsible for enforcing all procedures and polices relating to RIFA, and maintaining all records. The Environmental and Land Management Representative will liaise with, and report to, the Construction Manager and the relevant authorities on a regular basis. Should a RIFA nest be found, DPIF will be contacted within 24 hours.
Identification of Incident of Failure to Comply	The following represents an incident or failure to comply: • The presence of RIFA on site. • Suspected RIFA nests discovered. • Failure to comply with the DPIF Fire Ant Risk Management Plan. • Ineffective utilisation of movement certification.
Corrective Action	The following represents an incident or failure to comply in regard to RIFA: • Suspected RIFA nest discovered. • Failure to comply with the DPIF requirements. Work policies and procedures will be changed to improve the situation.

14.8.4.10 Traffic Management Plan

Traffic Management Plan	
Policy	To minimise any potential impacts associated with traffic generated by the pipelines' construction traffic.
Performance Criteria	Minimal traffic-related complaints and incidents.
Implementation Strategy	• All heavy vehicles travelling to and from the construction areas will follow dedicated heavy vehicle routes to avoid built-up areas. • Access to and from the ROW will be via designated routes. • Use of carpooling and bus services will be implemented where possible to minimise worker trips during construction. • Where possible, truck deliveries will be restricted to daytime working hours. • Dangerous goods will be transported along preferred dangerous goods routes in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail and in accordance with the requirements of the Queensland *Transport Operations (Road Use Management – Dangerous Goods) Regulation 1998* and the *Transport Infrastructure Act 1994*. • If possible, the transport of oversize loads will be restricted to non-peak periods to minimise traffic disruptions and will be provided with appropriate escorts and approvals from both the Main Roads Department and the Police. • Clear traffic signs and signals will be installed on-site to provide for safe traffic movement. • GPNL will negotiate with the Department of Main Roads, Fitzroy Shire Council and Calliope Shire Council regarding the development of a traffic management plan for the construction of the pipelines. This will be undertaken during the detailed design phase of the project, once the pipe source and delivery mode had been determined. The following issues will be specifically addressed in the plan: – Development of designated access routes for pipeline delivery and construction traffic. – Inspection of the access roads in consultation with relevant local authority representatives to determine the state of the road, whether any upgrade is required, and to record the preconstruction condition of the road (e.g. written record, photographs). GPNL will work with the local authority to make any necessary road upgrades and agree the reinstatement condition necessary for each road. GPNL will also work with landholders to develop agreements on any upgrades or reinstatement to private access tracks.

Traffic Management Plan	
	– Identification of locations where additional traffic control measures will be necessary to ensure safe traffic movement and minimise disruption to public traffic flows. – Development of temporary traffic control measures necessary to ensure safe traffic movement during construction.
Monitoring and Auditing	The Environmental and Land Management Representative will monitor the number of incidents or complaints received in relation to project traffic.
Reporting	The occurrence of any traffic incidents or complaints will be recorded by the Environmental and Land Management Representative and reported to the Construction Manager.
Corrective Action	The following will constitute an incident or failure to comply in regard to traffic management: • Not following designated routes. • Vehicles not observing site traffic regulations e.g. speed regulations. • Transport of oversize loads at times and in such manners as to disrupt other on- and off-site road users. • Necessary approvals for traffic-related activities not obtained from relevant bodies e.g. Main Roads and local councils. • Non-compliance with the requirements for the Australian Code or Queensland Regulations. In the event of a complaint, an incident or failure to comply with requirements, relevant corrective action will be taken which could include the following: • Traffic patterns will be investigated and vehicles will be rescheduled or rerouted if possible. • Repeatedly offending vehicles will be identified and operators educated in the required of operation for the vehicle. • Appropriate approvals will be sought from relevant authorities where this has not been done. • Issues of non-compliance will be rectified. • Review and modification of the traffic management plan.

14.8.4.11 Cultural Heritage Management Plan

Cultural Heritage Management Plan	
Policy	To protect the cultural heritage values of the project area.
Performance Criteria	Compliance with the requirements of the *Aboriginal Cultural Heritage Act 2003* and the relevant Cultural Heritage Management Plans (CHMPs). No disturbance of any place on the Queensland Heritage Register in accordance with the requirements of the *Queensland Heritage Act 1992*.
Implementation Strategy	GPNL is committed to the protection of cultural heritage sites and the sensitive handling of any accidental discovery of sites. GPNL will: • Finalise the development of an approved CHMP with representatives of the Port Curtis Coral Coast Native Title Applicants. • Complete cultural heritage surveys and develop and implement agreed management measures for the management of cultural heritage in accordance with the principles and procedures detailed in the approved CHMPs. • Where potential European heritage material is identified, determine the significance of the site in consultation with the Cultural Heritage Unit of the Department of Natural Resources and Water (DNRW) and where appropriate, in consultation with local historical organisations regarding the relocation / preservation of material. • Include cultural heritage issues in the project induction program and involve representatives from the Aboriginal Parties in the development and implementation of such programs.
Monitoring and Auditing	Monitoring of the earthworks will be undertaken by Traditional Owner monitors. Auditing of compliance with the CHMPs in accordance with the processes defined within the CHMP.
Reporting	Any signs of disturbance of artefacts will be reported to the Construction Manager and the relevant indigenous stakeholders.
Corrective Action	Any of the following will constitute an incident or failure to comply: • Failure to prepare and/or implement a CHMP • Unauthorised disturbance of any artefacts • Failure to implement a cultural heritage monitoring program In the event of an incident or failure to comply, the commitment that has not been undertaken will be reviewed and modifications implemented as appropriate.

14.8.4.12 Third Party Infrastructure Management Plan

Third Party Infrastructure Management Plan	
Policy	To minimise potential impacts to third party infrastructure during the construction of the pipelines.
Performance Criteria	• Minimal interruption to third party infrastructure.
Implementation Strategy	• .Infrastructure will be accurately identified pre-construction and recorded on construction drawings. • Disturbance to pre-existing soil conservation measures (e.g. levee/contour banks) will be avoided as far as possible. Where disturbance is required, the banks/levees will be reinstated as soon as practicable, in consultation with the relevant landholder. • Where required along the route, temporary fences will be installed to protect humans and livestock. • The location of existing fences will be determined pre-construction and temporary gates will be installed at locations where the pipelines cross fence lines. • Fences will be reinstated post construction • GPNL will work with infrastructure holders (road, rail, pipelines, powerlines) in regard to: – Accurately determining the location of existing underground infrastructure, – Designing the crossings, taking into account the specific requirements of the infrastructure holders, – Developing agreed safety protocols for the purpose of constructing crossings, – Obtaining the relevant consent/licence agreements for crossings, – Agreeing a schedule for construction of crossings, – Developing agreed protocols for any operational activities associated with the pipelines where an infrastructure crossing exists. • Crossings will be designed in accordance with AS 2285 to maintain the integrity of the existing infrastructure and public safety.
Monitoring and Auditing	Routine monitoring of implementation of agreed protocols.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and will report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.4.13 Health and Safety Management Plan

Health and Safety Management Plan	
Policy	To ensure that the construction of the pipelines does not adversely affect the health or safety of personnel or the general public.
Performance Criteria	Compliance with the requirements of all relevant legislation, Australian Standards and GPNL's health and safety management system. Implementation of a health and safety management system that will ensure the health and safety performance of the project meets industry standards.
Implementation Strategy	GPNL will develop and implement a health and safety management system that will ensure that the safety and occupational health performance of the construction project meets required industry best practice standards. The health and safety management system will include: • Clear identification of potential health and safety hazards. • Risk assessment resulting from the hazards identified. • Control measures that prevent or minimise the level of the risk. • Procedures for monitoring, review and corrective actions. Construction contractors will be required to:

Health and Safety Management Plan	
	• Develop, implement and maintain health and safety management plans which are consistent with GPNL's health and safety management system and which address specific workplace hazards that could be encountered. . • Appoint workplace health and safety representatives and provide them with the necessary support. • Provide appropriate personal protective equipment and health and safety induction and training to employees.
Monitoring and Auditing	The overall health and safety performance will be audited regularly by contractor management in conjunction with the Construction Manager. In addition, there will be regular workplace health and safety inspections.
Reporting	Records of inspections and audits will be maintained. Contractors will report results to the Construction Manager.
Corrective Action	The following constitute incidents or failure to comply with health and safety requirements: • Directives and procedures contained in the health and safety management plan are not being followed or enforced. • The health and safety management plan does not encompass all hazards and controls. • Work-related injury and illness occurs. • The emergency response plan is not prepared or implemented. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Investigate why the incident occurred and investigate and implement corrective actions to prevent recurrence. • Ensure health and safety information provided is adequate and up-to-date and revised regularly as appropriate. • Ensure employees, contractors and visitors to the site are familiar with the procedures and policies relevant to their positions and increase training effort as necessary. • Ensure health and safety directives and procedures are enforced. • Ensure health and safety documents are readily available to everyone on the site.

14.8.4.14 Emergency Response Management Plan

Emergency Response Management Plan	
Policy	To ensure that project personnel can respond effectively and efficiently in the event of an emergency associated with construction of the pipelines.
Performance Criteria	Emergency plans for construction developed and in place prior to construction. Construction personnel familiar with emergency procedures and role in the event of an emergency and emergency drills have been undertaken.
Implementation Strategy	GPNL will prepare a detailed emergency response plan during the project detailed design phase. The plan will include consideration of the following: • Response procedures in the event of a fire, chemical release, spill, leak, explosion, equipment failure, bomb threat, natural disaster (including severe storm and flood events) or any other likely emergency. • Communication arrangements and contact details. • Roles and responsibilities of responsible personnel. • Emergency controls and alarms. • Evacuation procedures. • Emergency response equipment. • Leak detection and control points. • Training requirements. • Site access and security.
Monitoring and Auditing	The effectiveness of the emergency response plan will be regularly tested and audited.

Emergency Response Management Plan	
Reporting	The Health and Safety Manager will be responsible for compiling the results of testing and auditing programs. These results will be reported to the Construction Manager.
Corrective Action	The following constitute incidents or failure to comply: • Emergency response plan is not prepared or implemented. • Emergency response equipment is not provided. • Emergency response training is not undertaken. • Emergency response procedures not followed in the event of an incident. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Prepare or implement the emergency response plan. • Provide the necessary equipment or training. • Investigate why the emergency response procedures were not followed and implement mitigating measures.

14.8.4.15 Incidents and Complaints Management Plan

Incidents and Complaints Management Plan	
Policy	To manage environmental or social incidents and complaints from the community regarding pipeline construction activities.
Performance Criteria	Incidents and complaints regarding environmental and social aspects of construction activities will be minimised and mitigation measures implemented to reduce the incidence of complaints.
Implementation Strategy	All incidents and complaints will be documented in an incidents/complaints register. The complaints form will document at least the following information: • Time, date and nature of complaint. • Type of communication (telephone, letter, email, visit). • Name, contact address and contact number (if provided). • Response and investigation undertaken as a result of the complaint. • Action taken and signature of person investigating complaint. Each complaint will be investigated as soon as practicable and, where appropriate, corrective action taken to remedy the cause of the complaint.
Monitoring and Auditing	The Construction Environmental Manager will maintain the complaints register and ensure all complaints are resolved. The complaint form will be checked by the Construction Environmental Manager within two weeks of complaint receipt to ensure follow-up action has been taken to resolve the issue.
Reporting	All complaints and incidents are to be reported to the Environmental and Land Management Representative who will subsequently report to the Construction Manager. The complainant will be advised of what action, if any, has been taken as a result of the complaint.
Corrective Action	Should further incidents occur or complaints be received in relation to previous occurrences, an appropriate selection of the following corrective actions will be undertaken: • Additional environmental awareness training of the workforce with respect to the procedures to be followed for environmental incidents or complaints. • Investigation into why the incident/complaint was not addressed within the specified time frame. • Incident/complaint follow-up according to the results of the investigation. • Where required, work place practices will be reviewed.

14.8.5 Special Area Plans

14.8.5.1 Wetland Habitat Area – Capricorn Yellow Chat

Wetland Habitat Area – Capricorn Yellow Chat	
Item / Area of Significance	Several areas of low lying coastal lands represent significant wetland values and habitat of the endangered Capricorn Yellow Chat (*Epthianura crocea macgregori*) and other fauna. The wetland regions comprise of fresh / brackish and tidally influenced water bodies. The Capricorn Yellow Chat (Yellow Chat) is limited in distribution to coastal central Queensland and is currently listed as 'Critically Endangered' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and listed as 'Vulnerable' under the Queensland *Nature Conservation Act 1992*. GPNL is committed to delivering pipelines that do not adversely impact wetland habitat areas particularly the Capricorn Yellow Chat.
Policy	To adhere to all mitigation procedures, where applicable, to minimise impacts to wetland areas (KP 105 – 140) intersected by the pipeline route.
Definitions **Refer to EIS Figure 7.5.2.**	High priority Yellow Chat habitat - sites where Yellow Chat breeding has been confirmed. Medium priority Yellow Chat habitat – sites where Yellow Chats have been observed but at which the breeding status is uncertain and few numbers were present. Low priority Yellow Chat habitat – sites at which Yellow Chats have not been found but have appropriate vegetation structure such as emergent sedges or grasses (e.g. key species supporting breeding listed above plus Typha, Carex and Eleocharis).
Detailed Requirements	• Habitat critical for survival of Yellow Chats is marine plains that have pulses of freshwater inundation during the wet season, supporting sedges and dense grasses. • There appear to be two components to the Yellow Chat's habitat: – areas of moderate to tall rush/sedge or grass vegetation (0.4 to 2 m tall) along drainage lines and depressions providing shelter and nesting habitat; and – foraging habitat comprising these shelter areas and nearby more open vegetation types, particularly sparser grasslands and samphire. • Breeding habitat includes: – channels lined with *Cyperus alopecuroides* (a sedge), *Schoenoplectus litoralis* (a club-rush) or Sporobolus virginicus (marine couch); – adjacent grasslands dominated by *Paspalum distichum* (water couch) or *Brachiaria mutica* (para grass); or – adjacent saltmarsh habitat dominated by *Halosarcia perangulata, H. indica, Sesuvium portulacastrum* and *S. virginicus*. • Marginal components of Yellow Chat habitat (those where the species has been seen but not confirmed as breeding) are adjacent freshwater marshes dominated by *Eleocharis*. Para grass lined channels may provide important dry season refuge when the breeding habitat has dried out. Other Yellow Chat subspecies use various species of rushes (*Typha*) and sedges, rank grasses and/or wetland shrubs. • Yellow Chats are insectivores and breeding appears to be dependent on inundation of the habitat. Most breeding occurs in the wetter months (October to May), coinciding with inundation, with breeding less likely during the drier winter to early spring period (June to September) when inundation is less likely. • Inundation appears to drive the productivity (primary and secondary) that supports breeding of Yellow Chats and consequently any reduction in surface flows into breeding habitat may be deleterious. • All chat breeding habitat coincides with a complex mosaic of fresh and salt-influenced wetlands, creating fine scale structural complexity in the plant community. • The majority of records are from marine plains or the marine plain / alluvial terrace interface with only one record from a site embedded within the alluvial terrace (Pelican Creek dam, HLA-Envirosciences 2006). This site was less than 2 km from tidal influence. • All sites where Yellow Chats occur are subject to extremes of wetness, drying completely during the dry season.
Potential Impacts	• Direct impact on the birds (e.g. noise, dust or lights associated with construction activities). • Physical disturbance of the habitat (e.g. clearing of wetland vegetation, water contamination, weed infestation). • Disturbance on hydrology that drives the breeding cycle (e.g. loss or reduction of downstream flows). • Disturbance of creek banks. The alignment only intersects low priority habitat but is upstream of high and medium priority habitat and thus has the potential for downstream effects on high and medium priority habitat.

Wetland Habitat Area – Capricorn Yellow Chat	
Performance Indicators	• No disturbance to high priority areas. • No significant change to saturation or ponding patterns as a result of construction. • Construction completed and stabilised prior to wet season.
Mitigation Measures	• The pipeline route has been aligned to avoid physical disturbance of high priority Yellow Chat habitat. • Additional surveys for Yellow Chats will be undertaken during the detailed design phase to further map potential habitat and assist in route refinement. • Buffer areas will be established and clearly marked in the field and on construction drawings. • Construction through the wetland area will be scheduled for the dry season (usually from June to August), when the extent of the wetlands will be minimal and to reduce the likelihood of disturbing breeding birds. • Clearing and disturbance in riparian areas and wetland/waterbody areas between KP101-140 will be minimised to that necessary to safely construct the pipelines and meet other environmental requirements (e.g. separation of stockpiles, erosion control). • Construction activities will be scheduled to limit the duration of construction through the area. • The route will be aligned to avoid areas of ponded water as far as possible, especially on watercourses and drainage lines upstream of habitat areas. • Where disturbance to wetland vegetation is unavoidable, disturbance will be confined to the upper reaches of the wetland. • Geotechnical studies will be completed on 12 Mile, Raglan and Inkerman Creeks prior to the selection of the crossing method. Where HDD is selected, the crossing will be designed to ensure that the drilling does not adversely impact on aquifer persistence or hydrology. • Soil and vegetation stockpiles will have regular breaks to limit any disturbance to overland water flow. • There will be no drawing of water from dams/impoundments within this area. • Disturbed wetland soils will be revegetated with native macrophytes sourced from topsoil of disturbed wetland or seed sources from adjacent undisturbed wetland areas.
Monitoring and Auditing	• Regular audits and reviews during construction through this area.
Reporting and Corrective Action	• The construction contractor will maintain records of all monitoring and auditing activities and report results to the Project Manager at agreed intervals. • Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor or manager. • All incidents that deviate from normal operating conditions will be reported and corrective action initiated (including reporting to relevant agencies where this is warranted/required) by the construction contractor to prevent a recurrence of the incident. • Non-compliance and incident reports will be reviewed and closed out by senior management.

14.8.5.2 Black Iron Box

Black Iron Box	
Item / Area of Significance	Black Ironbox is listed as Vulnerable under the EPBC Act and *Nature Conservation Act 1992*. The pipeline route crosses five ephemeral watercourses between KP 38 and KP 80.5, which are lined by numerous Black Ironbox trees, which include a mix of both mature and juvenile trees.
Policy	To adhere to all mitigation procedures, where applicable, to minimise impacts to Black Ironbox intersected by the pipeline route.
Performance Criteria	• No clearing of Black Ironbox for staging or work areas.
Implementation Strategy	• The route has been selected to avoid clearing of mature Black Ironbox trees as far as possible and to minimise disturbance to juvenile species. • A pre-construction survey will be completed of the final alignment. Any individual Black Ironbox, located within the construction easement, that can be avoided, will be clearly identified both in the field and on construction drawings. • Permits under the *Nature Conservation Act 1992* will be obtained for clearing of Black Ironbox. • All clearing boundaries will be clearly marked on construction drawings and in the field. • Topsoil, which contains seedstock, will be respread over the ROW.

Black Iron Box	
	• Cleared native vegetation will be respread across the ROW to assist in the distribution of seed stock. • Subject to landholder consent, the riparian area will be fenced to protect the regeneration area from cattle grazing. • Natural regeneration will be monitored. Where re-establishment is not deemed sufficient, seed collection will be undertaken and spread over the regeneration area.
Monitoring and Auditing	• Audits of the crossings will be completed to confirm the number of individual trees disturbed. • Audits of the crossings to ensure compliance to mitigation measures.
Reporting and Corrective Action	• Recommendations and corrective actions arising from audits and reviews will be implemented. • Routine work reports will be recorded and reviewed by each supervisor/manager. • Non-compliance and incident reports will be closed out by senior management. • Landholder complaints will be recorded, appropriate corrective actions implemented and closed out by the Project Manager or delegate.

14.9 Pipelines Operations Environmental Management Plan

14.9.1 Operational Activities

All pipelines will be operated from the Marlborough Mine or refinery. The control concepts will provide sequence control for all operations in response to system commands by the operator. Minimal operator supervision will be required once pumping commences. Maintenance and/or storage depots associated with the pipelines will be located either at the mine site or refinery.

There will be regular monitoring of the cathodic protection system for external corrosion. The timing of monitoring will be determined during the development of the operating procedures. Leak detection will be provided by the flow meters installed at the inlet and outlet of each pipeline. These flow meters will be monitored and alarmed via the pipelines control system.

A periodic visual inspection of the pipeline route will be carried out either by air or land. The inspection period will be determined during the development of the operating procedures. Inspections will include review of easement and access area maintenance, rehabilitation, third party activity, erosion and weed control.

There will be routine planned maintenance along the pipeline alignment and any above-ground facilities.

14.9.2 Development of Operations EMP

Operational activities with the potential to impact on the environment include:

- Access to the ROW, patrols and inspections of the ROW (vehicle use).
- Vegetation control activities (control of weed species and ROW clearing).
- Excavation works during scheduled maintenance or emergency response (i.e. repair of damaged pipelines).
- Loss of containment.

The control measures implemented for construction will be largely applicable to the prevention and mitigation of the above operational impacts. Prior to the commencement of operations, the EMP will be updated to address the operational management structure for the pipelines. The review will:

- Include the organisational structure for operations and allocation of responsibilities in line with the organisational structure.

- Establish reporting structures, based on the organisational structure.
- Include relevant approval conditions arising from the approval process and subsequent permits, authorities and/or licences relevant to pipelines operations.
- Review control measures, specifically the policy, objectives and performance criteria to ensure that these are appropriate for operations.
- Include reference to 'as constructed drawings', particularly those that reference areas of environmental sensitivity.
- Review inspection and audit schedule and inclusion of specific locations where a higher level of inspection is required (e.g. to monitor rehabilitation success of sensitive areas).

14.10 Refinery and RSF Construction Environmental Management Plan

The refinery and RSF construction EMP is comprised of a number of management plans covering specific environmental aspects. These are detailed below. Management system elements covering health and safety, emergency response, incidents and complaints, and recruitment and training are also described in this section.

14.10.1 Waste Management Plan

Waste Management Plan	
Policy	To manage wastes from the construction of the refinery and the RSF in such a way that any potential impacts on the environment are minimised or avoided by incorporating waste minimisation concepts in appropriate procedures.
Performance Criteria	Prevent adverse environmental impacts from waste management during the construction phase. Preparation and implementation of a waste management plan for the construction phase. Adhere to waste minimisation principles. Adhere to waste management hierarchy by: • Minimising waste generation; • Maximising water and materials reuse and recycling; and • Safely treating and disposing of all non-reusable and non-recyclable materials.
Implementation Strategy	A waste management plan will be developed for the construction stage that includes elements such as: • The scope and objective of the plan. • Opportunities and actions to be taken to implement the waste management hierarchy. • Waste management procedures. • Training and management. • A monitoring and reporting program. The following tasks will be undertaken during the construction phase to achieve the performance requirement: • The construction contractor(s) will prepare a waste management plan for the construction activities. • Topsoil from excavation work will be stripped in layers, and where possible, stockpiled and reused for contouring, landscaping and rehabilitation. • Tree wastes from site clearing will, where possible, be chipped and stockpiled for future use in site landscaping and rehabilitation programs. • Careful planning will be employed when ordering materials. Where practical, any excess materials and used chemical containers and packaging will be returned to the supplier or to a local customer. • Preference will be given to materials that will result in no, or low levels of, waste (from both the materials and the packaging). • Waste streams will be separated into various components where these are produced. Waste

Waste Management Plan	
	separation at source will be achieved by providing bins for re-useable and recyclable materials. For large quantities of waste, an area on site will be allocated for the collection of materials. • Recyclable building wastes will be collected separately and re-used or recycled, e.g.: – Timber from concrete formwork can be recovered and reused. – Scrap steel and off-cuts can be recycled. – Plastics can be recycled. – Oils can be collected and sent for refining. • Wastes that cannot be re-used or recycled will be disposed of at an approved landfill. • All wastes leaving the refinery site will be tracked in accordance with the requirements of the Environmental Protection (Waste Management) Regulation 2000 Schedule 2.
Monitoring and Auditing	Quantities of waste being sent for reuse, recycling and disposal will be recorded by the construction contractor. During the construction period, storage areas for wastes, reusable materials and recyclable materials will be monitored by the contractor's environmental representative to ensure materials are removed as required and to minimise potential for cross-contamination of materials. Throughout construction, waste generation will be audited to assess whether improved practices can be implemented to further reduce the volume of waste disposed to landfill.
Reporting	The contractor's environmental representative will be responsible for recording and reporting waste management issues, including waste volumes. The contractor will routinely report to the Construction Environmental Manager...
Corrective Action	The following constitute incidents or failures to comply in relation to waste management policies: • A waste management plan has not been prepared; • Wastes being disposed of rather than reused or recycled where possible; • Illegal or uncontrolled waste disposal; or • Other non-compliances with the waste management plan. Should an incident or failure to comply occur, the contractor's environmental representative will take the necessary actions to identify the causes of non-conformance with the waste management plan performance requirements and implement actions necessary to ensure compliance and prevent recurrence.

14.10.2 Air Quality Management Plan

Air Quality Management Plan	
Policy	To minimise the release of fugitive emissions from areas where construction activities are occurring.
Performance Criteria	No fugitive emissions causing, or likely to cause, an environmental nuisance beyond the boundaries of the refinery and RSF sites. These include odour, dust, smoke and fumes.
Implementation Strategy	The following strategies will be implemented: • No open burning of wastes without approval of Construction Manager. • Rescheduling of vegetation clearing or earthworks activities during periods of high wind, if practical and if visible dust is blowing off-site. • Applying controls in the form of regular watering of exposed areas, wind barriers or vehicle speed restrictions when dusty conditions occur. • Ensuring that roads are appropriately surfaced as soon as possible after the commencement of site activities. • Avoiding spillages and ensuring prompt clean-up. • Covering haul vehicles carrying dusty materials moving outside the construction site. • Routing haul routes away from sensitive areas wherever possible. • Ensuring that vehicles and equipment are appropriately maintained to minimise air emissions. • Any exposed ground surfaces judged by the Construction Environmental Manager to be not required for construction operations will be revegetated as soon as practicable. • Vehicle speeds on site will be limited to 30 km/h to minimise the generation of dust on

Air Quality Management Plan	
	unsealed roads and exposed surfaces.
Monitoring and Auditing	Regular visual inspections will be undertaken by the Construction Environmental Manager for evidence of excessive dust generation.
Reporting	Records of inspections and resulting corrective actions will be maintained. All justifiable dust complaints will be recorded in the incident/complaint register by the Construction Environmental Manager and will be dealt with in accordance with the provisions of the incidents and complaints procedures. Significant air quality performance information will be reported to the EPA in accordance with the regulatory requirements.
Corrective Action	The following will constitute an incident or failure to comply in regard to air quality management: • Receipt of a justifiable fugitive emissions or dust complaint. • Observation of excessive dust levels generated on site. The Construction Environmental Manager will investigate all incidents and complaints and will implement the following actions as appropriate: • Request that the construction contractor assess activities to determine the source of the emissions and identify modifications to activities and processes and/or dust controls (e.g. watering of exposed surfaces, barriers) to reduce emissions. • During strong wind events and dry periods, consider requesting that dust generating activities cease until meteorological conditions improve or additional control measures are implemented. Approval to recommence operations will be required from the Construction Environmental Manager. • Advise the complainant of the corrective action and subsequent results.

14.10.3 Noise Management Plan

Noise Management Plan	
Policy	To prevent excessive noise emissions from refinery and RSF construction activities.
Performance Criteria	Day, evening and night time operational noise criteria based on the "background plus" criteria specified in Table 8.8.5 of the EIS will be adopted as the noise goal for construction activities, where these can be practically achieved. It is common practice that noise limits are relaxed during daytime construction works, where it may not be practicable to achieve operational noise limits. The reasons for the relaxation of limits include (i) construction activities are not a long-term noise source, (ii) operational noise can be controlled within enclosures or buildings, whereas these buildings are not completed during the construction phase.
Implementation Strategy	The following strategies will be implemented during the construction phase of the project: • Construction activities will be limited to 6 am – 6 pm Monday to Sunday, where possible. • Best available work practices will be employed on-site to minimise occupational noise levels. • All construction equipment will be regularly inspected and maintained in good working condition. • High efficiency mufflers will be fitted to appropriate construction equipment. • Access roads will be well-maintained and repaired immediately if damaged. • Construction activities will not normally be undertaken at night. • Steam venting commissioning tests and other similar noise events will be performed during daytime working hours wherever possible. • Adjacent landholders/residents will be notified prior to any atypical noise events outside 6 am – 6 pm Monday to Sunday
Monitoring and Auditing	Construction equipment will be inspected regularly to maintain optimal working conditions. Throughout construction, the contractor's environmental representative will undertake regular environmental audits.
Reporting	All complaints will be documented in the complaints register, investigated and reported to the Construction Manager by the Construction Environmental Manager. Significant noise performance information will be reported to the EPA in accordance with the regulatory requirements.

Noise Management Plan	
Corrective Action	The following represents an incident or failure to comply in regard to noise management: • Noise complaint received. • Noise management strategies not implemented. Should a complaint be received, the following steps will be taken: • Construction activities will be investigated to determine the cause of the problem. • Current procedures and control measures will be reviewed to prevent recurrences and, where necessary, additional control and mitigation measures will be investigated and adopted.

14.10.4 Soil Contamination Management Plan

Soil Contamination Management Plan	
Policy	To manage potential soil contamination during the construction of the refinery and RSF.
Performance Criteria	No contamination of soil. Spill containment facilities constructed in accordance with AS 1940 (2004) and AS 3780 (1994).
Implementation Strategy	**Sources** Prevention of land contamination will be a high priority. Land resources can be affected by contamination which may potentially arise from any of the following: • Spillage or leakage of hazardous materials. • Disposal of general waste from construction activities. **Prevention** Strategies for the prevention of potential land contamination adopted by the construction contractor will include: • Construction of appropriate spill containment facilities for all chemicals and fuel storage areas (in accordance with AS 1940 and AS 3780). • Establishing and maintaining a hazardous materials register detailing the location and quantities of hazardous substances including the storage, use and disposal. • Induction and training of personnel and implementation of safe work practices for minimising the risk of spillage. **Containment** • If an area of contamination is reported, the cause will be identified and the area of contamination contained. The impact may be contained by isolating the source or implementing controls around the affected site. **Remediation** • Remediation of contaminated land will use the most appropriate available method to achieve required commercial/industrial guideline validation results. • Validation sampling of any remediated area will be used to establish the site as "clean" as per the relevant EPA Contaminated Land and National Environment Protection Measure (NEPM) Guidelines.
Monitoring and Auditing	The integrity of storage facilities for hazardous materials and wastes and bunded areas will be routinely inspected.
Reporting	The Construction Environmental Manager will keep records of routine visual inspections. The Construction Environmental Manager will report any contamination incidents to the Construction Manager.
Corrective Action	The following will be classified as an incident or failure to comply in relation to soil contamination management: • Breach in integrity of bunds. • Non-compliance with AS 1940 and AS 3780. Should an incident or failure to comply occur in relation to soil contamination management, a selection of the following corrective actions will be considered where relevant: • Rectify storage/handling non-compliance. • Contain and remediate or dispose of contaminated material/contaminants. • Investigate and implement measures to prevent recurrence.

14.10.5 Acid Sulphate Soil Management Plan

Acid Sulphate Soil Management Plan	
Policy/Objectives	To control acid generation from the in-situ soils and to minimise to an acceptable level, the potential for on-site and off-site environmental impacts.
Performance Criteria	No net increase in existing soil acidity due to oxidation of in-situ or excavated materials. No direct or indirect release of runoff waters or leachate that do not meet the established water quality parameters. Performance indicators detailed in the Acid Sulphate Soil Management Plan will include: • Oxidisable sulphur and acidity from laboratory testing of soils and level of treatment determined. • Properties of neutralising agents.
Implementation Strategy, Monitoring and Auditing	If potential ASS become exposed during construction, actions will be undertaken in accordance with the requirements of: • *Environmental Protection Act 1994*; • Environmental Protection (Water) Policy 1997; • State Planning Policy (SPP2/02) – Planning and Managing Development involving ASS. **ASS Management and Treatment** If ASS material is excavated, the material will be trucked to a designated area and spread out in loose layers approximately 300 mm thick for moisture conditioning and subsequent lime treatment if required. Non-ASS material (residual or alluvial) will be stockpiled separately to estuarine ASS material. Prior to placing the material, a low bund will be constructed around the perimeter of the stockpile to prevent overland flows entering the area and/or to contain runoff or leachate from exiting the treatment area. Bunds will comprise non-ASS materials and will be approximately 0.5 m to 1 m high. The surface of the treatment pad will comprise a layer of imported (non-PASS) fill 0.3-0.5 m thick, compacted to effectively restrict infiltration into the substrate soils. A surface layer of Aglime applied at a rate of 5 kg/m^2 will be worked into the soil surface to act as a guard layer to neutralise any leachate from the materials being treated on the treatment area. Lime will be blended into the material to neutralise any potential acid production. Proposed liming rates are as follows: • *Roundabout at Reid Road*. Test results from one hand auger indicate that the liming rate is between 194 and 63 kg/t and hence a standard liming rate of about 195 kg/t should be adopted. • *Conveyor Transfer Stations*. Test results from two hand augers indicate that the liming rate is between 2 kg/t in the vicinity of ASS4 and 61 kg/t in the vicinity of ASS5. **Lime Treatment of Excavated Material** Following placement and spreading of material, samples will be obtained at a rate of 1 sample per 250 m^3 of fill for laboratory verification testing. Sample handling and transport will be in accordance with the ASS sampling and analysis guidelines – Ahern et al. (1998). Once the material is sufficiently dry, lime will be added at a rate of 1.5 times the theoretical amount necessary to neutralise the existing and potential acidity. The lime will be blended thoroughly using a rotary hoe, disk plough or other approved alternative method. **Validation Testing** Validation testing of the treated material will be carried out by obtaining a representative composite sample (one sample per 500 m^3) for laboratory testing using either the suspended peroxide oxidation-combined acidity and sulphate (SPOCAS) method or combined S_{CR} plus ANC test method or other approved testing methods. A total potential acidity (TPA) test result of 0 mols H^+/t together with an average acid neutralisation capacity (ANC) value of 1.5 times the theoretical amount (of lime) necessary to neutralise the total of any existing and potential acidity, is the target for validation testing. If the testing indicates inadequate treatment, additional lime will be mixed with the soil material and further validation testing will be carried out until satisfactory results are achieved. **Self-Neutralising Soils** Some sediments contain naturally occurring calcium or magnesium carbonates in the form of crushed shell (shell-grit) coral and foraminifera, and when present in appreciable quantities,

Acid Sulphate Soil Management Plan	
	the oxidisable sulphur (%S) levels determined from the SPOCAS or the chromium reducible sulphur (CRS) suite of tests, may be reduced to reflect the self neutralising capability of the sediments. Where appropriate, the SPOCAS or combined CRS plus ANC test methods will be carried out to determine the inherent soil self-neutralising capacity of the sample being tested. **Other Monitoring** Monitoring to be undertaken includes: • Inspection of the soils bunds around the lime treatment area (should ASS treatment be necessary). • Inspection of site for evidence indicating the occurrence of untreated ASS. • Water pH in the retention ponds.
Reporting	The Construction Environmental Manager will report any occurrences of exposed ASS to the Construction Manager and provide regular updates on any ASS treatment. Reports will include: • The effectiveness of the operating strategies. • Problems in implementing the ASS management strategies. • Results and compliance with testing requirements, runoff control and materials handling. • Effectiveness of any corrective action adopted. • Deviations from the ASS management strategies.
Corrective Action	If lime treatment of PASS is unsuccessful or performance targets are not being met as indicated by the validation and water quality testing procedures, the earthworks schedule will be reassessed and action taken to determine the problems causing the breach of standards. Should results of verification testing indicate residual acidity outside allowable limits, the affected material will remain in place and additional lime added and the verification process repeated until 'Performance Criteria' are met. If the problems are related to ineffective implementation of the ASS management plan then the plan will be audited to ensure improved implementation. Monitoring and testing will be increased to ensure compliance with the established standards. Any major changes to the management plan will be subject to discussions with and the approval of the relevant regulatory authorities.

14.10.6 Groundwater Management Plan

Groundwater Management Plan	
Policy	To protect the quality of the existing groundwater resources.
Performance Criteria	Groundwater quality will not be impacted by construction activities. Spill containment facilities constructed in accordance with AS 1940 (2004) and AS 3780 (1994)
Implementation Strategy	In the unlikely event that dewatering of foundation excavations is required, the extracted water will be used for dust suppression or disposed of by irrigation. Chemical and fuel storage areas will be bunded in accordance with AS 1940 and AS 3780 to prevent the seepage of any contaminants into the groundwater system.
Monitoring and Auditing	The integrity of storage facilities for hazardous materials and wastes and bunded areas will be routinely inspected.
Reporting	The Construction Environmental Manager will keep records of routine visual inspections. The Construction Environmental Manager will report any contamination incidents to the Construction Manager.
Corrective Action	The following is to be classified as an incident or failure to comply in relation to groundwater management: • Breach in integrity of bunds. • Non-compliance with AS 1940 and AS 3780. Should an incident or failure to comply occur in relation to groundwater management, a selection

Groundwater Management Plan	
	of the following corrective actions will be considered where relevant: • Rectify storage/handling non-compliance. • Contain and remediate or dispose of contaminated material/contaminants. • Investigate and implement measures to prevent recurrence.

14.10.7 Surface Water Management Plan

Surface Water Management Plan	
Policy	To minimise the potential impacts associated with erosion and to prevent the release of contaminants that may adversely affect downstream surface water quality.
Performance Criteria	To prevent the direct or indirect release of contaminants resulting from construction operations to surface waters. To minimise incidences of accelerated erosion as a result of construction activities.
Implementation Strategy	The following strategies will be implemented to minimise potential impacts on receiving surface waters: • Preparation and implementation of a site-specific construction erosion and sediment control plan in accordance with the Institution of Engineers Australia – Erosion and Sediment Control Guidelines (1996). • Installation of temporary drainage works (channels and bunds) in areas required for sediment and erosion control and around storage areas for construction materials. • Where appropriate, installation of temporary sediment basins to capture sediment-laden runoff from site. • Using pumps to maintain dry working conditions in temporary excavations, rather than constructing temporary open channels for gravity drainage of temporary excavations, where gravity channeling is not acceptable. • Stabilising cleared areas not used for plant infrastructure with vegetation or appropriate surface treatments as soon as practicable following earthworks, to minimise erosion. • Provision of appropriate storage areas for fuels and dangerous goods with spill cleanup kits, and ensuring that relevant construction personnel are trained in appropriate handling of such materials and spill prevention. • Restricting vegetation clearance to the smallest area necessary. • Stripping and stockpiling of topsoil from disturbed areas. Diversion channels and silt fences will be constructed around the topsoil stockpiles to prevent erosion and loss of topsoil. Seeding of long-term topsoil stockpiles will be carried out with an appropriately designed seed mix. The topsoil will be respread prior to revegetation of areas to be rehabilitated at completion of construction. • Topsoil stockpiles will be located in areas outside drainage lines, and will be protected from erosion. Prior to the re-spreading of topsoil, the ground surface will be ripped to assist with binding of the soil layers, water penetration, and revegetation. Topsoil will be respread to a minimum depth of 75 mm. • All fuels and chemicals will be stored and handled in accordance with AS 1940 and AS 3780 to minimise the potential for contamination of stormwater runoff from the site.
Monitoring and Auditing	Monitoring requirements for erosion and sediment control will include routine visual inspections, including following all significant storm events, by the contractor's environmental representative,. Inspections will include the integrity of diversion bunds, drains and storage facilities, and cover housekeeping to ensure stormwater runoff does not contain rubbish or contaminants.
Reporting	The Construction Environmental Manager will report regularly to the Construction Manager on the following: • Contractor's compliance with approved erosion and sediment control plan. • Incidents of erosion or surface water contamination. • Results of routine inspections.
Corrective Action	The following is to be classified as an incident or failure to comply in relation to surface water management: • Erosion and sediment control plan not prepared and/or implemented.

Surface Water Management Plan	
	• Breach in integrity of bunds. • Any temporary sediment basins demonstrating significant reduced available volume. • Insufficient housekeeping to prevent general rubbish and contaminants entering the stormwater runoff from the site. Should an incident or failure to comply occur in relation to stormwater management, a selection of the following corrective actions will be considered where relevant: • Prepare and/or implement erosion and sediment control plan. • Repair stormwater controls. • Contain and remediate or dispose of contaminated material/contaminants. • Treat or dispose of contaminated stormwater. • Clean out temporary sediment basin. • Improve level of housekeeping. • Review the erosion and sediment control plan.

14.10.8 Flora Management Plan

Flora Management Plan	
Policy	To protect the flora within the project sites that will be retained around operational areas.
Performance Criteria	Minimise the impact of construction on the local flora.
Implementation Strategy	**General** The following strategies will be implemented to minimise potential impacts on flora: • Minimise the area to be cleared during construction. • Ensure that access of construction personnel to areas outside the disturbed areas is only permitted with the prior approval of the Construction Environmental Manager. • Prepare a formal application to remove vegetation on the sites where relevant. **Control of Site Clearance** Strategies to minimise potential impacts from site clearance are: • The total area to be cleared for construction will be restricted to the minimal area required for the construction of the proposed facilities. • The area to be cleared will be clearly marked prior to any works commencing. • Any clearing within or close to riparian and marine vegetation communities will employ adequate erosion and sedimentation mitigation measures to ensure that aquatic ecosystems are not impacted and riparian vegetation is not unduly effected. **Cleared Vegetation** Cleared vegetation will be chipped and stored for use as mulch during site landscaping works and/or in surrounding vegetated areas susceptible to erosion. If this is not possible, vegetation will be pit burnt in accordance with EPA guidelines. **Site Landscape Plan** A landscape plan which covers all areas disturbed during construction but not covered by built structures and infrastructure will be prepared and implemented at the end of the construction phase. The landscape plan will include the control of introduced "weed" species which can colonise disturbed areas following construction and the use of plant species native to the vegetation communities present in the region to the fullest extent possible. **Access Restrictions** Access to the sites will be restricted to prohibit unauthorised access to the surrounding undisturbed areas. Access restrictions will be implemented to prevent unauthorised clearing, recreational driving, unmanaged fire regimes, and the spread of introduced weed species. **Weed Control Program** A weed control program will be implemented over the construction sites which will include: • Effective management methods to control spread of declared weed species in keeping with regional management practice and DNRW pest control fact sheets.

Flora Management Plan	
	• Routine monitoring of the construction sites to identify any new incidence of weed infestation. • Provision of information for personnel on the identification of declared weeds. • Washdown protocols for any vehicles/machinery entering and exiting the sites. • Procedures for weed eradication and disposal. **Clearly Defined Stockpile Areas** Stockpile areas and haul roads required during construction will be clearly defined, so that weed establishment and the potential spread of plant diseases may be contained. Stockpiles will be developed in previously cleared areas, with adequate open spaces buffers, if possible. **Fire Management Program** An appropriate fire management regime will be implemented over the sites and will consist of periodic (as appropriate) inspections of fuel load and moisture content in vegetated areas.
Monitoring and Auditing	Routine inspections of undisturbed areas by the contractor's environmental representative to identify any evidence of vegetation disturbance, weed infestation and fire management issues.
Reporting	The Construction Environmental Manager will report any incidents of disturbance or weed infestation to the Construction Manager as necessary.
Corrective Action	The following constitute an incident or failure to comply in regard to flora management: • Unauthorised disturbance of vegetation outside the defined construction areas. • Evidence of weed infestation. • Fire management program not prepared or implemented. • Site landscape plan not prepared or implemented. In the event of a failure to comply, investigations will be undertaken into the cause of the incident or failure to comply and the appropriate corrective actions taken to overcome the problem and prevent recurrence.

14.10.9 Fauna Management Plan

Fauna Management Plan	
Policy	To protect fauna and fauna habitats in areas adjacent to the construction sites at the refinery and the RSF.
Performance Criteria	Minimise the impact of construction on the local fauna.
Implementation Strategy	The following strategies will be implemented to minimise potential impacts on fauna and fauna habitats: • Bushland and habitat surrounding construction areas will be managed to prohibit any unauthorised disturbance so as to maintain the area's habitat values. • Access of construction workers to areas outside the designated construction sites will only be permitted with the prior approval of the Construction Environmental Manager. • Where possible, dead trees, stags and hollow branches will be salvaged from the areas to be cleared and relocated to the surrounding undisturbed areas to create compensatory shelter. • Where possible, the timing of clearing operations will be selected to minimise impacts on breeding species. • Hollow bearing trees will be felled in a manner which reduces potential for fauna mortality. Felled trees will be inspected after felling and fauna (if identified and readily accessible) will be removed and relocated or rendered assistance if injured. After felling, hollow bearing trees will remain unmoved over-night to allow animals to move of their own volition. • Plans will be developed to monitor and control populations of vertebrate feral pests (*e.g.* Red Fox *Vulpes vulpes*, Feral Cat *Felis catus)*.
Monitoring and Auditing	Routine inspections of undisturbed areas by the contractor's environmental representative to identify any evidence of habitat disturbance or feral pest presence. During construction, the contractor's environmental representative will monitor site clearing to ensure that: • Areas to be cleared are clearly defined; • There is no unauthorised disturbance of the surrounding habitat area. • Compensatory shelter is established where necessary.

Fauna Management Plan	
	• Where necessary, an animal retrieval program is implemented.
Reporting	The Construction Environmental Manager will report any incidents of disturbance or feral pest presence to the Construction Manager as necessary.
Corrective Action	The following constitute an incident or failure to comply in regard to fauna management: • Unauthorised disturbance of habitat. • Evidence of feral pest presence. • Animal retrieval program not implemented during clearing. • Hollow bearing trees not felled appropriately. • Failure to obtain a necessary permit. In the event of an incident or failure to comply, investigations will be undertaken into the cause of the incident or failure to comply and the appropriate corrective actions taken to overcome the problem and prevent recurrence.

14.10.10 Mosquito Management Plan

Mosquito Management Plan	
Policy	To prevent the occurrence of potential mosquito breeding sites and the presence of adult mosquitoes.
Performance Criteria	Minimal number of potential mosquito breeding sites created on-site by preventing water from ponding.
Implementation Strategy	The following strategies will be implemented : • Depressions in the ground surface (such as wheel ruts) will be filled as soon as practicable to prevent the ponding of water. • Pools of stagnant water will be drained and/or the depressions filled. • Storage containers capable of ponding water will be either discarded after use or stored in an inverted position (care will be taken to ensure that ponding does not occur in waste storage areas). • Erosion and washdown practices will be controlled to prevent the formation of standing water pools in natural water courses adjacent to the sites.
Monitoring and Auditing	All sediment basins, ponds and on-site excavations filled with water will be inspected regularly for the presence of mosquito larvae by the contractor's environmental representative. Inspections of potential mosquito breeding areas will also be undertaken following rain. The frequency of mosquito bites to site personnel will also be monitored to identify where mitigation measures are not currently successful and to determine if adult eradication programs should be implemented. The Construction Environmental Manager will liaise with Queensland Health and the Calliope Shire Council for assistance in choosing a suitable method of laviciding / eradication should this be necessary.
Reporting	Records of larvae infestation and history of bites to on-site personnel will be maintained. The Construction Environmental Manager will regularly report to the Construction Manager on the current status.
Identification of Incident of Failure to Comply	The following represent an incident or failure to comply in regard to mosquito management: • An increase in the numbers of potential mosquito breeding sites on-site. • An increase in the numbers of larvae and/or mature mosquitoes on-site. • Significant incidences of mosquito bites are reported. • Mosquito management strategies are not implemented.
Corrective Action	Should an incident or failure to comply occur, a selection of the following actions will be taken: • An investigation will be undertaken into why directives are not being carried out. • Employees will be re-educated on desired practices. • Work policies and procedures will be reviewed and modified to improve the situation.

14.10.11 Pest Management Plan

Pest Management Plan	
Policy	To prevent further spread of the eastern red imported fire ant (RIFA) beyond the project boundaries and assist in the eradiation of RIFA.
Performance Criteria	No sightings / evidence of RIFA.
Implementation Strategy,	The following strategies will be implemented for construction within declared fire ant restricted areas to aid in reducing the spread of RIFA: **Site Survey** A survey of the construction areas is to be conducted by the DPIF within 28 days prior to the commencement of works to ensure that there are no active nests. The survey will be signed-off in accordance with the provisions of the DPIF-approved Risk Management Plan for the control of risks associated with RIFA. **Movement Certification** All high risk items (including fill gained through earthworks) to be transported within the restricted areas or to a DPFI-approved disposal site will be accompanied by a movement certificate. **Vehicle Movements** DPIF requirements for the movement of vehicles from a restricted area will be followed. Such requirements may include inspection and washdown. **Staff Education and Awareness** All personnel will be trained in the required practices through a training and awareness program developed in consultation with DPIF.
Monitoring and Auditing	Regular visual inspections will be conducted by the Construction Environmental Manager and Construction Manager, in accordance with DPIF guidelines, and by DPIF. If there is a suspected RIFA nest, DPIF will be notified within 24 hours and an inspection will occur.
Reporting	The Construction Environmental Manager will be responsible for enforcing all procedures and polices relating to RIFA and maintaining all records. The Construction Environmental Manager will liaise with and report to the Construction Manager and the relevant authorities on a regular basis. Should a RIFA nest be found DPIF will be contacted within 24 hours.
Identification of Incident of Failure to Comply	The following represents an incident or failure to comply in regard to RIFA: • Suspected RIFA nest discovered. • Failure to comply with the DPIF requirements.
Corrective Action	Should an incident or failure to comply occur, a selection of the following actions will be taken: • An investigation will be undertaken into why directives are not being carried out and the necessary actions taken. • Employees will be re-educated on desired practices. • Work policies and procedures will be reviewed and modified to improve the situation.

14.10.12 Chemical and Dangerous Goods Management Plan

Chemical and Dangerous Goods Management Plan	
Policy	To safely manage, purchase, store, handle and dispose of chemicals and prevent the uncontrolled release of chemicals to the environment.
Performance Criteria	• Compliance with relevant Australian Standards including: – AS 4452 The Storage and Handling of Toxic Substances; – AS 1940 The Storage and Handling of Flammable and Combustible Liquids; and – AS 3780 The Storage and Handling of Corrosive Substances. • No spillages of chemicals or release of chemicals to the environment. • Emergency procedures relating to chemicals and dangerous goods followed.
Implementation Strategy	All chemicals and dangerous goods to be handled and stored in accordance with relevant

Chemical and Dangerous Goods Management Plan	
	Australian Standards. MSDSs will be kept in a register at the construction sites. All hazardous materials will be managed in accordance with the relevant Australian Standard. Records will be kept on the existing inventory, storage location, personnel training and disposal of waste for all chemical and dangerous goods used on-site. Records will be maintained by the Construction Environmental Manager. All staff will be trained in appropriate handling, storage and containment practices for chemicals and dangerous goods as is relevant to their position. All construction equipment will be refuelled in an appropriate refuelling facility designed to contain any spills. Spill containment devices will be available at key chemical storage areas. Spills will be cleaned up immediately. Contaminated runoff and contaminated soil will be collected and remediated or disposed of in an approved manner. Where possible, hazardous chemicals and materials will be replaced with less harmful alternatives. Procedures regarding emergencies relating to chemicals and dangerous goods will be incorporated into the site emergency plan.
Monitoring and Auditing	Routine inspections of chemical and dangerous goods handling and storage areas will be conducted by the contractor's environmental representative.
Reporting	The Construction Environmental Manager will record and sign off on routine inspections of chemical and dangerous goods storage and handling areas. Spills will be reported to the Construction Environmental Manager including actions taken to minimise the impacts (refer to Section 14.10.9). Should a significant chemical spill occur, the site emergency plan will be followed and the EPA and Calliope Shire Council notified as soon as possible. The Construction Environmental Manager will report to the Plant Manager on the results of inspections, number of staff trained, number of spills and associated corrective actions and preventative actions.
Corrective Action	The following constitute an incident or failure to comply in relation to chemical and dangerous goods management: • Uncontained spill of a chemical or dangerous good. • Storage areas not compliant with Australian Standards. Should an incident/complaint occur, a selection of the following corrective actions will be undertaken as appropriate: • Contain and clean up spill material immediately and remediate or appropriately dispose of contaminated material. • Repair bunds / containment facilities. • Relocate chemicals to appropriately designed storage facilities. • In the case of a significant chemical spill, the site emergency plan will be followed and the EPA and Calliope Shire Council notified as soon as possible.

14.10.13 Traffic Management Plan

Traffic Management Plan	
Policy	To minimise any potential impacts associated with traffic generated by the project's construction traffic.
Performance Criteria	Minimal traffic-related complaints and incidents.
Implementation Strategy	The following strategies will be implemented to minimise potential impacts from construction related traffic: • All heavy vehicles travelling to and from the sites will follow dedicated heavy vehicle routes to avoid built-up areas. • Use of carpooling and bus services will be implemented where possible to minimise worker trips during the construction. • Where possible, truck deliveries will be restricted to daytime working hours.

Traffic Management Plan	
	• Dangerous goods will be transported along preferred dangerous goods routes in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail and in accordance with the requirements of the Queensland *Transport Operations (Road Use Management – Dangerous Goods) Regulation 1998* and the *Transport Infrastructure Act 1994*. • If possible, the transport of oversize loads will be restricted to non-peak periods to minimise traffic disruptions and will be provided with appropriate escorts and approvals from both the Main Roads Department and the Police. • Clear traffic signs and signals will be installed on-site to provide for safe traffic movement. • The site speed limit will be 30 km/h. • Contribution to the upgrading of roads and intersections potentially affected by the project's construction traffic.
Monitoring and Auditing	The Construction Environmental Manager will monitor the number of incidents or complaints received in relation to project traffic. Routine inspections will include checks on compliance with the traffic management plan.
Reporting	The occurrence of any traffic incidents or complaints will be recorded by the Construction Environmental Manager and reported to the Construction Manager.
Corrective Action	The following will constitute an incident or failure to comply in regard to traffic management: • Not following designated routes. • Vehicles not observing site traffic regulations e.g. speed regulations. • Transport of oversize loads at times and in such manners as to disrupt other on- and off-site road users. • Necessary approvals for traffic-related activities not obtained from relevant bodies e.g. Main Roads and local councils. • Non-compliance with the requirements for the Australian Code or Queensland Regulations. In the event of a complaint, an incident or failure to comply with requirements, relevant corrective actions will be taken which could include the following: • Traffic patterns will be investigated and vehicles will be rescheduled or rerouted if possible. • Repeatedly offending vehicles will be identified and operators educated in the required mode of operation for the vehicle. • Appropriate approvals will be sought from relevant authorities where this has not been done previously. • Issues of non-compliance will be rectified. • Review and modification of the traffic management plan.

14.10.14 Housing Management Plan

Housing Management Plan	
Policy	To ensure that adequate accommodation is available for the project's imported construction workforce.
Performance Criteria	All imported construction workers can be housed in suitable accommodation without significantly impacting the ability of other residents to obtain suitable accommodation.
Implementation Strategy	GPNL will prepare a housing strategy for its construction workforce. The strategy will detail plans to: • Stimulate construction of new dwellings. • Stimulate construction of multi-unit flats, motels and hotels. • Coordinate leasing of existing rental properties. • Develop a workers' village in Calliope Shire. GPNL will consult with relevant government departments, local developers, and the local community before finalising its housing strategy. GPNL will seek to maximise the employment of local workers to reduce the number of workers that need to be imported into the region. GPNL will look for opportunities to employ workers who are already accommodated and will be

Housing Management Plan	
	completing work on existing projects in the region and who will be able to move across to the GNP. GPNL will implement its housing strategy in conjunction with the local housing industry, the relevant local government authorities, and the construction contractors to ensure that adequate housing is provided as required. GPNL will consider initiatives proposed by the Gladstone and Calliope based housing agencies to assist low-income households seeking housing assistance. GPNL will work with proponents of other major industrial projects in the region to co-ordinate the management of cumulative housing impacts. GPNL will examine the option of off-site modular construction for major refinery elements in an effort to reduce the number of construction workers who will need to be imported into the region.
Monitoring and Auditing	The uptake of construction workforce housing will be recorded to ensure that the supply is sufficient to meet the demand.
Reporting	GPNL's Housing Manager will report the results of the monitoring to the Construction Manager.
Corrective Action	The following constitute an incident or failure to comply: • Housing strategy is not prepared. • Housing strategy is not implemented. • Suitable housing is not available for the imported construction workers when required. In the case of the occurrence of any of the above incidents, any of the following actions will be taken: • Housing strategy will be prepared. • Housing strategy will be implemented. • Additional housing will be provided.

14.10.15 Cultural Heritage Management Plan

Cultural Heritage Management Plan	
Policy	To protect the cultural heritage values of the project area.
Performance Criteria	Compliance with the requirements of the *Aboriginal Cultural Heritage Act 2003* and the relevant Cultural Heritage Management Plans (CHMPs). No disturbance of any place on the Queensland Heritage Register in accordance with the requirements of the *Queensland Heritage Act 1992*.
Implementation Strategy	GPNL is committed to the protection of cultural heritage sites and the sensitive handling of any accidental discovery of sites. GPNL will: • Finalise the development of an approved CHMP with representatives of the Port Curtis Coral Coast Native Title Applicants. • Complete cultural heritage surveys and develop and implement agreed management measures for the management of cultural heritage in accordance with the principles and procedures detailed in the approved CHMPs. • Where potential European heritage material is identified, determine the significance of the site in consultation with the Cultural Heritage Unit of DNRMW and where appropriate, in consultation with local historical organisations regarding the relocation / preservation of material. • Include cultural heritage issues in the project induction program and involve representatives from the Aboriginal Parties in the development and implementation of such programs.
Monitoring and Auditing	Monitoring of the earthworks will be undertaken by Traditional Owner monitors. Auditing of compliance with the CHMPs in accordance with the processes defined within the CHMP.
Reporting	Any signs of disturbance to artefacts will be reported to the Construction Manager and the relevant indigenous stakeholders.
Corrective Action	Any of the following will constitute an incident or failure to comply: • Failure to prepare and/or implement a CHMP. • Unauthorised disturbance of any artefacts.

Cultural Heritage Management Plan	
	• Failure to implement a cultural heritage monitoring program. In the event of an incident or failure to comply, the commitment that has not been undertaken will be reviewed and modifications implemented as appropriate.

14.10.16 Health and Safety Management

Health and Safety Management	
Policy	To ensure that the construction of the project does not adversely affect the health or safety of project personnel or the general public.
Performance Criteria	Compliance with the requirements of all relevant legislation, Australian Standards and GPNL's health and safety management system. Implementation of a health and safety management system that will ensure the health and safety performance of the project meets industry standards.
Implementation Strategy	GPNL will develop and implement a health and safety management system that will ensure that the safety and occupational health performance of the construction project meets GPNL policy and objectives. The health and safety management system will include: • Clear identification of potential health and safety hazards. • Risk assessment resulting from the hazards identified. • Control measures that prevent or minimise the level of the risk. • Procedures for monitoring, review and corrective actions. Construction contractors will be required to: • Develop, implement and maintain health and safety management plans which are consistent with GPNL's health and safety management system and which address specific workplace hazards that could be encountered. • Appoint workplace health and safety representatives and provide them with the necessary support. • Provide appropriate personal protective equipment and health and safety induction and training to employees.
Monitoring and Auditing	The overall health and safety performance will be audited regularly by contractor management in conjunction with the Construction Manager. In addition, there will be regular workplace health and safety inspections.
Reporting	Records of inspections and audits will be maintained. Contractors will report results to the Construction Manager.
Corrective Action	The following constitute incidents or failure to comply with health and safety requirements: • Directives and procedures contained in the health and safety management plan are not being followed or enforced. • The health and safety management plan does not encompass all required hazards and controls. • Work-related injury and illness. • The emergency response plan is not prepared or implemented. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Investigate why the incident occurred and investigate and implement corrective actions to prevent recurrence. • Ensure health and safety information provided is adequate and up-to-date and revise regularly as appropriate. • Ensure employees, contractors and visitors to the site are familiar with the procedures and policies relevant to their positions and increase training effort as necessary. • Ensure health and safety directives and procedures are enforced. • Ensure health and safety documents are readily available to everyone on the site.

14.10.17 Emergency Response Management

Emergency Response Management	
Policy	To ensure that project personnel can respond effectively and efficiently in the event of an emergency associated with construction activities.
Performance Criteria	Emergency plans for construction developed and in place prior to construction. Construction personnel familiar with emergency procedures and role in the event of an emergency and emergency drills have been undertaken.
Implementation Strategy	GPNL will prepare a detailed emergency response plan during the project detailed design phase. The plan will include consideration of the following: • Response procedures in the event of a fire, chemical release, spill, leak, explosion, equipment failure, bomb threat, natural disaster (including severe storm and flood events) or any other likely emergency. • Communication arrangements and contact details. • Roles and responsibilities of responsible personnel. • Emergency controls and alarms. • Evacuation procedures. • Emergency response equipment. • Leak detection and control points. • Training requirements. • Site access and security.
Monitoring and Auditing	The effectiveness of the emergency response plan will be regularly tested and audited.
Reporting	The Health and Safety Manager will be responsible for compiling the results of testing and auditing programs. These results will be reported to the Construction Manager.
Corrective Action	The following constitute incidents or failure to comply: • Emergency response plan is not prepared or implemented. • Emergency response equipment is not provided. • Emergency response training is not undertaken. • Emergency response procedures not followed in the event of an incident. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Prepare or implement the emergency response plan. • Provide the necessary equipment or training. • Investigate why the emergency response procedures were not followed and implement mitigating measures.

14.10.18 Recruitment and Training Management

Recruitment and Training Management	
Policy	To implement a program that ensures that adequate construction workers are available and that all necessary training requirements are met.
Performance Criteria	There is no shortage of adequately trained construction workers.
Implementation Strategy	GPNL will adopt an employment policy that encourages the use of local workers. An industry participation plan will be developed which will detail the level of local industry participation expected in the construction phase. Elements of the plan will include: • Ensuring potential local suppliers are provided with information in an equitable and timely manner. • Ensuring local suppliers are provided with opportunities to supply under the same terms, standards and conditions as interstate or overseas suppliers. • Ensuring contracts are awarded on the basis of most competitive proposal which includes due consideration of non-cost factors such as reliability, maintainability, servicing etc.

Recruitment and Training Management	
	• Performance measurements and feedback mechanisms. To maximise the employment opportunities of local personnel, GPNL will communicate the requirements of its employment policy to relevant local organisations and businesses. GPNL will be an equal opportunity employer and will consider suitable women, young people and Aboriginal and Torres Straight Island people for all appropriate positions. A specialist or employment firm(s) will be engaged to recruit the construction workforce from both local sources (where possible) and otherwise from within the wider region of Central Queensland or the remainder of Australia. Normal industrial training programs will be conducted as required by labour awards, as well as in agreements set out for the construction of the refinery and relevant State and Commonwealth legislation. Most of these programs will be the responsibility of the contractors and sub-contractors. An apprenticeship and/or traineeship program will be implemented in consultation with existing local and regional technical training institutions and specialist apprenticeship organisations.
Monitoring and Auditing	The success of the recruitment and training programs will be assessed on the availability of the required workforce, and the number of trainees and their ability to meet work requirements.
Reporting	The Human Resources Manager will be responsible for keeping records of all recruitment and training activities. This will be reported to the Construction Manager regularly.
Corrective Action	The following constitute an incident or failure to comply: • Inadequate number of workers available. • The workers that are available are not adequately trained. • Industry participation plan not development or implemented. In the event of an incident or failure to comply, increased recruitment or training activities will be undertaken as necessary

14.10.19 Incidents and Complaints Management

Incidents and Complaints Management	
Policy	To manage environmental or social incidents and complaints from the community regarding construction activities.
Performance Criteria	Incidents and complaints regarding environmental and social aspects of construction activities will be minimised and mitigation measures implemented to reduce the incidence of complaints.
Implementation Strategy	All incidents and complaints will be documented in an incidents/complaints register. The complaints form will document at least the following information: • Time, date and nature of complaint. • Type of communication (telephone, letter, email, visit). • Name, contact address and contact number (if provided). • Response and investigation undertaken as a result of the complaint. • Action taken and signature of person investigating complaint. Each complaint will be investigated as soon as practicable and, where appropriate, corrective action taken to remedy the cause of the complaint.
Monitoring and Auditing	The Construction Environmental Manager will maintain the complaints register and ensure all complaints are resolved. The complaint form will be checked by the Construction Environmental Manager within two weeks of complaint receipt to ensure follow-up action has been taken to resolve the issue.
Reporting	All complaints and incidents are to be reported to the Construction Environmental Manager who will subsequently report to the Construction Manager. The complainant will be advised of what action, if any, has been taken as a result of the complaint.
Corrective Action	Should further incidents occur or complaints be received in relation to previous occurrences, an appropriate selection of the following corrective actions will be undertaken: • Additional environmental awareness training of the workforce with respect to the procedures to be followed for environmental incidents or complaints. • Investigation into why the incident/complaint was not addressed within the specified time frame.

Incidents and Complaints Management	
	• Incident/complaint follow-up according to the results of the investigation. • Where required, work place practices will be reviewed.

14.11 Refinery and RSF Operations Environmental Management Plan

The refinery and RSF operations EMP is comprised of a number of management plans covering specific environmental aspects. These are all detailed below. Management system elements covering health and safety, emergency response, incidents and complaints, and recruitment and training are also described in this section.

14.11.1 Waste Management Plan

Waste Management Plan	
Policy	To manage wastes from the operation of the refinery and RSF in such a way that any potential impacts on the environment are minimised or avoided by incorporating waste minimisation and cleaner production concepts and procedures.
Performance Criteria	Prevent adverse environmental impacts from wastes. Adhere to waste minimisation and cleaner production principles by: • Minimising waste generation; • Maximising water and materials reuse and recycling; • Safely treating and disposing of all non-reusable and non recyclable materials.
Implementation Strategy	The key principles of cleaner production and application of the waste management hierarchy will be applied throughout the refinery. These will be implemented as follows: • Recovery of excess heat in waste heat boilers, superheaters and economisers. Heat will be recovered as superheated high pressure steam and low pressure steam to be used to meet process requirements and generate power. • Recovery and re-use of off-specification products and high pressure acid leach (HPAL) and mixed sulphide precipitation (MSP) autoclave descale within the process. • Storage of runoff from process areas for re-use as process water within the refinery where appropriate. • Collection of sulphur waste by a licensed contractor for recycling at a large scale composting facility which generates horticultural products. • Recycling of waste oil, scrap steel, filter belts and rubber on site where possible. • Waste avoidance by the design of chemical handling and storage facilities to prevent leaks and thus avoiding spills and wastes which would otherwise require disposal. The waste management plan will be developed prior to commencement of operations and will include: • The scope and objective of the plan. • Environmental values to be protected. • Inputs and outputs of the process, and the impact on the environmental values. • Opportunities and actions to be taken to implement the waste management hierarchy. • Life cycle assessment recommendations. • Specific action plans. • Emergency response procedures. • Training and management. • A monitoring and reporting program. The following tasks will be undertaken to achieve the performance requirements: • The Environmental Manager will approve the waste management plan for all operational aspects of the refinery. • Careful planning will be employed when ordering materials. Where practical, any excess materials and used chemical containers and packaging will be returned to the supplier or to a local consumer. • Preference will be given to materials that will result in no or low levels of waste (from both the materials and packaging). • Waste streams will be separated into various components where these are produced. Waste separation at source will be achieved by providing bins for re-useable or recyclable materials. For large quantities of waste, an area on-site will be allocated for the collection of materials. • Waste storage will occur in a secure area. Should there be a possibility that leaching from wastes onto the ground could affect either groundwater or surface water quality, engineering

Waste Management Plan	
	features will be put in place to prevent this. • Any wastes that cannot be re-used or recycled will be disposed of at an approved landfill. • All wastes leaving the refinery site will be tracked in accordance with the requirements of the *Environmental Protection (Waste Management) Regulation 2000* Schedule 2. All site personnel and contractors will implement the waste management hierarchy when undertaking activities on site in the following order of priority: • The generation of waste will be prevented or reduced by substituting inputs for those that generate waste; increasing efficiency in the use of raw materials, energy, water or land; redesigning processes or products; and improving maintenance and operation of equipment. • Re-use of waste will be achieved by recovering solvents, metals or oil and re-using these for a secondary purpose. • Wastes will be segregated for recycling into new products. Wastes that can be recycled include glass, cardboard, paper, plastics, aluminium, batteries, oil, drums and rubber. • Energy generated from waste will be recovered and utilised where possible. Where appropriate, licensed contractors will dispose of waste, or treat and dispose of waste, in ways that minimise harm to the environment.
Monitoring and Auditing	Volumes of waste being sent off-site for reuse, recycling and disposal will be monitored regularly via the waste tracking procedures. Waste and reusable and recyclable materials storage areas will be monitored by the Environmental Manager to ensure appropriate contractors to ensure materials are removed as required and to minimise potential for cross-contamination of materials.. Waste generation will be audited to assess whether improved practices can be implemented to further reduce the volume of waste disposed to landfill.
Reporting	The Environmental Manager will record the results of all waste monitoring surveys. The Environmental Manager will report waste collection and management issues to the Refinery Manager at regular intervals.
Corrective Action	The following constitute incidents or failures to comply in relation to waste management policies: • Unnecessary volumes of waste being sent for disposal. • Wastes being disposed of rather than reused or recycled where possible. • Illegal or uncontrolled waste disposal. • Other non-compliances with the waste management plan. Should an incident or failure to comply occur, the Environmental Manager will: • Take the necessary actions to identify the causes of non-conformance with the waste management plan performance requirements. • Be responsible for implementing all actions necessary to ensure compliance and prevent recurrence.

14.11.2 Air Quality Management Plan

Air Quality Management Plan	
Policy	To meet the relevant air quality standards, to minimise any adverse impacts on air quality and to comply with the conditions of the project's environmental authority.
Performance Criteria	Maintain specification emission concentrations under standard operating conditions. Operation in accordance with the project's environmental authority.
Implementation Strategy	Point-source air emissions will be managed using best practice technology and emission controls. Stack emission points within the plant will be provided with monitoring ports where necessary. Steam boilers will be gas-fired and no coal will be combusted on site. Dry operations at the refinery including the drying, briquetting, sintering and packaging of the nickel and cobalt product will take place in ventilated buildings that incorporate building dust capture. Before being emitted, air from the nickel and cobalt dryers will pass through a cyclone to

Air Quality Management Plan	
	remove particulate matter. Imported ore and sulphur will be transferred from the port by a covered conveyor which prevents wind-blown dust. The sulphuric acid plant will operate on the double absorption principle, which maximises the conversion of sulphur dioxide (SO_2) into sulphuric acid. The sulphuric acid plant will include a candle filter system to remove fine liquid droplets from the air stream prior to release to the atmosphere. A scrubber will be installed on the hydrogen sulphide plant which reduces the emissions of SO_2 from the hydrogen sulphide incinerator stack. The HPAL process includes a scrubber to significantly reduce the emissions of entrained traces of sulphuric acid in uncondensed steam emitted from the process. The design efficiency of this scrubber is 99%. Dust suppressant will be used when unloading sulphur from ships. This suppressant will be a chemical spray to help bind the fine particles together, so that these drop out of the air at the source. Sulphur will be delivered in the form of low dust-generating prill. Belt washing will be installed on all sulphur and ore conveyor heads, to prevent carry back of product and possible contamination. Ammonium sulphate will be transported in covered B-double trucks that incorporate automatic covering systems. The trucks will bottom-dump into a pit inside an enclosed storage shed where it is stockpiled to contain dust emissions. The conveyor from the silo to the ship will be covered to minimise dust emissions.
Monitoring and Auditing	A monitoring plan will be developed during the environmental licensing of the refinery. It is envisaged that the plan will address: • Obtaining representative meteorological data. • Ambient contaminant monitoring. • Stack emission monitoring. • Monitoring to be conducted following the receipt of justifiable complaints. Stack testing will be undertaken during the initial operation of the refinery to confirm the estimated level of emissions, and subsequently as required by any conditions of the project's environmental authority.
Reporting	Records of monitoring results will be kept by the Environmental Manager and reported to the Refinery Manager. Significant air quality issues will be reported to the EPA in accordance with the requirements of the project's environmental authority. All complaints and breaches of licence conditions will be reported to the Environmental Manager who will advise the Refinery Manager and the EPA in line with the project's environmental authority.
Corrective Action	The following will constitute an incident or failure to comply in regard to air quality management: • Emission concentrations exceed environmental authority levels. • Receipt of an air quality complaint. • Dust creating a health and safety issue on site. The Environmental Manager will ensure that all complaints and possible breaches of authority conditions are investigated , assess site operations to determine the source of the emissions, and identify any significant modifications to activities, processes and control devices that can be made to rectify the problem.

14.11.3 Greenhouse Gas Management Plan

Greenhouse Gas Management Plan	
Policy	To minimise the emissions of greenhouse gases generated by the project.
Performance Criteria	Maintain or decrease the direct greenhouse gas generation per year per unit of metal production.
Implementation Strategy	• GPNL will be a voluntary signatory to the Australian Government's Greenhouse Challenge

Greenhouse Gas Management Plan	
	Plus Program. • Use of the HPAL refining technology which significantly reduces greenhouse gas emissions compared to other processing alternatives. • GPNL will participate in the national energy efficiency assessment and public reporting program called Energy Efficiency Opportunities (EEO). • The refinery will generate a large proportion of its electricity requirements from surplus high pressure process steam rather than buying it from the electricity grid. • Implementation of numerous water reuse strategies to reduce the raw water demand and the associated pumping requirements. • Reuse and recycling of wastes as outlined in the waste management plan to reduce the power and transport requirements.
Monitoring and Auditing	Regular auditing of greenhouse gas emissions.
Reporting	As part of the EEO program, GPNL will conduct rigorous and comprehensive assessments to identify energy efficiency programs and outcomes, with the overall effect of reducing energy consumption and greenhouse gas emissions. Reporting obligations as a signatory to the Australian Government's Greenhouse Challenge Plus Program.
Corrective Action	Non-compliance with committed programs would be investigated and rectified.

14.11.4 Noise Management Plan

Noise Management Plan	
Policy	To prevent excessive noise emissions from refinery operations.
Performance Criteria	Compliance with the following criteria: • EPA EcoAccess "Planning for Noise Control" guideline. • EPA "Background Plus". • World Health Organisation (WHO) Sleep disturbance. • Environmental Protection Policy (EPP(Noise)). Compliance with the noise requirements of the project's environmental authority.
Implementation Strategy	The following tasks and actions will be implemented during the operational phase of the project to achieve the objectives of the noise EMP: • During the detailed design phase, an investigation will be carried out to ensure best available noise control technology is incorporated into the project. These measures will include specific noise controls for equipment, including enclosures for conveyors. • Once the refinery becomes operational, a comprehensive review of noise emissions will be carried out to review the effectiveness of noise control measures. • Items of equipment will be specified to comply with the occupational noise level limit of 85 dB(A) at 1 m. • Items which cannot comply with the 85 dB(A) specification will be contained in buildings or specially designed acoustic enclosures. • Ducting to and from compressors will be treated to limit noise emissions. • Designs for compressors and blowers will incorporate proprietary acoustic enclosures as necessary. • Best available work practices will be employed on-site to minimise occupational noise levels.
Monitoring and Auditing	Once the refinery becomes operational, a noise monitoring program to meet the requirements of the project's environmental authority will be implemented. Should a justifiable noise complaint be received, an appropriately designed monitoring program will be implemented. Any noise monitoring will be conducted in accordance with the Environmental Protection Policy (EPP(Noise)).
Reporting	The Environmental Manager will maintain records of noise monitoring programs, including any information on the noise levels emitted from individual items of plant and equipment.

Noise Management Plan	
	The Environmental Manager will also record all complaints relating to noise, the results of investigations into these matters and actions taken to resolve these. This information will be reported to the Refinery Manager. Significant noise performance information will be reported to the EPA in accordance with the requirements of the project's environmental authority.
Corrective Action	The following represents an incident or failure to comply: • Noise complaint received. • Non-compliance with conditions of the environmental authority. • Noise management plan is not developed and implemented. • Noise monitoring program not implemented. Should a failure to comply occur, the following steps may be taken: • Operational activities will be investigated to determine the cause of the problem. • Current procedures and control measures will be reviewed to prevent recurrences and, where necessary, additional control and mitigation measures will be investigated and implemented. • A noise monitoring program will be implemented.

14.11.5 Surface Water Management Plan

Surface Water Management Plan	
Policy	To minimise and prevent the release of contaminants that may adversely affect downstream water quality.
Performance Criteria	Compliance with the requirements of the project's environmental authority. Prevention of direct or indirect release of contaminants resulting from operations to surface waters.
Implementation Strategy	The sites will be divided into different areas according to activity/land-use. Surface water management strategies for each area are listed below. **Maintenance, Process And General Chemical Storage Areas** • Maintenance and process areas will be built on bunded concrete slabs. The bunded areas will each have a sump to collect stormwater. • Within areas where nickel slurry fluids are to be stored, settled or processed, stormwater collected in the bund sumps will be periodically inspected, and if necessary tested, and bled back into the system unless found to be a risk for contamination of the process. • If stormwater is found to be a risk for contamination of the process, the stormwater will be collected by tanker for off-site disposal at a licensed facility. • The bunds will be suitably sized to contain 1 in 200 year Average Recurrence Interval (ARI) storm events. • In the rare event that an overflow occurs, the overflow will be collected within the site's drainage system (as described below – General Refinery Areas below). • Waste products produced by the process will be transferred directly by pipeline to the RSF. • Pipeline connections between sections of the plant for process fluids and waste streams that cannot be feasibly bunded will be designed to have an extremely low risk of failure. **Oily Water Drainage Areas** • Bunded storage areas for fuels and dangerous goods will be provided with spill clean-up kits in accordance with Australian standards (AS 1940:2004 and AS 3780:1994). • All transfers of fuels and chemicals will be controlled and managed to prevent spillage outside bunded areas. • The bunds will drain into the site drainage system via suitably sized oil-water separators. • Oily water drainage will be designed to allow the introduction of cleaning equipment to the system. **Stockpile Areas** • Stockpiles for sulphur and imported ore will be contained within hardstand areas and connected via open channel drains to dedicated retention (settlement) ponds. • The pastille/prill sulphur product stored in the stockpiles will be quality controlled to ensure minimal dust content. This will reduce the potential for mobilisation of particulates in runoff

Surface Water Management Plan	
	from this stockpile. • All runoff from the sulphur stockpile will be collected and screened before passing to settlement ponds. It will subsequently be re-used as make-up process water in the refinery. • The imported-ore stockpile runoff will also be collected in a dedicated settlement pond and will be re-used in the refinery. • The design of ponds for all stockpiles will be to contain all runoff from a 5 minute, 100-year ARI rainfall intensity storm and with sufficient volume to contain the equivalent of a 12 hour 100-year event storm (approximately 320 mm rainfall). **General Refinery Areas** • The stormwater drainage system for the general refinery areas will collect and treat and/or remove the 'first flush' stormwater runoff, which is likely to be contaminated, from the non-process areas of the refinery. This will include all paved and roofed areas. • Excess runoff above the 'first flush' volume will by-pass the initial stormwater storage and discharge directly into the stormwater outlet system. • The 'first flush' volume is the total runoff resulting from a 1 in 5 year average rainfall intensity for the site (as derived using methods outlined in Australian Rainfall and Runoff (1987)) for the critical duration storm for the site. • All stormwater pipes and open drainage channels will be designed in accordance with best-practice engineering principles. **Undisturbed ('Clean') Areas** • Undisturbed/ 'clean' areas of the refinery site will not be paved and will generate stormwater runoff quantity and quality similar to natural runoff. This runoff will by-pass the refinery's contaminated catchments and be discharged. **Residue Storage Facility** • Infrastructure at the RSF will be designed to minimise the risk of overflow. This will include the provision of liquor reclaim pumps and storage with sufficient capacity. • The water level in the RSF will be maintained between 1.5 and 10 m depth to ensure that ponded water does not interfere with residue settling.
Monitoring and Auditing	A surface water quality monitoring program will be implemented and will include the refinery settlement ponds. Spillways from the settlement ponds will be designed to allow samples of the pond overflow waters to be collected remotely (e.g. rising stage sampler). Water levels at the RSF will be regularly monitored. All monitoring will be undertaken in accordance with the requirements of the project's environmental authority.
Reporting	The Environmental Manager will report significant monitoring results to the Refinery Manager. The Environmental Manager will report monitoring results to the EPA in accordance with the project's environmental authority.
Corrective Action	The following will constitute an incident or failure to comply with the surface water management plan: • Monitoring results indicate exceedances of environmental authority limits. • Drainage from bunded areas not contained and managed according to catchment requirements. • Bund integrity is lost. Should an incident or failure to comply occur, the following corrective actions will be implemented as appropriate: • The cause of any non-compliance with environmental authority limits will be investigated and the problem rectified. • Any breaches in bund integrity will be repaired. • Operational procedures will be modified as necessary to ensure that the drainage and ponding system of each catchment performs as designed.

14.11.6 Groundwater Management Plan

Groundwater Management Plan	
Policy	To protect the quality of the existing groundwater resources.

Groundwater Management Plan	
Performance Criteria	Compliance with the requirements of the project's environmental authority.
Implementation Strategy	Chemical and fuel storage areas will be bunded to prevent the seepage of any contaminants into the groundwater system. Chemical and fuel storage areas will be bunded in accordance with AS 1940 and AS 3780 to prevent the seepage of any contaminants into the groundwater system. Seepage from the RSF will be managed by incorporating mitigation measures including a seepage collection system, to limit seepage through the dam floor to the underlying aquifers. Seepage through the RSF embankment will be controlled through a combination of measures including a low-permeability clay core and cut-off key in the embankment foundations.
Monitoring and Auditing	The integrity of storage facilities for hazardous materials and wastes and bunded areas will be routinely inspected. A network of monitoring bores will be installed in strategic locations to monitor any potential seepage from the RSF. This monitoring bore network will consist of: • Shallow bores situated within each alluvial aquifer which intersects the site. • Monitoring bores in a cluster at the toe of the RSF. • Intermediate bores (to intersect Mount Alma Formation and Rockhampton Group aquifers) spaced appropriately around the perimeter of the RSF at varying depths. • Shallow bores at all locations where surface drainage lines intersect the RSF boundary. • A background bore located 2 km down-gradient of the RSF (screened within the local bedrock aquifer) to enable differentiation between groundwater rises associated with natural recharge and rises associated with any mounding of the aquifer attributed to seepage from the RSF. The monitoring program will be instigated prior to operation of the RSF and continued regularly for the life of the RSF. An annual review of the monitoring program will be conducted to evaluate the effectiveness of each monitoring location and to assess where new locations and modifications to the monitoring program may be needed to evaluate what impacts may be occurring.
Reporting	The Environmental Manager will keep records of routine visual inspections and the groundwater monitoring program. The Environmental Manager will report any contamination incidents to the Refinery Manager and report to the EPA in accordance with the requirements of the project's environmental authority.
Corrective Action	The following is to be classified as an incident or failure to comply in relation to groundwater management: • Breach in integrity of bunds or drains. • Spilled chemicals or liquid wastes enter the stormwater drainage system. • Non-compliance with AS 1940 and AS 3780. • Contamination detected by the groundwater monitoring program. Should an incident or failure to comply occur in relation to groundwater management, a selection of the following corrective actions will be considered where relevant: • Rectify storage/handling non-compliance. • Contain and remediate or dispose of contaminated material/contaminants. • Investigate and implement measures to prevent recurrence. • Modify the seepage recovery system at the RSF.

14.11.7 Water Discharge Management Plan

Water Discharge Management Plan	
Policy	To protect the existing water quality values in Port Curtis.
Performance Criteria	Water discharge to comply with the condition's of the project's environmental authority.
Strategy	Waste water from the refinery will be discharged to Port Curtis via diffusers and eductors to be located near Clinton Wharf to maximise dilution and dispersion of the discharge. Refinery discharge water quality will comply with the specification given in Table 8.3.9.

Water Discharge Management Plan	
	The final design of the diffuser at the discharge location will ensure that suitable near-field coefficients are achieved in the mixing zone. GPNL will undertake additional research work which will include: • Testing of longer-term oxidation rates of manganese in marine waters. • Testing of the effects of variables such as suspended solids and temperature on the manganese oxidation rates. • Testing of the factors affecting the oxidation of manganese at the sediment/water interface. GPNL will work with local alumina refiners to examine the potential to combine the alkaline alumina refinery residue with the acidic nickel refinery residue. This will have a number of potential benefits including: • Neutralisation of the residues. • Reduction/elimination of the need to dispose of barren liquor to Port Curtis as more of it will be able to be reused in the nickel refinery. • Reduction in the load of manganese and magnesium to Port Curtis. GPNL will continue to support proposed Port Curtis Integrated Monitoring Program (PCIMP) activities including: • Development of relevant trigger values for metals discharged in Port Curtis. • Increasing the understanding of deposition of fine particulates in Port Curtis. • Extension of current hydrodynamic modelling tools available for Port Curtis to include modelling of particulate movement.
Monitoring	The discharge flow rate and temperature will be measured daily. The chemical composition of the discharge will be measured daily until steady-state conditions are achieved when the monitoring frequency will be weekly. Monitoring parameters will include temperature, pH, TSS, Ni, Co, Fe, Mg, Al, Mn, Zn, Ca, Cl, and SO_4. The measurement of water quality and the collection and analysis of water samples will be conducted in accordance with the Australian Standards 5667.1 and 5667.9:1998 and the Queensland Environmental Protection Agency water sampling manual (EPA, 1999). GPNL will support existing and future ambient water quality monitoring programs in Port Curtis through the PCIMP.
Reporting	Monitoring results will be recorded by the Environmental Manager and reported to the Refinery Manager at monthly intervals. Any exceedence of the specified discharge water quality shall be identified by the Environment Manager and reported to the Refinery Manager as soon as possible. Any detrimental effects of the proposed discharge to ambient water quality in Port Curtis (as determined from ambient water quality monitoring) shall be identified by the Environment Manager and reported to the Refinery Manager at monthly intervals. Any such reports will be submitted to the EPA. Summary water quality reports will be prepared in accordance with the requirements of the project's environmental authority. Summary reports will also be made available for periodic community review, where appropriate.

Water Discharge Management Plan	
Corrective Action	The following would constitute an incident or failure to comply with the water discharge management plan. • Failure to undertake sampling and analyses as outlined above and per the environmental authority requirements. • Water quality or quantity non-compliant with the relevant environmental authority or the specified discharge quality. • Failure to undertake further research into manganese behaviour in the marine environment and/or to examine opportunities for combining nickel refinery residues with alumina refinery residues. Should a non-compliance occur, the following corrective actions may be implemented by the Environmental Manager, where appropriate: • Notify relevant environmental authorities. • Investigate the cause of the non-compliance. • Review work practices. • Review operating practices and procedures. • Undertake maintenance of water treatment devices, if appropriate. • Implement additional water quality control measures to minimise discharge of non-compliant water into Port Curtis.

14.11.8 Chemical and Dangerous Goods Management Plan

Chemical and Dangerous Goods Management Plan	
Policy	To safely manage, purchase, store, handle and dispose of chemicals and prevent the uncontrolled release of chemicals to the environment.
Performance Criteria	Compliance with relevant Australian Standards including: • AS 4452 The Storage and Handling of Toxic Substances. • AS 1940 The Storage and Handling of Flammable and Combustible Liquids. • AS 3780 The Storage and Handling of Corrosive Substances. No spills of chemicals or release of chemicals to the environment. Emergency procedures relating to chemicals and dangerous goods followed.
Implementation Strategy	• MSDSs will be kept in a register at the relevant site. • All hazardous materials will be managed in accordance with the relevant Australian Standard. • Records will be kept on the existing inventory, storage location, personnel training and disposal of waste for all chemical and dangerous goods used on-site. Records will be maintained by the Environmental Manager. • All staff will be trained in appropriate handling, storage and containment practices for chemicals and dangerous goods as is relevant to their position. • Liquid chemicals and fuels stored in above-ground tanks will be bunded in accordance with Australian Standards to contain at least 100% of the largest tank plus at least 10% of the second largest tank. Chemicals stored in drums will be bunded to contain at least 25% of the maximum stored quantity of chemicals. Packaged goods will be segregated in accordance with Australian Standards. • Spills will be cleaned up immediately. Contaminated runoff and contaminated soil will be collected and remediated or disposed of in an approved manner. • Where possible, hazardous chemicals and materials will be replaced with less harmful alternatives. • Procedures regarding emergencies relating to chemicals and dangerous goods will be incorporated into the site emergency plan.
Monitoring and Auditing	Routine inspections of chemical and dangerous goods handling and storage areas will be implemented by the Environmental Manager.
Reporting	The Environmental Manager will record and sign off on routine inspections of chemical and dangerous goods storage and handling areas.

Chemical and Dangerous Goods Management Plan	
	Spills will be reported to the Environmental Manager including actions taken to minimise the impacts (refer to Section 14.10.9). Should a significant chemical spill occur, the site emergency plan will be followed and the EPA and Calliope Shire Council notified as soon as possible.
Corrective Action	The following constitute an incident or failure to comply in relation to chemical and dangerous goods management: • Uncontained spill of a chemical or dangerous good. • Storage areas not compliant with Australian Standards. Should an incident/complaint occur, a selection of the following corrective actions will be undertaken as appropriate: • Contain and clean up spill material immediately and remediate or appropriately dispose of contaminated material. • Repair bunds / containment facilities. • Relocate chemicals to appropriately designed storage facilities. • In the case of a significant chemical spill, the site emergency plan will be followed and the EPA and Calliope Shire Council notified as soon as possible.

14.11.9 Health and Safety Management Plan

Health and Safety Management Plan	
Policy	To ensure that the project's operation does not adversely affect the health or safety of project personnel or the general public.
Performance Criteria	Compliance with relevant Australian and other recognised health and safety standards, applicable codes of practice and relevant statutory provisions, especially the Queensland *Workplace Health and Safety Act* and the *Workplace Health and Safety Regulation*. Compliance with the project's health and safety management system.
Implementation Strategy	GPNL will develop and implement a health and safety management system that will ensure that the safety and occupational health performance of the project meets required industry best practice standards. The health and safety management system will include: • Clear identification of potential health and safety hazards. • Risk assessment resulting from the hazards identified. • Control measures that prevent or minimise the level of the risk. • Procedures for monitoring, review and corrective actions. All contractors will be required to develop, implement and maintain health and safety management plans consistent with GPNL's health and safety management system and which address specific workplace hazards that could be encountered. GPNL will ensure that the role of the workplace health and safety representative is given the necessary profile and support to ensure the success of the safety management system. All necessary personal protective equipment and health and safety induction and training will be provided to all on-site workers. GPNL will prepare and implement an Emergency Response Plan and specific emergency response procedures.
Monitoring and Auditing	The overall health and safety performance will be audited regularly by GPNL. In addition, there will be regular workplace health and safety inspections.
Reporting	The Health and Safety Manager will be responsible for enforcing all health and safety directives and keeping all records relating to this. The Health and Safety Manager will routinely report to the Refinery Manager.
Corrective Action	The following constitute incidents or failure to comply with health and safety requirements: • Directives and procedures contained in the health and safety management plan are not being followed or enforced. • The health and safety management plan does not encompass all required hazards and controls. • Work-related injury and illness occur.

Health and Safety Management Plan	
	• The emergency response plan is not prepared or implemented. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Investigate why the incident occurred and investigate and implement corrective actions to prevent recurrence. • Ensure health and safety information provided is adequate and up-to-date and revise regularly as appropriate. • Ensure employees, contractors and visitors to the site are familiar with the procedures and policies relevant to their positions and increase training effort as necessary. • Ensure health and safety directives and procedures are enforced. • Ensure health and safety documents are readily available to everyone on the site.

14.11.10 Emergency Response Management Plan

Emergency Response Management Plan	
Policy	To ensure that project personnel can respond effectively and efficiently in the event of a site emergency.
Performance Criteria	Compliance with the relevant requirements of: • *Dangerous Goods Safety Management Act 2001* • *Fire and Rescue Authority Act 1990*
Implementation Strategy	GPNL will prepare a detailed emergency response plan during the project detailed design phase. The plan will include responses to incidents at the refinery, RSF, pipelines and wharf facilities. The plan will include consideration of the following: • Response procedures in the event of a fire, chemical release, spill, leak, explosion, equipment failure, bomb threat, natural disaster or any other likely emergency. • Communication arrangements and contact details. • Roles and responsibilities of responsible personnel. • Emergency controls and alarms. • Evacuation procedures. • Emergency response equipment. • Control points. • Training requirements. • Site access and security.
Monitoring and Auditing	The effectiveness of the emergency response plan will be regularly tested and audited.
Reporting	The Health and Safety Manager will be responsible for compiling the results of testing and auditing programs. These results will be reported to the Refinery Manager.
Corrective Action	The following constitute incidents or failure to comply: • Emergency response plan is not prepared or implemented. • Emergency response equipment is not provided. • Emergency response training is not undertaken. • Emergency response procedures not followed in the event of an incident. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: • Prepare or implement the emergency response plan. • Provide the necessary equipment or training. • Investigate why the emergency response procedures were not followed and implement mitigating measures.

14.11.11 Recruitment and Training Management Plan

Recruitment and Training Management Plan	
Policy	To implement a program that ensures that adequate operations workers are available and that all necessary training requirements are met.
Performance Criteria	There is no shortage of adequately trained workers.
Implementation Strategy	GPNL will adopt an employment policy that encourages the use of local workers. An industry participation plan will be developed which will detail the level of local industry participation expected. Elements of the plan will include: • Ensuring potential local suppliers are provided with information in an equitable and timely manner. • Ensuring local suppliers are provided with opportunities to supply under the same terms, standards and conditions as interstate or overseas suppliers. • Ensuring contracts are awarded on the basis of most competitive proposal which includes due consideration of non-cost factors such as reliability, maintainability, servicing etc. • Performance measurements and feedback mechanisms. To maximise the employment opportunities of local personnel, GPNL will communicate the requirements of its employment policy to relevant local organisations and businesses. GPNL will be an equal opportunity employer and will consider suitable women, young people and Aboriginal and Torres Straight Island people for all appropriate positions. GPNL will engage a specialist or employment firm(s) to recruit the workforce from both local sources (where possible) and otherwise from within the wider region of Central Queensland or the remainder of Australia. Normal industrial training programs will be conducted as required by labour awards, as well as in relevant State and Commonwealth legislation. An apprenticeship and/or traineeship program will be implemented in consultation with existing local and regional technical training institutions and specialist apprenticeship organisations.
Monitoring and Auditing	The success of the recruitment and training programs will be assessed on the availability of the required workforce, and the number of trainees and their ability to meet work requirements.
Reporting	The Human Resources Manager will be responsible for keeping records of all recruitment and training activities. This will be reported to the Refinery Manager regularly.
Corrective Action	The following constitute an incident or failure to comply: • Inadequate number of workers available. • The workers that are available are not adequately trained. • Industry participation plan not development or implemented. In the event of an incident or failure to comply, increased recruitment or training activities will be undertaken as necessary.

14.11.12 Incidents and Complaints Management Plan

Incidents and Complaints Management Plan	
Policy	To manage environmental or social incidents and complaints from the community regarding the refinery's operations.
Performance Criteria	Incidents and complaints regarding environmental and social aspects will be minimised and mitigation measures implemented to reduce the incidence of complaints.
Implementation Strategy	All incidents and complaints will be documented in an incidents/complaints register. The complaints form will document at least the following information: • Time, date and nature of complaint. • Type of communication (telephone, letter, email, visit). • Name, contact address and contact number (if provided). • Response and investigation undertaken as a result of the complaint. • Action taken and signature of person investigating complaint.

Incidents and Complaints Management Plan	
	Each complaint will be investigated as soon as practicable and, where appropriate, corrective action taken to remedy the cause of the complaint.
Monitoring and Auditing	The Environmental Manager will maintain the complaints register and ensure all complaints are resolved. The complaint form will be checked by the Environmental Manager within two weeks of complaint receipt to ensure follow-up action has been taken to resolve the issue.
Reporting	• All complaints and incidents are to be reported to the Environmental Manager who will subsequently advise the Refinery Manager. • The complainant will be advised of what action, if any, has been taken as a result of the complaint.
Corrective Action	Should further incidents occur or complaints be received in relation to previous occurrences, an appropriate selection of the following corrective actions will be undertaken: • Additional environmental awareness training of the workforce with respect to the procedures to be followed for environmental incidents or complaints. • Investigation into why the incident/complaint was not addressed within the specified time frame. • Incident/complaint follow-up according to the results of the investigation. • Where required, work place practices will be reviewed.

14.12 Decommissioning Environmental Management Plan

14.12.1 Decommissioning Management Plan

Decommissioning Management Plan	
Policy	To ensure that the refinery, RSF and pipelines are effectively decommissioned in an environmentally sustainable manner.
Performance Criteria	The sites contain no long term environmental hazards. Risks to the public are to be mitigated to acceptable levels. Sites are to be returned to a state suitable for other uses in the future.
Implementation Strategy	**Refinery** Prior to the completion of production, a detailed refinery decommissioning plan will be developed that will establish procedures and methods for decommissioning. The plan will be prepared in consultation with the appropriate regulatory authorities. Decommissioning procedures at the refinery site will involve: • The removal of equipment and structures which are of no further economic value. • Testing, where necessary, to establish whether any decontamination or site remediation work is required, and performance of such work. • Re-contouring the site and landscaping. • Any ongoing environmental monitoring requirements. **RSF** The proposed closure strategy for the RSF consists of the following: • Cessation of residue deposition into the RSF. • Re-profiling the RSF surface to provide a well graded surface that promotes surface runoff and prevents ponding. • Construction of a low-permeability cap across the final landform surface. This cap will limit the infiltration of water and provide a suitable medium for establishing vegetation. • Construction of a surface water management system across the RSF to collect rainwater and discharge this clean water to the surrounding environment in a controlled manner. The surface water management system will include graded drains and rock-lined chutes, with flows routed through sediment ponds during the establishment phase. Water will be discharged to the surrounding environment only after water quality monitoring has confirmed that discharge standards have been reached.

Decommissioning Management Plan	
	• Maintenance of the seepage collection system until the hydraulic head within the RSF has been lowered to the design level. • Monitoring of the groundwater levels around the perimeter of the RSF to ensure that the ongoing seepage performance meets the design expectations. **Pipelines** In the event that the pipelines are no longer required, these will be decommissioned in accordance with the legislative requirements of the day and the Australian Pipeline Industry Association (APIA) Code of Environmental Practice. The most likely options are: • Moth-balling – this involves depressurising the pipelines, capping and filling with an inert gas such as nitrogen and maintaining the cathodic protection system to prevent corrosion. • Abandonment – this could involve disconnecting the pipelines from all above-ground structures including the cathodic protection systems, purging the pipes of process materials, placing plugs at predetermined intervals to inhibit groundwater flow and removing all above ground facilities. The pipelines would then be abandoned to corrode in-situ. The pipe may be filled with a stable material (e.g. concrete grout) at critical locations such as where it passes under a railway line or major highway.
Monitoring and Auditing	A monitoring program that will assess the effectiveness of rehabilitation and decontamination efforts at the refinery and RSF sites will be developed as part of the preparation of the final decommissioning plan. On-going environmental monitoring may be required for a period of time to ensure decontamination and dewatering procedures have been successful and there is no likelihood of any further contamination resulting from the sites' previous activities.
Reporting	Records will be kept of any areas where decontamination is required and the steps taken to accomplish this. The results of rehabilitation, decontamination and any monitoring programs will be kept and presented in a decommissioning report which will be submitted to the EPA.
Corrective Action	The following constitute an incident or failure to comply: • Aspects of decommissioning do not satisfy the relevant regulatory authorities or other stakeholders in the project. • There is evidence of ongoing environmental harm following the completion of decommissioning activities. In the case of the occurrence of the above incidents, the decommissioning plan will be reviewed and revised in consultation with all relevant parties and the situation remedied.