Mahalo North PL 1128

Environmental Management Plan (EMP)

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1 INTRODUCTION

This Environmental Management Plan (EMP) has been prepared to minimise the potential for environmental harm from the Comet Ridge Pty Ltd (Comet Ridge) Mahalo North Coal Seam Gas Project (the Project), which is located on Petroleum Lease (PL) 1128 (the Site). This EMP has been prepared with consideration to Comet Ridge's obligations under its EPBC approval, environmental authority (EA) and other relevant legislative requirements.

1.1 Scope

The scope of the EMP is related to all Project construction, operation and rehabilitation activities undertaken by (or on behalf of) Comet Ridge on the Site.

1.2 Legislative Framework

An overview of the relevant legislative framework has been provided below.

1.2.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the key piece of Commonwealth legislation governing environmental protection in Australia. Administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), the EPBC Act defines and protects Matters of National Environmental Significance (MNES). Under Part 3 of the EPBC Act, a person must not undertake an action that will have, or is likely to have, a significant impact on a protected matter, without approval from the Minister for DCCEEW.

An EPBC Act referral (2023/09689) for the Project was submitted to DCCEEW, with a determination received (19 March 2024) that the Project is a Controlled Action and that the Project will require assessment and approval under the EPBC Act before it can proceed, in the form of Preliminary Documentation. The relevant controlling provisions for the Project are stated as:

- Listed threatened species and communities (sections 18 & 18A)
- A water resource, in relation to unconventional gas development and large coal mining development (sections 24D & 24E)

The EPBC Act Approval for the Project (2023/09689) is expected to be issued by the DCCEEW in late 2025Petroleum and Gas (Production and Safety) Act 2004 (Qld)

The object of the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act) is to facilitate and regulate the carrying out of responsible petroleum activities and the development of a safe, efficient, and viable petroleum and fuel gas industry. PLs may be granted under Chapter 2 of the P&G Act. Under a PL, a proponent is authorised to construct and operate a petroleum activity, including a petroleum facility (i.e. Gas Compression Facility (GCF)).

Comet Ridge Mahalo North Pty Ltd lodged a resource authority application to the Department of Resources (DoR) under the P&G Act for a PL 1128. Grant of the PL is expected to be issued by the DoR in late 2025.

1.2.2 Environmental Protection Act 1994 (Qld)

The *Environmental Protection Act 1994* (EP Act) provides the key legislative framework for environmental management and protection in Queensland. The objective of the EP Act is to: "Protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains ecological processes on which life depends" (Section 3 of the EP Act).

Under s493A of the EP Act, environmental harm, such as the development of the Project, is unlawful unless it is authorised under an EA. Comet Ridge lodged an EA application for the Project to the Department of Environment, Science and Innovation (DESI) on 20 October 2023. A decision on the EA was issued by the DESI on 5 August 2024.

1.2.2.1 General environmental duty

Under Section 319 of the EP Act, 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. This is referred to as the general environmental duty.

The measures required to be taken must have regard to:

- the nature of the harm or potential harm; and
- the sensitivity of the receiving environment; and
- the current state of technical knowledge for the activity; and
- the likelihood of successful application of the different measures that might be taken; and
- the financial implications of the different measures as they would relate to the type of activity.

1.2.3 Environmental Offsets Act 2014 (Qld)

The *Environmental Offsets Act 2014* (EO Act), *Environmental Offsets Regulation 2014,* and the *Queensland Government Environmental Offsets Policy* provide a streamlined framework for State environmental offset requirements for significant residual impacts to matters of state environmental significance (MSES).

The EA application identified that, based on the significant residual impact assessment for MSES associated with the potential project impacts, there are no predicted impacts to environmental values potentially requiring environmental offsets.

1.2.4 Nature Conservation Act 1992 (Qld)

The *Nature Conservation Act 1992* (NC Act) and subordinate documents (*Nature Conservation (Animals) Regulation 2020* (NC Animals Regulation) and *Nature Conservation (Plants) Regulation 2020* (NC Plants Regulation) are in place to protect Queensland's native flora and fauna from potential environmental impacts of various activities through the requirement for protected plant clearing permits, species management programs and other permits.

No protected plant clearing permit will be triggered by the Project. Where the Project may involve tampering with animal breeding places, a species management plan will be obtained to authorise the potential tampering of the animal breeding place.

1.2.5 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions and allows for sustainable land use.

The clearing of native vegetation for the Project is exempt from the provisions of the VM Act under Schedule 21 (Part 1, section 1, item 6) of the *Planning Regulation 2017,* where clearing occurs for a resource activity, defined under section 107 of the EP Act, which includes petroleum activities.

1.2.6 Water Act 2000 (Qld)

The *Water Act 2000* (Water Act) provides a structured system for the planning, protection, allocation and use of Queensland's surface waters and groundwater. Under the Water Act, a person must not take, supply, or interfere with water unless authorised for the taking of water from overland flow, groundwater, a watercourse, a lake, or a spring.

In areas of concentrated development, a cumulative management area (CMA) can be declared. The Project is located within the Surat CMA, which was declared in 2011. The Office of Groundwater Impact Assessment (OGIA) was established under the Water Act and is responsible for preparing the Underground Water Impact Report (UWIR) and for establishing obligations to monitor and manage impacts on aquifers and springs. OGIA assigns responsibility to individual petroleum tenure holders for implementing specific parts of the strategies within CMAs. These predictions, strategies and responsibilities are set out in the Surat CMA UWIR, prepared and maintained by the OGIA. The most recent Surat CMA UWIR was published by OGIA in 2021.

The OGIA provided Comet Ridge Mahalo North with data from the Surat CMA UWIR regional scale groundwater flow model to inform the groundwater impact assessment, which supported the EA application.

1.2.7 Waste Reduction and Recycling Act 2011 (Qld)

The *Waste Reduction and Recycling Act 2011* (WRR Act) contains a suite of measures to reduce waste generation, landfill disposal and encourage recycling. The waste management hierarchy described in the WRR Act, from most desirable to least, is as follows:

- AVOID unnecessary resource consumption
- REDUCE waste generation and disposal
- RE-USE waste resources without further manufacturing
- RECYCLE waste resources to make the same or different products
- RECOVER waste resources, including the recovery of energy
- TREAT waste before disposal, including reducing the hazardous nature of waste
- DISPOSE of waste only if there is no viable alternative

The waste management hierarchy has been addressed in the planning for the proposed activities for the Project.

1.2.8 Aboriginal Cultural Heritage Act 2003 (Qld)

The *Aboriginal Cultural Heritage Act 2003* (ACH Act) binds all persons to provide recognition, protection and conservation of Aboriginal cultural heritage. The Cultural Heritage Duty of Care (section 23 of the ACH Act) states: 'a person who carries out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage'.

Comet Ridge Mahalo North will work with the Gaangalu Nations People (GNP) prior to land disturbance and will undertake a cultural heritage survey, utilising advisors from the GNP.

2 PROJECT DESCRIPTION

The project includes the construction, operation, decommissioning, and rehabilitation of a CSG activity, including the following project components:

- Gas Compression Facility (including water treatment and water storage infrastructure)
- Gas wells
- Gas and water gathering pipelines
- New access tracks (extension of existing access tracks)

The project components layout is shown in **Figure 1** and described further in the table below.

Component	Description
GCF	▪ Two gas compression units, gas dehydration/separation units, safety and control systems, water tanks, safety flare, water treatment plant, water storage, permanent operational camp, workshop, office, washdown bay, parking
Gas wells	▪ 68 wells, with a combination of vertical and lateral wells ▪ Each well site is constructed in an area of up to approximately 1 ha (100 m x 100 m) ▪ The majority of this disturbance will be temporary, as each well site will be partially rehabilitated after construction is completed, leaving an area of approximately 20 m x 20 m (0.04 hectare) for well maintenance and access ▪ Production wells will be fenced and generally include gas and water metering and separation equipment, electrical and control systems, particulate filter separator and manifolds to connect the water and gas pipelines
Gas and water gathering pipelines	▪ Construction disturbance area of up to 18 m wide, with the exception of areas of environmental significance, where it is reduced to 6 m wide ▪ Power lines and communication may be co-located within the gas and water gathering trench ▪ Includes excavation of a trench (up to 0.85 m wide) ▪ The majority of this disturbance will be temporary as the disturbed area will be restored to pasture as soon as practicable, and available to the landholder for grazing/cropping purposes
New access tracks	▪ Existing access tracks will be utilised during all phases of the Project wherever possible ▪ New access tracks only installed where necessary to connect to proposed infrastructure, estimated 8 km of new access tracks, at 6 m wide

<insert figure here>

Figure 1: Mahalo North Layout

2.1 Gas Compression Facility

The 10 terajoules (TJ)/day GCF would be constructed to centrally gather gas and water produced from the production wells and pressurise this gas for export to domestic markets. The GCF will be located within a fenced compound and include the following equipment during operations:

- Gas compression units (two in operation)
- Gas dehydration / separation units
- Associated instrumentation and control systems
- Water infrastructure
- Water tanks
- Safety systems
- Safety flare
- Site office
- Workshop
- Storage of fuel and chemicals
- Vehicle washdown bay
- Potable water
- Vehicle parking
- Accommodation camp (5-person capacity during operation phase)

2.1.1 Proposed Activities

2.1.1.1 Construction

Construction activities for the GCF would include:

- Planning and surveying: survey of the proposed disturbance boundary, pre-clearance ecological and cultural heritage surveys
- Site preparation: establishment of access tracks, installation of erosion and sediment controls, clearing and grubbing the disturbance boundary, stripping, and stockpiling top soil and cleared vegetation, site levelling (if required)
- Building works: constructing and installing buildings, plant, and equipment
- Site restoration: spreading top soil and grass seed on disturbed areas not required for operation

2.1.1.2 Operations

Operations of the GCF would include:

- Separation: further separation of water, gas and solids, within the gas stream (initial separation occurs at the well site, at the gas / water separator)
- Gas compression: increase the gas pressure for the pipeline transfer
- Water Infrastructure
- Maintenance: maintenance of plant and equipment and facilities to ensure safe and reliable operation of the GCF
- Flaring: gas flaring undertaken only in an emergency situation

2.1.1.3 Sewage treatment

The treatment of sewage will utilise a truck mounted bio-cycle system with the waste treated to Class C and the treated sewerage effluent or greywater, and disposed of at a licenced waste facility (same condition as an Environmental Authority Model Condition PESCC28). The bio-cycle system will be located at the mobile temporary accommodation camp near the drilling sites.

2.1.1.4 Water Infrastructure

A water treatment facility will be constructed to treat produced water to facilitate the beneficial use of water at a nominal treatment rate of up to 0.5 ML/day. The water treatment facility will include the following infrastructure:

- A package water treatment plant
- Above ground lined ring tanks to store:
- Produced water from the wells
- Treated produced water
- Brine
- Aboveground pipes to connect water treatment plant and the ring tanks
- Pumping equipment to facilitate the transfer of treated produced water for beneficial re-use

Treated produced water from any treatment process will be stored in up to 100 ML of above-ground storages (e.g. lined ring tanks), constructed and operated in accordance with the manufacturers' specifications. Treated produced water generated from the Project will be beneficially used to support irrigation and industrial activities, and development and operational activities (include drilling of the wells and dust suppression).

Brine from any treatment process will be stored in up to 100 ML of above-ground storages (e.g. lined ring tanks), constructed and operated in accordance with the manufacturers' specifications, from where it may be further concentrated via solar and mechanical evaporation to a concentrated slurry or solid salt. The concentrated waste product will be disposed of at a licensed waste facility.

2.2 Gas Production Wells

A maximum of 68 coal seam gas wells will be installed, comprising a combination of vertical and lateral wells. The lateral wells will intersect the vertical wells within the section drilled within the coal seam. Gas and water will be collected from the vertical wells. There will be no hydraulic fracturing/stimulation or blasting activities as part of the proposed activities. A conceptual diagram illustrating the connection between a vertical and lateral well is provided in **Figure .**

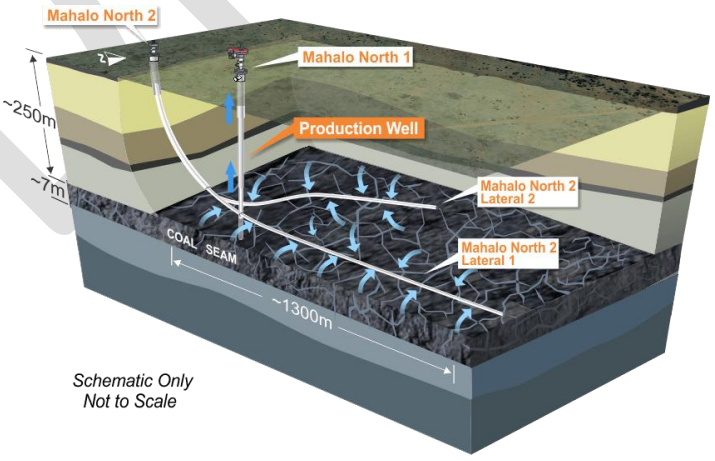

Figure 2. Conceptual Diagram of Vertical and Lateral Gas Wells

Each production well will be located within a fenced compound of approximately 20 metres (m) x 20 m and include the following equipment during operations:

- Well head
- Gas and water meter
- Gas and water separation equipment
- Electrical and control systems
- Particulate filter separator
- Manifolds to connect to water and gas gathering pipeline
- Fuel storage
- Mixed fuel generator (initially using diesel, then transferred to gas when the well is producing gas)
- Fence and gate

Each associated lateral gas well will be in a suspended well state, and will have cattle panels installed around the well head, of approximately 8 m x 8 m. No other plant or equipment will be installed at a suspended lateral well site.

2.2.1 Proposed Activities

2.2.1.1 Construction

Construction activities for each gas well would include:

- Planning and surveying: survey of the proposed disturbance boundary, pre-clearance ecological and cultural heritage surveys
- Site preparation: establishment of access tracks, installation of erosion and sediment controls, clearing and grubbing the disturbance boundary, stripping and stockpiling top soil and cleared vegetation, site levelling (if required)
- Well establishment: installation of well pad, drilling of wells using rotary mud or air drilling, setting up drill rig and associated equipment, completion of wells using a completion rig, installation of a pump within the production well to reduce the hydrostatic pressure of the coal seam and facilitate gas production, installation of fencing and gate
- Site restoration: At completion of well construction, the disturbance footprint will be reduced to approximately 0.04 ha (20 m x 20 m). Top soil and grass seed will be spread over disturbed areas not required for operation

Wells would be constructed in accordance with the *Code of Practice for the Construction and abandonment of petroleum wells and associated bores in Queensland V2* (DNRME 2019).

2.2.1.2 Operations

Operations of the gas wells would include:

- CSG extraction: engines (i.e. generators) will power wellhead pumps to extract water from the production well and facilitating gas to flow
- Maintenance: maintenance of plant and equipment and workover of wells to ensure safe and reliable operation of each well

Workovers of wells will be completed as required and not expected to be a frequent occurrence.

2.3 Gas and Water Gathering Pipelines

Gas and water from each of the well sites will be transported through a network of gathering pipelines to connect to the GCF. The gathering pipelines will be installed underground. The gathering pipelines will comprise the following components:

- Polypipe underground low pressure gas pipelines

- Water pipelines, power and communications may be co-located with the gas gathering network to connect to the GCF
- Main lines valves to allow maintenance activities to be undertaken in sections along the pipeline

2.3.1 Proposed Activities

2.3.1.1 Construction

Construction activities for the gathering pipelines would include:

- Planning and surveying: survey of the pipeline route, pre-clearance ecological and cultural heritage surveys
- Site preparation: installation of erosion and sediment controls, clearing and grubbing, stripping, and stockpiling top soil and cleared vegetation in windrows
- Excavation: excavating a trench along the proposed gas and water gathering route to the appropriate depth and width (up to 0.85 m wide)
- Welding and stringing: laying the pipeline adjacent to the trench and welding sections of pipe together to create a continuous length of pipeline
- Pipe laying: placing the welded pipeline into the trench
- Watercourse and waterway crossings
- Backfilling: backfill trench with excavated material and compacting
- Testing: pressure testing the pipeline to ensure that it is safe and functioning properly
- Partial restoration: spreading top soil and grass seed across the disturbed area

2.3.1.2 Operation

Operations of the gathering network would include:

- Routine Inspections: Regular visual and in-line inspections to check for damage, corrosion, or leaks
- Leak Detection and Repair: Identifying and fixing gas leaks promptly
- Cathodic Protection: Monitoring and maintaining systems to prevent corrosion.
- Valve Maintenance: Inspecting, testing, lubricating, and repairing or replacing valves
- Pipeline Cleaning: Using pigs to remove debris and obstructions
- Right-of-Way Maintenance: Clearing vegetation and maintaining access roads
- Pressure Testing: Performing hydrostatic tests and continuous pressure monitoring

2.4 New Access Tracks

The majority of access tracks required for the Project will utilise existing access tracks. In areas where no access tracks exist, new tracks will be established to allow access to project infrastructure. Based on the Project layout, the Project requires approximately 8 km of new access tracks to be established to access Project infrastructure.

2.4.1 Proposed Activities

2.4.1.1 Construction

Construction activities for the new access tracks would include:

- Planning and surveying: survey of the proposed access track route, pre-clearance ecological and cultural heritage surveys

- Site preparation: installation of erosion and sediment controls, clearing and grubbing the access track stripping and stockpiling top soil and cleared vegetation
- Access track establishment: levelling and grading the access tracks
- Site restoration: spreading top soil and grass seed on disturbed areas not required for operation

2.4.1.2 Operations

Operations of the new access tracks would include maintenance of the access tracks to ensure safe and reliable access to plant, equipment, and facilities

3 ROLES AND RESPONSIBILITIES

The responsibilities delegated to Comet Ridge personnel to support the implementation of this EMP during the site activities is presented in the table below.

Table 1 Roles and Responsibilities

Role	Responsibilities
Project Manager	The Project Manager is responsible for providing support to the site team and ensuring that environmental matters are adequately addressed at the executive level. With regards to this EMP, the Project Manager is primarily responsible for: • Ensuring EMP is made available, communicated, maintained, and understood by all parties • Ensuring sufficient resources are available for all personnel to fulfil Comet Ridge environmental obligations • Contacting the landholder (minimum 2 weeks prior) with a courtesy phone call prior to the commencement of any new works, and/or contacting the landholder as requested • Reviewing environmental incidents and, where necessary, developing and implementing corrective actions • Ensuring all incidents are adequately reported, investigated, and managed • Ensuring that personnel (including contractors) engaged by Comet Ridge are adequately trained and qualified to fulfil their roles • Drive a proactive culture through recognition of good practices and active participation in environmental forums • Inspection of the site and validation implementation of the EMP and all legislative requirements • On completion of the construction activities, rehabilitation of the site back to conditions as close as possible to before disturbance
Supervisor	The primary responsibility of the Supervisor is to supervise construction works With regards to this EMP, the Supervisor is primarily responsible for: • Understanding the EA and EPBC approval conditions • Reporting to the Project Manager all matters related to environmental performance • Understanding this EMP and ensuring the EMP is implemented by all personnel (including contractors) • Supervise waste collection, removal, and appropriate disposal
Environmental Representative or Delegate	The Environmental Advisor is responsible for: • Providing direction and advise with regards to legal obligations to the Project Manager / Supervisor • Inspection of the site and validation implementation of the EMP and all legislative requirements • Investigate any environmental incident or non-compliance • Liaising with regulatory authorities in relation to the EA and the EPBC approval • Consolidating data and undertaking all statutory environmental reporting • Validation of rehabilitation of the site back to conditions as close as possible to before disturbance • Implement the principles of avoid, reduce, reuse, and recycle
All personnel (including contractors)	• Reporting any actual or potential environmental incidents to the Supervisor immediately • Complying with the requirements of this EMP • Identifying and reporting non-conforming or potentially hazardous work practices, products, services, equipment, and places • Only performing tasks for which they are trained and competent

Role	Responsibilities
	• Assisting with environmental incident investigations and applying corrective actions • Ensuring that all tools, equipment, and facilities are in good working order and condition prior to use • Take responsibility of the health and safety of all individuals on site • Comply with environmental obligations, particularly avoidance of environmentally constrained areas • Comply with the Project site rules and instructions of the Supervisor/Project Manager/Environmental Representative • Comply with both site and task specific personal protective equipment (PPE) requirements • Report incidents or accidents as soon as practicable to the Supervisor • Participate in toolbox talks • Participate in assessments and investigations as requested • Undertake any training for site activities prior to attending site

4 APPLICATION OF S.M.A.R.T PRINCIPLES

The development of all management plans and rehabilitation requirements within this EMP (Management Plans 1-17) and rehabilitation requirements (Section 16), were developed in accordance with the 'S.M.A.R.T' principle:

- S – Specific (what and how)
- M – Measurable (baseline information, number/value, auditable)
- A – Achievable (timeframe, money, personnel)
- R – Relevant (conservation advice, recovery plans, threat abatement plans)
- T – Time-bound (specific timeframe to complete)

By utilising the 'S.M.A.R.T' principle parameters, Comet Ridge Mahalo North are ensuring all objectives are attainable within designated timeframes and are eliminating risks associated with potential guesswork. Using this method has also ensured control strategies are easier to measure and track, creating a more accountable and robust system of on-site management.

4.1 Effectiveness Assessment Method

For each management plan within this EMP (Management Plans 1-17) and rehabilitation requirements (Section 16), the potential effectiveness of the mitigation measures being adopted was assessed using a risk-based assessment with (inherent risk) and without (residual risk) mitigation measures being implemented. This method was based on examining the likelihood and consequences of an environmental risk event occurring. The qualitative values for assessing the likelihood of an environmental risk event are provided in Table 2. The qualitative values for assessing the consequence of an environmental risk event are provided in Table 2. Based on the likelihood and consequence values, an inherent and residual risk rating has been applied using the score sheets in Table 4**.**

Table 2 Likelihood levels

Description	Example
Highly unlikely	Will only occur in exceptional circumstances
Unlikely	Not likely to occur within the Project lifecycle
Possible	May occur within the Project lifecycle (or once every ten years)
Likely	Likely to occur within the Project lifecycle (or once every five years)
Very likely	Almost certain to occur within the Project lifecycle (at least once every year)

Table 3 Consequence levels

Magnitude	Description
Negligible	No environmental harm or environmental nuisance
Low	Environmental nuisance or minor environmental harm. Unreasonable interference or, likely interference with an environmental value (Noise complaints, odour complaints, complaints about visual amenity etc) and/or < $5,000 actual or potential loss or damage to property.
Moderate	Material Environmental Harm. Causes or threatens harm not trivial or negligible in nature, extent or context and/or >$5,000 actual or potential loss or damage to property but < $50,000
High	Serious Environmental Harm. Causes or threatens harm that high impact or widespread and/or >$50,000 actual or potential loss or damage to property
Severe	Irreversible impact on an environmental value and/or MNES.

Table 4 Risk rating assessment

		Likelihood				
		Highly Unlikely	**Unlikely**	**Possible**	**Likely**	**Highly Likely**
Consequence	**Severe**	**Minor**	**Medium**	**Significant**	**Significant**	**Significant**
	High	**Insignificant**	**Minor**	**Medium**	**Significant**	**Significant**
	Moderate	**Insignificant**	**Minor**	**Medium**	**Medium**	**Medium**
	Low	**Insignificant**	**Minor**	**Minor**	**Minor**	**Minor**
	Negligible	**Insignificant**	**Insignificant**	**Insignificant**	**Insignificant**	**Insignificant**

5 ENVIRONMENTAL INDUCTION AND TRAINING

A process for inducting new personnel, including contractors, onto the site will be implemented. The objective will be to ensure the entire workforce is aware of the environmental obligations of the Project.

All visitors will be required to sign into the site visitor register prior to gaining access to the site and will be inducted as appropriate.

Table 5 Management Plan 1 Induction and training plan

Environmental Protection Objective	Ensure all staff and contractors are aware of their environmental obligations and comply with all requirements		
Measurable Environmental Outcome	All staff, contractors and visitors have undergone site induction and relevant training.		
Environmental Risk Event	Minor environmental harm (e.g. unauthorised impact to flora and fauna, proliferation of weeds and pests, spill of fuel or chemicals etc.) caused a as result of a personnel or contractors not being aware of the compliance requirements on-site.		
Avoidance Measures	N/A - No avoidance measures apply to this management plan		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor

Mitigation/Management Measures	**Timing**	**Responsibility**

A site induction program will be developed that addresses key site environmental requirements
• The induction program will be flexible and regularly updated to reflect changes in environmental requirements.
• The induction program will include (but will not be limited to):
  ○ Overview of environmental risks
  ○ Overview of legislative requirements
  ○ General environmental duty of care
  ○ Key environmentally sensitive areas
  ○ Waste removal
  ○ Incident notification, investigation, and reporting
  ○ Mitigation measures for environmental elements (e.g. erosion and sediment control, flora and fauna, air, noise, vibration, cultural heritage, species of significance)
  ○ Storage, handling, and disposal of hazardous materials
  ○ Spill response requirements
• Additional training will be targeted to staff with specific responsibilities.
• A training and induction register will be maintained and records kept for a minimum of five years.
	Whenever a employee or contractor Starts at the Site	Project Manager

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	Low	Minor
On-Going Monitoring	Monthly comparison of site induction records with the on-site attendance records, to be undertaken by the Environmental Representative		
	Identified Issue	**Corrective Action**	

Corrective Actions if Environmental Outcome is not achieved	Personnel or contractor entered site without adequate training and inductions.	• Personnel must immediately Stop Work • Personnel not allowed to restart work until inductions have been completed • Identify how a person was able to start work on-site without adequate inductions • Design and implement a process that mitigates how the person was able to start without adequate training and inductions
Relevant EA conditions	None	

6 INCIDENTS AND COMPLAINTS

6.1 Incidents

Comet Ridge Mahalo North has developed a management process for environmental incidents particularly those involving hazardous substances including fire, explosion, spillage, leakage or other escape into the environment. The management system is available as a separate document. The following table provides a summary of control measures for potential environmental incidents.

Table 6 Management Plan 2 Environmental Incident Management

Environmental Protection Objective	Minimise environmental harm from fire, explosion, spillage, leakage or other escape of harmful substances.		
Measurable Environmental Outcome	• The response to and reporting of environmental incidents is appropriate to the environmental risk of the incident. • An emergency response capability and a suitable number of spill kits or a suitably stocked area in a proximate container are maintained.		
Environmental Risk Event	Insufficient response planning and preparation to an environmental incident results in an increased level of environmental harm.		
Avoidance Measures	N/A - No avoidance measures apply to this management plan		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	High	Medium

Mitigation/Management Measures	**Timing**	**Responsibility**
Implement the Environmental Contingency Plan (MH-HSES-PLN-003.3)	At all times	All Personnel
In the event of an incident, a person should take immediate action to reduce any risk associated with unauthorised discharges to air, land and water (where it safe to do so)	In the event of an incident	All Personnel
The person identifying the incident should notify the Project manager immediately after becoming aware of the incident	Within 1 hours of the incident identification	All Personnel
Investigate the incident to determine the likely cause, record the outcome of the investigation (keep these records for the life of the Project)	Within 7 days of the incident identification	Environmental Representative
Implement appropriate preventative action that will address the cause of the incident (as identified during the investigation). A preventative action should be a single action or a series of actions that is designed to minimise the likelihood of an environmental incident reoccurring.	Within 28 days of the incident investigation	Environmental Representative
Excavate or remove contaminated ground (spills up to five litres or less) in a sensitive area, or remedy through an approved process.	Within 7 days of the incident identification	Environmental Representative
Notify relevant landowners in the event of an unauthorised release likely to impact on landowner activities and/or safety.	Within 24 hours of the incident identification	Project Manager
Conduct soil, surface water and/or groundwater sampling and monitoring of the clean-up area if/as required.	Until the impact have been remediated	Environmental Representative

Notify the appropriate authorities in accordance within 24 hours if there is actual or potential for environmental harm as a result of the incident.		Within 24 hours of the incident identification	Project Manager
Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	High	Minor
On-Going Monitoring	• Spill kits will be inspected on a weekly basis • Post-incident review to determine the suitability of the incident response		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Incident response was not appropriate to minimise the environmental harm	• Undertake additional training in incident response with all personnel • Review the available response equipment and source additional equipment that would be suitable to respond to a similar incident • Review, update and implement this EMP to ensure all management/mitigation measures are suitable to minimise the likelihood and consequence of an environmental incident	
Relevant EA conditions	Refer to Schedule G (conditions G11 to G16) of the EA conditions (**Appendix 1**)		

6.2 Complaints

Enquiries/complaints will be dealt with in a responsive manner so that stakeholders feel their concerns are being seriously dealt with and not dismissed. This will assist in building a relationship of trust and reliability between the community and Project team. Complaints will be handled in accordance with the relevant condition/s of the EA and the Complaints Register and Management Plan**Error! Reference source not found.**.

Table 7 Management Plan 3 Complaints register and management

Environmental Protection Objective	Deal with enquiries and complaints in a timely manner		
Measurable Environmental Outcome	All complaints and responses recorded in the complaints register. The response to and reporting of complaints is appropriate and resolves the concern of the compliant.		
Environmental Risk Event	Insufficient response to an environmental compliant, resulting in further complaints being received or complaints remaining unresolved.		
Avoidance Measures	The layout of the activity has considered the location of sensitive receptors and potential for air and noise impacts.		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor

Mitigation/Management Measures	**Timing**	**Responsibility**
A central point of contact will be maintained for enquiries and complaints, to enable the content and distribution of information to the community to be appropriately managed and monitored.	At all times	Project Manager
Each complaint will be assessed for its validity and potential risk and investigated as soon as practicable.	Within 7 days of complaint receipt	Environmental Representative
Corrective action will be implemented where appropriate to address the cause of the complaint and to minimise reoccurrence of similar complaints.	Within 28 days of investigating the complaint	Environmental Representative
The following details will be recorded in the complaints register for all complaints received: • Name, address and contact number for complainant • Time and date of complaint • Reasons for the complaint as stated by the complainant • Investigations undertaken in response to the complaint • Conclusions formed • Actions taken to resolve complaint • Any abatement measures implemented to mitigate the cause of the complaint Name and contact details of person responsible for resolving the complaint	Upon receipt of a complaint	Project Manager
Records will be kept for a minimum of five years.	For five years following a complaint	Project Manager
The administering authority will be notified of valid complaints and any actions proposed or undertaken in relation to the complaint.	Within 7 days of complaint receipt	Environmental Representative
Any monitoring or actions requested by the administering authority will be undertaken.	Following response receipt from the administering authority	Environmental Representative

Residual Risk Rating (after mitigation	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	Possible	Minor

measures have been applied)			
On-Going Monitoring	Annual review of complaints and response actions to ensure timing and investigations occurred in accordance with this management plan.		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Complaint has not been resolved in accordance with this management plan	• Investigate the reason for non-conformance • Retrospectively update the complaint register (if information was missing) • Train the Project Team on required complaint response requirements	
Relevant EA conditions	Refer to Schedule G (conditions G20 to G23) of the EA conditions (**Appendix 1**)		

7 MONITORING AND REPORTING

Environmental monitoring and reporting are key measures to demonstrate compliance with the EA and EPBC approval. The EA and EPBC approval stipulate certain standards and methodologies to be used. This management plan ensures the sampling, monitoring, analysis and reporting measures are undertaken in compliance with the legislative requirements.

Table 8 Management Plan 4 Monitoring and reporting

Environmental Protection Objective	Compliance with the requirements of the EA		
Measurable Environmental Outcome	Meet all reporting and record keeping requirements. Adopted monitoring standards will be conformant with industry best practice.		
Environmental Risk Event	• Monitoring data is not suitable to identify the potential for environmental harm • Monitoring is not compliant with conditions of approval		
Avoidance Measures	N/A - No avoidance measures apply to this management plan		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Likely	Moderate	Medium

Mitigation/Management Measures	**Timing**	**Responsibility**
All monitoring required will be compliant with the standards set in the EA	At all times	Environmental Representative
If no specific standards are set, then appropriate Australian Standards, Codes or industry best practice guidelines will be followed	At all times	Environmental Representative
All environmental sampling and in-field monitoring will be undertaken by person/s that are appropriately qualified to undertake the sampling and monitoring	At all times	Environmental Representative
Monitoring systems and processes shall be put in place by a appropriately qualified person to ensure compliance with the EA	At all times	Environmental Representative
Any monitoring equipment utilised to undertake the monitoring will be calibrated in accordance with manufacturers specifications	At all times	Environmental Representative
All samples will be collected and transported in accordance with the required sample preservation requirements (as prescribed by the laboratory) and transferred to the laboratory for analysis under a chain of custody (COC)	At all times	Environmental Representative
All laboratory analyses and tests will be undertaken by a laboratory that has appropriate NATA accreditation	At all times	Environmental Representative
Where there is no NATA accredited laboratory, duplicate samples will be sent to at least two separate laboratories for independent testing	At all times	Environmental Representative
Sampling and monitoring results will be kept in readily accessible files, labelled appropriately, and collated if necessary	At all times	Environmental Representative
The following monitoring records will be maintained for a period of 5 years and provided to the administering authority on request: • Calibration records • Field sheets and records • COC • Laboratory certificate of analysis	At all times	Environmental Representative

Summary results.		
A certification is required by an appropriately qualified person for each plan, procedure, program and report required to be developed under the EA • That relevant material and published guidelines have been considered in the written document • The content of the written document is accurate and true • The document meets the requirements of the relevant conditions of the EA	At all times	Environmental Representative

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor
On-Going Monitoring	N/A - No additional monitoring apply to this management plan		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Non-conformance with the requirements of this management or environmental authority	• Notify the department • Undertake an additional round of monitoring to verify no environmental harm in the receiving environment • Review, update and implement this management	
Relevant EA conditions	Refer to Schedule G (conditions G10 to G16) of the EA conditions (**Appendix 1**)		

8 AIR

8.1 Site Context

The Project is located in a rural area; however, the area is more broadly located between a number of operating coal mines, including Blackwater Mine, Cook Colliery, Curragh Mine, and Jellinbah Mine to the north; Minerva Mine to the west; and Rolleston Coal Mine to the south. These mines are anticipated to affect the air quality due to coal dust particles, depending on the prevailing wind. Other than coal particulates the majority of the existing sources of emissions would be derived from:

- Products of combustion from fuel burning vehicles and equipment;
- Smoke from low-temperature scrub and agricultural burning;
- Wind erosion;
- Mining and extractive industry;
- Vehicle movements across dirt roads; and
- Livestock movements.

8.2 Sensitive Receptors

Sensitive receptors have been identified on the Meroo Downs property (the occupiers homestead) and on Struan Station (the ringers quarters and the owners homestead).

8.3 Management Plan

The Air Quality Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on air quality and other air environmental values relevant to the Project area.

Table 9 Management Plan 5 Air Quality Management Plan

Environmental Protection Objective	• To avoid impacts on human health and amenity arising from particulate emissions • To minimise dust emissions beyond 100 m of construction activities • To minimise gas emissions from flaring, venting or fugitive emissions causing a nuisance		
Measurable Environmental Outcome	• Consultation undertaken with any potentially affected landowners/occupiers (sensitive receptors) • Limited or no air quality complaints from sensitive receptors		
Environmental Risk Event	Air emissions from the Project cause an environmental nuisance at a nuisance-sensitive place		
Avoidance Measures	• Project layout (particularly the GCF) has been positioned to avoid air quality impacts on the sensitive receptors. • The closest sensitive receptor to the GCF is located >2.3 km east.		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	Moderate	Minor

Mitigation/Management Measures	**Timing**	**Responsibility**
Where possible, soil stockpiles will be placed in areas protected from the wind and away from public places	During earthworks	Supervisor
Soil stockpiles will be aligned with prevailing winds to minimise cross sectional area exposed to the prevailing wind direction	During earthworks	Supervisor
Soil stockpiles will be lightly compacted after placement and covered (with vegetation) if intended to remain in place for longer than 28 days	During earthworks	Supervisor

Soil stockpiles heights will be less than 3 m	During earthworks	Supervisor
Existing vegetation will be retained where possible within cleared areas	During earthworks	Supervisor
Construction traffic will be controlled by using specific routes for haulage and access. Vehicle speeds on unsealed roads will be limited to 50 km/hr, or less if significant dust plumes occur	At all times	All personnel
All trucks hauling dirt, sand, soil or other loose materials to and from project sites will be covered	At all times	Supervisor
All construction vehicles, mobile plant and machinery will be maintained and operated in accordance with the manufacturers' specification to minimise exhaust emissions	At all times	Project Manager
Water spraying will be undertaken for dust suppression on unsealed roads	At all times	Supervisor
Any complaints in relation to dust emissions will be recorded, and if any variation to the control strategies is indicated, this will be implemented.	At all times	Supervisor
During drilling and well operations, flaring and venting will be minimised in accordance with section 72 of the P&G Act	At all times	Project Manager
Regular testing for well-head leaks in accordance with the Queensland Government's *Code of practice for coal seam gas well head emissions detection and reporting*.	At all times	Project Manager

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Highly Unlikely	Low	Insignificant
On-Going Monitoring	• Number of complaints received • Visual observations of dust plumes • Wind direction		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	An air quality complaint is received	• Review the watering regime and increase if necessary to minimise dust emissions • Reduce the speed limits on access tracks within 500m of the complainant to 30 km per hour • Apply cover material (e.g. vegetation, soil binder etc.) on any stockpile that is proposed to remain in place for longer than 28 days	
Relevant EA conditions	Refer to Schedule A of the EA conditions (**Appendix 1**)		

9 NOISE AND VIBRATION

9.1 Site Context

The predominant land use within the Project area is primarily rural in nature, and accordingly, background noise levels are low. Major noise sources include existing mining activities, cattle truck movements and helicopter mustering activities.

9.2 Sensitive Receptors

Sensitive receptors have been identified on the Meroo Downs property (the occupiers homestead) and on Struan Station (the ringers quarters and the owners homestead).

9.3 Management Plan

The Noise and Vibration Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts of noise and vibration within the Project area.

Table 10 Management Plan 6 Noise and Vibration Management Plan

Environmental Protection Objective	• Noise from activities associated with construction and operation will not cause an environmental nuisance at a sensitive receptor • Minimise noise and vibration impacts to fauna where possible.		
Measurable Environmental Outcome	• Consultation undertaken with any potentially affected landowners/occupiers (sensitive receptors), especially if atypical noise events are anticipated • Limited or no noise related complaints from sensitive receptors • Noise condition limits in the EA are not exceeded in the event of a complaint		
Environmental Risk Event	Noise and vibration emissions from the Project cause an environmental nuisance at a nuisance-sensitive place		
Avoidance Measures	• Project layout (particularly the GCF) has been positioned to avoid impacts on the sensitive receptors. • The closest sensitive receptor to the GCF is located >2.3 km east.		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor
Mitigation/Management Measures		**Timing**	**Responsibility**
Consider potential for noise nuisance when planning activities		Prior to works commencing	Environmental Representative
Avoid night time constructions within 1 km of a sensitive receptor between works between the hours 6PM and 6AM.		During construction	Project Manager
Notify landholders of construction works in advance of commencement of works. Provide information on likely timing and duration of works and contact details in the event of questions or complaints		During construction	Project Manager
Notify impacted landholders of any proposed nighttime construction works		During construction	Project Manager
Liaise with landholder about how to minimise potential impacts and implement “alternative arrangements” if necessary.		During construction	Project Manager
Apply noise mitigation measures to permanent noise sources where necessary (e.g. in the event that valid noise complaints are received)		At all times	Project Manager
Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Very Low	Insignificant
On-Going Monitoring	Number of complaints received		
Corrective Actions if Environmental	**Identified Issue**	**Corrective Action**	
	A noise or vibration complaint is received	• Review, update and implement this management plan	

Outcome is not achieved		
Relevant EA conditions	Refer to Schedule N of the EA conditions (**Appendix 1**)	

10 LAND

10.1 Site Context

The primary land use within the Project area is agricultural land, primarily used for grazing and cropping. The majority of the Project area is freehold tenure, with the exception of road parcels, a railway corridor and easement parcel. There is a stock route located within the road corridor of Comet-Rolleston Road that is mapped within the eastern section of the Project area.

A number of terrestrial and aquatic ecological values have been identified across the site. Refer to the Epic Environmental consultant reports, Ecological Assessment Report (2023) and DPM Aquatic values assessment (2023) for details on the ecological values in the Project area. These reports are available on the Comet Ridge website and company servers.

10.2 Management Plan

The control strategies in the following management plans listed below will combine to protect land values identified in the above-mentioned reports:

- Vegetation Clearing Management Plan
- Fauna and Pest Management Plan
- Weed Management Plan
- Soil and Erosion Management Plan
- Land Use Management Plan

10.2.1 Vegetation Clearing

The Vegetation Clearing Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on terrestrial flora values, fauna habitat values and sensitive environmental areas and communities.

Table 11 Management Plan 7 Vegetation Clearing Management Plan

Environmental Protection Objective	Minimise vegetation clearing to the extent practicable for the safe operation of petroleum activities		
Measurable Environmental Outcome	• No unauthorised clearing of native vegetation. • No unauthorised disturbance to flora species or habitats of flora species listed as endangered, vulnerable or rare under State or Commonwealth legislation		
Environmental Risk Event	Unauthorised disturbance to flora species or habitats of flora species listed as endangered, vulnerable or rare under State or Commonwealth legislation		
Avoidance Measures	• Project layout optimised based on the ground-truthed ecological assessments to avoid any areas of ecological significance (e.g. TEC, GDEs, threatened species habitat, etc.) • No vegetation clearing adjacent to water courses • Project layout has considered and utilised existing access tracks • Project footprint minimised through the use of lateral and vertical production wells		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Likely	High	Significant
Mitigation/Management Measures		**Timing**	**Responsibility**
Clearing limits to be survey marked prior to any clearing commencing		Prior to vegetation clearing	Project Manager

Assess sites for vegetation prior to undertaking clearing activities, by a suitably qualified and experienced person	Prior to vegetation clearing	Environmental Representative
Cleared paddocks and access tracks will be preferentially utilised for locating assets and tracks to minimise the extent of clearing	Prior to vegetation clearing	Project Manager
Where site assessment results in identification of sensitive ecological values such as threatened flora and fauna species, or threatened ecological communities, in order of preference: • adjust location to avoid ecological values • adjust the activity to prevent impact (e.g. change design or layout) • if there is no viable alternative, seek additional authorisation where that is appropriate, which may include offset conditions	Prior to vegetation clearing	Project Manager
Any clearing beyond the approved clearing areas boundaries will be reported as an incident	During vegetation clearing	Environmental Representative
Pipeline crossings of defined watercourses will be via horizontal directional drilling to minimise the disturbance to riparian vegetation and aquatic habitat	Prior to vegetation clearing	Project Manager
The following records must be maintained for clearing: • Pre-clearance ecological inspection • Survey data of clearing extents	For a minimum of 5 years following clearing	Environmental Representative
Regular weed inspections will be carried out in areas subject to clearing	During construction	Environmental Representative
All plant and equipment moving mobilising to and demobilising from the site will be inspected for weed and seeds. If required plant and equipment will be cleared prior to mobilisation or demobilisation	During construction	Environmental Representative
Any cleared vegetation will be stockpiled in windrows adjacent to the area of clearing	During construction	Environmental Representative

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	High	Minor
On-Going Monitoring	Clearing extents will be visually inspected and verified by the Environmental Representative.		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Clearing extents are exceeded in an area identified as containing significant ecological values (i.e. MNES, MSES or habitat for a threatened species)	• Train personnel on this management plan via a toolbox. • Notify the relevant authority and engage an ecologists to undertake an impact assessment and provide further recommendations	
Relevant EA conditions	Refer to Schedule B of the EA conditions (**Appendix 1**)		

10.2.1 Fauna and Pest

This Fauna and Pest Management Plan provides the environmental protection commitments and control strategies that will be implemented to minimise direct and indirect impacts on terrestrial fauna values including the following threatened MNES fauna species considered as likely or possibly occurring on the site:

- Koala (*Phascolarctos cinereus*)
- Australian Painted Snipe (*Rostratula australis*)
- Squatter Pigeon (*Geophaps scripta scripta*)
- Painted Honeyeater (*Grantiella picta*)
- Ornamental Snake (*Denisonia maculata*)
- Grey Snake (*Hemiaspis damelii*)

In terms of management of listed species that may occur on-site the plan provides specific and measurable outcomes, including reporting requirements and actions to be taken in the (unlikely) event of injury or mortality to one of the identified species. In compiling these measures, review of the following sources was used:

- Species Profile and Threats Database (SPRAT)
- Approved conservation advice for the relevant species including:
    - Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory (DAWE 2022a)
    - Approved conservation advice for Rostratula australis (Australian Painted Snipe) (DSEWPC 2013)
    - Conservation advice Geophaps scripta scripta Squatter pigeon (southern) (TSSC 2015)
    - Conservation advice Grantiella picta Painted Honeyeater (DE 2015)
    - Approved conservation advice for Denisonia maculata (Ornamental Snake) (DE 2014)
    - Conservation advice for Hemiaspis damelii (Grey Snake) (DCCEEW 2022)
- National recovery plans for the relevant species including:
    - National Recovery Plan for the Koala Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (DAWE 2022b)
    - National recovery plan for the Australian Painted Snipe (Rostratula australis) (DCCEEW 2022)
    - National recovery plan for the Painted Honeyeater (Grantiella picta) (DAWE 2021)
- Adopted threat abatement plans relevant for the species including:
    - Threat abatement plan for predation by feral cats 2024 (DCCEEW 2024)
    - Threat abatement plan for competition and land degradation by rabbits (DEE 2016)
    - Threat abatement plan for predation by the European red fox (DEWHA 2008)

As identified in the EPBC Act referral, the Project's extent of impact to potential habitat for the identified species is very minor (<1.2 ha for any species), given the extent of identical habitat present elsewhere within the Project area (1,470 ha of wooded habitat and 1,513 ha of wetland/gilgai habitat). Although not identified above, several wetland bird species listed as Migratory under the EPBC Act may also possioccur within the Project area. While not specifically addressed it is considered that management measures considered applicable to Australian Painted Snipe are also suitable to mange any possible impact on Migratory wetland bird species.

It is considered highly unlikely a significant impact to an MNES species will occur as a result of the Project. Nevertheless, the proposed measures are anticipated to be effective in avoiding, mitigating, and/or managing potential impacts.

Table 12 Management Plan 8 Fauna and Pest Management Plan

Environmental Protection Objective	Minimise impacts on listed fauna species as a result of exploration, development and decommissioning activities		
Measurable Environmental Outcome	• No unauthorised disturbance to fauna species or habitats of fauna species listed as endangered, vulnerable, rare or near threatened under State or Commonwealth legislation • No introduction or spread of introduced pest animals.		
Environmental Risk Event	• Project activities result in the loss of habitat for a significant fauna species • Project activities result in the death or injury to a significant fauna species		
Avoidance Measures	• Project layout optimised based on the ground-truthed ecological assessments to avoid any areas of ecological significance (e.g. TEC, GDEs, threatened species habitat, etc.) • No vegetation clearing adjacent to water courses • Project layout has considered and utilised existing access tracks • Project footprint minimised through the use of lateral and vertical production wells		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood** Likely	**Consequence** High	**Risk Rating** Significant

Mitigation/Management Measures	**Timing**	**Responsibility**
Cleared paddocks and access tracks will be preferentially utilised for locating assets and tracks to minimise impact to fauna habitat	Prior to vegetation clearing	Project Manager
Assess sites for fauna habitat prior to undertaking clearing activities, by a suitably qualified and experienced person	Prior to vegetation clearing	Environmental Representative
Where site assessment results in identification of sensitive ecological values such as threatened fauna species, or threatened ecological communities, in order of preference: • Adjust location to avoid ecological values • Adjust the activity to prevent impact (e.g. change design or layout) • If there is no viable alternative, seek additional authorisation where that is appropriate, which may include offset conditions	Prior to vegetation clearing	Project Manager
For any clearing of potential habitat (including vegetation or stockpiles of vegetation), the following will be implemented: 1. The potential habitat will be inspected by a suitably qualified and experienced person (i.e. licensed fauna spotter) to identify any fauna residing in the area 2. Clearing activities will only commence with verbal authorisation from the licensed fauna spotter 3. If fauna is present, the licensed fauna spotter will provide instructions to the Project Manager on appropriate action that may encourage the fauna to move of its own volition 4. In the event that fauna does not move, only the licensed fauna spotter will be authorised to collect the animal, in accordance with the Queensland code of practice for the welfare of wild animals affected by land-clearing and other	Prior to and during vegetation clearing	Environmental Representative

habitat impacts and wildlife spotter/catchers (2009). The licensed fauna spotter must relocate the animal to the nearest available habitat (ideally adjacent to the area of clearing and outside the development footprint)		
Establish partnerships with local wildlife carer	Prior to vegetation clearing	Project Manager
Any identified injured fauna must either be euthanised or transported to a local wildlife carer (if safe to do so) by a suitably qualified and experienced person (i.e. licensed fauna spotter). Liaise with local wildlife carers or veterinarians for appropriate treatment of injured animals	During construction	Environmental Representative
Any listed fauna injuries or mortalities caused as a result of vegetation clearing will be communicated to the administering authority within 24 hours of discovery	During construction	Environmental Representative
Any occurrence of listed species, including Koala (*Phascolarctos cinereus*) recorded during vegetation clearing will be immediately reported to the Environmental Representative	During construction	All Personnel
The following records must be maintained for clearing: • Pre-clearance ecological inspection • Fauna spotter records of any fauna interactions	For minimum of 5 years following clearing	Environmental Representative
Install appropriate fencing or cover of areas where fauna may be entrapped such as well infrastructure, dams or trenches	During construction	Environmental Representative
Inspect any trenches or excavations for trapped fauna on a daily basis	During construction	Environmental Representative
Fauna ramps must be installed in trenches a minimum of every 10 m apart, where trenches are required to remain open over night	During construction	Environmental Representative
Take prompt action to control any introduced species of pest animals, actions may include: • No domestic animals belonging to project personnel or subcontractors will be permitted on site • Covering and securing scrap kitchen • Direct pest control baiting and trapping (only if the specific species can be targeted) • Weekly inspections of onsite project buildings/infrastructure (e.g. offices and workers accommodation) for sheltering feral predators (focused on cats)	At all times	Environmental Representative
A fauna register to record all fauna encountered during clearing works (as per fauna spotter-catchers) including fauna incidents (injuries and mortality) will be maintained during construction	At all times	Environmental Representative
Onsite speed limits (<50 km/h) will be established throughout Project area to limit the potential for road collisions. This speed limit is considered suitable as the Project area is flat with good visibility; the Proponent is utilising existing farm tracks; driving will only be in 4WD mode.	At all times	All Personnel

	Likelihood	Consequence	Risk Rating

Residual Risk Rating (after mitigation measures have been applied)	Unlikely	High	Minor
On-Going Monitoring	Number of fauna interactions		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Death or injury to a significant fauna species	Review, update and implement this management plan based on the cause of the death or injury.	
	Unauthorised disturbance to fauna habitat	• Train personnel on this management plan via a toolbox. • Notify the relevant authority and engage an ecologists to undertake an impact assessment and provide further recommendations	
Relevant EA conditions	Refer to Schedule B, conditions B1 and B2 of the EA conditions (**Appendix 1**)		

10.2.2 Weeds

The Weed Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts from weeds on terrestrial flora values and land use.

Table 13 Management Plan 9 Weed Management Plan

Environmental Protection Objective	Prevent or minimise the introduction or spread of pests through movement of people, vehicles, machinery or soil and vegetation disturbance		
Measurable Environmental Outcome	• No introduction of new weed species on the Project area as a result of the petroleum activities • No increase on the Project area in abundance or distribution of weed species as a result of the petroleum activities		
Environmental Risk Event	Proliferation of weed species as a result of Project activities.		
Avoidance Measures	No avoidance measures apply to this management plan.		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Moderate	Medium

Mitigation/Management Measures	**Timing**	**Responsibility**
Identify and record areas currently subject to weed infestations	Prior to vegetation clearing	Environmental Representative
Regular weed inspections will be carried out in areas of vegetation clearing	During Construction	Environmental Representative
Control and manage pest infestations and outbreaks resulting from petroleum activities in consultation with the relevant landowner/s	At all times	Environmental Representative
Weed washdown procedures will be implemented where necessary when moving between properties	At all times	Project Manager
Periodic monitoring of petroleum sites and access tracks for weeds	At all times	Environmental Representative

Weed awareness including in induction and tool box talks for all personnel	At all times	Environmental Representative
A vehicle and plant movement protocol will be established for movement between properties	At all times	Project manager
If a new weed infestation is reported or found, appropriate action to contain and eradicate will be implemented (in consultation with an ecologist). This will include (at a minimum) review of the Qld Department of Agriculture and Fisheries weed factsheets which provide advice on control methods including recommended herbicides and application rates. Available at: https://www.dpi.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/fact-sheets	At all times	Project manager

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor
On-Going Monitoring	Weed inspections identifying weed outbreak		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Weed outbreak identified adjacent to the Project activities	• Train personnel on this management plan via a toolbox. • Review all weed washdowns related to the Project had been completed in the last 90 days • Notify the land holder and take appropriate action to rectify (https://www.dpi.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/fact-sheets)	
Relevant EA conditions	No specific conditions applicable to weed management in the EA conditions.		

10.2.3 Soil and Erosion

The Soil and Erosion Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on land and soil quality values.

Table 14 Management Plan 10 Soil and Erosion Management Plan

Environmental Protection Objective	Minimise soil erosion and sedimentation that may result from exploration, development, or decommissioning activities.		
Measurable Environmental Outcome	• No failure of erosion and sediment control measures that result in the release of sediment • No release of stormwater runoff from active construction sites that has a greater turbidity than background water quality • No degradation of top soil quality as a result of project activities		
Environmental Risk Event	Project activities result in a release of sediment-laden waters to surface waters, resulting in an increase in downstream turbidity.		
Avoidance Measures	• No vegetation clearing adjacent to water courses • Project layout has considered and utilised existing access tracks • Project footprint minimised through the use of lateral and vertical production wells		
	Likelihood	**Consequence**	**Risk Rating**

Inherent Risk Rating (before mitigation measures applied)	Likely	High	Significant

Mitigation/Management Measures	Timing	Responsibility
Avoid working during the wet season or heavy erosive rainfall as much as practicable. Where this is not possible, erosion and sediment controls will be implemented prior to any disturbance being commenced	During construction	Project Manager
Use existing access roads where practicable. Where this is not practicable, new access tracks will be formed with erosion controls such as whoa boys and berms to minimise flows across the disturbance	At all times	All personnel
Soil sampling will be undertaken to identify reactive/erosive/dispersive soils	Prior to vegetation clearing	Environmental Representative
Every stage of the Project will have a site-specific erosion and sediment control plan (ESCP) developed and implemented in accordance with the *Best Practice Erosion and Sediment Control* (International Erosion Control Association Australia, 2008 or later versions). Each ESCP will outline erosion and sediment controls with consideration to: • Quantification of potential soil loss • Catchment and sub-catchments • Slope lengths and gradients • Nearest waterway and drainage lines • Soil properties • Stage duration • Disturbance areas	Prior to vegetation clearing	Environmental Representative
Reactive/erosive and dispersive soils will be managed with drainage and sediment controls in accordance with best practice guidance material	Prior to vegetation clearing	Environmental Representative
Vegetation clearing will be limited to the minimum disturbance required for the construction phase. Rootstocks will remain in situ where no earthworks are required. Minimise vegetation clearing and leave root stock in-situ where practicable to minimise potential for soil erosion	During vegetation clearing	Supervisor
Reuse stripped top soil in areas to be rehabilitated with similar top soil characteristics if possible. If top soil cannot be effectively reused immediately, stockpile ensuring the height of the stockpile is no more than 2 m. Long-term stockpiles will be re-vegetated with appropriate cover crops to minimise loss of top soil	During vegetation clearing	Supervisor
Top soils and subsoils will not be mixed. Replace subsoils at depth and cover with top soil	During construction	Supervisor
Where practicable, mulch cleared vegetation and spread as protective layer over exposed soil	During construction	Supervisor
Stabilise problem area/s that have the potential for erosion or soil movement with surface stabilisers, crushed rock or scour protection as necessary	During construction	Supervisor

Slow the overland flow of water and floodwaters by installing frequent contour banks, whoa boys or similar in appropriate areas	During construction	Supervisor
Direct discharges to multiple locations to decrease volumes. Discharges will be stable drainage lines. Implement engineering controls in drainage line where necessary	During construction	Supervisor
Any erosion and sediment control devices installed will remain in place until the relevant area is stabilised by rehabilitation	During construction	Supervisor
Soil stockpiles will be less than 3 m in height and located away from drainage lines	During construction	Supervisor
Re-establish the bed and banks profile of any waterways or creeks disturbed by petroleum activities	During construction	Supervisor
Erosion and sediment control devices will be inspected following every rainfall event. Where maintenance to devices are required this will be completed immediately	Following rainfall event	Environmental Representative
Reference to the guidelines *Best Practice Erosion and Sediment Control* (International Erosion Control Association Australia, 2008 or later versions)	At all times	Environmental Representative

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	**Minor**
On-Going Monitoring Program	Implement the surface water monitoring detailed in Section 8.7 of the Water Monitoring and Management Plan 2025		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	This management plan or ESCP has not been implemented	• Rectify the non-conformances • Train personnel and contractors on the appropriate implementation of measures • Weekly surface water monitoring until results demonstrate the Project causes no residual sedimentation	
	This management plan or ESCP is not suitable to minimise the potential for erosion / or sediment is observed in the receiving environment	• Review and update the management plan / ESCP • Train personnel and contractors on the updated measures adopted in the management plan / ESCP • Weekly surface water monitoring until results demonstrate the Project causes no residual sedimentation • Implement the mitigation response detailed in section 7.3 of the water monitoring and management plan (2025)	
Relevant EA conditions	Refer to Schedule L of the EA conditions (**Appendix 1**)		

10.2.4 Land Use

A Land Use Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on land use, landholders and other land tenure holders.

Table 15 Management Plan 11 Land Use Management Plan

Environmental Protection Objective	• Minimise impacts on existing land uses and surrounding landholders/tenure holders as a result of exploration, development, production and decommissioning activities • Avoid accidental damage to existing infrastructure and services • Avoid environmental harm and reduced soil productivity arising from the release of sediments, salinisation of soil, disturbance of contaminated soils and contamination of soils		
Measurable Environmental Outcome	• Any impacted landholder is consulted with prior to impact to their land • No complaints from landowners or tenure holders		
Environmental Risk Event	• Project activities result in damage to existing infrastructure and services • Release of contaminants results in reduced soil productivity and biodiversity		
Avoidance Measures	• Project layout optimised based on the ground-truthed assessments and consultation with landholders to: – Avoid any areas of ecological significance (e.g. TEC, GDEs, threatened species habitat, etc.) – Minimise impacts to agricultural activities and productive land • Project layout has considered and utilised existing access tracks • Project footprint minimised through the use of lateral and vertical production wells		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Likely	Moderate	Medium
Mitigation/Management Measures		**Timing**	**Responsibility**
Co-ordinate clearing and disturbance activities with landowners to minimise disruption to property operations		Prior to vegetation clearing	Project Manager
Use existing access roads where practicable		At all times	All personnel
Flow lines will follow existing fence lines or roads where practicable to minimise disturbance to property activities		During construction	Project Manager
Consult with land/tenure holders on locations of field infrastructure to minimise impacts on property activities		Prior to works commencing	Project Manager
Maintain a complaints register and handling system.		At all times	Environmental Representative
Conduct pre-clearing checks for potential soil contamination		Prior to vegetation clearing	Environmental Representative
If contaminated soil is identified, further investigate and in consultation with the landowner develop appropriate remediation strategies and disposal requirements		During earthworks	Environmental Representative
Dispose of significant quantities of contaminated soils to authorised facilities. Small quantities can be maintained on-site where appropriate		At all stages	Supervisor

Design fuel, oil and chemical storage and handling areas in accordance with Australian Standards	Prior to works commencing	Project Manager
Inspect and maintain all vehicles, plant and machinery to ensure they are not at risk of leaking or spilling contaminants	At all stages	All personnel
Ensure that appropriate handling and use of fuels, oils and chemicals is enforced on-site	At all stages	Project Manager
Include handling procedures and clean up protocols in induction training and tool box talks	At all stages	Environmental Representative
Clean up spills promptly	At all stages	All personnel
Keep a spill kit on-site for each relevant infrastructure	At all stages	Environmental Representative
Ensure that each well, tank and sewage treatment is adequately signposted for easy identification with a unique name or number	At all stages	Project Manager

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Moderate	Medium
On-Going Monitoring	Implement the monitoring detailed in Section 9 of the Chemical Risk Assessment (2023)		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Contaminant releases from the Project result in loss of biodiversity or land productivity	• Engage a contaminated land specialist / soil scientist to undertake an investigation and determine appropriate remediation action plan • Implement the remediation action plan • Review this management plan, update as necessary and implement the revised plan	
Relevant EA conditions	Refer to Schedule L of the EA conditions (**Appendix 1**)		

11 WASTE

11.1 Site Context

The primary waste generation for the construction and operation is expected to include the following:

- Vegetation
- Typical drilling wastes including packaging, surplus drilling materials such as timber, concrete, gravel, metals and plastics
- Returned drill cuttings and muds
- Surplus soil from earthworks
- Typical domestic waste generated from camps
- Sewage from camps
- CSG water

Where possible the waste will be reused, recycled or removed to a facility that can lawfully accept the waste under the EP Act.

All regulated waste will be removed from site and transported by a person who holds a current authority to transport such wastes to a facility that is lawfully able to accept the waste under the EP Act. Trackable waste records will be kept in accordance with EA conditions and the EP Act.

11.2 Potential Impacts

The following potential impacts from waste have been identified:

- Release of hazardous waste to land or waters either through inappropriate waste disposal protocols or accidental release(s)
- Inadequate waste management leading to inappropriate disposal, or inadequate re-use or recycling
- Compromised land use, ecosystems or well-being of people resulting from inappropriate waste disposal
- Beneficial re-use of coal seam gas water may result in improved conditions for agriculture by providing an additional water source.

11.3 Management Plan

11.3.1 Waste

Objectives for waste management are based on the waste and resource management hierarchy outlined in section 9 of the WRR Act. Management Plan 11**Error! Reference source not found.** deals with all solid and sewage waste that may be generated by the petroleum activities, including drilling materials, packaging materials, green waste and sewage.

Table 16 Management Plan 12 Waste Management Plan

Environmental Protection Objective	• Minimise waste generation to the extent practicable in accordance with the waste management hierarchy of avoid, re-use and recycle • Or dispose of waste in the most appropriate manner		
Measurable Environmental Outcome	• No on-site environmental impacts from the management of waste • No waste is disposed of at a facility that is not licensed to accept the waste • No contamination of soil, air or water as a result of waste handling		
Environmental Risk Event	• Solid waste material is not disposed of at an appropriately licensed facility • Sewage waste material is released to the environment • Loss of available landfill airspace as a result of the inappropriate segregation of solid waste		
Avoidance Measures	N/A - No avoidance measures apply to this management plan		
	Likelihood	**Consequence**	**Risk Rating**

Inherent Risk Rating (before mitigation measures applied)	Likely	Low	Minor

Mitigation/Management Measures	**Timing**	**Responsibility**
Set up designated waste disposal areas at each production well construction area. Include bins or nominated areas for the following solid waste streams: • General waste • Regulated waste (i.e. oils, oily rags, solvents, lubricants and fuel). • Drill cuttings • Cleared vegetation The designated area can be moved once the production well construction has been completed.	At all stages	Project Manager
Maintain a designated waste disposal areas at the gas compression facility construction area. Include bins, tanks or nominated areas for the following solid waste streams: • General waste • Regulated waste (i.e. clean-up material, oily waste etc • Sewage effluent • Recyclable steel and copper	At all stages	Project Manager
Surplus soil will be reused across the Project to shape land and create erosion and sediment controls	At all stages	Project Manager
Store recyclable waste separately from residual/non-recyclable waste	At all stages	Project Manager
All fuel, oil and chemicals are to be stored, transported, and handled in accordance with appropriate standards including AS1940:2004 - The storage and handling of flammable and combustible liquids, AS 3780:2008 – The storage and handling of corrosive substances, AS 3833:2007 – Storage and handling of mixed classes of dangerous goods in packaged and intermediate bulk containers	At all stages	All personnel
Use pre-painted products to minimise use of paints and solvents	At all stages	All personnel
Ensure waste is removed by an appropriately licensed contractor	At all stages	Supervisor
Ensure appropriate records are kept for trackable wastes	At all stages	Environmental Representative
Used oils, oily rags, solvents, lubricants and fuel in covered and bunded areas and disposed of as regulated waste	At all stages	All personnel
Ensure drilling wastes will be disposed of as general waste	At all stages	Supervisor

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Low	Minor
On-Going Monitoring	Volumes and type of waste being generated on the Project		

Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**
	Unauthorised disposal or release of Project generated waste material	• Undertake toolbox training with all personnel on appropriate waste handling • Increase the frequency of waste servicing

		• Review, update and implement this management plan
Relevant EA conditions	Refer to Schedule W of the EA conditions (**Appendix 1**)	

11.3.2 Produced Water

The Coal Seam Gas Water Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on environmental values from the storage and handling of produced water.

Table 17 Management Plan 13 Coal Seam Gas Water Management Strategy

Environmental Protection Objective	• Manage coal seam gas produced water in a way that optimises its beneficial use and minimises adverse impacts on environmental values • Contain coal seam gas produced water in appropriate structures until it can be re-used		
Measurable Environmental Outcome	• Beneficial use of coal seam gas produced water will be in accordance with the appropriate end of waste code • The initial consequence category of structures will be certified by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933) and the Guideline *Structures which are dams or levees constructed as part of environmentally relevant activities* (ESR/2016/1934)		
Environmental Risk Event	Unauthorised release of coal seam gas produced water to the environment.		
Avoidance Measures	Produced water is stored greater than 2km from the nearest mapped watercourses		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Moderate	Medium
Mitigation/Management Measures		**Timing**	**Responsibility**
Coal seam gas produced water will be contained in appropriately designed and constructed dams or tanks. [Note the EA only authorises low consequence category dams]		During Operations	Project Manager
Dams will be monitored regularly to ensure that the dam remains a low consequence category structure		At all stages	Environmental Representative
Testing of coal seam gas produced water will occur prior to any beneficial use to establish that the water meets the criteria required for that use (e.g. stock and domestic)		At all stages	Environmental Representative
Any beneficial use of water will be in accordance with the latest version of the *End of Waste Code Associated Water (including coal seam gas water) (ENEW07547018)*		At all stages	Environmental Representative
Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	Moderate	Minor
On-Going Monitoring	• Permanent leak detection on any tanks or dams that are storing coal seam gas produced water • Implement the surface water monitoring detailed in Section 8.7 of the Water Monitoring and Management Plan 2025		
	Identified Issue	**Corrective Action**	

Corrective Actions if Environmental Outcome is not achieved	Unauthorised release of coal seam gas produced water	Implement the mitigation response detailed in Section 7.3 of the Water Monitoring and Management Plan (2025)
Relevant EA conditions	Refer to Schedule W (conditions W5 to W8) of the EA conditions (**Appendix 1**)	

12 SURFACE WATER

12.1 Site Context

The Project is contained within the Fitzroy River catchment area, and the Comet River sub-basin. The Fitzroy River drains to the sea at Rockhampton.

12.2 Sensitive Receptors

The *Environmental Protection Policy (Water and Wetland Biodiversity) 2019* provides a framework for managing water, including identification values associated with water and setting of water quality objectives.

Environmental values identified for water in the Project area are:

- Farm water supply
- Stock watering and irrigation
- Suitability for raw drinking water supply
- Cultural and spiritual values

12.3 Potential Impacts

The following potential impacts to surface water were identified for the construction and operation phases:

- Increased sediment load in runoff and at stream crossings
- Water quality impacts associated with herbicides for weed control
- Water quality impacts from improper containment of chemicals, fuels, wastes and CSG water
- Stormwater discharge and flow redirection
- Impacts to natural flood flows

12.4 Management Plan

A Surface Water Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on surface waters. Surface water encompasses watercourses, wetlands and springs; and overland flow as well as the management of stormwater runoff.

Table 18 Management Plan 14 Surface Water Management Plan

Environmental Protection Objective	• Undertake petroleum activities in a manner that has negligible impact on surface water environmental values • Undertake petroleum activities in a manner that has negligible impact of stormwater runoff to surface water geomorphology, hydrology, quality and dependent ecosystems
Measurable Environmental Outcome	• The natural flow of a watercourse has not been interfered with through placing fill, excavation, impoundment or diversion • Time of disturbance to the bed and banks of a watercourse is not undertaken between the months of 01 November and 31 March each year • No unauthorised discharge to surface waters of contaminants, including through stormwater runoff
Environmental Risk Event	• Project activities result in a reduction in the water quality in the receiving environment • Project activities alter the natural hydrologic flow regime resulting in changes in water availability in the receiving environment
Avoidance Measures	• Only minor earthworks proposed on the Project resulting in minimal changes to hydrologic regimes • The GCF are located more than 2km from a mapped watercourse

	• Disturbance activities have preferentially been chosen to be located in previously disturbed land to minimise the potential for new impacts to be caused		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	High	Medium

Mitigation/Management Measures	**Timing**	**Responsibility**
Infrastructure and activities will be designed to occur outside watercourses and drainage lines where practicable	Prior to works commencing	Project Manager
Vegetation will not be cleared, nor fill placed in or within: • 200 m from any wetland, lake or spring; or • 100 m of the high bank of any other watercourse	During Construction	Supervisor
Activities for construction of pipelines or access tracks or any other linear infrastructure in watercourses, will be undertaken in no or low flow conditions	During Construction	Supervisor
Routine, regular and frequent visual monitoring will be undertaken while construction work is carried out in a watercourse	During Construction	Supervisor
Petroleum activities that do occur in a watercourse, lake or spring will be designed and undertaken by a suitably qualified person	During Construction	Supervisor
Refuelling of plant and equipment will occur at least 30 m from a watercourse or other drainage feature	During Construction	Supervisor
Hazardous and dangerous goods will be stored in bunded facilities located at least 100 m from a watercourse or other drainage feature	During Construction	Supervisor
Fuels and other flammable liquids will be stored and handled in accordance with *AS 1940:2004 - The storage and handling of flammable and combustible liquids*.	During Construction	All personnel
Every stage of the Project will have a site-specific erosion and sediment control plan (ESCP) developed and implemented in accordance with the *Best Practice Erosion and Sediment Control* (International Erosion Control Association Australia, 2008 or later versions). Each ESCP will outline erosion and sediment controls with consideration to: • Quantification of potential soil loss • Catchment and sub-catchments • Slope lengths and gradients • Nearest waterway and drainage lines • Soil properties • Stage duration • Disturbance areas	During Construction	Supervisor
Where hardstand areas are installed, appropriate measures to reduce the possible effects of stormwater runoff will be implemented.	During Construction	Supervisor

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	High	Minor
On-Going Monitoring	Implement the surface water monitoring detailed in Section 8.7 of the Water Monitoring and Management Plan 2025		

Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**
	Project activities result in a change in water quality or flow in the receiving environment	Implement the mitigation response detailed in Section 7.3 of the Water Monitoring and Management Plan 2025
Relevant EA conditions	Refer to Schedule WT of the EA conditions (**Appendix 1**)	

13 GROUNDWATER

13.1 Site Context

There are a number of requirements under the *Water Act 2000* designed to protect groundwater resources from the impacts of resource activities. A Baseline Assessment Plan is required to be submitted and approved prior to commencement of testing or production activities.

13.2 Sensitive Receptors

The *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* provides a framework for managing water, including identification values associated with water and setting of water quality objectives.

Environmental values identified for water in the Project area are:

- Farm water supply
- Stock watering and irrigation
- Suitability for raw drinking water supply
- Cultural and spiritual values.

13.3 Potential Impacts

The following potential impacts to groundwater were identified for the construction and operating phases:

- Potential drawdown of aquifers as a result of depressurisation activities for coal seam gas production
- Potential loss of functional use of water bores as a result of that drawdown
- Impact on aquifers as a result of drilling activities, including connectivity of gas producing horizons with water producing horizons
- Contamination of aquifers due to poor drilling practises or improper isolation of zones by casing or cement
- Potential impact on groundwater dependent ecosystems.

13.4 Management Plan

A Groundwater Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to minimise impacts on groundwater values as a result of petroleum activities. Note that the existing EA does not authorise well stimulation activities; so there are no control strategies outlined here.

Table 19 Management Plan 15 Groundwater Management Plan

Environmental Protection Objective	Manage petroleum activities in a manner that minimises impacts to groundwater quality and levels		
Measurable Environmental Outcome	• Well construction and operation in accordance with the relevant Codes • Oil-based or synthetic-based drilling muds will not be used • Drilling activities do not cause the connection of a target gas production horizon with other aquifers		
Environmental Risk Event	Drawdown of groundwater levels resulting in impacts to groundwater users		
Avoidance Measures	N/A – No avoidance measures are applicable to this management plan		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	High	Minor
Mitigation/Management Measures		**Timing**	**Responsibility**
Procure and use only approved water based and biodegradable drilling fluids		During drilling activities	Project Manager
During development of production wells, hydraulic isolation will be maintained between aquifers		Throughout the well development phase	Supervisor
Baseline assessment of any identified water bores in the area completed prior to testing		Prior to works commencing	Project Manager
Annual modelling will be undertaken to determine connectivity or otherwise of coals seams with groundwater resources in the area		Annual	Project Manager
Undertake collation of historical water level data for bores in the area to establish natural seasonal variation in aquifer levels		Prior to drilling works commencing	Environmental Representative
Develop and implement a groundwater monitoring program to identify potential impacts on groundwater user		Prior to drilling works commencing and on-going thereafter	Environmental Representative
Develop a trigger action response plan in accordance with the *Coal Seam Gas - Joint industry framework Managing impacts to groundwater resources in the Surat Cumulative Management Area under EPBC Act approvals*		Prior to drilling works commencing and on-going thereafter	Environmental Representative
Monitor trigger levels of the implementation of the trigger action response plans		At all times	Environmental Representative
Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Highly Unlikely	High	Insignificant
On-Going Monitoring	Implement the ground water monitoring detailed in Section 8.7 of the Water Monitoring and Management Plan 2025		
	Identified Issue	**Corrective Action**	

Corrective Actions if Environmental Outcome is not achieved	Project activities result in a change in water quality or flow in the receiving environment	Implement the mitigation response detailed in Section 7.3 of the Water Monitoring and Management Plan 2025
Relevant EA conditions	Refer to Schedule WT and WS of the EA conditions (**Appendix 1**)	

14 CULTURAL HERITAGE

14.1 Site Context

There is potential for activities undertaken in the Project area to disturb unrecorded items of cultural heritage (CH). The management of accidental finds of cultural heritage items is therefore important, along with the Duty of Care requirements under the *Aboriginal Cultural Heritage Act 2003*.

The CH group for the Project area are the Gaangalu Nations People (GNP). Prior to land disturbance, a CH ground survey will be conducted, utilising advisors from the GNP.

14.2 Management Plan

The Cultural Heritage Management Strategy is provided in the table below. This provides the environmental protection commitments and control strategies that will be implemented to minimise impacts to both unknown and undiscovered items and places of cultural heritage relevant to the Project area.

Table 20 Management Plan 16 Cultural Heritage Management Strategy

Environmental Protection Objective	• To avoid damage, destruction or degradation of cultural artefacts during construction or operation; • To avoid impacts on other existing group rights seeking access to cultural artefacts and places		
Measurable Environmental Outcome	Compliance with the Duty of Care obligations under the *Aboriginal Cultural Heritage Act 2003*		
Environmental Risk Event	Loss of Aboriginal cultural heritage values from Project disturbance activities.		
Avoidance Measures	Avoidance of all known cultural heritage sites in the Project layout.		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	Moderate	Minor

Mitigation/Management Measures	**Timing**	**Responsibility**
Identify and map all known cultural heritage sites	Prior to ground disturbance	Environmental Representative
Conduct cultural heritage surveys prior to commencing activities that could result in ground disturbance	Prior to ground disturbance	Environmental Representative
Catalogue any discovered artefacts	At all stages	Environmental Representative
In the event of accidental finds, stop work to exercise Duty of Care	At all stages	Project Manager

Create buffer zones around fixed known cultural heritage locations (such as scar trees or sacred places)	At all stages	Supervisor
Where appropriate and in consultation with the CH advisors, log location details, and relocated artefacts for the duration of Project activities (such as isolated finds)	At all stages	Environmental Representative
Record results of any cultural heritage surveys in the register (if agreed by traditional owners)	At all stages	Environmental Representative

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Unlikely	Moderate	Minor
On-Going Monitoring	Pre-disturbance cultural surveys with traditional owners		
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**	
	Cultural heritage artefact is found during the Project	In the event of accidental finds, stop work to exercise Duty of Care	
Relevant EA conditions	No specific conditions applicable to cultural heritage management in the EA conditions.		

15 REHABILITATION

Final land use will be determined by a number of factors including:

- Regulatory and legislative requirements current at the time of decommissioning and rehabilitation
- Stakeholder views including those of landowners, particularly where continued use of infrastructure such as access roads, dams, water bores, fences and gates, may be required
- Land use of surrounding areas and local community needs, for example land may be used for future community development rather than return to agricultural use
- The nature of the receiving environment and the environmental values of the area

Section 560 of the P&G Act requires the tenure holder removes all equipment and infrastructure from the land prior to relinquishment of the tenure, unless the landowner agrees otherwise. A written agreement for any permanent infrastructure left to the landowner is required with the Final Rehabilitation Report required under the EP Act .

A Rehabilitation Management Plan is provided in the table below. This plan provides the environmental protection commitments and control strategies that will be implemented to maximise the effectiveness of rehabilitation activities.

The Rehabilitation Management Plan and Rehabilitation Objectives and Criteria tables in this EMP have been developed keeping regulatory requirements at both a State and Commonwealth level in mind. Rehabilitation activities and measures have been provided to ensure a safe, stable, non-polluting, and self-sustaining landform, including restoration of habitat for listed threatened species, including Koala, and avoidance of sedimentation/erosion within the site generally.

Details of rehabilitation activities proposed to be undertaken as required by any Commonwealth or State approvals, which are not already shown here, will be added once the requisite approvals and conditions are granted.

Table 21 Management Plan 17 Rehabilitation Management Plan

Environmental Protection Objective	• Final landform that is safe, non-polluting, stable and self-sustaining • Significantly disturbed land reinstated to pre-disturbance land use; except where otherwise agreed between the landholder, administering authority and the tenure holder • Significantly disturbed land is rehabilitated to a stable landform requiring no on-going management greater than that required pre-disturbance
Measurable Environmental Outcome	• Dams to be rehabilitated to become a stable landform similar to surrounding undisturbed areas OR with agreement maintained for use by the landowner. • Decommissioning of all infrastructure no longer required at cessation of activities. • No ongoing contamination of surface or groundwater. • Achieve stable landform with no subsidence or erosion gullies • Achieve 70% native ground cover species richness after rehabilitation compared to pre-disturbed or adjacent land use • Achieve greater than or equal to the total percent of ground cover compared to pre-disturbed or adjacent land use • Achieve less than or equal to the percent species of declared plant pest species compared to pre-disturbed or adjacent land use • Rehabilitated land to contain at least one regional ecosystem from the broad vegetation group in either the adjacent land or pre-disturbed land, with equal or higher biodiversity conservation value

	• Where the rehabilitated land was in an environmentally sensitive area, additionally achieve greater than or equal to 50% organic litter cover, and greater than or equal to 50% of total density of woody material • Where the rehabilitated land was in an environmentally sensitive area, additionally all predominant species in the ecologically dominant layer defining the pre-disturbance regional ecosystem (RE) are to be present		
Environmental Risk Event	Residual environmental harm is occurring post operations as a result of ineffective rehabilitation		
Avoidance Measures	• Project layout optimised based on the ground-truthed ecological assessments to avoid any areas of ecological significance (e.g. TEC, GDEs, threatened species habitat, etc.) • Project layout has considered and utilised existing access tracks • Project footprint minimised through the use of lateral and vertical production wells		
Inherent Risk Rating (before mitigation measures applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Likely	High	Significant

Mitigation/Management Measures	**Timing**	**Responsibility**
Progressive rehabilitation of disturbed areas as practicable, including reshaping significantly disturbed land to a stable profile and remediation of contaminated land.	At all stages	Environmental Representative
Re-establish surface drainage lines to prevent erosion and manage sedimentation, and restore natural hydrological function	During construction	Supervisor
Reinstate top layer of soil profile to promote vegetation growth and prevent erosion	During construction	Supervisor
Continue weed management protocols (refer to Management Plan 8**Error! Reference source not found.**) until a minimum of 70% native ground cover is achieved. Note where the land disturbed was previously used for cropping, the land must be returned to a suitable state to allow the landholder to continue cropping.	During construction	Supervisor
Promote establishment of vegetation to stabilise soil and prevent erosion	During construction	Supervisor
Regular maintenance of rehabilitated areas until performance standards are met.	At all stages	Environmental Representative
Monitoring at least annually, or as appropriate, to measure progress of rehabilitation until performance standards are met.	Annually	Environmental Representative
Written agreements with landowners for acceptance of rehabilitation works	At all stages	Project Manager
Written agreements with landowners for any infrastructure remaining on the property for their us	At all stages	Project Manager
Prepare Final Rehabilitation Report once rehabilitation has been completed across all stages	Prior to surrender of PL	Environmental Representative

Residual Risk Rating (after mitigation measures have been applied)	**Likelihood**	**Consequence**	**Risk Rating**
	Possible	High	Medium

On-Going Monitoring	• Groundcover achieved following rehabilitation • Verified completion of progressive rehabilitation	
Corrective Actions if Environmental Outcome is not achieved	**Identified Issue**	**Corrective Action**
	Rehabilitation is not successful in achieving a stable, safe, non-polluting and self-sustaining landform	Rehabilitation obligations continue until the land can be proven to be stable, safe, non-polluting and self-sustaining.
Relevant EA conditions	Refer to Schedule R of the EA conditions (**Appendix 1**)	

15.1 Revegetation

The vegetation community that is being rehabilitated is described as remnant Poplar Box woodland analogous to Regional Ecosystem 11.5.3 - *Eucalyptus populnea* +/- E. *melanophloia* +/- *Corymbia clarksoniana* woodland on Cainozoic sand plains and/or remnant surfaces. Dominant species that will be included in the rehabilitation site are listed below:

- **Trees**
  - Poplar Box (*Eucalyptus populnea*)
  - Silver-leaved Ironbark (*Eucalyptus melanophloia*)
  - Long-fruited Bloodwood (*Corymbia clarksoniana*)
  - White Cypress Pine (*Callitris glaucophylla*)
  - Quinine Tree (*Petalostigma pubescens*)
- **Shrubs**
  - Leichardt Bean (*Cassia brewsteri*)
  - Curracabah (*Acacia crassa*)
  - Small-leaf Wax-flower (*Philotheca difformis*)
  - Wilga (*Geijera parviflora*)
  - Cocaine Tree (*Erythroxylum australe*)
  - False Sandalwood (*Eremophila mitchelli*)
  - Sandalwood (*Santalum lanceolatum*)
  - Currant Bush (*Carissa ovata*)
  - Wild Orange (*Capparis canescens*)
  - Dysentery Plant (*Grewia latifolia*)
- **Grasses**
  - Kangaroo Grass (*Themeda triandra*)
  - Black Spear Grass (*Heteropogon contortus*)
  - Hairy Panic (*Panicum effusum*)
  - Dark Wiregrass (*Aristida calycina*)
  - Leafy Nineawn (*Enneapogon polyphyllus*)
  - High Sida (*Sida trichopoda*)
  - Pin Sida (*Sida fibulifera*)
  - Australian Millet (*Panicum decompositum*)

15.2 Proposed final land use

In the absence of specific landowner agreements, the proposed final land use will be consistent with the current pre-disturbed land use (agricultural or native ecosystem).

Any land that is contaminated as a result of the Project activities will be remediated in accordance with accepted industry practice at the time and the relevant current regulatory and administrative requirements.

- Final land use will be determined by a number of factors including:
- Regulatory and legislative requirements current at the time of decommissioning and rehabilitation
- Stakeholder views including those of landowners, particularly where continued use of infrastructure such as access roads, dams, water bores, fences and gates, may be required
- Land use of surrounding areas and local community needs, for example land may be used for future community development rather than return to agricultural use
- The nature of the receiving environment and the environmental values of the area

Conditions R3 to R5 of the EA, must be achieved in order for Comet Ridge to relinquish their tenure rights at the end of the Project's life.

Based on current regulatory requirements on progressive rehabilitation and closure reforms in Queensland, the proposed rehabilitation measures are expected to allow effective and appropriate rehabilitation at the Project area. Assessment of the effectiveness of the proposed rehabilitation activities will be undertaken progressively via rehabilitation monitoring in accordance with the indicators, timing, and completion criteria outlined in Error! Reference source not found.. Should any issues be identified throughout the rehabilitation monitoring, alternative corrective actions will be implemented immediately as outlined in Error! Reference source not found..

Table 22 Rehabilitation objectives and criteria

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
Wells	1. safe	Site safe for humans and animals.	Reported accidents, incidents and injuries.	Ongoing for life of Project	• Plugged with cement to isolate aquifers. • Surface facilities removed. • Re-contoured to condition consistent with surrounding area or proposed land use. • Visual inspection following decommissioning • No reported accidents, incidents or injuries as a result of petroleum activities.	• Review any incident and establish appropriate actions to ensure safety of site is maintained
	2. non-polluting	Stormwater runoff does not pollute nearby watercourses.	All equipment and chemicals from site are removed. No leakage.	Ongoing for life of Project	• Monitoring meets specified EA conditions	• Improve erosion controls • Remediate contamination
	3. stable	Stormwater runoff does not cause erosion. Surface contours re-established.	Subsidence. Erosion gully formation.	Ongoing for life of Project	• No significant erosion events. • Landform re-established. • No active rill, gully or sheet erosion visible five years after rehabilitation activities commenced • Drainage follows appropriate drainage paths	• Rework site to suitable landform

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
					• Certification from a suitably qualified engineer that the final landform is geotechnically stable	
	4. self-sustaining	Land use returned to pre-disturbance use.	Foliage cover. Species diversity. Weed survey.	Either progressively where able or upon decommissioning of wells	• Either land is returned to cropping land in agreement with the landholder OR • Foliage cover established at 70% of the surrounding area. • No ongoing management beyond that required for surrounding areas with similar land use. • Vegetation successfully self-propagating and reseeding using seed mix consistent with RE 11.5.3. • Key species present (vegetation community of RE 11.5.3). • No weed species introduced.	If the site is not progressing or likely not to reach acceptance criteria for final rehabilitation, undertake an investigation into the cause (i.e. soil condition, weed infestation), including: • Review of monitoring results from previous site assessments to identify any issues • If necessary, undertake targeted surveys to identify the magnitude of the issue • Review the current management measures • If required, amend the management measures to ensure consistency with the acceptance criteria for final rehabilitation • Actions may include soil amelioration, reseeding, control of weeds/pests or stock fencing.

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
Flow lines	1. safe	Site safe for humans and animals.	Reported accidents, incidents and injuries.	Ongoing for life of Project	• Lines isolated, drained, purged and vented. • Lines flushed and cleaned. • Capped and left in situ. • Visual inspection following decommissioning • No reported accidents, incidents or injuries as a result of the petroleum activities.	• Review any incident and establish appropriate actions to ensure safety of site is maintained
	2. non-polluting	Stormwater runoff does not pollute nearby watercourses.	Surface water quality.	Ongoing for life of Project	• Monitoring meets specified EA conditions.	• Improve erosion controls • Remediate contamination
	3. stable	Stormwater runoff does not cause erosion. Surface contours re-established.	Subsidence. Erosion gully formation.	Ongoing for life of Project	• No significant erosion events. • Landform re-established. • No active rill, gully or sheet erosion visible five years after rehabilitation activities commenced • Drainage follows appropriate drainage paths • Certification from a suitably qualified engineer that the final landform is geotechnically stable	• Rework site to suitable landform

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
	4. self-sustaining	Land use returned to pre-disturbance use.	Foliage cover. Species diversity. Weed survey.	Either progressively where able or upon decommissioning of flow lines	• Either land is returned to cropping land in agreement with the landholder OR • Foliage cover established at 70% of the surrounding area. • No ongoing management beyond that required for surrounding areas with similar land use. • Vegetation successfully self-propagating and reseeding using seed mix consistent with RE 11.5.3. • Key species present (vegetation community of RE 11.5.3). • No weed species introduced.	If the site is not progressing or likely not to reach acceptance criteria for final rehabilitation, undertake an investigation into the cause (i.e. soil condition, weed infestation), including: • Review of monitoring results from previous site assessments to identify any issues • If necessary, undertake targeted surveys to identify the magnitude of the issue • Review the current management measures • If required, amend the management measures to ensure consistency with the acceptance criteria for final rehabilitation • Actions may include soil amelioration, reseeding, control of weeds/pests or stock fencing.
Access tracks	1. safe	Site safe for humans and animals.	Reported accidents, incidents and injuries.	Ongoing for life of Project	• Fences removed. • Road closed. • Visual inspection following decommissioning	• Review any incident and establish appropriate actions to ensure safety of site is maintained

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
					• Condition of land similar to surrounding landscape. • No reported accidents, incidents or injuries as a result of the petroleum activities.	
	2. non-polluting	Stormwater runoff does not pollute nearby watercourses.	Surface water quality.	Ongoing for life of Project	• Monitoring meets specified EA conditions.	• Improve erosion controls • Remediate contamination
	3. stable	Stormwater runoff does not cause erosion. Surface contours re-established.	Subsidence. Erosion gully formation.	Ongoing for life of Project	• No significant erosion events. • Landform re-established. • No active rill, gully or sheet erosion visible five years after rehabilitation activities commenced • Drainage follows appropriate drainage paths • Certification from a suitably qualified engineer that the final landform is geotechnically stable	• Rework site to suitable landform
	4. self-sustaining	Land use returned to pre-disturbance use OR Tracks maintained for use by	Foliage cover. Species diversity. Weed survey.	Upon decommissioning of Project or in accordance with landowner agreement/s	• Either land is returned to cropping land in agreement with the landholder OR	If the site is not progressing or likely not to reach acceptance criteria for final rehabilitation, undertake an investigation into the cause

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
		landowner with agreement.			• Foliage cover established at 70% of the surrounding area. • No ongoing management beyond that required for surrounding areas with similar land use. • Vegetation successfully self-propagating and reseeding using seed mix consistent with RE 11.5.3. • Key species present (vegetation community of RE 11.5.3). • No weed species introduced.	(i.e. soil condition, weed infestation), including: • Review of monitoring results from previous site assessments to identify any issues • If necessary, undertake targeted surveys to identify the magnitude of the issue • Review the current management measures • If required, amend the management measures to ensure consistency with the acceptance criteria for final rehabilitation • Actions may include soil amelioration, reseeding, control of weeds/pests or stock fencing.
Dams	1. safe	Site safe for humans and animals.	Reported accidents, incidents and injuries.	Ongoing for life of Project	• Fences removed. • Condition of land similar to surrounding landscape. • Visual inspection following decommissioning • No reported accidents, incidents or injuries as a result of the petroleum activities.	• Review any incident and establish appropriate actions to ensure safety of site is maintained

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
	2. non-polluting	No land contamination from contents of dam. Stormwater runoff does not pollute nearby watercourses.	Contaminated land assessment. Ongoing surface water quality sampling.	Ongoing for life of Project	• Salts removed and disposed at purpose built facility. • Above ground structures removed. • Monitoring of soils and water meets specified EA conditions.	• Improve erosion controls • Remediate contamination
	3. stable	Stormwater runoff does not cause erosion. Surface contours re-established.	Subsidence. Erosion gully formation.	Ongoing for life of Project	• No subsidence or major erosion gullies. • Landform re-established. • No active rill, gully or sheet erosion visible five years after rehabilitation activities commenced • Drainage follows appropriate drainage paths • Certification from a suitably qualified engineer that the final landform is geotechnically stable	• Rework site to suitable landform
	4. self-sustaining	Land use returned to pre-disturbance use. OR Dams maintained for use by	Foliage cover. Species diversity. Weed survey.	Upon decommissioning of dams or in accordance with landowner agreement/s	• Either land is returned to cropping land in agreement with the landholder OR • Foliage cover established at 70% of the surrounding area.	If the site is not progressing or likely not to reach acceptance criteria for final rehabilitation, undertake an investigation into the cause (i.e. soil condition, weed infestation), including:

Petroleum activity feature	Rehabilitation goal	Rehabilitation objectives	Indicators	Timing	Completion criteria	Corrective actions
		landowner with agreement.			• No ongoing management beyond that required for surrounding areas with similar land use. • Vegetation successfully self-propagating and reseeding using seed mix consistent with RE 11.5.3. • Key species present (vegetation community of RE 11.5.3). • No weed species introduced.	• Review of monitoring results from previous site assessments to identify any issues • If necessary, undertake targeted surveys to identify the magnitude of the issue • Review the current management measures • If required, amend the management measures to ensure consistency with the acceptance criteria for final rehabilitation • Actions may include soil amelioration, reseeding, control of weeds/pests or stock fencing.

APPENDIX 1 – ENVIRONMENTAL AUTHORITY (EA) 100521948