FOG-1-4 Zevon Test Line

Environmental Management Plan

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Document control

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1-1	Initial submission	Enviro-Value	CL	4 May 2023
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Disclaimer

This document has been developed by Central Petroleum Limited acting on behalf of Frontier Oil and Gas Pty Ltd (FOG), and it has been prepared using the skill and care expected from persons who have professional qualifications, training, skills and experience on the subject matter of environment, safety, risk management and petroleum development and operations to provide factual and technical information and reasonable solutions to identified risks.

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Document ownership and revision

FOG is the custodian of this EMP and has overall responsibility for its implementation, compliance, and revision.

FOG will ensure that this EMP is reviewed and if necessary revised:

- When there is a significant change to normal operations for the activities covered by this EMP;
- When there is a significant change to the regulatory framework within which the activities under this EMP are carried out;
- When recommendations or comments from the government approval process are made;
- If there is a new environmental impact or environmental risk not provided for in the current plan for the activity or an increase, not provided for in the current plan for the activity; and
- In the event an incident causing significant environmental harm or loss occurs.

This document shall not be issued and/or revised without the express approval of the FOG.

Executive Summary

Frontier Oil and Gas Pty Ltd (FOG) is a wholly owned subsidiary of Central Petroleum Limited. FOG is the interest holder of Exploration Permit (EP) 115 located approximately 280km SW of Alice Springs in the Northern Territory. As part of the first phase in assessing EP 115 for gas resources, FOG is seeking to acquire 30.4km of 2D seismic data. The project is referred to as the Zevon Test Line (Zevon) project.

The purpose of this Environmental Management Plan is to demonstrate how FOG will conduct its scope of activities in a manner consistent with the principles of Ecologically Sustainable Development (ESD) and such that impacts, and risks are reduced to as low as reasonably practicable and acceptable levels.

Nominated Liaison

Details for FOG's nominated liaison for this Environmental Management Plan are outlined below.

Nominated Person Details

Attribute	Details
Name	[redacted]
Position	
Company	
Address	
Contact Details	

Description of the Activity

The Zevon project includes a 30.4km main seismic line and up to 150km (38 x 4km) of stub lines across the main line. Seismic vibroseis and weight drop trucks will be used to send source signals to geophone receivers along the main line. Receivers only will be placed along the stub lines. Access to the seismic line will be via an existing track which is to be regraded. An additional 0.5km track will be added to the existing track to access the southern end of the seismic line. The main seismic line will be graded to allow access for the seismic truck and accompanying vehicles. The stub lines will be accessed using Utility Terrain Vehicles and no grading is required.

Accommodation for personnel will be at Central Petroleum's Mereenie Field Camp as a priority however, in the event contractor availability and timing does not align with vacancy at Mereenie, a temporary trailer mounted camp with capacity for up to 30 people will be established on site. The camp (if required) will be located just off the exiting track and seismic line as seismic operations progress. The camp will be in an area proximate to that shown in Figure 16 which is naturally open and flat. Further, all storage tanks will also be trailer mounted, so no grading is required and general ground disturbance would be minimised. Waste generated, including sewage, will be trucked off-site and disposed of at a licenced facility prior to storage tanks reaching capacity.

Description of the Environment

A summary of the physical, natural, and social environment for Zevon is provided in the following table.

Environment Summary

Attribute	Description
Climate	Arid; (Precipitation / Evaporation ratio = 0.1)
Geology	Located within the Amadeus Basin, an east-west trending sedimentary basin extending across the southern part of the Northern Territory and into Western Australia. This basin covers an area of approximately 170,000km² and a maximum sediment thickness of 14,000m.
Regional soils	Predominantly red sands to sandy red earth sands
Land systems	Simpson-Spinifex-covered sand dunes. Dune fields with parallel linear dunes, reticulate dunes and irregular or aligned short dunes.
Land types	Predominately sand dune and sandplains and dune swales
Groundwater	There are no current registered bores within the proposed exploration area
Surface water	No major or minor water courses run through the proposed exploration are
Bioregions	Great Sandy Desert
Site of conservation significance (SOCS) / Site of Biodiversity Significance (SOBS)	SOCS – None present. SOBS – Lay Cocks Sandplain over 10km away
Threatened species	None identified during baseline assessment however, hollow bearing Desert oaks and tall Marble gums proximate to the survey area were confirmed which may provide breeding habitat for the Princess parrot and Grey falcon.
Habitat	Hummock Grassland
Weeds	No declared weeds or Weeds of National Significance were located. Buffel grass, identified as a Category 2 – Priority weed for strategic control, was detected within the seismic survey area.
Fire history	The seismic exploration area has been subject to at least 1-2 fires since 2020
Underlying land tenure/ Use	Freehold-Haasts Bluff Aboriginal Land Trust
Historical/Natural/Aboriginal heritage	No Historical, Natural or Aboriginal artefacts were observed during the site survey. The NT Heritage Branch has been contacted (28 August 2023) and advised no places of cultural significance are located proximate to the proposed Zevon test line. The EMP commits to a final check prior to ground disturbance in case items have been added between EMP submission and commencement of works.
Aboriginal Sacred Sites	An application for an authority certificate has been lodged with AAPA and certification has been received. A Sacred Site Clearance Certificate from the Central Land Council (CLC) has been received. CLC Certification number: C2022 / 033 AAPA Certification Number: C2022 / 043 The Katiti Petermann Indigenous Protection Area (IPA) Petroleum Reserve Block abuts EP115 on its southern border to ensure the IPA is not adversely impacted the boundary coordinates plus a 50m buffer have been noted and will be maintained during seismic works.

Risk Assessment Summary

FOG has undertaken a risk assessment that is consistent with the requirements of ISO:31000 for the activities under this EMP. The risk assessment has considered the inherent risk of an activity (i.e. without controls in place) and the residual risk (i.e. after mitigation measures have been applied).

For residual risks that have a risk score of 'Low' these are considered as low as reasonably practicable and acceptable. For residual risks that have a risk score that is not 'Low' the risk assessments have included discussions on whether these are as low as reasonably practicable and acceptable.

A summary of the residual risks for activities under the EMP is provided below. All risks are as low as reasonably practicable and acceptable. The 'Medium' residual risks for activities under this EMP are both related to the potential to introduce and spread weeds, bushfire as a result of accidental ignition at the site, injury or death of native fauna due to vehicle collisions and unauthorised disturbance to sacred sites or culturally sensitive areas.

Residual Risk Summary

	Residual Risk			
	Low	Medium	High	Very High
Count	15	7	0	0

Management Plans

Management plans have been developed for the following:

- Erosion and Sediment Control
- Weed Management
- Bushfire Management
- Spill Management
- Rehabilitation Management.

Stakeholder Engagement

Engagement with stakeholders as per the definition in the *Petroleum (Environment) Regulations 2016* (NT) for the seismic exploration program commenced in September 2020 during the annual Liaison Committee Meetings and has continued throughout the program. Stakeholders who were present during this consultation included the Central Land Council and members of the community.

Under our land access agreements, Sacred Sites Clearance Certificates (SSCC) and have been requested. These clearances will see Traditional Owner visit and assess potential locations to understand any impacts. All the necessary information on the program required under the *Petroleum (Environment) Regulations 2016* has been shared with stakeholders.

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Tables

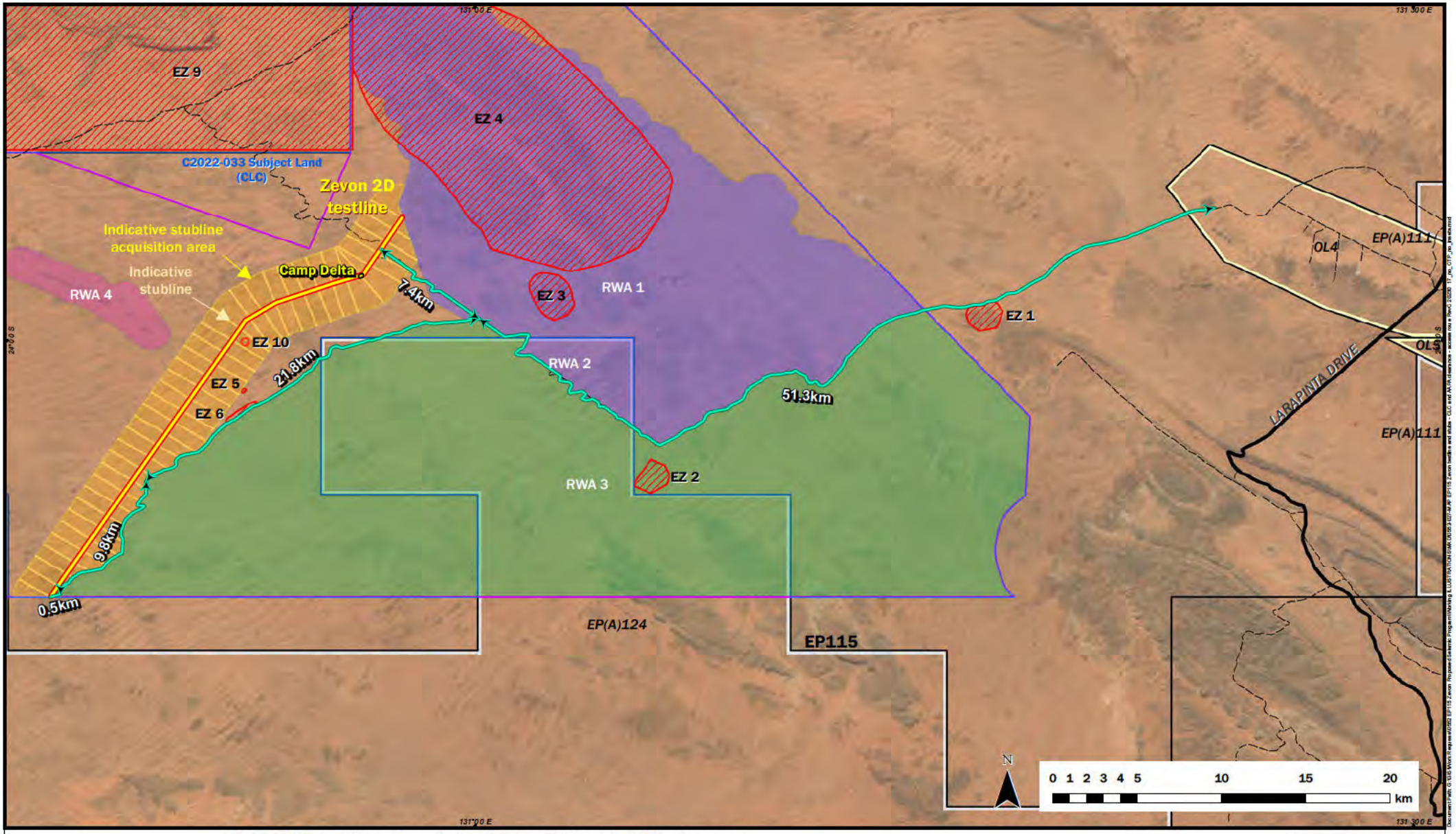
1 Introduction

Frontier Oil and Gas Pty Ltd (FOG) is a wholly owned subsidiary of Central Petroleum Limited. FOG is the interest holder of Exploration Permit (EP) 115 located approximately 280km SW of Alice Springs in the Northern Territory. The location of EP 115 is shown in Figure 1.

As part of the first phase of a wider seismic exploration programme planned for EP 115, FOG is seeking approval to conduct 2D seismic activities along a 30.4km seismic line known as the Zevon Test Line (Zevon) project (Figure 1). In addition to the main seismic line, the project includes collection of data from 150km of stub lines off the main line to assess the area for gas resources.

This EMP provides a detailed description of how FOG proposes to manage the environmental impacts and risks associated with the Zevon project activities, including how it will address its regulatory obligations that have underpinned the *Code of Practice for Petroleum Activities in the Northern* Territory (the Code).

Figure 1: Location of EP 115 within the Northern Territory



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Map Scale is 1:308,103 when printed at A4
Coordinate System: GCS GDA 1994

Zevon 2D Test Line - Scouted locations, CLC and AAPA clearances

- Camps
- Access tracks to be graded
- Zevon 2D seismic testline
- Indicative stubline acquistion area
- Indicative stublines
- Exis ing track
- Secondary Road
- CLC Exclusion Zone
- CLC Subject Land
- AAPA C2022043 Certificate Area

AAPA Restricted Work Areas

- RWA 1
- RWA 2
- RWA 3
- RWA 4
- EP115 and L6
- CTP Permit Application
- CTP Granted Permit

Figure 2

1.1 Interest Holders

Table 1 provides details of the permit titleholder and the titleholder's nominated liaison person for the Zevon project. FOG is the operator within all the title areas.

Table 1: Interest / Title holder

Title	Title Holder	Nominated Liaison for EMP
EP 115	Frontier Oil and Gas Pty Ltd	[redacted]

1.2 Purpose

The purpose of this EMP is to demonstrate how FOG will conduct its scope of activities under the EMP in a manner consistent with the principles of Ecologically Sustainable Development (ESD) and such that impacts, and risks are reduced to as low as reasonably practicable and acceptable levels.

More specifically, this EMP aims to:

- Address regulatory requirements.
- Provide site-specific impact management strategies to assist FOG in maintaining a positive position in the local community throughout its campaign.
- Provide a description of site-specific aspects of the existing environment (physical, biological, and social)
- Provide site-specific plans for review, monitoring, and rehabilitation.
- Be a practical and usable document with environmental management principles that are easily implemented and effective.

1.3 Scope

This EMP covers all activities required to complete the 2D seismic exploration program referred to as the Zevon project, which includes a 30.4km of seismic line plus up to 150km of associated stub lines. A detailed 'description of activities' is provided in Section 3.

2 Environmental Legislation and Other Requirements

2.1 Key Legislation

Legislation of relevance to the Zevon project is provided in Table 2.

2.2 Key Code of Practice and Guidelines

In addition to legislative requirements, FOG works to codes of practice, standards and guidelines in its production operations. These include, but are not limited to:

- *Code of Practice: Onshore Petroleum Activities in the Northern Territory (2021)*
- *Code of Practice for Wastewater Management (2020)*
- *NT Petroleum Regulations (2020)*
- *Australian Pipeline Industry Association Code of Environmental Practice – Onshore Pipelines (2017)*
- *APPEA Code of Environmental Practice (2008)*
- *Best Practice Erosion and Sediment Control (2008)*
- *DEPWS Onshore Petroleum Guidelines (various)*
- *ISO 31000 Risk Management – Principles and guidelines*
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2000*
- *National Environment Protection (Assessment of Site Contamination) Measure, 1999*
- *Australian Standards*
- *Northern Territory Noise Management Framework Guidelines (2018).*

2.3 Ecologically Sustainable Development

Ecologically Sustainable Development (ESD) is a concept based on implementing practices and principles that meet the needs of ecological process and people today without impeding on future generations to meet theirs. There is no universally accepted definition of ESD, however the Commonwealth Government of Australia suggested the following:

'*Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased*' (Ecological Development Steering Committee, 1992).

The aim of ESD for FOG is to utilise the natural environment to meet the current needs of FOG without jeopardising the environment for future operations or other land managers. All aspects of environmental impacts have been assessed with appropriate preventative and mitigation measures implemented to ensure that all aspects of the Zevon project are managed and developed in accordance with the ESD concepts and this EMP.

2.4 Environment Protection Act 2019

Under the *Environment Protection Act 2019* (NT) (EP Act), proposed projects/action that may have a significant impact on the environment (or meet a referral trigger) are to be referred to the NT EPA for assessment. The proposed Zevon project is unlikely to have an actual or potential significant impact on the environment or location-based impacts to features of natural or cultural environments. The assessment is based on consideration of the potential impacts of the activities on the environment cumulatively and locally through the development of this EMP. Based on this assessment, FOG is of the view that the activities covered by this EMP do not trigger referral to the NT EPA.

2.5 EPBC Act and Referral Self-Assessment

A self-assessment in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was undertaken for the activities under this EMP, and it was determined that the activity will have no significant impacts on MNES.

FOG's activities align with the principles of ESD through the following:

- The exploration activities are essential to maintain and expand the commercial resource FOG has and can generate sustainable, long-term benefits to the local community and to the NT.
- Based on the risk assessment and management actions contained in this EMP, the activities under this EMP do not constitute threats of serious or irreversible environmental damage and there is no impact on the conservation of biological diversity and ecological integrity. For example:
  - Existing infrastructure (access tracks) are to be used to reduce new ground disturbance.

  - Activities under the EMP comply with the Code of Practice to reduce any risk to the environment and communities to an acceptable level.
  - Royalty payments to the NT Government (as owner of the natural resource), and payments to Native Title Holders (as per Exploration Agreements)
  - FOG seeks to maximise local participation in training and employment opportunities.
  - Prioritising the use of local employment to deliver exploration activities.
  - Obtaining Sacred Site Clearances from host Traditional Owners through open engagement with custodians and the Statutory Representative body – the Central Land Council (CLC)
- Stakeholder engagement has been undertaken with the NT community about the proposed action, which is detailed in Section 4.6. No objections to the activity have been received to date.

Table 2: Key legislation

Relevant legislation	Applicable legislative requirement	How FOG meets the requirement
Commonwealth		
Environment Protection and Biodiversity Conservation Act 1999	Referral of proposed action/ environmental approval	FOG has assessed its potential impact on MNES and there is not likely to be a significant impact on MNES. FOG will not be referring activities under this EMP to the Federal Government for assessment
National Greenhouse and Energy Reporting Act 2007 (NGER Act)	Reporting under National Greenhouse and Energy Reporting Scheme where thresholds are exceeded	The Mereenie facility energy consumption, production and greenhouse gas emissions are reported as one of the facilities under the Operational Control of Central Petroleum in accordance with the *NGER Act*.
National Environment (National Pollution Inventory Protection) Measure 1998	Reporting under the National Pollution Inventory (NPI) where trigger thresholds are exceeded	FOG's activities may contribute to triggering the threshold for NPI reporting. FOG reports usage against the potential 93 NPI substances where required.
Native Title Act 1993	Stipulates the process to be followed in negotiating and agreeing to the use of land and waters between other parties and native title groups via Indigenous Land Use Agreements (ILUA).	FOG works alongside Traditional Owners, represented by the Central Land Council regarding all activities undertaken on the Aboriginal Freehold Land on which the Zevon project is conducted
Northern Territory		
Petroleum Act 1984	Petroleum titles	FOG has obtained the necessary petroleum titles to undertake the activities listed in this EMP
Petroleum Act 1984	Land Access Agreements	Land Access Agreements which cover the scope of activities under this EMP will be in place prior to commencing activities under this EMP
Bushfire Management Act 2016 / Bushfire Management Planning Guide: Onshore Petroleum Projects	Bushfire Management Plan	FOG has included a Bushfire Management Plan consistent with the requirements of the Act and the Bushfire Management Planning Guide: Onshore Petroleum Projects
Petroleum (Environment) Regulations 2016	Approved EMP	FOG will have in place an approved EMP to conduct its seismic exploration program
Code of Practice: Onshore Petroleum Activities in the Northern Territory (2019)	Activities to be performed under an EMP are to be consistent with the Code of Practice	The EMP to be submitted for approval is to be consistent with the Code

Relevant legislation	Applicable legislative requirement	How FOG meets the requirement
Environmental Protection Act 2019 and associated *Environment Protection Regulations 2020*	Referral of proposed action/ environmental approval	The activities proposed under this EMP do not have a significant impact on the environment (or meet a referral trigger), as determined via the pre-referral screening tool completed by a Suitably Qualified Person (SQP). Referral of the activities under this EMP is not required.
Northern Territory Aboriginal Sacred Sites Act 1989	Must not enter, damage, or interfere with a Sacred Site without authorisation	FOG will obtain AAPA certificates for the seismic exploration program. FOG commits to abiding by the conditions on the certificates.
Water Act 1992	Allocation, use, control, protection, management, and administration of water resources	No groundwater access is required for this program.
Heritage Act 2011	Conservation of cultural and natural heritage	Everick Heritage (2021) conducted a site survey and did not identify aboriginal artefacts within the Zevon area
Public and Environmental Health Act 2011	Wastewater management	Sewage from the camp (if required) will be trucked off-site to a licensed disposal facility. Camp greywater and wastewater to be collected and either disposed off-site to a licensed facility, treated at the Mereenie wastewater treatment plant or irrigated at the camp site subject to regulatory approvals and in accordance with the Code of Practice for Wastewater Management.
Territory Parks and Wildlife Conservation Act 1976 (TPWC Act)	Identifies wildlife and listed threatened species in the Northern Territory	FOG's activities have been located so as not to cause a significant impact on wildlife or threatened species listed under the Act
Work Health and Safety (National Uniform Legislation) Act 2011	Provides for occupational health and safety measures associated with petroleum activities	FOG to undertake activities in accordance with the Act, including reporting of incidents
Transport of Dangerous Goods by Road and Rail (National Uniform Legislation) Regulations 2011	Dangerous goods can only be transported by appropriately licensed personnel and within licensed vehicles	No dangerous goods are to be transferred in this program
Waste Management and Pollution Control Act 1998	General environmental duty Licensed waste transporters	Activities within the proposed exploration program are highly unlikely to trigger responsibilities under this legislation
Agricultural and Veterinary Chemicals (Control of Use) Act 2004	Use of chemicals to control weed and pest species across operations	FOG ensures the application of weed control products is in alignment with the Act

Relevant legislation	Applicable legislative requirement	How FOG meets the requirement
Work Health and Safety (National Uniform Legislation) Act 2011	Activities to be performed under an approved EMP are to be compliant	FOG field operations described in this EMP are subject to *Work Health and Safety (National Uniform Legislation) Act 2011* and Regulations
Weeds Management Act 2001	Defines weed declaration classes and statutory weed management plans	FOG to ensure its activities are consistent with statutory weed management plans and undertakes weed management activities consistent with weed declaration classes

3 Description of Activity

3.1 Introduction

Seismic surveys have been used to delineate subsurface geology within the petroleum and gas industry for many decades. The process is summarised in Figure 6 and below:

- Energy source on the surface produces acoustic (sound) waves which travel through the subsurface
- The waves reflect off geological boundaries with contrasting physical properties and return to surface where they are detected by sensitive geophones.
- Remaining acoustic waves travel deeper into the subsurface and reflect off deeper geological boundaries.
- A spread of receiver geophones are placed along the seismic line and an energy source is induced at stations along the seismic line to generate full imaging of the subsurface.

3.2 Zevon Test Line Program

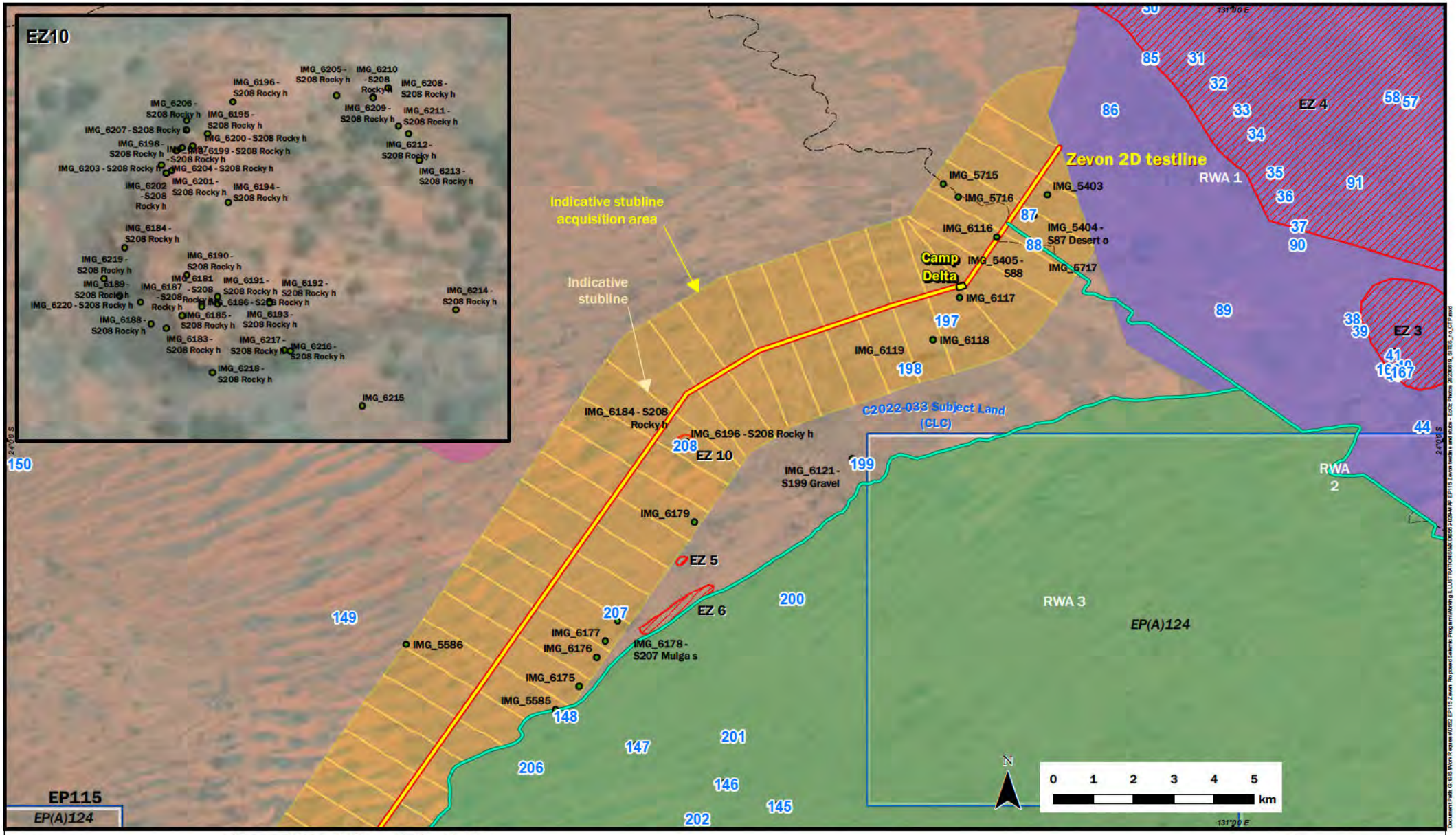
The Zevon project involves the acquisition of a 30.4km of 2D seismic line and up to 150km of associated short stub lines that require minimum disturbance due to the non-intrusive nature of the geophones to be used in the acquisition (see Section 3.5.2). Figure 3 shows the indicative location of the seismic line and stub line acquisition area. There will be no petroleum infrastructure, pipelines, wells or well pads, drilling or hydraulic fracturing in this program.

The program is located within the Great Sandy Desert which covers an area of 395,250 km^2. The Bioregion is characterised by extensive red sand plains, parallel dune fields that run orthogonal to the prevailing southeast winds; fringing dune fields; extensive sandplains; dry watercourses and saltpans and salt lakes; and remnant rocky outcrops. The arid dune fields and sandplains support sparse shrubland and spinifex hummock grassland, with cane grass on deep sands along dune crests. The swales of claypans and stony plains support a sparse shrubland of acacias, and coolabah woodlands fringe the creeks and flood outs. Vegetation is predominately spinifex grasslands, low woodland and shrubs.

3.3 Zevon Site Selection

Given the dominance of spinifex grasslands on extensive red sand plains and dunes within the arid project area, it has been easy to avoid potentially sensitive habitat such as claypans, and sandstone ranges which area well away from the existing hunting track to be used for the seismic acquisition (see Section 4.1.5). The Zevon seismic line will be accessed from Larapinta Drive through the West Mereenie Oil Field (OL4), using an existing track that has been historically used by the Traditional Owners for hunting and access to the Great Sandy Desert. The existing track heads due west into the Great Sandy Desert and will be re-graded for improved access and to limit puncture risks. A small new disturbance area of approximately 0.5km x 4m will be graded to access the southern end of the test line. No other significant ground disturbance is anticipated in the Zevon project. The total length of the existing access track to be re-graded is approximately 91km. A segment of this existing access track will form the main seismic line acquisition area and is 30.4km in length. The location of the proposed Zevon survey area is constrained to the southeast and northeast, by what have been previously identified as restricted work areas (RWA) by the Traditional Owners.

A Desktop environmental constraints mapping process was undertaken by suitably qualified third-party to assess and identify potential landscape constraints for the Zevon project (see Appendix 5), prior to mobilisation to the field for ground-truthing. The constraints mapping identified priority land types in the Zevon area, and along the existing hunting track, that were potentially susceptible to potential project disturbance impacts such as threatened species habitat; drainage lines; clay pan; sandstone ranges; sandstone hills; rocky rises; calcrete hills/rises; and calcareous flats. These areas were subsequently excluded from the Zevon footprint.



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Rev:
Date: 31/08/2023

Map Scale is 1:1,709 when printed at A4
Coordinate System: GCS GDA 1994

Zevon 2D Test Line - EcOz photos

- Photos EcOz - Sept 2021 - Zevon Testline
- Camps
- Access tracks to be graded
- Zevon 2D seismic testline (27/1/2023)
- Indicative stubline acquistion area
- Indicative stublines
- Existing track
- CLC Exclusion Zone
- CLC Subject Land

AAPA Restricted Work Areas

- RWA 1
- RWA 2
- RWA 3
- RWA 4

- EP115 and L6
- CTP Permit Application
- 999 Site number

Figure 3

Figure 4: Existing hunting track to be utilised for Zevon access and survey acquisition

The existing access track on the Zevon project area was then scouted and is shown to be exclusively located in open spinifex hummock grasslands (see Section 4.1.5) with some shrubs and a few mature trees away from the existing hunting track (Figure 5). Surveyors will peg up and mark up the line to ensure accurate positioning for the seismic truck and receivers. The orthogonal stub-lines will have minimal disturbance and will clearly avoid sensitive areas identified in the landscape mapping in Section 4.1.5.

The results of desktop and field survey work has informed the proposed locations are as follows:

- The seismic line will avoid clearing of mature vegetation.
- The existing hunting track shows signs of erosion. Road maintenance will be undertaken to ensure the road is left in a better condition and to give improved access for traditional owners into the future.
- Exploration activity location has been moved, avoiding disturbance of potential Princess parrot and Grey falcon breeding places.

a) Landscape alongside existing hunting tracks in the Northern section of the main seismic line


b) Central section of the main seismic line


c) Southern section of the main seismic line

Figure 5: Indicative photos of the Zevon main seismic line

One small short-term camp central to the test line location will be set up in the event the Mereenie Field camp is at capacity. The camp (if required) will be established in a pre-disturbed area or an area naturally devoid of vegetation and away from clay pans and salt lakes. All diesel, grey water and other storage tanks will be dual lines and be trailer mounted to avoid the need for any grading.

3.4 Activities and Indicative Timetable

The program is proposed to commence in late 2023 and take up to seven days for line preparation, 14 days for acquisition and six days to close (decommissioning and rehabilitation) (Table 3). Seismic exploration will be undertaken during daylight hours from 6am to 6pm. The workforce for will be locally sourced where possible, with the additional workers coming to site via Alice Springs.

Table 3: Proposed timing and associated workforce

Seismic location	Activity	Proposed schedule	Estimated duration	Workforce
Zevon Test Line	Line preparation (survey)	3rd quarter 2023	7 days	3-5 people including ▪ Ste Supervisor ▪ Survey crew
	Seismic Exploration	3rd quarter 2023	14 days	Up to 30 personnel including: ▪ Equipment operators ▪ Site Supervisor

Seismic location	Activity	Proposed schedule	Estimated duration	Workforce
	Decommissioning and rehabilitation	3rd quarter 2023	6 days	3-5 people including: ▪ Equipment operators ▪ Site Supervisor

3.5 Civil Activities

The scope of work for the civil activities associated with the Zevon project are shown in Table 4: Civil activities

Table 4: Civil activities

Activities	Scope of work
Line preparation	▪ Main seismic line (30.4km) will be graded up to 4m wide using grader (Figure 13) along existing hunting track, to allow access for the seismic vibriosis truck, weight drop truck, vehicles and trailer mounted accommodation. ▪ Vegetation will be cleared with the bulldozer using a raised blade clearing technique; the removal of vegetation above ground level (blading off vegetation as close to ground surface as possible) or using a stick rake attachment, leaving topsoil and root-stock undisturbed. ▪ If necessary, a grader will follow with its blade skimming. ▪ The few Desert oak trees in the area will be avoided. ▪ A small portion of the line is likely to have irregularly spaced, elongated sand dunes with deep sands. These landforms are relatively stable. ▪ Impacts will be minimised avoiding dune crests and dune crossings (Zevon line intersects approximately 23 sand dunes) ▪ Dune crossings will be made as close to 90 degrees of strike to the dune as possible to minimise length driven over the dune. ▪ Bulldozers and graders equipped with GPS units to ensure accurate positioning and prevent unplanned disturbance
Road and access track maintenance	▪ Access to the seismic line will be via an existing track which will be re-graded due to erosion. ▪ A new section of access track (0.5km) is required to access the southern end of the seismic line. ▪ Total of approximately 91km to be graded
Camp (only proposed if Mereenie camp is at capacity).	▪ The camp (if required) will be in an area which are naturally open and flat, so no grading is required. All storage tanks associated with camp infrastructure will be kept on trailers in double lines tanks.
Footings, foundations and excavation	▪ Not applicable
Land and vegetation management	▪ Vegetation removed during grading to be placed adjacent to track. ▪ Erosion and sediment controls including repair of eroded areas and installation of diversion and dissipation devices
Use of borrow pits	▪ Not applicable
Site mobilisation and demobilisation	▪ All equipment will be removed from site upon completion of the seismic activities

3.5.1 Zevon Seismic Survey Methodology

There are many types of energy sources used to produce a controlled, repeatable and environmentally sensitive technique. Early surveys conducted during the infancy of seismic acquisition used dynamite as an energy source, however this has evolved substantially with the use of modern truck mounted vibrating pads.

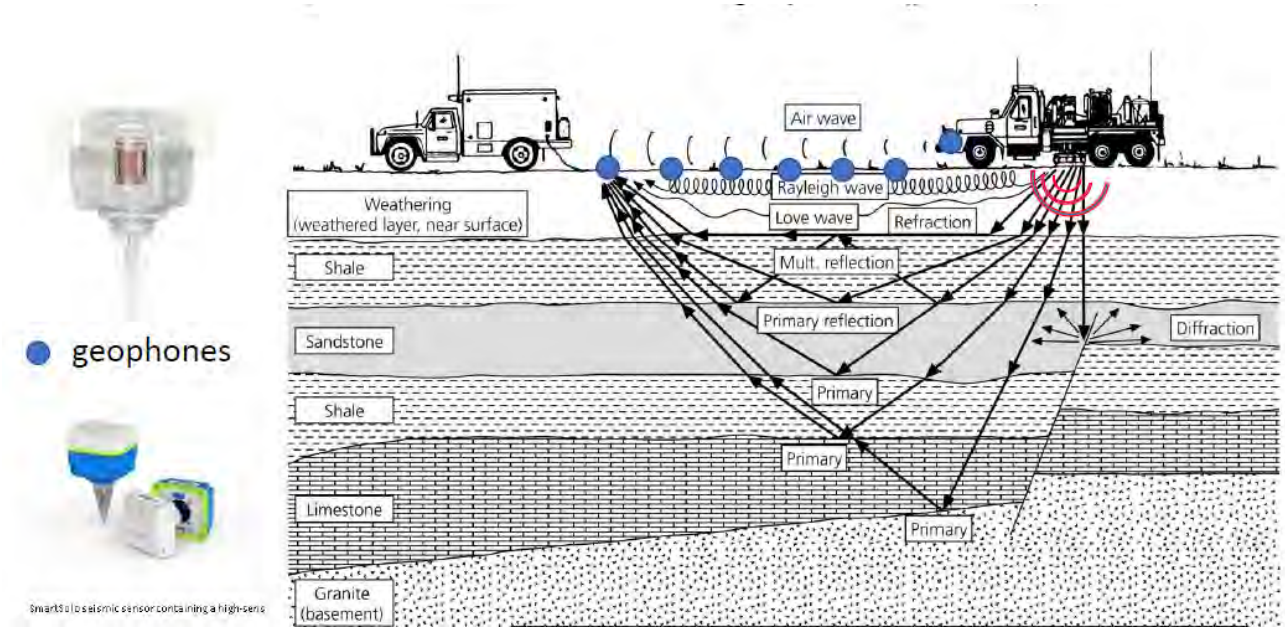


Figure 6: Land seismic reflection and acquisition process

For the Zevon Test Line survey, FOG will utilise truck mounted vibrating pads, termed ‘vibroseis’, which has a steel plate on a hydraulic assembly mounted to the underside of the mobile vibroseis truck (Figure 9. The steel plate is lowered to the ground where it vibrates, generating a series of waves at different frequencies.

This technology has advanced further in recent years with the development of smaller articulated buggies termed ‘envirovibes’, designed specifically to limit the environmental footprint. In areas difficult to manoeuvre an envirovibe, a mini-sosie (a handheld vibrating plate) can be used, however these have limited penetration depths.

The reflected waves are recorded by geophones and data harvested at the recording truck where it is recorded and quality controlled (Figure 7). The raw field recordings are sent to the processing centre for further processing into a final and interpretable seismic section.

Figure 7: Example receiver truck

FOG has a structured program for its seismic programs as depicted in Figure 8 to manage the successful acquisition of data within its tenure.

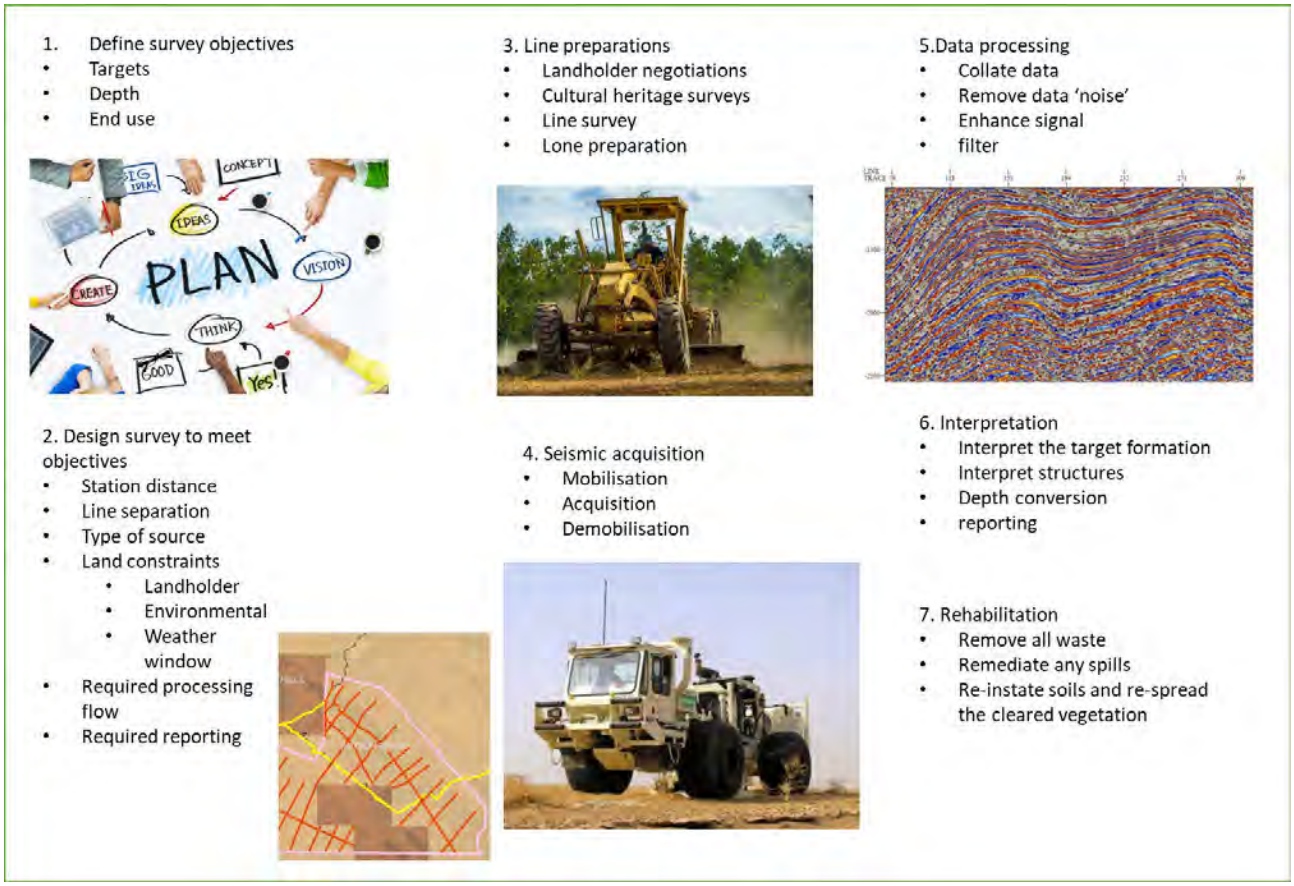


Figure 8: FOG seismic process

The seismic vibroseis trucks/seismic energy source will be a fleet to two or three INOVA Articulated Hydrostatic Vehicle (AHV) or similar (Figure 9). Multiple passes may be required along the main seismic line. FOG may also use a weight drop truck (Figure 10) in addition to the vibroseis trucks.

Figure 9: Example vibroseis truck

Figure 10: Example drop weight truck

Up to 150km (38 stub lines of 4km each) stub lines will extend orthogonally off the main seismic line. Figure 3 shows the location of the stub lines within the stub line acquisition area. These locations are indicative only and may be subject to change subject to operational requirements.

3.5.2 Low Deployment Impact Receivers (Geophones)

The acquisition of seismic reflection will be achieved by the use of low impact deployment geophones (**Figure 11**), a recent development in the O&G industry. Figure 12 shows an example of a geophone receiver in place. No vegetation clearing or grading is required to access the stub lines. As the stub lines are located in open country, using light vehicle at slow speeds and foot deployment will enable low impact and avoidance of vegetation. Receivers will be deployed along a single 4km stub line by foot or light vehicle. For

accurate positioning of the receiver points, the stub line will be surveyed and marked out using a variety of pegs, pins, spray paint and flagging tape as appropriate. Pegs / tapes are removed by the recording crew once the vibrator trucks have completed that section of the main line. Spray paint used fades after 3-4 weeks.

Figure 11: Typical receiver node

The receiver nodes will be spaced at 5m intervals along each planned receiver line location. Deployment of nodes will occur from the back of a four-wheel drive (4WD) or Utility Terrain Vehicle deployment vehicle. Following the physical placement of the node in the ground, a person with a handheld terminal sets up the node with coordinate information, its station number and a wake-up time. A series of tests is performed on the nodes to ensure each node is functioning correctly before being made available for redeployment. This will reduce the amount of daily vehicle movements required throughout the duration of the survey.

Figure 12: Geophone receiver in place

Figure 13: Example grader

3.6 Oil and Gas Production

No oil and gas production are associated with the Zevon project.

3.7 Support Activities

Support activities for the Zevon project are shown in Table 5.

Table 5: Support activities

Activity	Description
Workforce and facilities	▪ Temporary workforce of up to 30 personnel, using local Alice Springs region-based employees supplemented with fly-in fly-out employees as required. ▪ A short-term camp will be erected *if Mereenie* camp is at capacity to accommodate up to 30-persons over the seismic campaign duration. ▪ On-site camp accommodation will be trailer-mounted units (Figure 14) ▪ The camp will include amenities including showers, toilets, laundry facilities, kitchen, dine, mobile work offices as well as car park and laydown areas (indicative layout shown in Figure 15) ▪ The camp will be configured to satisfy Department of Health guidelines. ▪ Indicative temporary camp location is shown as Camp Delta in Figure 3. Scout photos are shown in Figure 16 ▪ The camp will be set up in a pre-disturbed area or an area naturally devoid of mature trees and away from clay pans and salt lakes Storage tanks and other liquid storage will be kept on trailers in double lined tanks to avoid any additional grading. The camp will be positioned as close as practical to the access track and seismic line. ▪ The access route from camp will be clearly defined to restrict wheel track impact which results from vehicles transit to and from camp. Vehicles will be restricted to the perimeter of the camp and parking areas will also be delineated.

Activity	Description
Primary camp	▪ The Primary camp is the Mereenie Camp, 100km to the west of the seismic line. The seismic crew would be transported by helicopter or vehicle to and from the Zevon test line site. ▪ Depending on final approval and commencement of works vacancy at Mereenie may be limited. In the event Mereenie has no capacity a temporary site camp as described will be established on site (see Figure 16 for proposed location).
Procurement	▪ Where available and economic, item/products used at site are sourced locally
Laydown areas	▪ Only required for the temporary camp
Power supply	▪ The short-term camps will be powered by a diesel portable generator. ▪ All electrical equipment, instrumentation, lighting and cabling will be installed in accordance with the Australian Electrical Safety Standards
Water supply	▪ Potable water is planned to be sourced from the Alice Springs water supply and trucked into camp. ▪ FOG estimates water usage to be approximately 160 litres per person per day. Based on this assumption water use for the test line crew would be approximately 4,800 litres per day.
Wastewater generation and handling	▪ Putrescible and general waste will be stored at a camp site in lidded bins/skips which will remain closed to prevent fauna access and wind-blown waste. ▪ Sewage management practices at the camp will consist of the use of port-a-loos, with sewage trucked off-site to a licenced disposal facility. ▪ Grey and wastewater will be captured and stored on-site and either trucked off-site to a licensed disposal facility, trucked to the Mereenie wastewater treatment plant every two days, or irrigated on-site in accordance with regulatory requirements including approval by the NT Department of Health and in accordance with the Code of Practice for On-Site Wastewater Management ▪ Black wastewater (sewerage) may be stored in at least 1,600L dual lined tanks capable of holding three days of generated wastewater (assuming 150L wastewater generated per day). Blackwater to be trucked every two days, to provide capacity and contingency in the event of wet weather. ▪ In the event of irrigation, wastewater will be irrigated (surface drip or spray) to an area suitably landscaped to ensure infiltration as per the code of practice
Waste services	▪ Waste services are to be provided by licensed waste transporters and disposers
Wet weather	▪ Project will be conducted during the CoP defined wet season (Oct to Apr) to meet permit conditions. Weather conditions are to be monitored daily and the wet weather management plan will be implemented.

Figure 14: Indicative camp

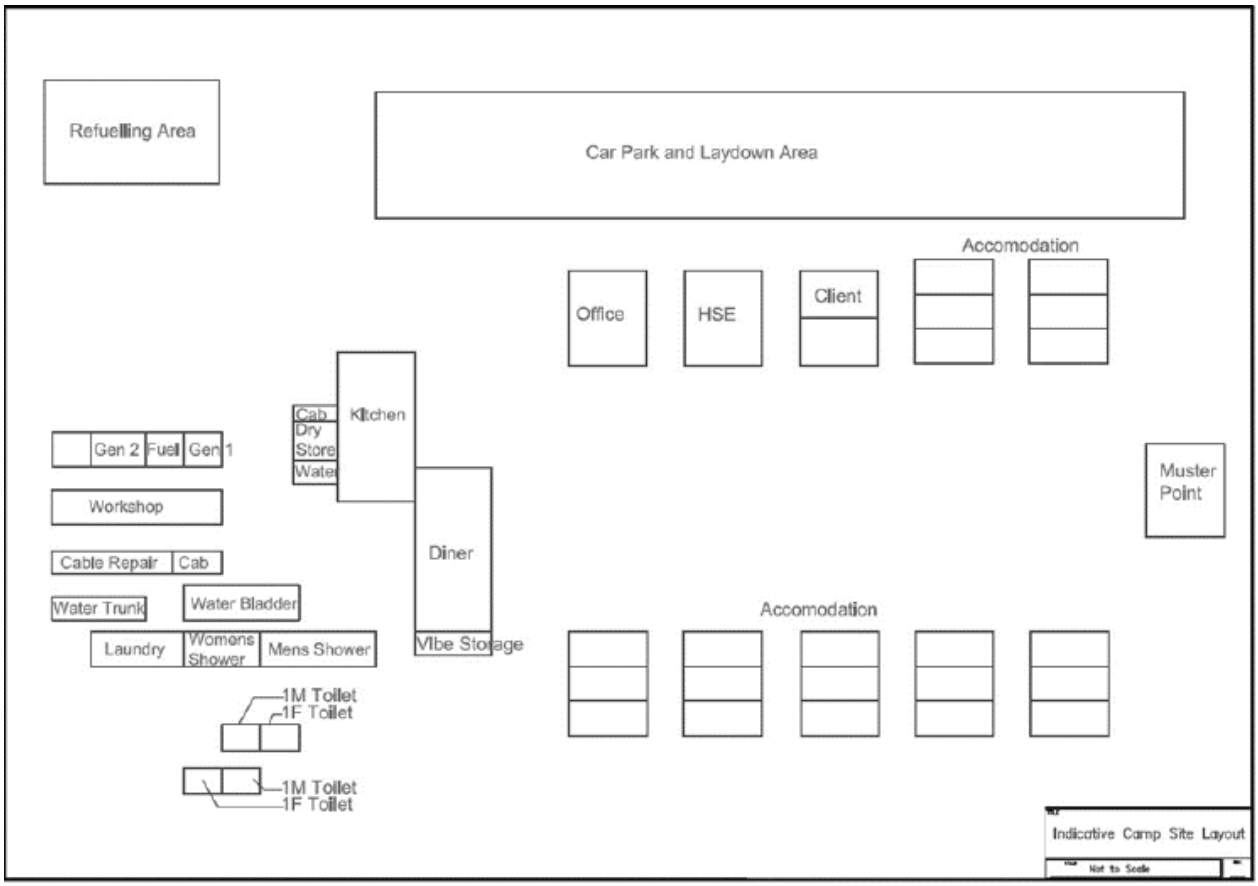


Figure 15: Indicative camp layout

Figure 16: Scout photo of the potential Zevon camp location

3.7.1 Waste Management

There will be minimal waste associated with this program, most will be associated with consumption of food by workers or to support any on-site vehicle maintenance that may be required. Waste management during the project will follow the waste management hierarchy:

1. Avoid
2. Reduce
3. Re-use
4. Recycle
5. Treatment
6. Disposal

Waste is to be separated into listed and non-listed wastes. Listed waste is any waste prescribed under the *Waste Management and Pollution Control (Administration) Regulations 1998* (NT) as a listed waste (refer https://ntepa.nt.gov.au/waste-pollution/approvals-licences/listed-waste), with non-listed waste being waste that is not prescribed under the legislation.

Listed and non-listed wastes are stored in vermin proof containers and transported off-site daily and disposed of at The Alice Springs Town Council Waste Depot, while contaminated wastes (including oil, etc.) will be disposed via Cleanaway, in Alice Springs.

Recyclable materials, including tyres, are segregated from other waste on camp and transported to the licensed waste depot in Alice Springs.

The typical wastes that may be generated during a seismic exploration program are listed in Table 6.

Table 6: Waste type and disposal method

Typical waste	Disposal method
Food, cardboard, paper, plastics	Disposal Stored in waste bins for transport and disposal at an approved disposal facility
Glass, cans, scrap metals	Recycling Stored in recycling bins for collection and transport to an approved recycling facility
Batteries	Recycled Stored in a securely and transported to an approved recycling facility
Oil contaminated material, and any other hydrocarbon containing material	Recycled Disposed Stored securely and transport to an approved recycling facility or disposal facility
Used spill kit materials	Disposal Stored securely and transport to an approved disposal facility
Spill contaminated soil	Disposal Stored in waste bins for transport and disposal at an approved disposal facility

3.7.2 Chemical[1] Storage/Use

Limited chemicals in small volumes are required for the project. Chemicals are to be stored within vehicles and on trailers in dual lined storage tanks / bunded pallets. Multiple small containers and volumes of chemicals will be carried in portable storage within vehicles during the seismic exploration program. These include grease, cleaning fluids, spray paints, silicones, anti-freeze, sealants, and insect repellents. These are all carried in small volumes (less than 5L) and are not considered high risk of spills in the environment.

Chemicals over 5L such as diesel and oil (Table 7) will be stored within dual lined tanks with safety cut-off valves and top access. Spill leak and drip trays will be used to address minor drips and spills resulting from re-fuelling operations.

The dual lined 20,000L fuel tanker will be used and stored at the campsite, where a refuelling station will be established. The mobile service truck (maximum capacity of 2,000L) will refuel from the tanker and refuel the vibroseis vehicle daily.

All chemicals used in Australia must be approved for use by the Commonwealth Government's Department of Health and be listed on the Australia Inventory of Chemical Substances which is maintained under the National Industrial Chemicals Notification and Assessment Scheme.

In addition to the requirements under this EMP, the storage, segregation, handling and use of chemicals is to comply with the NT's workplace, health and safety legislation, relevant Australian Standards and the safety data sheet (SDS) (which must detail the minimum content required by NT WorkSafe) for each chemical.

Table 7: Chemicals in portable storage

Product name	Dangerous Good Code	Hazardous substance	Estimated quantity	Storage location
Engine and hydraulic oil	No	Yes	300L	Portable storage in vehicles Short-term camp
Diesel	Yes	Yes	2,000L	Mobile service truck/Portable storage
Diesel	Yes	Yes	20,000L	Fuel tanker used and stored at camps with bunded refuelling station

[1] References to chemicals throughout this EMP include dangerous goods, hazardous substances, fuels, oils, lubricants, completion fluids and the like

3.7.3 Noise Management

The seismic program is in a rural area with the closest populated place located 100km away (Kings Canyon – approximately 100km SW, Alice Springs – approximately 350km E and Hermannsburg – approximately 200km E). The nearest sensitive receptors are located greater than 40km away (Figure 18).

Noise emissions may arise from the use of the seismic truck (at full pressure is 78 dBA at 10m) as well as during grading of the road. Potential noise impacts are considered minimal due to the low-level noise emissions, short term nature of the project (less than three weeks) and the remote area in which the project is located.

3.7.4 Traffic

The potential traffic related impacts associated with Zevon are not considered to be significant as the mobilisation / demobilisation will take place outside of the peak dry season. Traffic associated with exploration activities is generally small and of short duration given the project is expected to take just over two weeks. Existing traffic figures obtained from the DIPL Annual Traffic Report 2018 (Figure 17) for the Larapinta Drive (1km east of Larapinta / Namatjira intersection) indicates that during Oct and Nov an average 383 vehicles pass that point. With mobilisation and demobilisation taking place over a 2-day period and the impact will be an additional 6-7 vehicles a day or a less than a 2% increase.

Rural Primary Count Stations Key: Adjusted Data Year: 2019

Table: 2.2 Calculated AADT and Monthly ADT for Primary Stations Region: Alice Springs

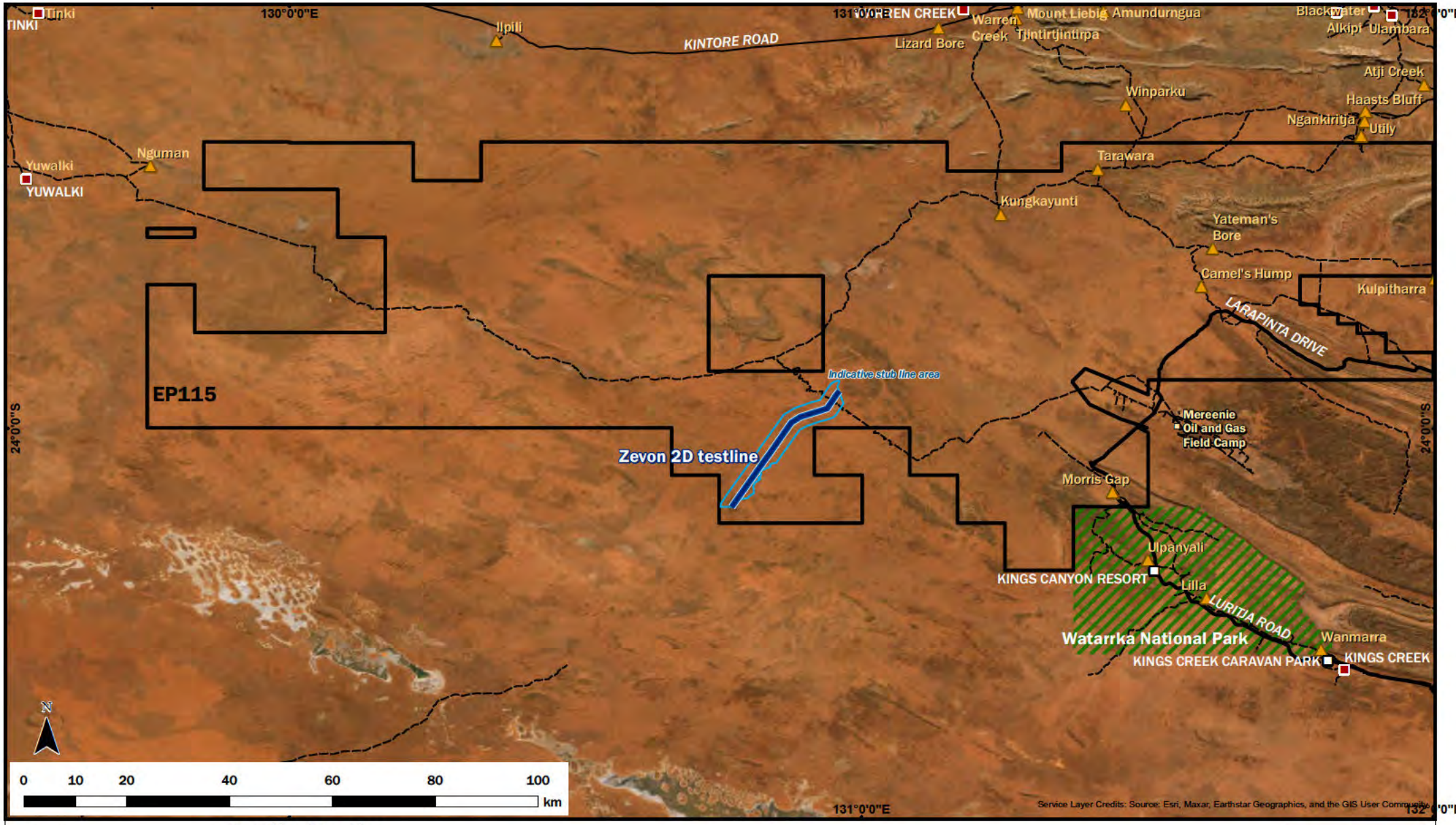
Road Name / Location	Station No	Direction	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AADT
Larapinta Drive	RAVDP002	Inbound	Veh	131	142	151	258	256	307	375	296	284	224	164	138	228
1km East of Larapinta/Namatjira Intersection		Outbound	Veh	131	139	147	244	246	289	356	285	269	216	162	133	219
		Both	Veh	262	281	298	502	502	596	731	581	553	440	326	271	447
Larapinta Drive	RAVDP013	Inbound	Veh	11	11	14	43	36	52	76	49	51	32	14	10	33
30km North of Kings Canyon (at jump up)		Outbound	Veh	14	15	16	34	28	35	48	38	33	27	16	11	26
		Both	Veh	25	26	30	77	64	87	124	87	84	59	30	21	59
Lasseter Highway	RAVDP007	Inbound	Veh	92	89	104	205	193	231	333	240	247	223	530	87	214
500m West of Stuart Highway		Outbound	Veh	104	104	128	251	220	307	382	272	296	222	541	98	244
		Both	Veh	196	193	232	456	413	538	715	512	543	445	1071	185	458
Lasseter Highway	RAVDP008	Inbound	Veh	147	132	158	319	296	379	547	376	390	327	158	120	280
500m East of Yulara/Airport Intersection		Outbound	Veh	133	128	154	318	282	382	533	366	392	305	153	120	273
		Both	Veh	280	260	312	637	578	761	1080	742	782	632	311	240	553

Figure 17: Indicative traffic counts along Larapinta Drive

Vehicles will mobilise from Alice Springs to the Mereenie Camp, located approximately 280km West of Alice Springs, before the commencement of the program. They will travel via a network of sealed and unsealed public and private roads, heading west from Alice Springs along Larapinta Drive / Red Centre Way to Hermannsburg, and then continuing towards Kings Canyon. The turn off to the Mereenie Camp is left off the Red Centre Way before Kings Canyon; approximately 175km past Hermannsburg.

The vehicles to be used during the seismic program include UTVs, cars, trucks including those with trailer mounted camp accommodation. The vehicles will access the Zevon site via a track that travels past the West Mereenie Gas Field. Most of the seismic program is occurring within an existing infrequently used and remote unsealed track within Haasts Bluff Aboriginal Land Trust.

The peak maximum anticipated traffic flow increase associated with FOG's activities will be approximately 13 vehicles per day to the Zevon site (Landcruiser's, UTVs, Seismic Trucks and a Service Truck). As it is a remote location, there are no records of how often vehicles access the remote track where seismic exploration is occurring. There are no communities or outstations within proximity that would regularly use this track. It is anticipated that use of this track will be infrequent. To manage any risk to other vehicles accessing this track, signage and call points monitored by UHF will be established at either end of the survey area.



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Sensitive Receptors

- Populated Places
- Homesteads
- Aboriginal communities
- Zevon 2D seismic testline
- Indicative stub line area
- Mereenie Oil and Gas Field Camp
- Secondary Road
- Minor Road
- Track
- EP115 permit
- Parks and Reserves

Figure 18

3.7.5 Greenhouse Gas Emissions

The Zevon program is a targeted 30.4km of 2D Seismic exploration, using predominantly existing tracks and is operating over a short time (less than three weeks). There are no proposed wells, no hydraulic fracturing proposed to occur or has occurred, no gas production or operating plants are proposed within this program. Therefore, the greenhouse gas contribution of this program is negligible and does not trigger any legislative assessment or reporting requirements.

The potential sources of greenhouse gas emissions are limited to the driving of the 13 diesel vehicles and clearing of approximately 12.4ha of vegetation (30.4km for the main seismic line and 500m new access track). The greenhouse gas emissions are listed below in Table 8, based on Emission and Energy Threshold Calculator available through the Clean Energy Regulator (2021).

Table 8: Greenhouse gas emissions

Source of GHG emissions	Key inputs	Assumptions	tCO_2e
Transport fuel consumption	32,40kL diesel (post-2004 vehicle)	▪ Assumes each vehicle and vibe use a full tank of fuel each day on-site. ▪ Estimate based on the Emissions and Energy Threshold Calculator 2021 -2022	87-109
Short-term camps generator	5.1–5.5kL diesel	▪ Estimate based on the Emissions and Energy Threshold Calculator 2021 -2022	14-15
Vegetation clearing	Clearing of the main seismic line (30.4km x 4m width) = **12.16 ha** Clearing for 500m x 4m of new access track = **0.2 ha** Total estimated clearing = **12.36 ha**	▪ 113 (tCO2-e /ha) emissions factor ▪ Emissions calculated using the Transport Authorities Greenhouse Group (TAGG) GHG Assessment Workbook for Road Projects (2013) ▪ FOG has conservatively assumed that all vegetation to be cleared for the seismic program is vegetation class G (Open Shrubland – Acacia Shrubland), which has a higher emissions factor than other vegetation classes found in the proposed disturbance area such as class F (Mallee and Acacia Woodland and Shrubland-Acacia Open Woodlands) (106 tCO2—e) and class I (Grassland - Tussock Grasslands) (110 tCO2—e).	14.012
TOTAL			**138.012**

3.8 Decommissioning and Rehabilitation

Within one month of completing the seismic test, all other equipment will be removed from the site, and no equipment, machinery or material will remain. Any infrastructure removed or altered as a result of the project (e.g. fences, gates) will be reinstated to pre-activity conditions, including the reinstatement of temporary gates through fence lines. Specifically, demobilisation and site reinstatement will include:

- All temporary fencing and gates will be removed and any permanent fencing, removed to allow access to the seismic survey, reinstated.
- Equipment, personnel and supplies will be removed from the project area, including at the potential site of the mobile accommodation camp.

- Each geophone node location is assigned GPS coordinates to ensure they are all retrieved during demobilisation. They are removed from the ground manually via loosening by foot and then extracting by hand.
- All waste will be removed from the site, including at the potential site of the mobile accommodation camp.

The main seismic line will be rehabilitated back to its original land use. Rehabilitation will be undertaken in accordance with the Rehabilitation Management Plan in Section 6.5. The existing access track, and new access track will be maintained, stabilised. No rehabilitation is required on the stub lines or camp and associated ungraded access tracks.

4 Description of Environment

A description of the physical, natural, and-economic environment surrounding the Zevon Test Line is provided in the following sections. FOG has a demonstrated understanding of the environmental constraints of EP 115 using a combination of desktop and baseline results to develop a description of the existing environment for the Zevon project, including:

- Mereenie Field Environmental Management Plan (9900-630-PLN-0004)
- EcOz Ecological Assessment Report for the Zevon 2D Seismic Project (2021)

The EcOz 2021 report assessed the area of interest for FOGs planned wider seismic program in EP 115. The survey effort is shown in Figure 19 and included 190 aerial sites and 54 ground sites across the area of interest.

Due to the large size of the area covered by the wider survey and the low number of existing access tracks, a helicopter was selected as the most appropriate mode of transport for the field survey, which allowed for efficient access to all sites of interest to provide a comprehensive and spatially representative ecological dataset for the area.

The survey effort was targeted via desktop assessment of threatened flora, fauna and priority land types considered to be at a higher risk of potential impacts within the aera. Ecologists made both aerial and ground based visual assessments across the Zevon test line shown by the helicopter flight paths and inspection points. Further, visual assessments were supported by numerous geo-tagged photographs to verify the data obtained during the desktop assessment and confirm where environmentally sensitive areas, habitats and species are located (EcOz, 2021).If FOG becomes aware of any additional information not contained in the EMP in relation to the existing environment that may influence the results of the risk assessment and mitigation measures outlined in this EMP, it will undertake a review of the EMP.

4.1 Physical Environment

4.1.1 Climate

The proposed location for the Zevon program experiences an arid to semi-arid climate, which is characterised by hot dry summers and cool dry winters with a low average annual rainfall. Typically, more rainfall occurs in the summer months associated with monsoonal influences; however, the amount of rainfall in the arid zone is highly variable.

Climate data has been summarised using available data from the Bureau of Meteorology weather station (015652, Watarrka; 2021a) and Table 9 shows the mean maximum and minimum temperature, mean rainfall, highest rainfall, lowest rainfall, mean days of rain and mean evaporation for each month.

Table 9: Climate data

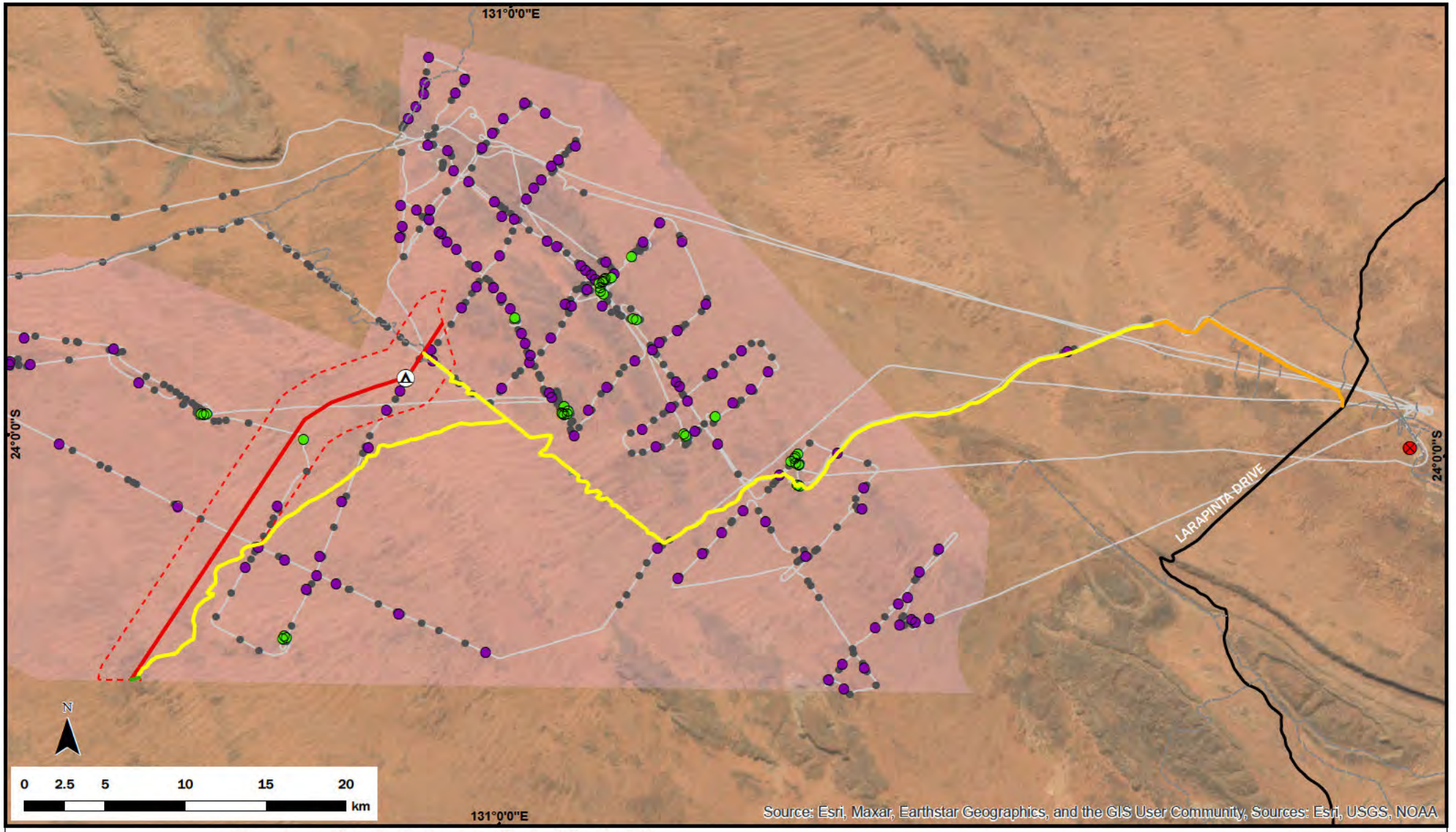
Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean maximum temperature (°C)	38.3	36.8	34.9	30.8	24.9	21.3	22.1	24.5	29.6	33.2	35.2	36.5
Mean minimum temperature (°C)	23.4	22.9	20.7	16.6	10.7	6.3	6.1	8.2	13.2	17.5	19.9	22.0
Mean rainfall (mm)	45.9	39.7	32.9	12.4	20.8	14.0	12.7	6.1	9.7	24.5	43.7	38.9
Highest rainfall (mm)	185.0	377.8	237.2	161.6	158.1	133.5	82.5	38.9	104.9	123.7	168.5	103.9
Lowest rainfall (mm)	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Mean days of rain	5.6	4.8	3.1	2.5	3.2	2.5	2.4	1.6	2.6	4.2	6.4	7.4

4.1.2 Geology

The proposed Zevon program is located within the Amadeus Basin, an east-west trending sedimentary basin extending across the southern part of the Northern Territory and into Western Australia. This basin covers an area of approximately 170,000km² and a maximum sediment thickness of 14,000m with several major depocentres including the Idirriki, Carmichael and Ooraminna Sub-basins and Missionary Plain Trough along the northern margin and the Mount Currie and Seymour Sub-basins in the south (Geoscience Australia,

2020). It is bound in the north by the Arunta complex and in the south by the Musgrave Mann complex, both containing granite, gneiss and schists, with amphibolite and quartzite.

The general stratigraphy of the region is shown in Figure 20.



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Map after EcOz 13/12/2021
Survey data: EcOz (Sep 2021)

Map of overall ecological survey effort within the AOI

- Area of Interest
- Proposed camp
- Proposed access - new track
- Proposed access - existing track to be graded
- Proposed access - existing Mereenie field road
- Proposed Zevon 2D seismic testline
- Indicative stub line area
- Mereenie basecamp
- Secondary Road
- Track (variable condition)

Survey effort

- Aerial inspection site
- Ground inspection site
- Other geotagged photos
- Helicopter flight path (aerial observations)

Figure 19

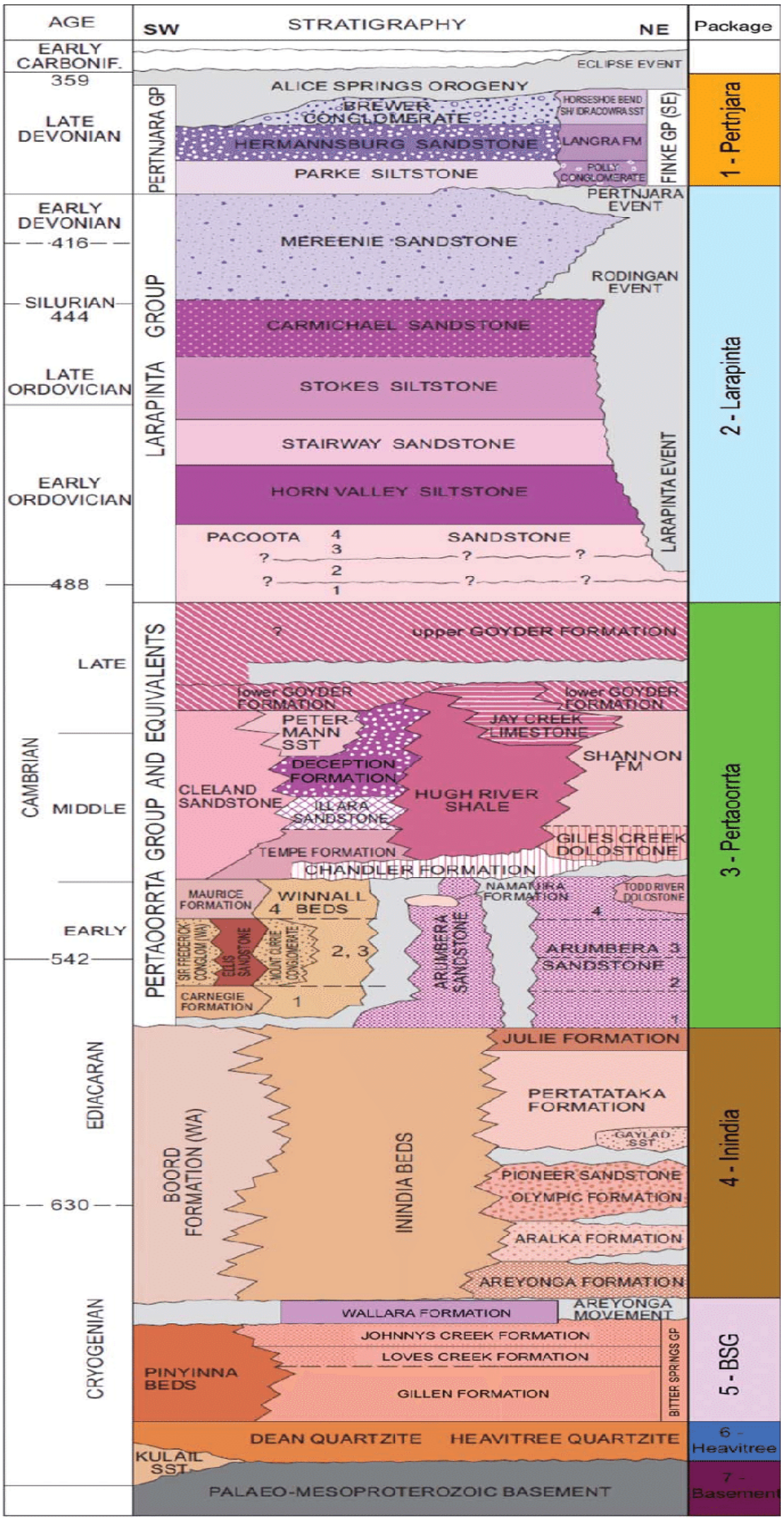


Figure 20: Amadeus Basin stratigraphy (Schmid et al., 2016)

4.1.3 Regional Soils

The Zevon program is located within the Central Australia Ranges province, which feature a fold complex of prominent east-west ranges, mainly quartzite, lowlands on limestone and with gravel terraces over moderately weathered bedrock (ASRIS, 2011).

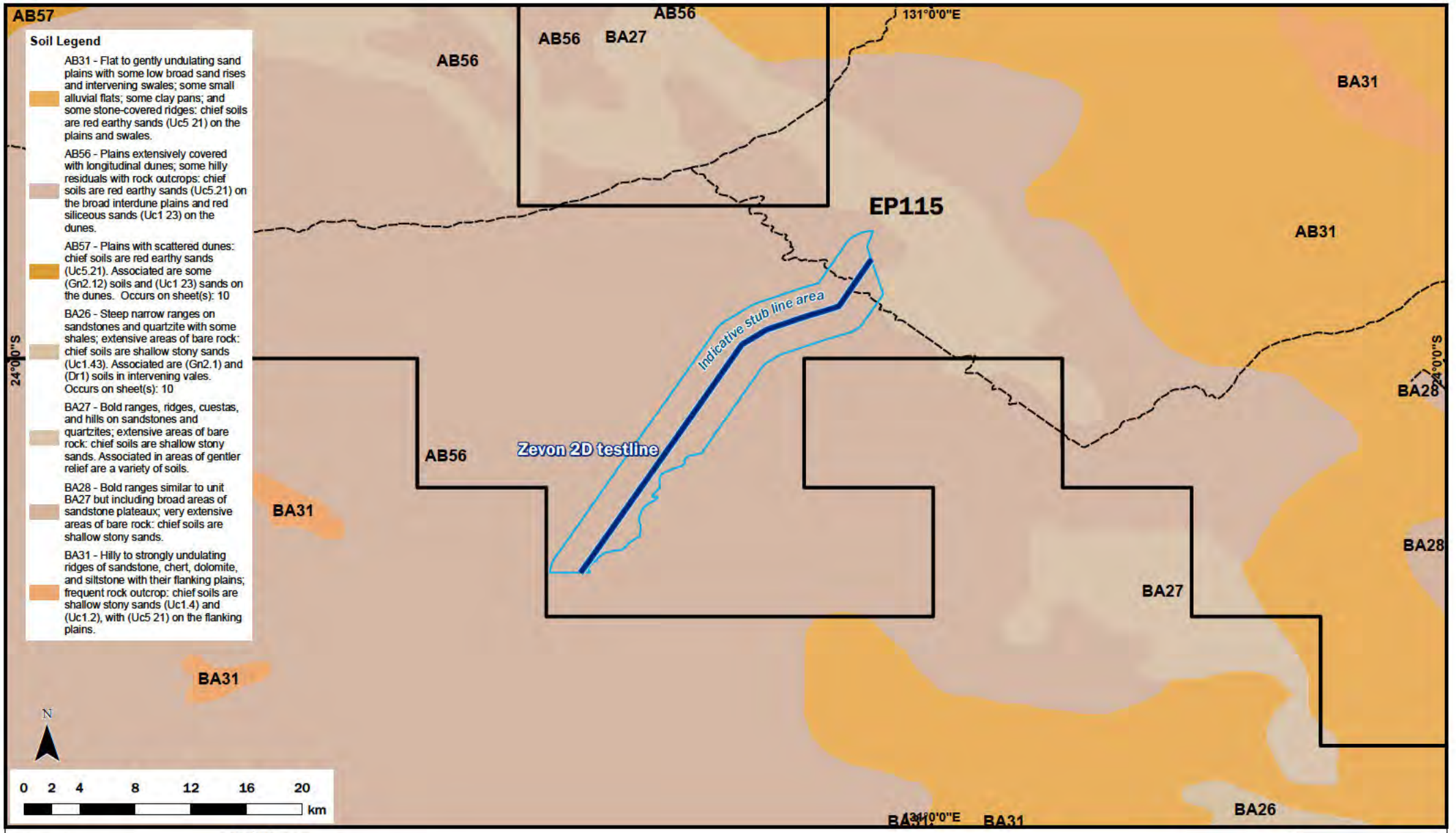
The main soil types in the Zevon project location are AB56 as mapped using data from the Digital Atlas of Australian Soils (Figure 21). AB56 is comprised of red kandosol sandy red earths, the iconic soil type of arid NT. Plains covered with longitudinal dunes, some hilly residuals with rock outcrops Chief soils are red earthy sands on interdune plains and red siliceous sands on dunes. BA27 and AB31 is present along the access track whereas the predominant soils are described as red sands to red sandy earth soils associated with the sandplain and sand dune land types Figure 21. Sodic soils are not recorded in this area and were not observed during site surveying.

4.1.4 Land Systems

Zevon is located within the Simpson land system as shown in Figure 22 and described in Table 10 (EcOz, 2021).

Table 10: Land systems

Land system	Landform class	Description
Simpson	Desert Dune fields	Dune fields with parallel linear dunes, reticulate dunes and irregular or aligned short dunes. Variable relief. Associated swales in between dunes. Red sands on dunes and a variety of soil types in swales- such as red clayey sands, red earths and calcareous earths. Sparse shrubs and low trees (occasional *Allocasuarina decaisneana*) over spinifex and tussock grasses. Dune crests can support *Zygochloa paradoxa*. Swales can support *Acacia aneura* and *Eucalyptus microtheca* or sparse low trees over samphire and old man saltbush.



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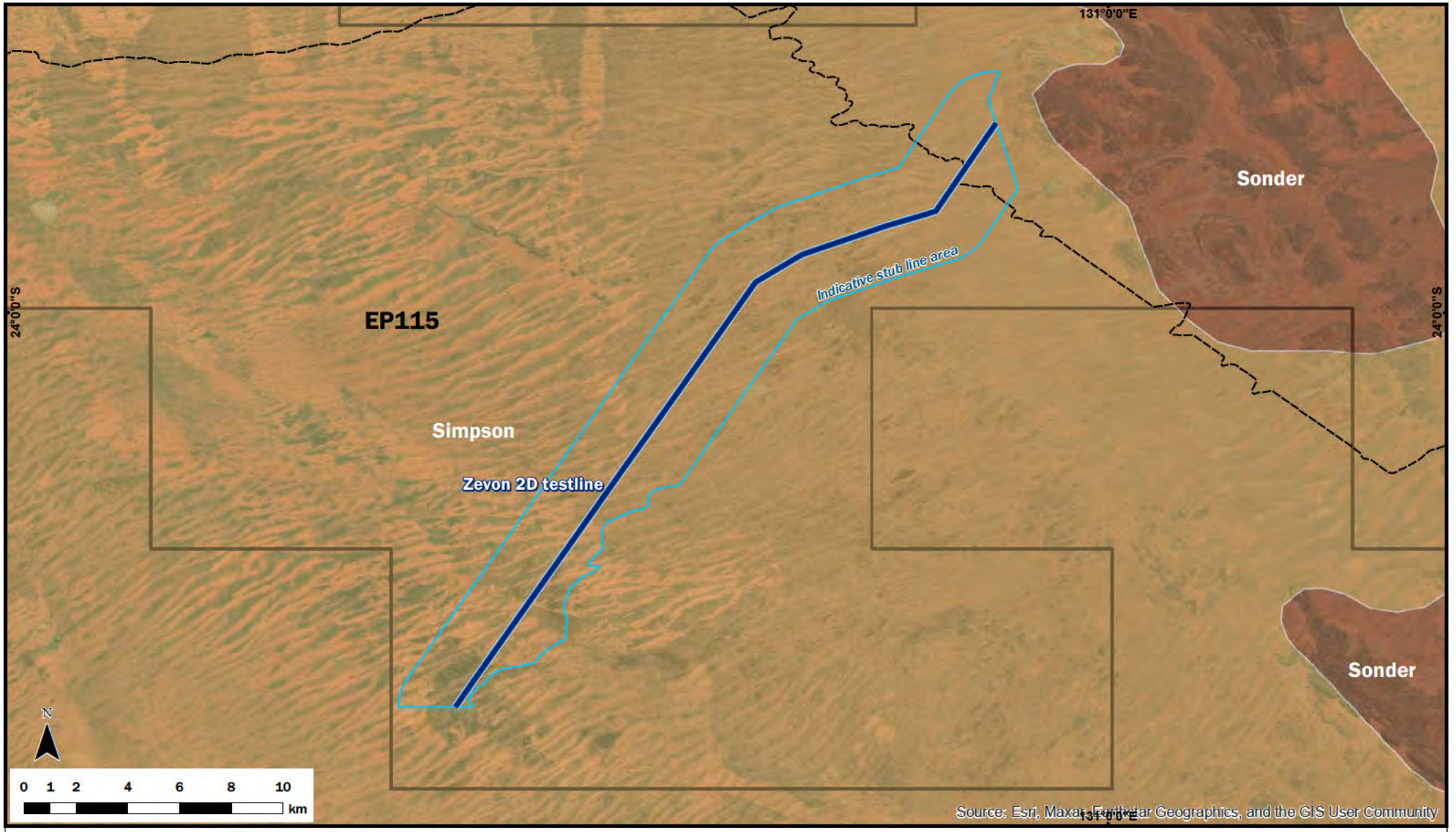
Soil types

- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

Figure 21



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Land Systems - Department of Environment and Natural Resources

Zevon Test Line Land Systems

- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

Land System
- Simpson
- Sonder

Figure 22

4.1.5 Vegetation and Land Types

The Zevon project footprint is restricted entirely to open spinifex hummock grassland as shown in Figure 24: Vegetation communities. Typically, shrubs and low open woodlands with life spans of a few decades or more (e.g. desert oaks), populate arid soil areas that are more stable in the mosaic of the local vegetation community; and on erosional surfaces that are less stable or have exposed subsoil, are populated by grasses and herbaceous plants.

The spatial distribution of vegetation and bare patches on the slopes is the important landscape structural element that causes discontinuity in flow between fine scales and broader scales in desert landscapes such as in the Zevin project area. This is evident in Figure 24 where Zevon footprint is restricted to a single dominant Land Type in the region which is Sand plains/Dunes. All other minor land systems, that are potentially more sensitive in the Zevon Project area, are avoided.

The desert grassland is topographically flat with sandy soils. The soils have high infiltration characteristics and limited potential for run-off or run-on. On this type of landscape unit, the timing and quantity of rainfall are the important determinants of productivity. The temporal pattern of rainfall determines which group of species responds. At a broad scale, soil is the foremost determinant of vegetation type.

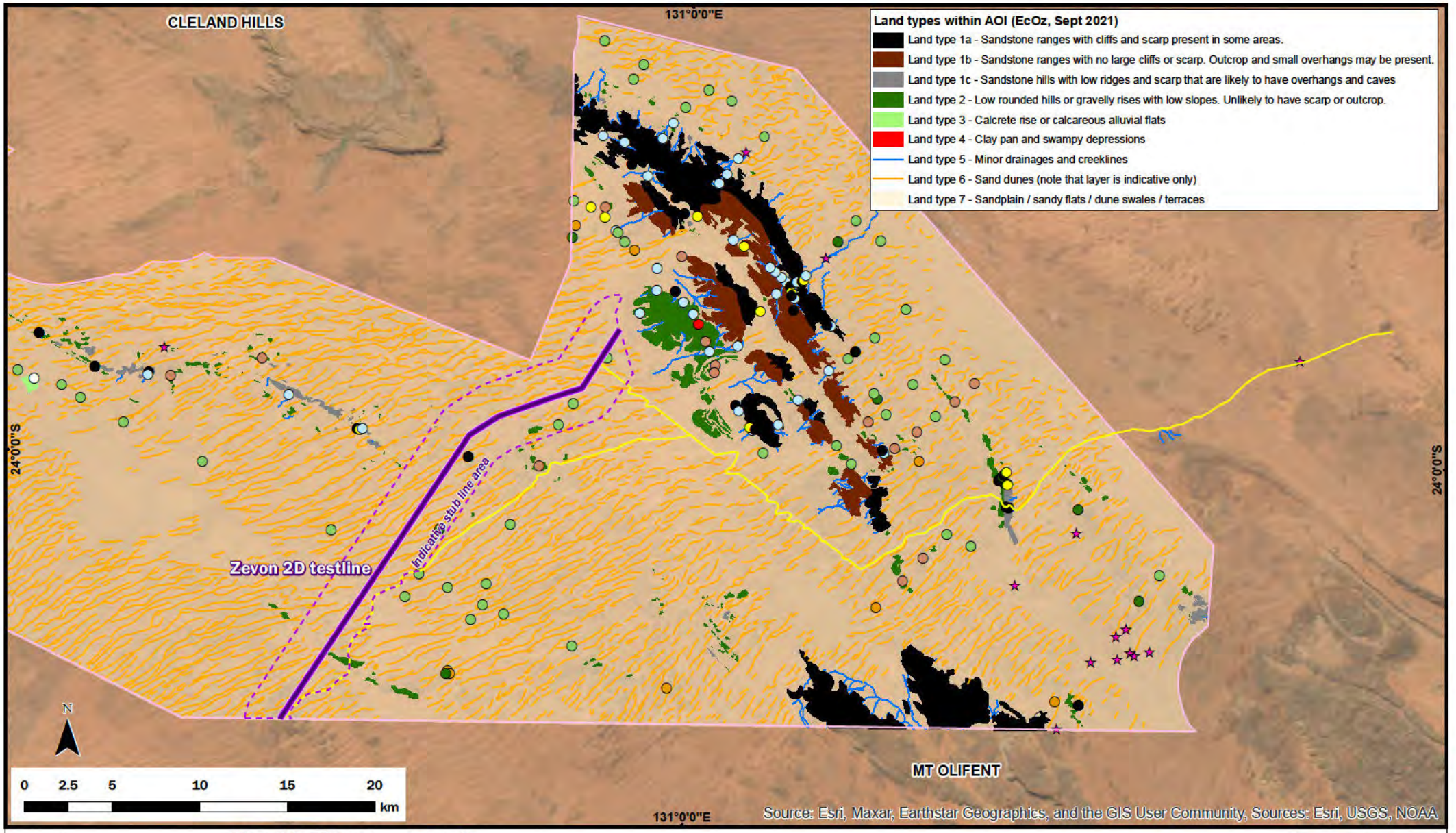
The exclusive vegetation type as identified through the NVIS (2000) for the Zevon project land disturbance are is spinifex Hummock grassland as described in Table 11 and is representative of the images taken during seismic line and camp location scouting efforts (refer to Figure 5 and Figure 16). NVIS mapping together with Site survey did not identify any high priority / conservation significant landforms or vegetation communities (Figure 23 and Figure 24). The sparsity of Desert oaks and Marble gums; clay pans and drainage lines; sandstone ranges; rocky hills and rises; and mulga swale associations is evident in the Zevon area, where the proposed land disturbance footprint on an existing access/ Traditional Owner hunting track, avoids intersection with these restricted habitats. Microtopographic effects control vegetation mosaic in this dominant hummock grassland; this includes the deep roots of the small trees that may develop in the centre of the hummocks.

Any residual risk is deemed to be mitigated by implementing the recommendations outlined in Table 14.

Table 11: Vegetation communities

NVIS ID	Type	Community description	Dominant species	Environs
577	Hummock grassland	Upper – Allocasuarina low open woodland	*Allocasuarina decaisneana +/- Acacia aneura, +/- Acacia estrophiolata*	Extensive dune fields, infertile red siliceous and clayey, sands
		Mid – Acacia mid sparse shrubland	*Acacia ligulata, Acacia dictyophleba, Acacia murrayana*	
		Ground – Triodia low hummock grassland	*Triodia basedowii, Triodia pungens, Triodia schinzii*	

EcOz's 2021 survey identified that the Zevon project is located exclusively within sand dunes, sandplains and dune swales, both of which are common in the Great Sandy Desert Bioregion. A small patch of rocky hill and rocky rise and two desert oak sites are present within the Zevon project area. However, these areas occur within proposed orthogonal stub-line areas, which will only require minimal disturbance at intervals to place small geophones by hand. All rocky outcrops and mapped exclusions zones will be avoided.



ID: 0552-112
Rev:
Date: 9/06/2023

Map Scale is 1:295,768 when printed at A4
Coordinate System: GDA 1994 MGA Zone 52

Map after EcOz 13/12/2021
Survey data: EcOz (Sep 2021)

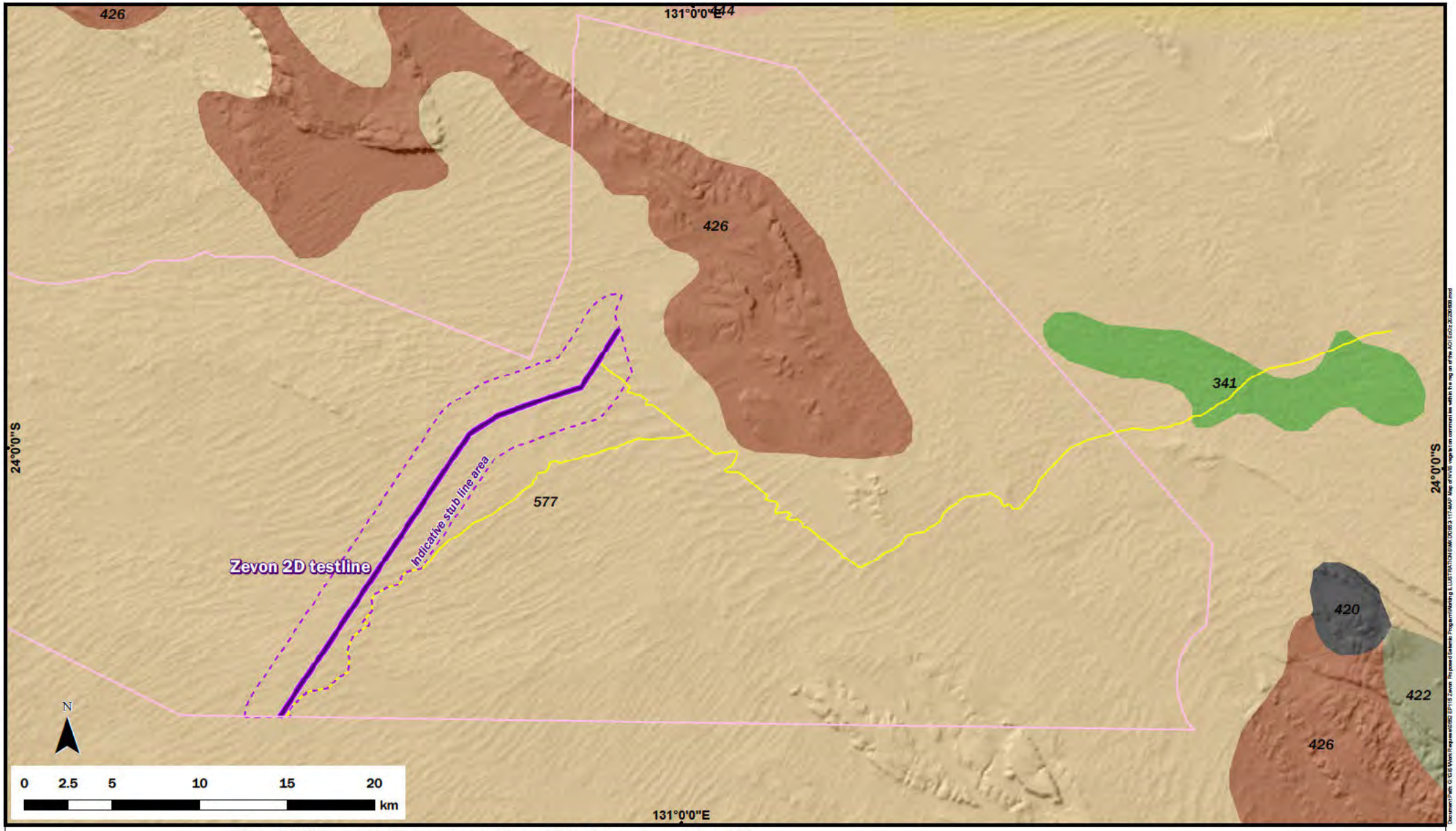
Map of land type survey results

- Zevon 2D seismic testline
- Indicative stub line area
- Zevon Testline access track to be graded (17/04/2023)
- Area of Interest

Site feature (EcOz, Sept 2021)

- Dune field
- Sandplain
- Marble Gum (dune swale / sandplain)
- Desert Oak (dune swale / sandplain)
- Mulga patch (dune swale / sandplain)
- Drainage
- Calcrete rise or calcareous alluvial flats
- Clay pan
- Rocky hill
- Rocky rise

Figure 23



ID: 0552-117
Rev:
Date: 8/06/2023

Map Scale is 1:295,768 when printed at A4
Coordinate System: GDA 1994 MGA Zone 52

Map after EcOz 13/12/2021

Map of NVIS vegetation communities within the region of the AOI

- Area of Interest
- Zevon 2D seismic testline
- Indicative stub line area
- Zevon Testline access track to be graded (17/04/2023)

VEGETATION COMMUNITIES (NVIS LEVEL 4)

- 341, Eucalyptus mid open woodland\Grevillea tall sparse shrubland\Triodia low open hummock grassland
- 420, Acacia low woodland\Prostanthera mid sparse shrubland\Triodia low hummock grassland
- 422, Acacia mid open mallee woodland\Acacia mid sparse shrubland\Triodia low hummock grassland
- 426, Eucalyptus low open woodland\Acacia mid open shrubland\Triodia low hummock grassland
- 444, Acacia mid sparse shrubland\Salsola low forbland
- 577, Allocasuarina low open woodland\Acacia mid sparse shrubland\Triodia low hummock grassland

Figure 24

Table 12: Land types (EcOz, 2021)

Land type	Landform and soils	Vegetation description	Notes
LT 1a, b & c – Sandstone ranges and hills with areas of scarp	▪ Ridges and hills associated with Watson Range and rocky hills in the vicinity of Mt Olifent; also includes isolated rocky hills and low ridgelines situated in the dune fields. ▪ There are areas of steep scarp, crevices/cracks, outcrop, overhangs and caves; as well as a large areas of rounded hills and slopes. ▪ There are numerous drainage gullies that flow for varying distances into sandplain; all drainages are ephemeral and highly episodic; small waterholes are expected in some locations. ▪ Shallow sandy soils amongst high rock groundcover; localised run-ons areas, flats and foot slopes are sandy red earth.	▪ 81 flora species identified within this land type during the survey. ▪ Hill tops and slopes support a mixed open shrubland / stunted trees (common species include *Acacia aneura, Acacia macdonnellensis, Santalum lanceolatum, Grevillea wickhamii, Senna spp., Eremophila spp., Eucalyptus trivalvis, Acacia pruinocarpa*) over spinifex and/or tussock grass and forbs (common species include *Triodia brizoides, Abutilon sp., Eriachne mucronata, Aristida holathera, Ptilotus exaltatus, Ptilotus obovatus, Sida cardiophylla, Sida sp. Excedentifolia).* ▪ Drainages are typically lined with higher numbers of *Acacia aneura* (Mulga group) over tussock grasses. ▪ Cliffs, escarpment, overhangs also support scattered *Ficus platypoda, Callitris glaucophylla, Acacia aneura (Mulga group), Nicotiana gossei, Corymbia aparrerinja* ▪ Scree slopes typically support a low shrubland (mostly *Eremophila freelingii* and *Senna spp.*) over scattered tussocks & forbs, scattered spinifex (*Triodia brizoides*).	▪ High biodiversity value in areas where rocky features are present (such as cliffs, scarp, overhangs, caves). ▪ Mapping of this unit has been split into 1a, 1b and 1c to delineate areas that are likely to have significant rocky features (or not). Conducted at a scale of 1:5,000. ▪ Erosion risk low on in rocky areas; however, receiving down-gradient land types are at risk if water channelling is not suitably controlled. ▪ Buffel Grass infestations (weed species of concern) observed at numerous sites (discussed further in Section 4.2.6).
LT2 – Rocky rises and low rounded hills	▪ Low relief rises or low hills (lateritic or sandstone) ▪ No significant areas of outcrop (if present small in area and low elevation) ▪ Rocky features (such as scarp, overhangs, caves etc.) are highly unlikely (and if present, not large)	▪ Sparse to patchy shrubland of species from the Mulga group (*Acacia aneura, A. aptaneura and A. ayersiana*). *Acacia kempeana* +/- scattered low shrubs (*Eremophila freelingii, Senna artemisioides subsp. alicia*) over sparse tussock grasses and forbs (*Aristida contorta, Aristida holathera, Enneapogon sp., Abutilon sp., Ptilotus exaltatus, Sclerolaena cornishiana, Solanum spp.*) and/or spinifex (most likely *Triodia brizoides)*	▪ Erosion risk is low on rocky surfaces; however, lower slopes and receiving down-gradient areas are at risk if water channelling is not controlled. Density of shrubs and low incidence of spinifex may be due to higher fire history. ▪ Dry conditions experienced in the past few years have also resulted in spinifex senescence (death)
LT 6 – Sand dunes	▪ Located within an extensive dune field.	▪ Open Acacia and Grevillea shrubs (including *Acacia ligulata, Acacia melleodora, Grevillea stenobotrya, Grevillea juncifolia, Eremophila willsii*) over spinifex (*Triodia basedowii*) and mixed tussock grasses (including	▪ Fire history has produced floristic differences, and recent dry conditions have resulted in some senesced vegetation

Land type	Landform and soils	Vegetation description	Notes
	▪ Dune formations are reticulate and irregularly and have a general south-west to north-east orientation. ▪ Dune height is approximately 6m to 12m in the west. ▪ All dunes have red siliceous sands; Aeolian origin but stable	*Paractaenum refractum, Eriachne aristidea, Aristida holathera, Eragrostis eriopoda*) and forbs/daisies (including *Chrysocephalum eremaeum, Newcastelia spodiotricha, Leucochrysum stipitatum, Calotis erinacea, Ptilotus obovatus, Sida spp., Yakirra australiensis*) ▪ Some dunes support Mallee (*Eucalyptus pachyphylla, E. gamophylla, E. oxymitra*) and scattered trees including *Allocasuarina decaisneana* and *Corymbia chippendalei.* ▪ Patches of Desert Heath Myrtle (*Aluta maisonneuvei subsp. maisonneuvei*) are common throughout the entire dune field	
LT 7 – Sandplains and dune swales	▪ The most extensive land type in the region ▪ Flat to gently undulating plains; to low sandy rises that do not constitute dune landform. ▪ Red sand to sandy red earth soils ▪ Low points in swales typically have a heavier red earth (these areas often support denser stands of Mulga) ▪ Sandplains at the foot slopes of rocky ranges and hills have alluvium characteristics due to due to run-off and flooding from adjacent rocky terrain and drainages. These areas often have a siltier texture than surrounding dune field sandplains, and have scattered surface rocks and pebbles (which are absent or rare in dune field sandplains)	▪ Extensive areas of open to patchy woodland of Desert Oak (*Allocasuarina decaisneana*) over sparse shrubs (including *Acacia aneura, Acacia ligulata, Eremophila latrobei subsp. latrobei, Eucalyptus gamophylla, Acacia maitlandii, Acacia melleodora, Grevillea juncifolia, Senna spp.*) and variable ground cover of tussock and /or hummock grasses (including *Triodia basedowii, Aristida holathera, Eragrostis eriopoda, Eriachne aristidea*) and forbs (including *Ptilotus obovatus, Ptilotus polystachyus, Scaevola parvifolia, Chrysocephalum eremaeum, Seringa sp., Euphorbia sp., Sida spp., Calandrinia sp.*) ▪ Patches of Desert Heath Myrtle (*Aluta maisonneuvei subsp. maisonneuvei*) are scattered throughout. ▪ Red earth areas within the low points of the swale often support patches of 'groved' Mulga (*Acacia aneura, A. aptaneura or A. ayersiana*) over tussock grasses and forbs. ▪ Other scattered trees include *Corymbia eremaea, Acacia sericophylla, Eucalyptus gamophylla, Brachychiton gregorii, Hakea divaricata, Corymbia aparrerinj*	▪ Fire history has produced floristic differences, and recent dry conditions have resulted in some senesced vegetation. ▪ Marble gum present within this land type (important habitat for Princess Parrot) but was not identified during site surveys around the proposed Zevon test line.

4.1.6 Groundwater

Zevon is located in the Amadeus Basin, an elongated east-west aligned sedimentary basin that covers an area of approximately 170,000km^2 in Central Australia. Lloyd and Jacobson (1987) define two main hydrogeological domains within the Amadeus Basin: the north-central area which has broad folding associated with extensive and mappable sandstone formations, elsewhere in the basin greater deformation has resulted in the development of a regional fractured rock groundwater systems.

The nearest registered bores are RN012924, RN016241 and RN 016242. Figure 25 shows the locations of groundwater bores in relation to the Zevon program. These bores will not be impacted as the Zevon project does not involve any taking or interfering with groundwater.

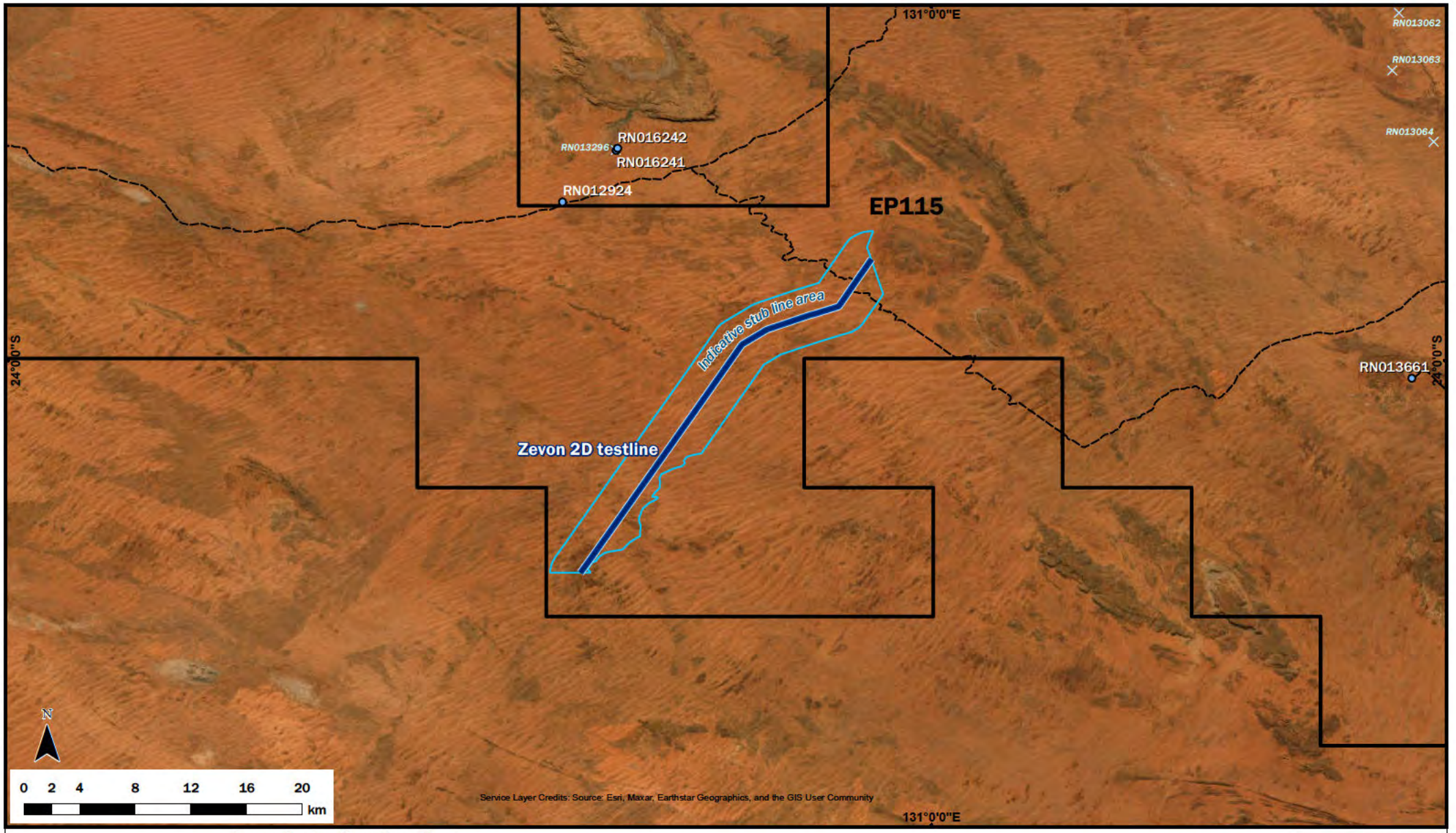
4.1.7 Surface Water

Zevon is within the Victoria River-Wiso River Region and the Mackay River Basin. The Mackay River Basin is an extensive catchment area that covers an area of 215,958km^2.

Desktop analysis of Northern Territory mapped streams identified no major or minor water drainage areas within 20km of the proposed program area or streams crossing the main test line or the stub line (DEPWS, 2018). See Figure 26 for the location of streams and drainage areas near the Zevon program. Drainage lines within the wider 2km buffer area around the test line are ephemeral 1st and 2nd order drainage depressions which will be pegged out where the test line traverses them and a 25m ‘no clearing’ buffer will be applied in accordance with the NT Land Clearing Guidelines (DENR 2020).

4.1.8 Wetlands, Springs and Aquatic Inflow Dependent Ecosystems

Most wetlands in an arid/semi-arid environment are intermittent and only hold water after rainfall events. No groundwater fed wetlands, springs, groundwater dependent ecosystems or Aquatic Inflow Dependent Ecosystems have been identified in the vicinity of Zevon (Figure 26). It was confirmed by EcOz field investigations that Impacts to any intermittent water bodies in EP 115 is not likely given the distance between the IDEs and the proposed activities.



ID: 0552-103
Rev: B
Date: 9/06/2023

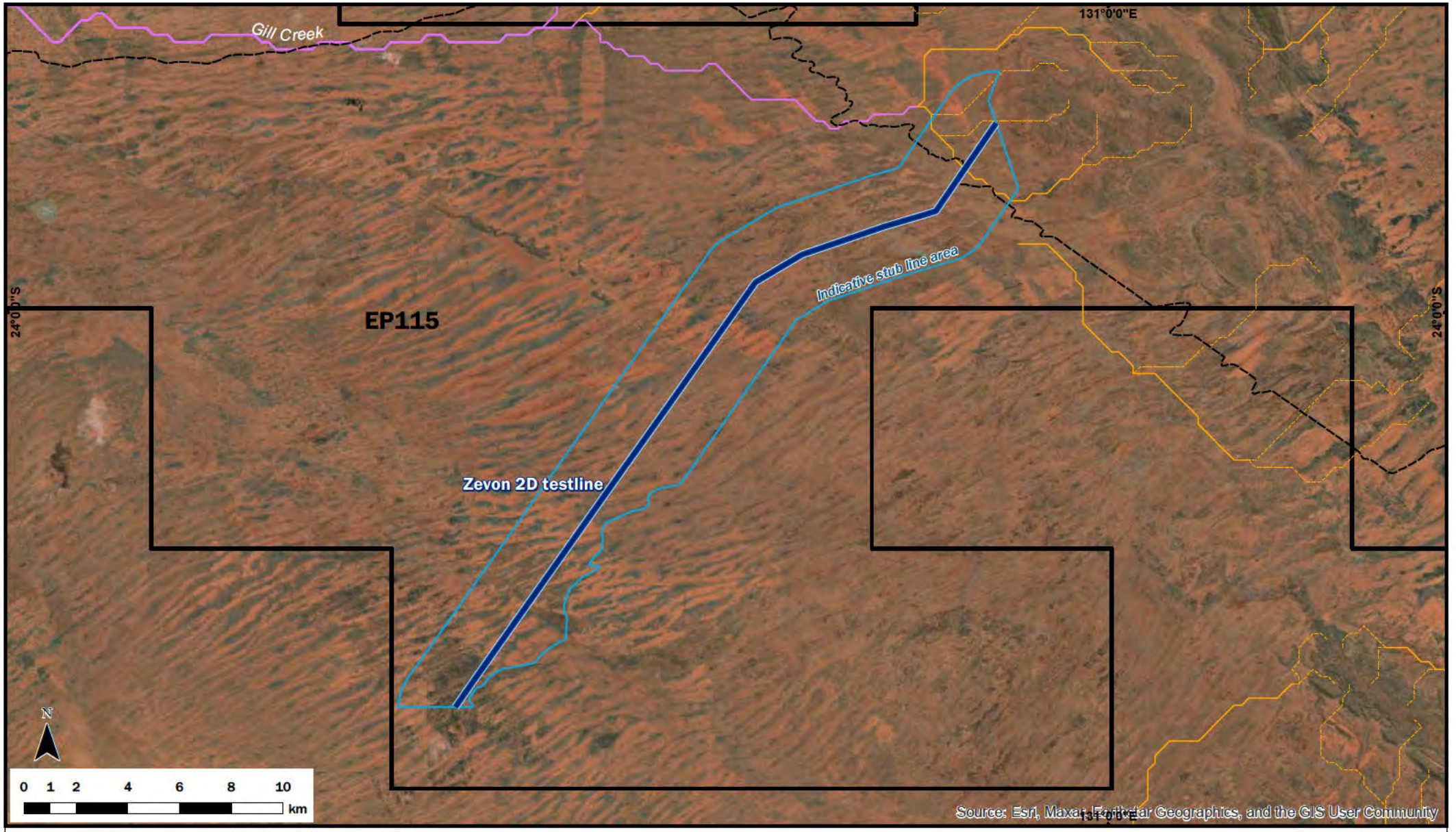
Map Scale is 1:372,335 when printed at A4
Coordinate System: GCS WGS 1984

Water bores - Department of Environment and Natural Resources

Groundwater Bore Locations

- Current Water Bore
- Abandoned Water Bore
- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

Figure 25



ID: 0552-104
Rev: C
Date: 25/08/2023

Map Scale is 1:200,000 when printed at A4
Coordinate System: GCS WGS 1984

Northern Territory Mapped Streams - Department of Environment and Natural Resources
Water bodies - (C) Copyright Commonwealth of Australia (Geoscience Australia) 2006
Intermittent drainage - EcOz field work

Surface Water Locations

- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

Stream Order

Intermittant Streams
- 1
- 2

Creeks
- 3
- 4

Figure 26

4.2 Natural Environment

4.2.1 Bioregions

The Zevon program is located within the Great Sandy Desert bioregion as classified by (Baker, et al., 2005) and described in Table 13. The Great Sandy Desert covers an area of 395,250 km^2 and is characterised by extensive red sand plains, parallel dune fields that run orthogonal to the prevailing southeast winds, fringing dune fields; extensive sandplains; dry watercourses and saltpans and salt lakes; and remnant rocky outcrops. The arid dune fields and sandplains support sparse shrubland and spinifex hummock grassland, with cane grass on deep sands along dune crests. The swales of claypans and stony plains support a sparse shrubland of acacias, and coolabah woodlands fringe the creeks and flood outs. Vegetation is predominately spinifex grasslands, low woodland and shrubs.

Table 13: Bioregions

Bioregion	General description	Soils	Vegetation
Great Sandy Desert	The area is generally flat and arid (rainfall <400mm) with few watercourses	Soils are predominantly shallow sands and are influenced by the presence of saline lakes, where mostly saline loams occur.	Vegetation is dominated by hummock grassland with areas of tall-shrubland or low open woodland, tall open-shrubland, and Samphire low open-shrubland fringing salt pans.

4.2.2 Sites of Conservation Significance

There are no Sites of Conservation Significance within the proposed seismic exploration area.

4.2.3 Sites of Botanical Significance

A Site of Botanical Significance (SOBS) is an area that has been defined (by Duguid et al. 2000) to hold important and/or unique botanical assemblages that require protection. SOBS are designated as either nationally significant (41 sites), bio-regionally significant (79 sites) or of undetermined significance (33 sites).

Currently there is no specific legislation attached to SOBS, although protection of the SOBS is administered through other pieces of legislation.

The Zevon program is located over 10km from the SOBS Lay Cock's Sandplain (Figure 27), described as a poorly known region primarily sandplain fringed by low ranges (Duguid et al. 2000). Hydrological characteristics of the underlying sandstone is likely to influence the habitat for flora. There are sandstone outcrops that support rare plants and potentially communities.

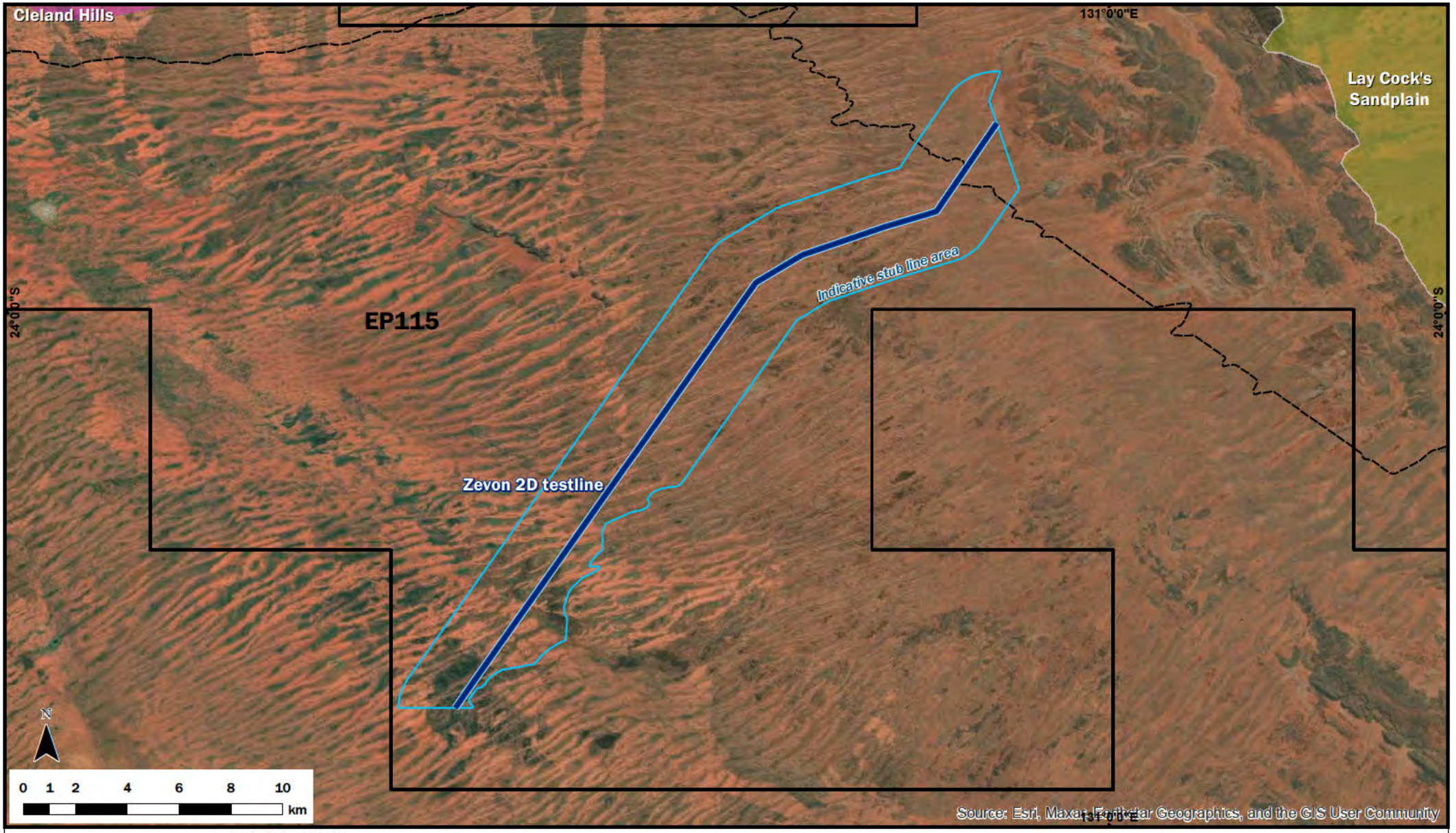
4.2.4 Threatened Ecological Communities

No threatened ecological communities were identified near Zevon during the field survey conducted by EcOZ (2021) and in desktop assessments. However, locally important habitat (biodiversity and refugial reasons), was identified and will be avoided during delivery of the seismic exploration program (Figure 23). The locally important habitat may include:

- Large trees (i.e., >15m in height), in particular the Marble gum (*Eucalyptus gongylocarpa*) as this has a restricted range in the Northern Territory and provides unique nesting opportunities for the threatened Princess parrot and Grey falcon. No Marble gum was identified proximate to the Zevon test line during the 2021 survey, however, may occur within the broader land type. Desert oaks were identified in the Zevon project location. Desert oaks are very common and widespread throughout the area, and although they *may* be used for breeding by the Princess parrot (and taller specimens by the Grey falcon), the species is not generally considered as important habitat due to its abundance and extensive presence in the region. Mitigation measures to avoid impacts to 'of concern' ecological communities / species are detailed in Table 14.

4.2.5 Threatened Species

EcOz (2021) conducted an assessment to determine the likely presence or absence of threatened species identified in their desktop assessment as having a 'High' or 'Medium' likelihood rating. The assessment included a field survey focused on assessing habitat suitability with active searches for some species where possible (Figure 28). The results and mitigation measures to be adopted are shown in Table 14



ID: 0552-105
Rev: B
Date: 9/06/2023

Map Scale is 1:200,000 when printed at A4
Coordinate System: GCS WGS 1984

Sites of Botanical Significance - Department of Environment and Natural Resources - Copyright Northern Territory Government.

EP115 - SOBS

- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

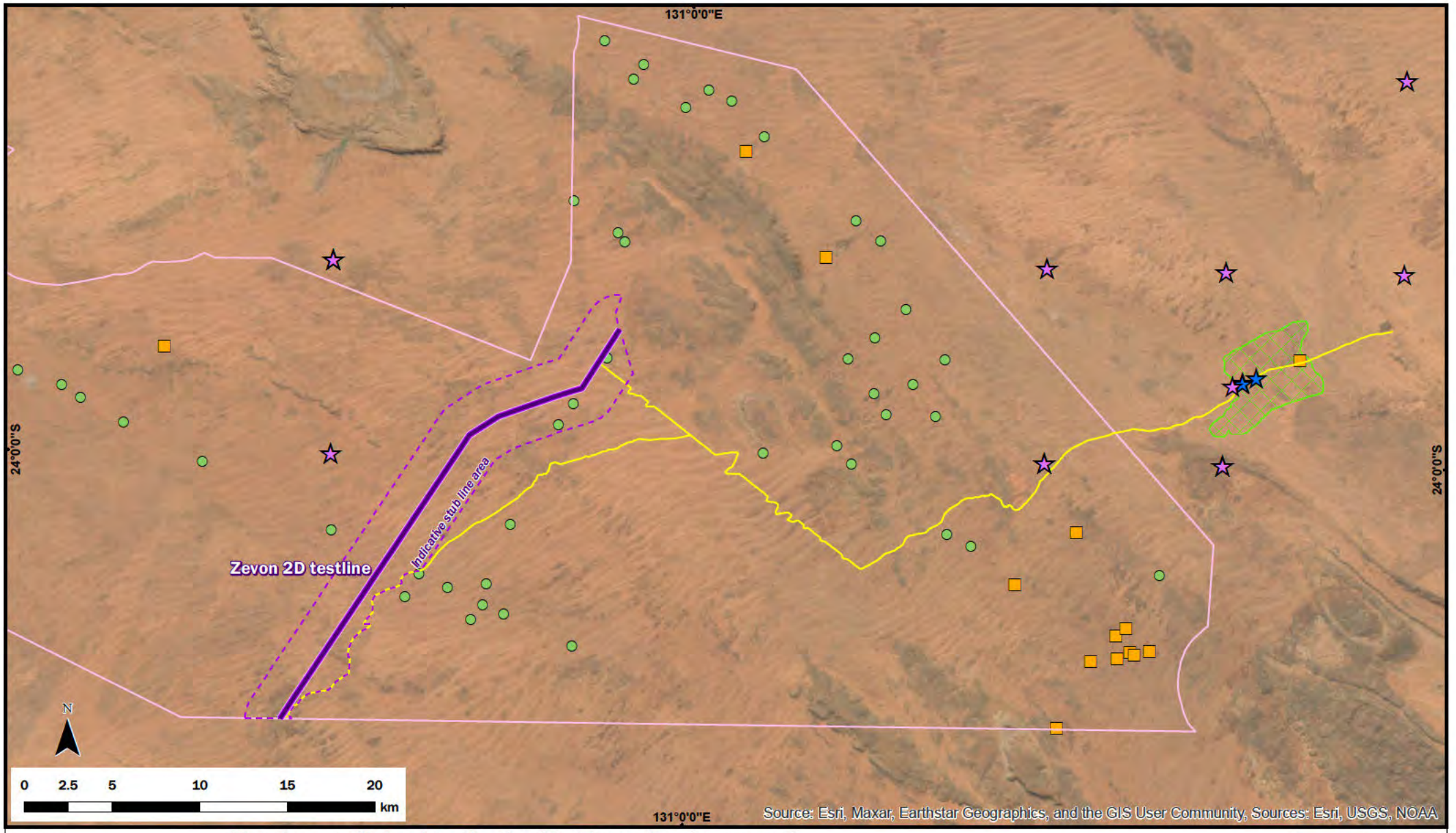
Sites of Botanical Significance
- Cleland Hills
- Lay Cock's Sandplain

Figure 27

Table 14: Threatened species assessment

Threatened species	Results	Mitigation measures
Princess Parrot (*Polytelis alexandrae*) (*Vulnerable TPWC Act* and *EPBC Act*)	▪ Princess Parrot is known to occur in the broader region, with Marble Gum their most important habitat. Desert Oaks, common though out the area, may also be used as breeding habitat. ▪ No Marble Gum was recorded in proximity to the Zevon project however Desert Oaks were identified	▪ Avoid any Marble gums or hollow bearing Desert oaks. ▪ Where possible, avoidance or minimising clearance of any other large and / or hollow bearing tree species to mitigate potential impacts to preferential Princess parrot breeding sites. ▪ Where Marble gums, Desert oaks or any other hollow bearing vegetation is proximate to the proposed test line (ie. <300m), a pre-clearing visual assessment of the vegetation will be undertaken by a qualified ecologist to determine the presence of breeding places. ▪ Should threatened species be identified within the vegetation, a 300m exclusion zone will be implemented and the location noted for communication through daily pre-starts and inductions. ▪ Inductions to include information on Princess parrot so staff are aware of the species and mitigation measures.
Night Parrot (*Pezoporus occidentalis*) (*Critically Endangered TPWC Act; Endangered EPBC Act)*	▪ Suitable habitat within the broader region however mainly restricted to calcrete rise or calcareous alluvial land types which are not located on or near the Zevon project. ▪ Fire is a major threat to the Night Parrot	▪ Implement weed and fire management plans (refer to Section 6 of the EMP)
Grey Falcon (*Falco hypoleucos*) (*Vulnerable TPWC Act; Vulnerable EPBC Act)*	▪ Living in sparsely timbered lowland plains, typically on inland drainage systems, where the average annual rainfall is less than 500 mm there is potential for Grey Falcon to be present. ▪ Availability of nesting trees and fire is a major threat.	▪ Avoid any Marble Gums or hollow bearing Desert oaks. ▪ Where possible, avoidance or minimising clearance of any other large and / or hollow bearing tree species (>15m) to mitigate potential impacts to preferential Grey falcon breeding sites. ▪ Where Marble gums, Desert oaks or any other tall vegetation is proximate to the proposed test line (ie. <300m), a pre-clearing visual assessment of the vegetation will be undertaken by a qualified ecologist to determine the presence of breeding places. ▪ Should threatened species be identified within the vegetation, a 300m exclusion zone will be implemented and the location noted for communication through daily pre-starts and inductions. ▪ Inductions to include information on Grey falcon so staff are aware of the species and mitigation measures.

Threatened species	Results	Mitigation measures
Low likelihood species	▪ The following five threatened species are considered to have a low likelihood of occurrence within the broader regions, and/or low inherent risk of impact: ▪ Desert Quandong (*Santalum acuminatum*) ▪ Greater Bilby (*Macrotis lagotis*) ▪ Central Australian Rock Wallaby (*Petrogale lateralis centralis*) ▪ Alice Springs Squat Snail (*Semotrachia euzyga*)	▪ Specific mitigation measures are not required for these species; however, the site induction shall include key identification characteristics for each species so staff can report any suspected observations. A suitably qualified ecologist (or equivalent) will then be engaged to validate identification and recommend follow-up actions, if required. In these cases, exploration works will cease in that area until advice is sought from ecological professionals



ID: 0552-113
Rev:
Date: 9/06/2023

Map Scale is 1:295,768 when printed at A4
Coordinate System: GDA 1994 MGA Zone 52

Map after EcOz 13/12/2021
Survey data: EcOz (Sep 2021)

Map of survey effort and results related to Princess Parrot assessment

- Zevon 2D seismic testline
- Indicative stub line area
- Zevon Testline access track to be graded (17/04/2023)
- Area of Interest
- Princess Parrot record (EcOz, June 2021)
- Princess Parrot record (NT Fauna Atlas)

Survey site result (EcOz, Sept 2021)

- Marble Gum observed
- Desert Oak only (no Marble Gum)
- Marble Gum patch (EcOz, June 2021)

Figure 28

4.2.6 Weeds

Weeds managed under this EMP can be categorised via the following methods:

Weeds of National Significance (WoNS) – nationally agreed priority flora species for control and management. Weed species are determined based on rankings for invasiveness, potential to spread, and impact on socio-economic and environmental assets. There are currently 32 WoNS with each having an endorsed strategic plan which outlines tactics and actions for control.

Declared Weeds – species which have been identified for control, eradication, or prevention of entry in all or part of the Northern Territory under the Weeds Management Act 2001. Declared weeds can be of the following classes:

- Class A – to be eradicated
- Class B – growth and spread to be controlled
- Class C – not to be introduced into the Northern Territory

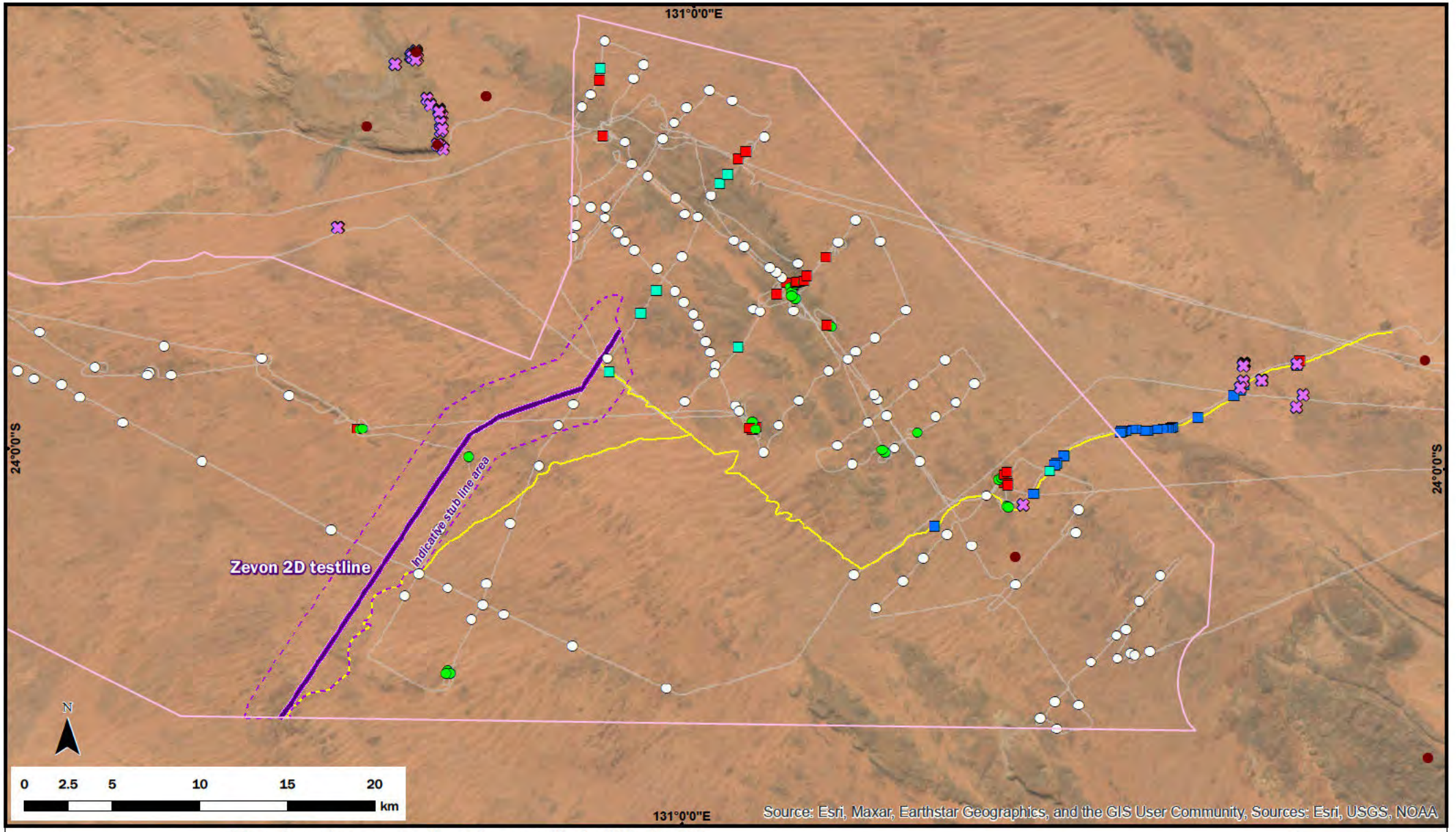
Species which have been identified as a priority or alert weed species within the Alice Springs Regional Weeds Strategy 2021-2026.

EcOz (2021) included a weed assessment in their ecological survey and confirmed the presence of the weed shown in Figure 29 and Table 15 along the proposed access track to the test line area. Buffel grass is listed a Category 2 species (Weed of Concern) in the Alice Springs Regional Weeds Strategy 2021-2026. The weed mainly occurs along the access track out to the Zevon seismic line. Milk Thistle and Spiked Malvastrum were recorded at very low densities and are not declared weeds. However, the survey did not note any occurrences of weeds within the proposed test line or surrounding areas.

Table 15: Weed records

Name	Common Name
Cenchrus ciliaris	Buffel grass
Sonchus oleraceus	Milk thistle
Malvastrum americanum	Spiked malvastrum

A Weed Management Plan has been developed to address the potential to spread weeds during survey activities. Weed hygiene is a key focus of the Weed Management Plan with the objective of not further spreading this species.



ID: 0552-114
Rev:
Date: 9/06/2023

Map Scale is 1:295,768 when printed at A4
Coordinate System: GDA 1994 MGA Zone 52

Map after EcOz 13/12/2021
Survey data: EcOz (Sep 2021)

Map of weed survey results and survey effort within the AOI

- Zevon 2D seismic testline
- Indicative stub line area
- Zevon Testline access track to be graded (17/04/2023)
- Area of Interest

Buffel Grass survey results (EcOz, Sept 2021)

- Buffel Grass present (varying densities)
- Potential infestation (aerial observation)
- None observed (on ground inspection)
- Unlikely (based on aerial observation)
- Buffel Grass (EcOz June 2021)
- Helicopter flight path (Sept 2021)

NT Atlas weed records (DEPWS)

- Other weeds (low risk)
- Buffel Grass records

Figure 29

4.2.7 Introduced Fauna (Pests)

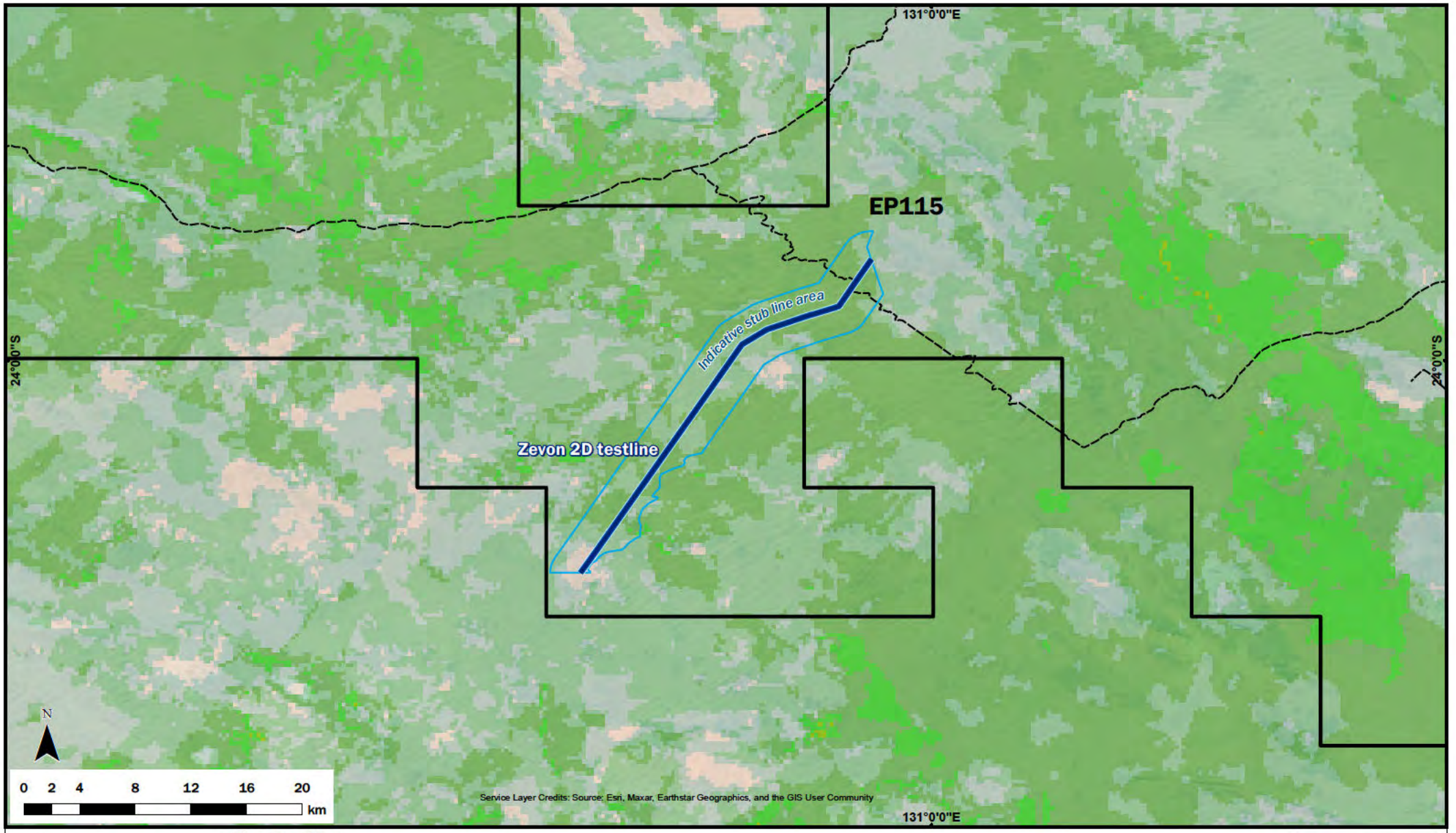
A Protected Matters Search with a 20km buffer indicated the following introduced fauna (pests) may be present within the seismic exploration area:

- Cattle (*Bos taurus*)
- Donkey (*Equus asinus*)
- Horse (*Equus caballus*)
- Wild Dog (*Canis lupus*)
- Feral Cat (*Felis catus*)
- European Red Fox (*Vulpes vulpes*)
- House Mouse (*Mus domesticus*)
- Feral European Rabbit (*Oryctolagus cuniculus*)
- One-humped Camel (*Camelus dromedarius*)

A review of the Fauna Atlas N.T shows five species have been identified previously within a 20km radius of the exploration area Camel (*Camelus dromedarius*), Horse (*Equus caballus*), Cat (*Felis catus*), House Mouse (*Mus musculus*) and Rabbit (*Oryctolagus cuniculus*).

4.3 Fire History

The Zevon project is located within the Alice Springs Fire Management Zone. The Northern Australia Fire Information (NAFI) records indicates that the areas have generally been burnt at least once (Figure 30). Ecological impacts of the fire regime are discussed in Table 12.



ID: 0552-108
Rev: B
Date: 9/06/2023

Map Scale is 1:372,335 when printed at A4
Coordinate System: GCS WGS 1984

Fire frequency - Darwin Centre for Bushfire Research 2023

Fire Scar Map

- Zevon 2D seismic testline
- Indicative stub line area
- Track
- EP115 permit

Years burnt 2000 - 2022

- Unburnt
- 1
- 2
- 3
- 4
- 5

Figure 30

4.4 Socio-Economic Environment

4.4.1 Land Tenure

The proposed Zevon program will be located within land held by Haast Bluff Aboriginal Land Trust which is administered through the CLC. FOG has existing relationships with the CLC and landholders through other petroleum infrastructure located on their property and previous exploration programs.

4.4.2 Surrounding Populated Places

Populated places close to Zevon are shown in Figure 31 and include:

Kungkayunti – 45km north-east
Kings Canyon Resort – 66km east

4.4.3 Noise

The Zevon project is located within a sparsely populated region and the nearest sensitive receptor is located greater than 40km away (Kungkayunti) (Figure 31).

Northern Territory *Noise Management Framework Guideline 2018* refers to offensive noise that may cause an environmental nuisance. The offensive noise test described in the NT framework is not relevant given the nearest sensitive receptors for noise to the Zevon project location are greater than 40km away. No impacts on sensitive receptors are considered likely given the remote and isolated location of the field. The operation of grader and seismic truck will occur from 6am-6pm, seven days per week for approximately two weeks only. In the first instance, these facilities must comply with exposure standards for noise defined in the Work Health and Safety Regulation 2011 which provide a much stricter threshold for noise sources, thereby mitigating any potential off-site nuisance noise. FOG will monitor any complaints regarding noise as part of its stakeholder engagement process.

Given the distance to the nearest receptor and that the noise generated from the Zevon project do not plausibly exceed 'nuisance noise tests', an assessment described under Section 3.2 of the Northern Territory Noise Management Framework Guideline 2018 has not been conducted.

4.4.4 Traffic

Traffic is discussed in Section 0, which indicates that traffic volumes associated with the project will be minor. In addition, further controls are and will be in place to reduce the impact and keep other road users safe. The turn in and turn offs of NT controlled roads are currently being used by FOG operations and no further upgrades are required. Vehicle speeds will be reduced to 60km/h to ensure dust creation is reduced.

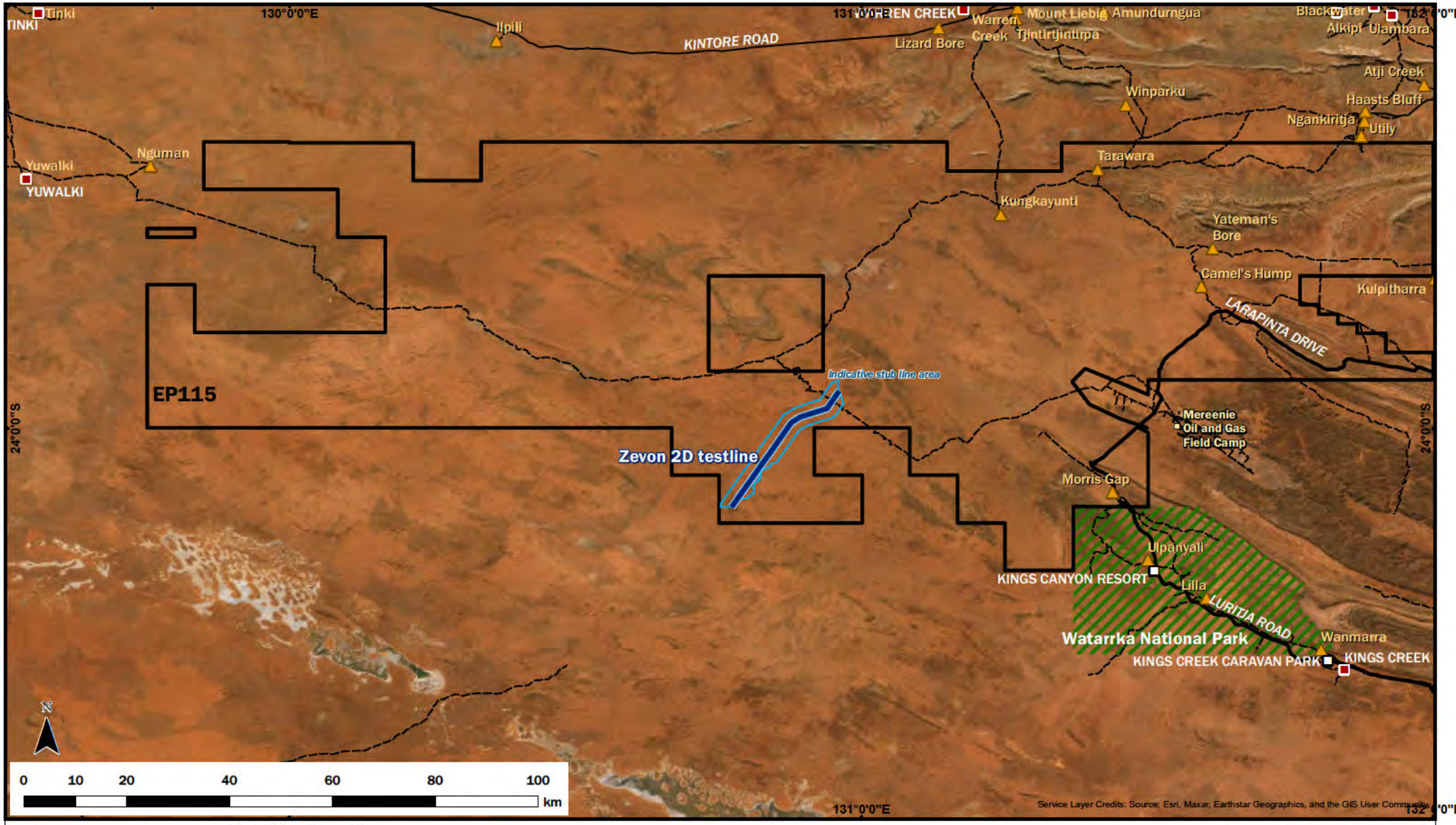
FOG will have signage and call points monitored by UHF will be established at either end of the survey area to mitigate any potential traffic impacts along the track associated with activities at Zevon.

4.4.5 Workforce

Workforce numbers for each activity during the exploration program are discussed in Section 3.

Due to the short nature of the activity, local resourcing strategy and utilisation of up to four short-term camps the overall impact of the project should be positive to the local community. This assessment is based on the following:

- There will be no impacts on the demographics of the regional population from the exploration campaign.
- FOG will prioritise local resourcing.
- FOG continue to explore opportunities to provide education and training opportunities to promote the gas industry, integrate the NT gas story into the tourism experience and include STEM (science, technology, engineering, and mathematics) learning into local schools with technical experts and guided field trips to FOG operations.



ID: 0552-110
Rev:
Date: 9/06/2023

Map Scale is 1:1,000,000 when printed at A4
Coordinate System: GCS WGS 1984

Sensitive Receptors

- Populated Places
- Homesteads
- Aboriginal communities
- Zevon 2D seismic testline
- Indicative stub line area
- Mereenie Oil and Gas Field Camp
- Secondary Road
- Minor Road
- Track
- EP115 permit
- Parks and Reserves

Figure 31

4.5 Cultural Heritage

4.5.1 Historic and Natural Heritage

The Zevon program is located within the MacDonnell Shire. An online search of the Northern Territory heritage register showed no publicly listed heritage sites within the exploration clearance area nor were any identified in Everick Heritage (2021).

4.5.2 Aboriginal Archaeological Assessment

An Aboriginal archaeological assessment of potential seismic areas within EP 115 including the Zevon project location was commissioned and completed in November 2021. The report:

- was also used in designing the seismic line to avoid any areas and to establish exclusion zones around any known archaeological heritage sites.
- outlines steps to be undertaken when an Aboriginal Objects and Human Remains are potentially identified, including:
  - work in the surrounding area is to stop immediately;
  - a temporary fence or barrier is to be erected around the site, with a buffer zone of at least 10 metres around the known edge of the site;
  - an appropriately qualified archaeological consultant is to be engaged to identify the material, either in person or remotely;
  - if the material is found to be of Aboriginal origin and it has been determined that the objects has been identified the NT Heritage Branch will be notified (via contact details on their website) and all relevant information provided.

A summary of findings from the Heritage Assessment undertaken is provided in a sub-section of Appendix 5.

4.5.3 Indigenous Protection Areas

The Katiti Petermann Indigenous Protection Area (IPA) Petroleum Reserve Block was declared 15/01/2020 and abuts EP115 on its southern border (Figure 32). The Katiti-Petermann Indigenous Protected Area (IPA) surrounds the Uluru-Kata Tjuta National Park. It's a significant part of a vast network of protected regions that span across the boundaries of the Northern Territory, Western Australia, and South Australia. Within the Katiti-Petermann IPA, numerous ancestral Dreaming paths intersect, and it safeguards numerous culturally important sites for the [redacted] Traditional Owners. Additionally, this area provides a habitat for a wide range of plant and animal species, including endangered ones like the *tjakura* (great desert skink), *murtja* (brush-tailed mulgara), and *warru* (black-footed rock wallaby) (Society, 2023).

To ensure the IPA is not adversely impacted the boundary coordinates plus a 50m buffer have been noted (-24.136315; 130.773907). This will allow the boundary and required buffer zone to be communicated through the induction process, ensuring seismic works and personnel maintain a safe distance from the IPA at all times.

4.5.4 Sacred Sites Assessment

FOG has logged a request with CLC for a Sacred Site Clearance Certificate. FOG has also lodged an Authority Certificate application with the AAPA for the Zevon Test Line (application # 202112105). FOG commits to complying with the requirements of the granted Authority Certificate. A map of the planned seismic exploration area where CLC and AAPA clearance has been obtained is shown in Figure 32.

4.6 Environmental Engagement and Consultation

4.6.1 Stakeholder Engagement

FOG is committed to proactively engaging with a range of stakeholders and other interested parties. We aim to establish and maintain enduring and mutually beneficial relationships between the communities which we work with; ensuring that our activities generate positive economic and social benefits for and in partnership with these communities.

To continue to foster those relationships, FOG has engaged with a range of stakeholders and the interested parties for the Zevon Test Line Seismic Exploration Program. For the purpose of this EMP, FOG identified its stakeholders, in compliance with the NT *Petroleum (Environment) Regulations 2016,* as the Traditional Owners recognised as the Native Title holders and/or claimants and their representatives, the Central Land

Council. These stakeholders will continue to be engaged with as required or when the scope of works is updated or may have impacts to stakeholder interests.

No consultation with the Commonwealth Government was required as it has been determined that the works are unlikely to cause a significant impact on MNES. Therefore, the EPBC / EP Act will not be triggered.

Upon approval of the EMP and prior to commencement of works, formal notification will be made, in writing, by FOG to the Minister and the owner / occupier of the land of the expected start date for the approved seismic works.

4.6.2 Traditional Owner(s) Engagement

FOG undertakes regular consultation with Traditional Owners primarily through annual community liaison and site-specific meetings. We have engaged with one of the key stakeholders' groups at Kintore and another at Mereenie. At these meetings FOG provides an overview our planned development activity. Through the engagement that has taken place, we are able to demonstrate that the process has been executed in accordance with *Petroleum (Environment) Regulations 2016* during the preparation of the EMP which included communication regarding:

- The activities planned to be undertaken and the proposed locations.
- The planned Aboriginal sacred site surveys completed as part of this EMP.
- The anticipated environmental impacts and environmental risks of the activity
- The proposed environmental outcomes in relation to the activity
- The possible consequences of carrying out the activity to the stakeholder's rights or impacts on stakeholders' activities.

Engagement undertaken with directly affected stakeholders have been documented in the Stakeholder Engagement Register in Appendix 3. FOG is also committed to continued engagement with the identified stakeholders through annual community liaison meetings or at a time where potential impacts discussed with stakeholders may change.

4.6.3 Assessment of Merit of Stakeholder Objection or Claim

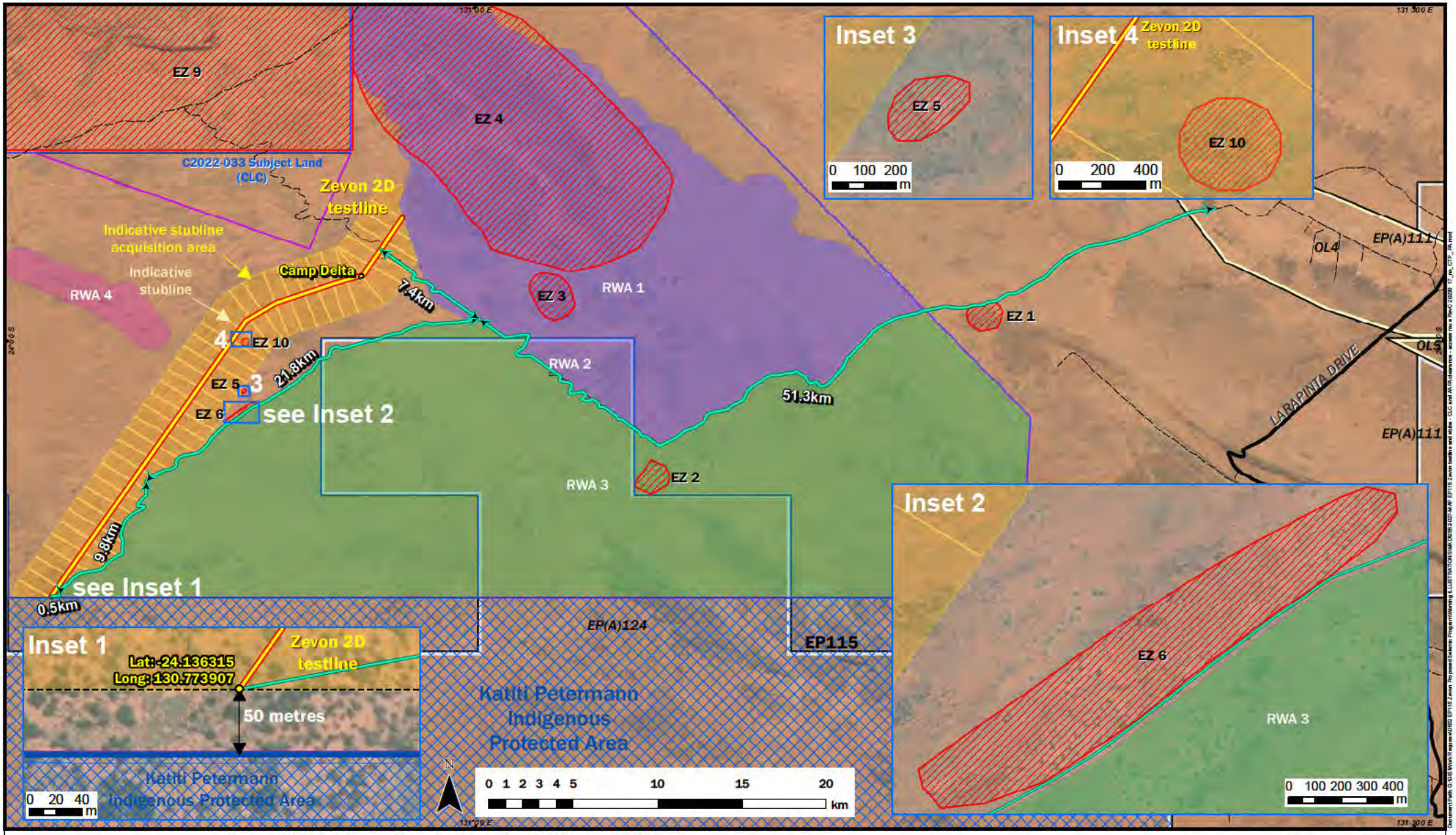
The process that FOG will undertake in assessing any stakeholder objection/claim that it receives includes:

All stakeholder objections/claims are to be provided to the Chief Operating Officer (COO) who will appoint a person to confirm that the objection/claim relates to the activities under this EMP.
The COO to notify the stakeholder:

- If the objection/claim is not related to FOG and that no additional action is required; or
- If the results confirm that the objection/claim is related to FOG an investigation will commence.
- In relation to the investigation:
  - The COO will appoint a person to investigate the objection/claim.
  - The appointed person is to investigate and provide a written report of their findings to the COO.
  - Once the report is accepted, a discussion with the stakeholder will take place to communicate the outcomes of the investigation including any actions that FOG have/will undertake to address the objection/claim – if required. Following the discussion, a written response will be provided.

4.6.4 Details of Changes Due to Engagement

Any proposed changes in operations, policy or procedures because of stakeholder consultation or other engagement will be considered by FOG Management. If any changes for merit are deemed necessary, these changes will follow the approved FOG management of change process and captured in a register.



ID: 0552-027-MAP
Rev: C
Date: 31/08/2023

Map Scale is 1:308,103 when printed at A4
Coordinate System: GCS GDA 1994

Zevon 2D Test Line - Scouted locations, CLC and AAPA clearances

- IPA
- Camps
- Access tracks to be graded
- Zevon 2D seismic testline
- Indicative stubline acquistion area
- Indicative stublines
- Exis ing track
- Secondary Road
- CLC Exclusion Zone
- CLC Subject Land
- AAPA C2022043 Certificate Area

AAPA Restricted Work Areas

- RWA 1
- RWA 2
- RWA 3
- RWA 4
- EP115 and L6
- CTP Permit Application
- CTP Granted Permit

Figure 32

5 Environmental Impacts, Risks and Mitigation

5.1 Approach

5.2 Risk Assessment Methodology

FOG's risk management approach is aligned with all material aspects of ISO 31000 and all environmental risks associated with operations have been:

- Identified, analysed, and evaluated including the assessment of critical controls and their effectiveness (Table 16)
- Recorded in a risk register Treated in a manner commensurate with the level of risk.
- Communicated to key stakeholders.
- Monitored and reviewed in a manner commensurate with the level of risk.

Assessment of risk is completed using FOG's Risk Matrix (Table 20) to assess and rate risks by assessing the combination of likelihood of occurrence and the severity of the impact/outcome of an event. This allows quantification of the risk and determination can then be made about whether the risk is ALARP and acceptable or whether further mitigation is required.

Table 16: Control effectiveness

Assessment	Description
Effective	Controls are well designed and are operating effectively, and management monitoring and review of controls are established.
Satisfactory	Controls are reasonably well designed, and most aspects are operating effectively with some minor areas for improvement.
Needs Attention	Certain control/s are not well designed and/or are systematically not operating effectively.
Ineffective	Significant gaps in the design and operation of controls. No confidence that any degree of control is being achieved.

5.3 ALARP and Acceptability

As part of FOG's risk assessment process, each risk is mitigated to ALARP. FOG considerers risks having been reduced to ALARP when all reasonably practicable control measures have been identified and implemented. ALARP involves making a judgement about whether all reasonably practicable measures are in place to control a potential risk or impact considering the level of consequence and cost, time and resources involved to mitigate it.

To determine whether potential environmental risks and inputs are 'acceptable' is a matter of judgement that depends on issues such as the nature and scale of impacts and the social or economic benefits. FOG's risk tolerance/acceptance process (Table 17) is utilised to determine whether to accept the assessed residual risk or implement improvement actions.

Table 17: Risk Acceptance/Action Criteria

	Low	Medium	High	Very High
Risk owner/ acceptance	Activity owner	Direct reports to Managers	Managers	CEO/ExCo
Improvement actions identified	Within a reasonable timeframe	3 months	1 month	As soon as practicable

In addition to the requirements detailed above, for the purposes of petroleum activities, impacts and risk to the environment are considered broadly acceptable if:

The residual risk is determined to be 'Low' the controls are determined to be effective, and the scientific uncertainty score is A (low) or
The residual risk is determined to be either 'High' or 'Medium', the controls are determined to be effective, and the scientific uncertainty score is A (low) as well as ALARP being demonstrated through:

- Alignment with legislative requirements, regulator guidance, stakeholder expectations
- Adoption of regional strategies and plans
- Not compromising ESD Principles, and
- Limiting the nature and scale of the effect on the environment.

5.4 Uncertainty

To enable an accurate assessment of the potential impact and risk of the activities, the risk assessment process considers scientific uncertainty regarding the information available to assess the risk. Uncertainty is high where confidence in the available information is low in identifying risk or the effectiveness of a management control. Additional baseline studies or other safeguards may be required to increase the accuracy of an assessment to determine the acceptability of a risk.

Scientific uncertainty is qualitatively assessed using a generic means of ranking the data available in accordance with the criteria assigned in Table 18. Considerations of scientific uncertainty have been included in the risk assessment.

Table 18: Scientific uncertainty scoring

Category	Description	Decision making tools
A (Low)	▪ Control/mitigation measures are well understood and established within the industry to ensure the risk is effectively controlled. ▪ Information available to assess the risk is current	▪ Legislation, codes and standards exist to regulate the activity. ▪ Good industry practice includes additional controls beyond legislation, codes and standards
B (Moderate)	▪ Control/mitigation measures exist and have been demonstrated as effective in other industries. ▪ Information used to assess the risk is still valid but is either starting to date or there are information gaps	▪ Risk based assessment tools are available for use (e.g. modelling, quantitative risk assessment, cost benefit analysis etc.)
C (High)	▪ Scarce or no data available to support the assessment of the risk	▪ No guidance material available. The precautionary approach to management of the risk is required.

5.5 Risk Assessment Summary

The outcomes of the detailed environmental risk assessment (Appendix 1) are presented in Table 19 which provides a summary of the residual risks for activities under the environmental management plan. All risks are considered by FOG to be as low as reasonably practicable and are accepted.

Table 19: Risk assessment summary

	Residual risk			
	Low	Medium	High	Very High
Count	15	7	0	0

The 'Medium' residual risks for activities under this environment management plan are:

- Injury or death of conservation significant fauna from civil works, vehicle movements and earthworks
- Increased occurrence of weeds (including weeds of national significance)
- Unauthorised disturbance to sacred sites or culturally sensitive areas
- Bushfire as a result of activities under this EMP.

5.6 Environmental Management Strategy

Based on the results of the detailed environmental risk assessments and the identification of critical controls (Appendix 1), FOG has categorised the environmental outcomes and developed performance standards and measurement criteria aligned with the identified critical controls. The environmental outcomes, performance standards and measurement criteria are outlined in the tables in Section 6.2 to 6.10 below.

Table 20: Risk matrix

Risk Matrix

Impact Level	Health and Safety	Environment	Community	Legal	Reputation	Financial AUD$	Remote	Unlikely	Possible	Likely	Frequent
							Conceivable, but only in extreme circumstances	Event is unlikely to occur during the life-span of a project	Event may occur during the life-span of a project	Event likely to occur during the life-span of a project	Recurring event during the life-span of a project
							<1% chance of occurring within the next year.	>1% chance of occurring within the next year	>10% chance of occurring within the next year	>30% chance of occurring within the next year	>60% chance of occurring within the next year
Extreme	5 or more fatalities or life-threatening injury / illness or total permanent disability.	Extensive permanent impact on / off site or damage to critically endangered species, habitats, ecosystems.	Extensive irreversible impacts to the community or social wellbeing. Long term social unrest. Permanent damage to area/s of cultural significance.	Charges against any director or senior executive involving jail, substantial fine or loss of right to manage the company. Public inquiry – requiring considerable resources and senior executive time. Loss of an asset or loss of licence to operate an asset. Permanent non-voluntary suspension of trading CTP securities on the ASX.	Multiple stakeholder groups confirming coordinated action, as reflected in media channels with significant reach and influence. Negative international or prolonged national media (e.g. 2 weeks).	Loss of value in excess of $20m Cashflow impact in excess of $5m	High	Very High	Very High	Very High	Very High
Critical	1-4 fatalities or life-threatening injury / illness or total permanent or partial disability.	Extensive long term partially reversible impact on / off site or damage to endangered species, habitats, ecosystems.	Extensive reversible impacts to the community or social wellbeing. Prolonged community outrage. Extensive long term partially reversible damage to area/s of cultural significance.	Charges against any director, senior executive or senior manager involving fines, jail or the loss of right to manage the company. Prolonged major litigation – exposure to significant damages, fines or costs. Suspension or restrictions to the benefit of an asset or operate an asset. Prolonged non-voluntary suspension of trading CTP securities on the ASX.	Multiple stakeholder groups mobilising and encouraging other to act, as reflected in media channels with significant reach and influence. Negative media national for 2 days or more.	Loss of value >$10m to $20m Cashflow impact >$1m to $5m	High	High	High	Very High	Very High
Serious	Injury or illness resulting in partial disability, lost time or alternative / restricted duties.	Long term reversible impacts on / off site or to vulnerable or near threatened species, habitats, ecosystems.	Impacts to the community or social wellbeing. High levels of community tension. Long / medium term partially reversible damage to area/s of cultural significance.	Charges against any employee (not described above). Non-compliance with conditions of licence to own or operate an asset or to conduct an activity. Litigation - exposure to damages, fines or costs. Short-term non-voluntary suspension of trading CTP securities on the ASX.	More than one stakeholder group's opinion or view influencing other stakeholders, reported through media channels with some reach and influence. Negative national / state media for 1 day.	Loss of value >$2.5m to $10m Cashflow impact >$500k to $1m	Medium	Medium	High	High	High
Moderate	Injury or illness to 1 or more people resulting in medical treatment.	Medium / short-term impact on / off site or to low risk / least concern / common regional species, habitats, ecosystems.	Small scale impacts to the community or social wellbeing. Isolated examples of community tension. Moderate short-term impact to areas of cultural significance.	Moderate non-compliance with external mandatory obligations or breach of contractual or other legal obligations (not described above). Litigation possible. Non-compliance with internal controls with a moderate impact	A single stakeholder group drawing attention to an incident, issue, or approach conveyed through local media channels.	Loss of value >$500k to $2.5m Cashflow impact >$250k to $500k	Low	Medium	Medium	Medium	Medium
Minor	Injury or illness requiring first aid to 1 or more people, or no treatment recorded.	Minor near source impact on / off site – readily dealt with.	Minor community impact / short-term impact to areas of cultural significance – readily dealt with.	Minor non-compliance with external mandatory obligations or breach of contractual or other legal obligations. Non-compliance with internal controls with a minor impact.	A person or organisation within a stakeholder group signalling an interest in an incident, event or approach, using channels with limited reach or influence. Public concern restricted to local complaints.	Loss of value >$250 to $500K Cashflow impact >$50 to $250k	Low	Low	Low	Medium	Medium

5.7 Biodiversity

<table>
<tr><th colspan="6">Environmental performance measures: Biodiversity</th></tr>
<tr><td>Activities</td><td colspan="5">▪ Civil activities – grading of access track and seismic line.
▪ Rehabilitation
▪ Support activities – chemical storage, waste management</td></tr>
<tr><td>Residual risk</td><td>Medium</td><td>Code of Practice</td><td>A.3.1; A.3.5; A.3.6; A.3.7, A.3.9</td><td>Uncertainty</td><td>A (Low)</td></tr>
<tr><td rowspan="2">Risk</td><td colspan="3">Consequences</td><td colspan="2">Critical controls</td></tr>
<tr><td colspan="3">▪ Loss of vegetation/fauna habitat values from:
- loss of containment of sewage, including in wet weather
- storage, handling, use and disposal of fuels, oils and chemicals,
- uncontrolled fires from an ignition source
- movement of vehicles and heavy machinery outside of disturbance areas
- spread of weed species.
▪ Encouragement of native and pest fauna from poor waste handling and storage
▪ Loss of fauna habitat from lack/failure of rehabilitation.
▪ Loss of fauna from:
- vehicle movements and human interaction
- injury or death from access to ponds, pits, sumps or trenches or similar</td><td colspan="2">▪ Weed Management Plan
▪ Rehabilitation
▪ Fire Management
▪ Spill Management Plan
▪ Erosion and Sediment Control Plan</td></tr>
<tr><td>ALARP and Acceptability</td><td colspan="5">▪ The residual risk remains medium based on moderate impacts of loss of conservation significant fauna. FOG considers that the
▪ risk has been reduced to APLARP and acceptable based on the following:
▪ Vehicle movements are a necessary part of operations controls are aligned with industry practice and consistent with ESD principles to co-exist without any long-term impacts to the local environment.
▪ No WoNS or declared weeds however Buffel grass present along access tracks. Best practice weed management practice areas in place and FOG seeks to achieve the requirements of key legislation and strategies as outlined in Section 2.</td></tr>
</table>

Environmental performance measures: Biodiversity			
Environmental outcome	**Environmental performance standards**	**Measurement criteria**	**Records**
No significant impact[2] to threatened fauna, their habitat and sites of conservation significance	No unauthorised clearing of vegetation or loss of fauna habitat	▪ Area(s) of known threatened fauna will be sign posted to avoid impacts to threatened fauna or their habitat. ▪ Permit to work specifies area authorised cleared work areas. ▪ The incident management system shows no incidents of unauthorised clearing	▪ Incident records
	No introduction of new or spread of existing Weeds of National Significance, weed listed under NT legislation or locally significant weed species	▪ No new WONS, NT listed weed species or locally significant weed species identified. ▪ Weed certifications from vehicles, equipment and machinery entering from known weed infestation areas. ▪ Weed hygiene training provided within field inductions	▪ Incident records ▪ Weed declaration certificates. ▪ Induction and register of participants
	No unmitigated death of conservation significant fauna will occur	▪ Inductions present requirements around protection of fauna, flora, their habitat and reporting fauna interactions. ▪ No incidents recorded in incident management system of driving off designated roads and access tracks. ▪ No incidents within incident management system involving vehicle related fauna strikes with speeds above 70km/hr	▪ Incident records ▪ Induction and register of participants
	No uncontrolled fires from FOG activities	▪ The incident management system shows no recorded incidents of uncontrolled fires starting because of FOG activities	▪ Incident records
	FOG activities will not encourage pest species	▪ The incident management system shows no records of pest species interactions with waste or inappropriate waste storage and handling that encourages vermin access.	▪ Incident records ▪ Inspection records

[2] Significant impact: Impact which result in the long term decrease in the size or viability of a threatened species population.

Environmental performance measures: Biodiversity	
Environmental monitoring and reporting	▪ Rehabilitation success monitoring as per Rehabilitation Plan ▪ Fauna interactions (as required)
Corrective actions	▪ Reinstatement of disturbed areas ▪ Removal of new weed infestations

5.8 Land

Environmental management strategy: Land					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Rehabilitation ▪ Support activities – chemical storage, waste management				
Residual risk	Low	**Code of Practice**	A.3.1, A.3.4, C.7.1, C.7.2	**Uncertainty**	A (Low)
Risk	**Consequences**		**Critical controls**		
	• Soil/land contamination from: - loss of containment, including spills and leaks, of hydrocarbons, chemicals, sewage, including during wet weather - storage, handling, use of fuels, oils and chemicals - waste generation, segregation and disposal • Land disturbance and exposure of soils increasing erosion hazard from movement and use of heavy machinery/earthworks. - wet weather including flooding and high rainfall events resulting. - Loss of soil viability and productivity from soil stockpiling or compaction - Failure of rehabilitation		▪ Implementation of asset management system ▪ Spill Management Plan ▪ Wet Season Management Plan ▪ Erosion and Sediment Control Plan ▪ Rehabilitation Management Plan ▪ Waste segregation and implementation of waste management hierarchy ▪ Job Hazard Analysis/ Permit to work systems.		
ALARP and Acceptability	▪ FOG considers that the risks have been reduced to ALARP and no further risk reduction is warranted as: ▪ A strong historical knowledge of the field and the environmental response to land disturbance, erosion and contamination events presents a low level of uncertainty. ▪ Greywater will be disposed of on-site, and sewage will be contained and trucked off-site by a licenced third party				
Environmental outcome	**Environmental performance standards**		**Measurement criteria**		**Records**
No significant long-term impacts on soil stability, soil quality	Erosion and sediment controls in place, including wet weather response.		▪ Records show the erosion and sediment control measures are being implemented. ▪ Records show inspections of erosion and sedimentation issues after significant rainfall events.		▪ Inspection records ▪ Incident records ▪ Weather records

Environmental management strategy: Land			
and land formations from FOG activities		▪ Records show all active work sites inspected for evidence of erosion and sedimentation, including after significant rain events, and that where erosion/sedimentation is identified, remedial actions are taken. ▪ The incident management system shows no incidents relating to the failure of ESFOG controls (within the design parameters) ▪ Records show restricted use of roads and tracks to operational safety activities across the field after significant rainfall event (>10mm in 24 hours)	
	Disturbance of land remains within existing cleared and operational areas.	▪ Records show that earthworks and upgrade/project activities remain within approved disturbance area. ▪ Records show vehicles and machinery remain within designated areas. ▪ Records show that personnel, visitors and contractors are aware of designated work areas	▪ Incident records ▪ Induction records ▪ Permit to work records
	No releases of contaminants (including wastes, chemicals, hydrocarbons) resulting in long-term contamination of the soil	▪ Records show all spills remediated immediately on discovery, and where necessary contamination assessment undertaken. ▪ The incident management system indicates no releases of contaminants incidents related to wet weather operations. ▪ The incident management system indicates no Level 3 spills as per the Spill Management Plan ▪ Records show emergency response plan implemented in the event of a Level 3 spill or leak	▪ Incident records ▪ Soil monitoring results ▪ Inspection records ▪ Wet weather records
	Land no longer required for active operations is stabilised and progressively rehabilitated	▪ Records show rehabilitation has been initiated for areas no longer required for FOG activities	▪ Rehabilitation success monitoring ▪ Incident records
Environmental monitoring and reporting	▪ Visual site inspection to ensure appropriate erosion and sediment control measures implemented (Civil activities: Daily) ▪ Soil contamination assessment incorporating sampling following any Level 3 spills or spills outside of lease areas (as required)		

Environmental management strategy: Land	
	▪ Rehabilitation success monitoring – land stabilisation (upon completion) ▪ Weather and road conditions (daily) ▪ Chemical and waste storage areas/tanks or similar (daily)
Corrective actions	▪ Revisit rehabilitation strategy where revegetation does not meet specified criteria. ▪ Revegetate areas where natural revegetation is not occurring. ▪ Reinstate eroded areas, particularly following wet weather events

5.9 Surface Water

Environmental performance measures: Surface water					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Rehabilitation ▪ Support activities – chemical storage, waste management				
Residual risk	Low	**Code of Practice**	A.3.4, A.3.8, C.3, C.4.1, C.4.2, C.5, C.7.1, C.7.2	**Uncertainty**	A (Low)
Risk	**Consequences**		**Critical controls**		
	• Surface water contamination from: - loss of containment, including spills and leaks, of hydrocarbons, including during wet weather - spill or leak from the storage, handling, use of fuels, oils and chemicals. - flooding from significant rainfall events - earthworks/civil activities including heavy machinery use - poor waste handling and disposal		▪ Spill Management Plan ▪ Wet Season Management Plan		
ALARP and Acceptability	FOG considers that the risks have been reduced to ALARP and no further risk reduction is warranted as: • There are no major drainage lines or streams within the Zevon project area. • Small volumes of potential contaminants being used over a short duration (approximately two weeks)				
Environmental outcome	**Environmental performance standards**		**Measurement criteria**		**Records**
No significant impact on surface water quality from FOG activities	No release of contaminants resulting in long term contamination of surface waters, including during wet weather operations		▪ Records show all spills remediated immediately on discovery, and where necessary contamination assessment undertaken. ▪ The incident management system indicates no release of contaminant incidents related to storage, handling, use or disposal of chemicals, fuels, wastes. ▪ The incident management system indicates no release of contaminant incidents related to wet weather operations.		▪ Inspection records ▪ Incident records ▪ Chemical register

Environmental performance measures: Surface water			
		▪ The incident management system indicates no Level 3 spills as per the Spill Management Plan ▪ Records show emergency response plan implemented in the event of a Level 3 spill or leak	
	Erosion and sediment controls in place	▪ Records show the erosion and sediment controls are implemented along the seismic line and access tracks as required. ▪ Records show all active work site inspected for evidence of erosion and sedimentation, including after significant rain events, and that where erosion/sedimentation is identified, remedial actions are taken. ▪ The incident management system shows no incidents relating to the failure of ESFOG controls (within the design parameters)	▪ Inspection records ▪ Incident records ▪ Job hazard analysis
Environmental monitoring	▪ Water sampling, where available following a Level 3 spill, to determine extent of contamination of surface water and following removal of contamination source (as required as part of Level 3 spill response) ▪ Visual monitoring of erosion and sediment controls: ▪ Civil activities: Daily		
Corrective actions	▪ Soil remediation where spills occur to reduce impact to nearby surface water. ▪ Review of wet weather procedures and response ▪ Review of storage and handling practices of contaminants ▪ Increased awareness and training		

5.10 Groundwater

Environmental performance measures: Surface water					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Support activities – chemical storage, waste management				
Residual risk	Low	**Code of Practice**	A.3.8	**Uncertainty**	A (Low)
Risk	**Consequences**		**Critical controls**		
	▪ Groundwater extraction for project purposes impacts on existing users and environmental dependencies. ▪ Contamination of aquifers impacts existing groundwater users and environmental dependencies		▪ Spill Management Plan ▪ Emergency Response Plan ▪ Wet Season Management Plan		
ALARP and Acceptability	▪ FOG considers that the risks have been reduced to ALARP and no further risk reduction is warranted as: ▪ There are no major drainage lines or streams within the Zevon project area. ▪ Small volumes of potential contaminants being used over a short duration (approximately two weeks) ▪ Water for the camp is to be purchased commercially.				
Environmental outcome	**Environmental performance standards**		**Measurement criteria**		**Records**
No significant impact on groundwater quality from FOG activities	No release of contaminants resulting in long term contamination of groundwater, including during wet weather operations		▪ Records show all spills remediated immediately on discovery, and where necessary contamination assessment undertaken. ▪ The incident management system indicates no release of contaminant incidents related to storage, handling, use or disposal of chemicals, fuels, wastes. ▪ The incident management system indicates no release of contaminant incidents related to wet weather operations. ▪ The incident management system indicates no Level 3 spills as per the Spill Management Plan ▪ Records show emergency response plan implemented in the event of a Level 3 spill or leak		▪ Inspection records ▪ Incident records ▪ Chemical register

Environmental performance measures: Surface water	
Environmental monitoring	▪ Water sampling, where available following a Level 3 spill, to determine extent of contamination of groundwater and following removal of contamination source (as required as part of Level 3 spill response) ▪ Civil activities: Daily
Corrective actions	▪ Soil remediation where spills occur to reduce impact to groundwater. ▪ Review of wet weather procedures and response ▪ Review of storage and handling practices of contaminants ▪ Increased awareness and training

5.11 Air and Noise

Environmental performance measures: Air and noise					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Rehabilitation ▪ Support activities – chemical storage, waste management				
Residual risk	Low	**Code of Practice**	A.3.3, B.4.8, B.4.9, B.4.14 D.5*	**Uncertainty**	A (Low)
Risks	**Consequences**		**Critical controls**		
	▪ Release of contaminants to air environment through: - air emissions from combustion of fuel/gas - vehicle and heavy machinery movements - explosion or fire from FOG activities		▪ Asset integrity and maintenance systems ▪ Emergency Response Plan ▪ Job Hazard Analysis and Permit to Work systems.		
ALARP and Acceptability	The Zevon project is a seismic exploration project only there is low risk to the receiving are environment due to the low emissions from vehicles, seismic truck and those associated with the camp. With control in place, we consider this risk ALARP and acceptable.				
Environmental outcome	**Environmental performance standards**	**Measurement criteria**		**Records**	
FOG's activities do not create a measurable decrease in air quality at sensitive receptors	No complaints from sensitive receptors	▪ Records show that there were no complaints from sensitive receptors		▪ Incident records	
	No fire or explosion from FOG activities	▪ Records show that safety critical processes and procedures are in place as per Integrity Management System ▪ Incident management system shows that emergency response plan is implemented		▪ Inspection records ▪ Incident records	
Greenhouse gas emissions are minimised	Greenhouse gas emissions are reported	▪ Calculation and submission of greenhouse gas emissions in accordance with the NGER Measurement Determination		▪ Fuel use records ▪ Submission records	
Environmental monitoring and reporting	▪ Routine testing, inspection and maintenance ▪ Clean Energy Regulator – National Greenhouse and Energy Reporting scheme (NGERs) • Supply of NGERs outcomes to the Northern Territory Government				
Corrective actions	▪ Repair of plant, vehicles and equipment ▪ Implement corrective maintenance via incident and maintenance systems where regular inspections identify potential failure				

5.12 Hazards

Environmental performance measures: Hazards					
Activities	• Civil activities – grading of access track and seismic line. • Rehabilitation • Support activities – chemical storage, waste management				
Residual Risk	Medium	**Code of Practice**	B.4.16	**Uncertainty**	A (Low)
Risk	**Consequences**		**Critical controls**		
	▪ Ignition sources present from FOG activities causing fire and loss of areas/items of cultural significance		▪ Spill Management Plan ▪ Erosion and Sediment Control Plan ▪ Bushfire Management Plan ▪ Wet Season Management Plan ▪ Waste management hierarchy implementation		
ALARP and Acceptability	Based upon the risk being ranked as a low, the controls being assessed as effective and a scientific uncertainty score outcome of low, the risk is determined to be ALARP and 'acceptable'. Oil and gas exploration and operational activities have been occurring in the area over 40 years and FOG is experienced with operating in the climatic and environmental conditions. Systems and controls are in place to effectively manage operations in the event of natural hazards such as bushfire, wet weather.				
Environmental outcome	**Environmental performance standard**		**Measurement criteria**		**Records**
Bushfires are not started from conduct of the regulated activity and infrastructure is protected from fires started outside of the OL areas	No uncontrolled bushfires caused by FOGs activities		▪ The Incident Management System shows no fires resulting from FOG activities. ▪ Records show annual fire scar mapping, annual fire load estimates and maintenance of firebreaks are undertaken. ▪ Records show emergency response plan implemented in the event of a fire. ▪ Records show weather conditions, including current fire danger are reviewed as part of pre-start/toolbox/Job Hazard Analysis/Permit to Work processes.		▪ Incident records ▪ JHA records ▪ Daily reports

Environmental performance measures: Hazards			
		▪ Records show NAFI fire tracking maps are reviewed daily as part of operations where a high fire danger is present	
No significant impact on the natural environment from FOG activities in association with weather events	No releases of contaminants resulting in long-term contamination of surface waters	▪ The incident management system indicates no releases of contaminant incidents related to wet weather operations. ▪ Incident management system indicates no incidents relating to the failure of ESFOG controls (within design parameters)	▪ Incident records ▪ Post wet weather inspection records ▪ Daily reports ▪ Inspection records
	Erosion and sediment controls in place where required and working as designed	▪ Records show Erosion and Sediment Control Plan is being implemented. ▪ Incident management system indicates no incidents relating to the failure of ESFOG controls (within design parameters) ▪ Weather conditions, including current fire danger are reviewed as part of pre-start/toolbox/Job Hazard Analysis/Permit to Work processes	▪ Incident records ▪ Post wet weather inspection records ▪ Inspection records
Environmental monitoring and reporting	▪ Monitor long-term and short-term weather forecast (daily) ▪ Measure rainfall (daily)		
Corrective actions	▪ Replace defective fire equipment. ▪ Reinstate fire breaks. ▪ Reinstate/repair erosion and sediment control devices		

5.13 Heritage

Environmental performance measures: Heritage					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Rehabilitation				
Residual risk	Medium	**Code of Practice**	A.3.1, A.3.5, A.3.7, A.3.8	**Uncertainty**	A (Low)
Risk	**Consequences**		**Critical controls**		
	• Loss of heritage values or items of significance from: - Disturbance/exposure of heritage sites/artefacts of cultural significance - Ignition sources present from FOG activities causing fire and loss of areas/items of cultural significance. - Unauthorised access to the field by public - Unauthorised access to restricted work areas/no-go zones		▪ SSCC Certificates/CLC permits in place. ▪ Site inductions (cultural awareness) ▪ Access to site pre-approved under CLC permit. ▪ Exclusion zones ▪ Implement Bushfire Management Plan ▪ Implement Emergency Response Plan / actions		
ALARP and Acceptability	Activities are not being conducted in the cultural heritage sensitive areas (exclusion zones / Katiti Petermann IPA), though there is a remote likelihood of disturbance to unexpected items or places of significance ranking this as a low risk. Works are remaining within areas approved under FOGs CLC and AAPA certificates. Further, the NT Heritage Branch will be contacted prior to any ground-disturbing activities, to ensure any known non-publicly listed sites on the Heritage Register are identified. Should additional sites be identified, suitable exclusions zones will be established in consultation with the Heritage Branch. Fire could spread to culturally significant areas if started by FOG activities. This presents a risk of a serious nature for the loss of culturally significant areas, but through the implementation of control measures outlined within the Bushfire Management Plan FOG considers that this risk has been reduced to lowest possible and is ALARP and acceptable.				
Environmental outcome	**Environmental performance standard**		**Measurement criteria / monitoring**		**Records**
No significant impact to indigenous and non-indigenous artefacts, Aboriginal Sacred Sites,	No non-compliance with AAPA Sacred Site Certificates or CLC permits		▪ The Incident Management System shows no recorded incidents involving non-compliance with AAPA and CLC permits.		▪ Incident records ▪ Induction (Heritage and Cultural Awareness)

Environmental performance measures: Heritage			
and non-indigenous heritage sites		▪ Personnel inductions include cultural and heritage awareness including exclusion zones and unexpected finds procedures	
	No unauthorised disturbance of aboriginal archaeological places/objects and/or Aboriginal Sacred Sites	▪ Incident Management System show no recorded incidents involving damage to aboriginal archaeological places/objects and/or Aboriginal Sacred Sites ▪ No removal of artefacts in situ without prior approval from Heritage Branch NT	▪ Incident records ▪ Communication with CLC
Bushfires are not started from conduct of the regulated activity and infrastructure is protected from fires started outside of the OL areas	No uncontrolled bushfires caused by FOGs activities	▪ The Incident Management System shows no fires resulting from FOG activities. ▪ Records show annual fire scar mapping, annual fire load estimates and maintenance of firebreaks are undertaken. ▪ Records show emergency response plan implemented in the event of a fire. ▪ Records show weather conditions, including current fire danger are reviewed as part of pre-start/toolbox/Job Hazard Analysis/Permit to Work processes. ▪ Records show NAFI fire tracking maps are reviewed daily as part of operations where a high fire danger is present. ▪ Records show emergency response drills are conducted	▪ Incident records ▪ JHA records ▪ Daily reports
Environmental monitoring and reporting	▪ Notify AAPA/CLC of approval and permit breaches as per conditions (as required) ▪ Review of registers and records (annual)		
Corrective actions	▪ Consult with Traditional Owners/CLC ▪ Investigate incidents and review and revise procedures		

5.14 Community

Environmental performance measures: Community values					
Activities	▪ Civil activities – grading of access track and seismic line. ▪ Rehabilitation ▪ Support activities – chemical storage, waste management				
Residual risk	Low	**Code of Practice**		**Uncertainty**	Low
Risk	**Consequences**		**Critical controls**		
	▪ Increased traffic during works programs ▪ Increased waste generation impacts regional landfill capacity and disposal of listed wastes		▪ All activities remain within approved SSCC and AAPA areas. ▪ Site Induction ▪ Bushfire Management Plan ▪ Emergency Response Plan ▪ Traffic management plan and logistics coordination ▪ Implementation of waste hierarchy in operations and program planning		
ALARP and Acceptability	Based upon the risk being ranked as a low, the controls being assessed as effective and a scientific uncertainty score outcome of low, the risk is determined to be ALARP and 'acceptable'. FOG has been operating in the area and working with owners of the land under agreement for over 40 years. FOG is maintaining relationships with the community to ensure that the risk of operations remains low and that the protection of social and economic sustainability values remains.				
Environmental outcome	**Environmental performance standard**	**Measurement criteria**		**Records**	
FOG's activities minimise the following: • Reduction in capacity of road infrastructure up to and within Mereenie • Maintain and enhance community relationships.	No complaints from stakeholders	▪ Records of FOG approved journey management plans. ▪ Records show Traditional Owners able to access field in liaison with Production Supervisor/Person in Charge ▪ Contact information provided to local communities and stakeholder to facilitate communication. ▪ No recorded incidents of work being conducted beyond approved operational areas		▪ Stakeholder Communication Log ▪ Journey Management System ▪ Incident records	

• Safety risks to the community	No disturbance to surrounding land uses/access from FOG activities	▪ The incident management system shows no record of complaints regarding surrounding land use, access, amenity, noise or nuisance. ▪ No recorded incidents against traffic management plans for FOG activities ▪ Records of journey management system implementation	▪ Stakeholder Communication Log ▪ Journey Management System ▪ Incident records
	No impact on regional waste resources and services	▪ Records show only licensed waste contractors are used for waste handling, treatment and/or disposal	▪ Waste tracking register
	Visitors and contractors are aware of environmental requirements	▪ All visitors and contractors are approved for access and inducted according to their visit requirements	▪ Induction records ▪ Incident records
Environmental monitoring and reporting	▪ Waste tracking (as required) ▪ Community complaints (as required) ▪ Traffic changes (weekly)		
Corrective actions	▪ Drive to conditions on unsealed private and public roads to minimise nuisance and safety risks. ▪ Communicate with Traditional Owners/CLC where incidents occur beyond operational areas. ▪ Investigate incidents and review and revise procedures. ▪ Re-instate areas disturbed beyond approved boundaries		

5.15 Cumulative Impacts

The cumulative impacts associated with the Zevon project have been assessed as low.

Aspect	Risk rating	Summary
Water (groundwater)	Low	No groundwater impacts associated with Zevon.
Surface water	Low	No surface water will be taken and no release to surface water proposed
Greenhouse Gas Emissions	Low	▪ Low emissions associated with vehicle use, camp generator use and vegetation clearing (1525.2 tCO_2 e) ▪ Current emissions levels do not trigger the *Northern Territory Governments Large Emitters Policy 2021*
Community – traffic	Low	▪ An additional 13 vehicles per day accessing Mereenie and EP 115 anticipated during specific work programs such as the seismic testing. This is above the current traffic volumes that have been ongoing accessing the Mereenie Field for the last 40 years. ▪ Journey Management Planning and personnel awareness through daily pre-start meetings of increased traffic during peak tourist periods and maintaining safety for FOG crews and tourists alike is a priority for FOG.
Community – tourism	Low	Tourism activities have worked nearby to Mereenie and EP115 for the life of the field. With the isolated location of the proposed seismic test line, supporting infrastructure and no other resource or industrial projects in the area, FOG considers the impacts of ongoing activities to be low
Community – amenity / accommodation visual impact	Low	No infrastructure proposed, short term project only
Rehabilitation – final land use	Low	Successful rehabilitation is dependent on the vegetation type, soil type and moisture content in the soil which, in turn, is dependent on the timing and amount of rainfall in the region after earth work restoration commences

6 Management Plans

The subsequent management plans have been workshopped and developed in collaboration with suitably qualified, multidisciplinary personnel (e.g. engineers, site managers, environmental professionals, logistics managers) to ensure sources of potential impacts and risks are accurately identified and mitigated. Personnel involved in the development of these management plans included:

6.1 Wet Season Management Plan

The Zevon project activities are set to be conducted in late 2023, and where possible will avoid the wet season. However, in the event the activities are conducted during the wet season, a Wet Season Management Plan has been developed and presented below in Table 21 to address the risks. Management measures will be put in place to ensure the project can continue with little impact on the environment.

6.2 Erosion and Sediment Control Plan

The Code requires an Erosion and Sediment Control Plan (ESCP) for the activities to be developed by a suitable qualified person in accordance with the relevant guidelines including IECA Best Practice Guidelines. Table 22 presents the ESCP for the Zevon project.

6.3 Weed Management Plan

The Code requires a Weed Management Plan (WMP) that is developed in accordance with the requirements of the *NT Weed Management Planning Guide: Onshore Petroleum Projects.* The Weed Management Plan is provided below in Table 23.

6.4 Bushfire Management Plan

The Bushfire Management Plan for the Mereenie Field is provided in Table 24 and has been based on the *Bushfire Management Planning Guide: Onshore Petroleum Projects (*DENR, 2020) and the Code.

6.5 Rehabilitation Management Plan

The Rehabilitation Management Plan, Table 25 addresses progressively rehabilitating significantly disturbed land which is not required for ongoing activities and returning all disturbed areas to a safe and stable landform as close as possible to the surrounding environment pre-disturbance. In the event gravel is required for rehabilitation it will be purchased from a commercial supplier and brought to site. Topsoil will be stockpiled during seismic profiling works and respread during rehabilitation. In the unlikely event more topsoil is required, it too will be commercially sourced and brought to site.

6.6 Spill Management Plan

The Code requires a Spill Management Plan (SMP) that assesses and manages the risks posed by potential spills of waste, wastewater, produced oil or condensate, fluids and any chemicals used or stored as part of petroleum activities and addresses the requirements of the Code is presented in Table 26.

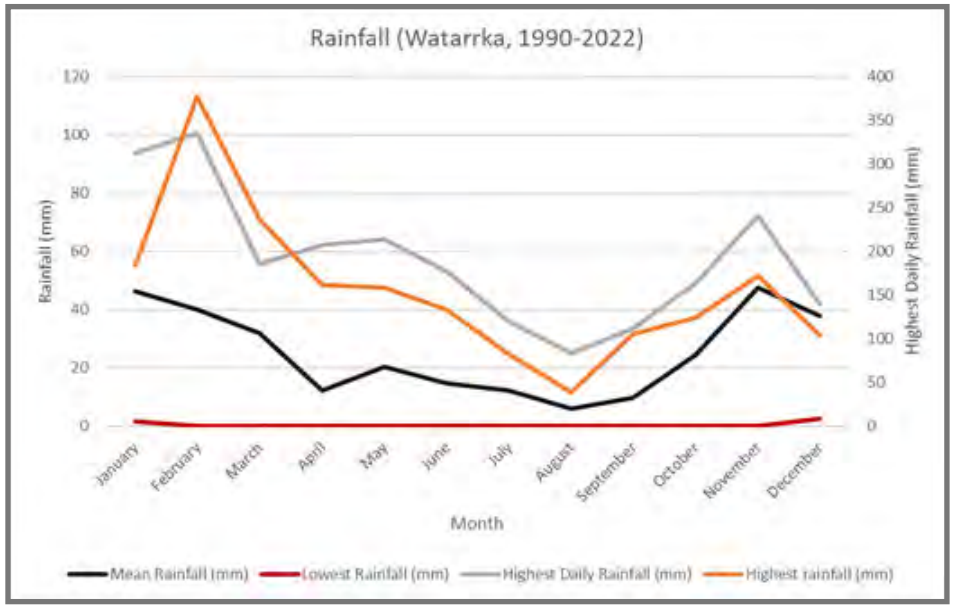
Zevon Test Line

Weather Management Plan 2023

CENTRAL PETROLEUM MEREENIE FIELD	
Property land uses	CP operates the Zevon program under EP 115
Site Description	EP 115 located approximately 280km SW of Alice Springs in the Northern Territory adjacent to the existing Mereenie field (OL4)
Wet Season Management Plan	
Purpose	To respond to the risks associated with wet weather on daily operations.
Objectives	Ensure that all operational and workover activities can continue to be undertaken safely and with minimal risk to the environment during the wet season .

WET SEASON RISKS	
Key Risks	**Controls**
Flooding within the operational areas	• Operations are shut down during significant wet weather or flooding and only restarted once potential for extensive damage has passed. • Following shut down due to flooding or inundation the risk assessment will be revisited to ensure controls are still appropriate to manage risk to ALARP. • All chemicals and hydrocarbons are stored within vehicles or suitable containers to prevent rain ingress and overflows where possible.
Erosion/damage to access tracks and roads	• After a rain event any unsealed roads will be inspected to ensure they are safe for vehicles. • Earthworks will not occur during rainfall events. • Erosion & Sediment Controls will be examined after a significant rain event and repairs undertaken if required.

	Plan Owner	Implementation
Contact		



WET SEASON MONITORING		
Monitoring	**Information location/Action**	**Frequency**
Weather forecast	http://www.bom.gov.au/nt/	Daily
Road conditions	https://roadreport.nt.gov.au/home	After significant rainfall event
Internal roads and access tracks	Visual monitoring for erosion	After significant rainfall event

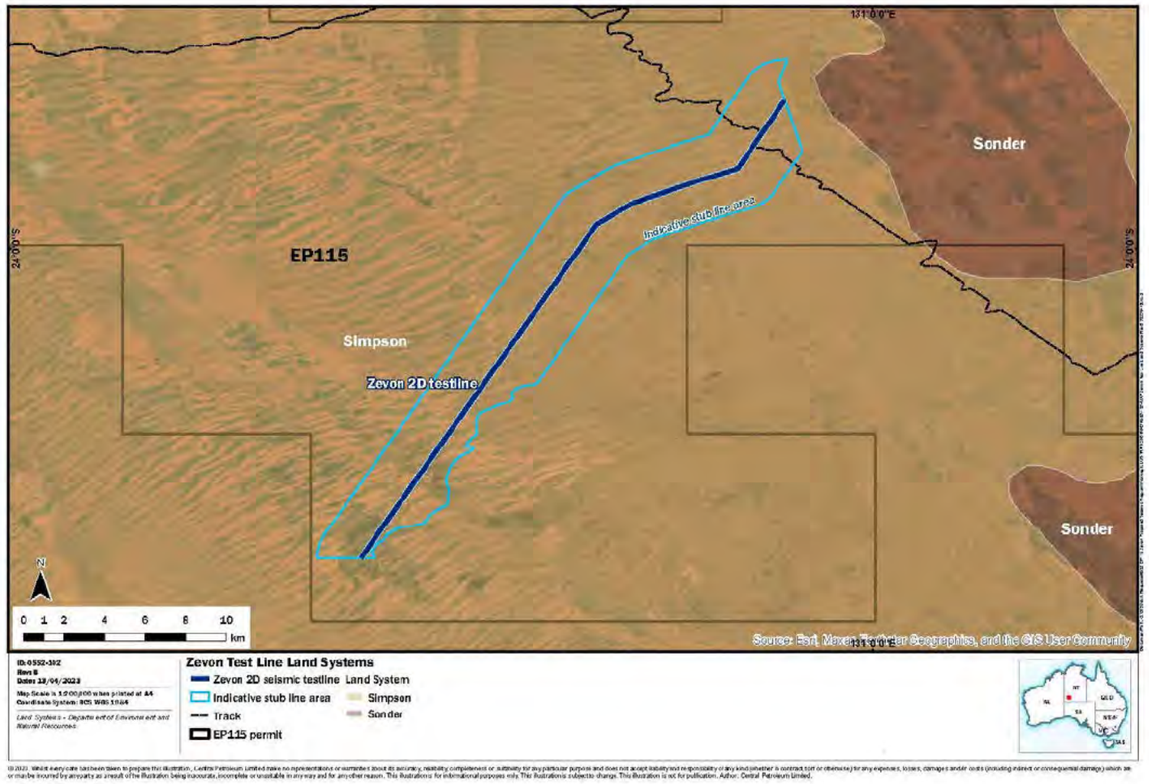
Zevon Test Line
Erosion and Sedimentation Control Plan 2023

	Owner	Field Implementation
ESCP	Central Petroleum's Site Supervisor	Central Petroleum's HS&E Team

Central Petroleum EP 115	
Property land uses	CP operates the Zevon program under EP 115
Objectives	To minimise land and water impacts in relation to seismic exploration activities by preventing erosion and controlling sediment discharge.

EROSION AND SEDIMENTATION RISKS	
Key Risks	**Controls**
Arid to semi-arid climate, hot dry summers and cool dry winters with a low average annual rainfall. More rainfall occurs in the summer months associated with monsoonal influences; but the amount of rainfall in the arid zone is highly variable.	
Movement of heavy machinery and vehicles	• Avoid driving after significant rainfall events • No driving beyond access tracks • Personnel access to the facility and any site/area by permit approved by the CLC
Significant rainfall events	• Operations are shut down during significant wet weather or flooding and only restarted once potential for extensive damage has passed. • Following shut down due to flooding or inundation the risk assessment will be revisited to ensure controls are still appropriate to manage risk to ALARP. • After a rain event any unsealed roads will be inspected to ensure they are safe for vehicles. • Earthworks will not occur during rainfall events. • Erosion & Sediment Controls will be examined after a significant rain event and repairs undertaken if required.

LIKELY IMPACTED AREAS	
Disturbance areas	• Existing track • Previously cleared seismic line • The clearing for the 30.4 km seismic line



EROSION AND SEDIMENTATION MONITORING PROGRAM			
Mitigation Measure	**Measurement Criteria**	**Monitoring frequency**	**Record**
Main seismic line (during seismic acquisition)	• Minimise disturbances. Use existing tracks. Travel at slow speeds. • No work during wet weather events.	• Visual inspections of Zevon area undertaken to ensure that a stable landform is being maintained. • Ensure restricted works areas are visually inspected for ESC impacts and that all controls are in sound working order. • Inspections after significant rainfall events (e.g., greater than 15mm in 24hrs). • Drone footage and photographic images will be recorded prior to and post the Zevon program.	Rehabilitation report: • Area of disturbed land available for rehabilitation at the start of the reporting period • Area of disturbance that occurred during the reporting period • Area where rehabilitation commenced during the reporting period • Area of disturbed land (if any) remaining to be rehabilitated at the end of the reporting period • Drone and photographic monitoring point GPS locations and results of monitoring undertaken during the reporting period • Monitoring of progressive rehabilitation, including flora type and density, fauna activity and soil stability • Any erosion and sedimentation issues • Any stakeholder consultations and results of discussions related to rehabilitation • Any issues that may affect the rehabilitation success factors noted in the measurement criteria within the Rehabilitation Management Plan. and remedial actions taken or required to be undertaken to allow the success factor to be realised. • Monitoring of contaminated sites (if any) • Weed monitoring
Stub Line	• Avoid disturbance. No clearing of vegetation or land for tracks. • Use UTV's at slow speeds to access. Manoeuvre around sensitive areas. • No work during wet weather events.		
Access track in the location of the seismic line post acquisition	• Rehabilitate existing sections of the track exhibiting erosion issues. • Reprofile to prevent concentration of sheet flow. • Install erosion controls to redirect water from the track and other restricted works areas (eg. mapped heritage exclusion zones and ecologically significant areas). • Install erosion controls upstream to reduce erosion and lower water velocities in some locations. • No windrows. • No work during wet weather events.		
Main Seismic line clearing	• Reprofile to prevent concentration of sheet flow. • Install erosion controls to redirect water from the track and other restricted works areas (eg. mapped heritage exclusion zones and ecologically significant areas). • Install erosion controls upstream to reduce erosion and lower water velocities in some locations. • Ensure breaks in windrows. • No work during wet weather events		

Zevon Test Line
Erosion and Sedimentation Control Plan 2023

Land Systems					
Land System	**Description**	**Geology**	**Topography**	**Soils**	**Erosion Hazard**
Singleton	Desert Sandplains	Level to undulating sandplains with red sands.	A fold complex of prominent east-west ranges, mainly quartzite, lowlands on limestone and with gravel terraces over moderately weathered bedrock	• Tenosols which lack a well-developed soil profile and are generally sandy. • Kandosols, which lack texture contrast, are not calcareous and parent material is siliceous to intermediate. • Sodic soils were not observed during site surveying.	• Low risk from seismic activities. • Primary risk is from rainfall over the survey location.
Simpson	Desert Dunefields	• Spinifex-covered sand dunes. • Dunefields with parallel linear dunes, reticulate dunes and irregular or aligned short dunes. • Variable relief. • Associated swales in between dunes. • Red sands on dunes and a variety of soil types in swales- such as red clayey sands, red earths, and calcareous earths.			

TYPICAL EROSION AND SEDIMENTATION CONTROL DEVICES*		
Type	**Use**	**Example**
Fibre rolls	• Fibre rolls consist of small-diameter, biodegradable straw/coir-filled logs. • Can be used as check dams in wide, shallow drains so long as the logs can be anchored to prevent movement. • Best used in locations where it is desirable to allow the log to integrate into the vegetation, such as in vegetated channels.	
Cross ban (whoa boy) drainage	• Divert water off tracks • Collect and divert sheet flow off roads and tracks	
Devices will be as per the design standards of *IECA Best Practice Erosion and Sediment Control Guidelines Source: *Erosion and Sediment Control- A Field Guide for Construction Site Managers, Version 5, 2012, Catchments & Creeks Pty Ltd*		

Zevon Test Line
Weed Management Plan 2023

	Contact Details	Name
Weeds Officer	[redacted]	[redacted]

CENTRAL PETROLEUM MEREENIE FIELD	
Property land uses	CP operates the Zevon program under EP 115
Site Description	EP 115 located approximately 280km SW of Alice Springs in the Northern Territory adjacent to the existing Mereenie field (OL4)
Weeds Management Plan	
Purpose	To prevent and control new and existing weed species within the operating licence areas.
Objectives	To prevent weeds through the following process steps: 1. Identification 2. Prevention 3. Control 4. Disposal

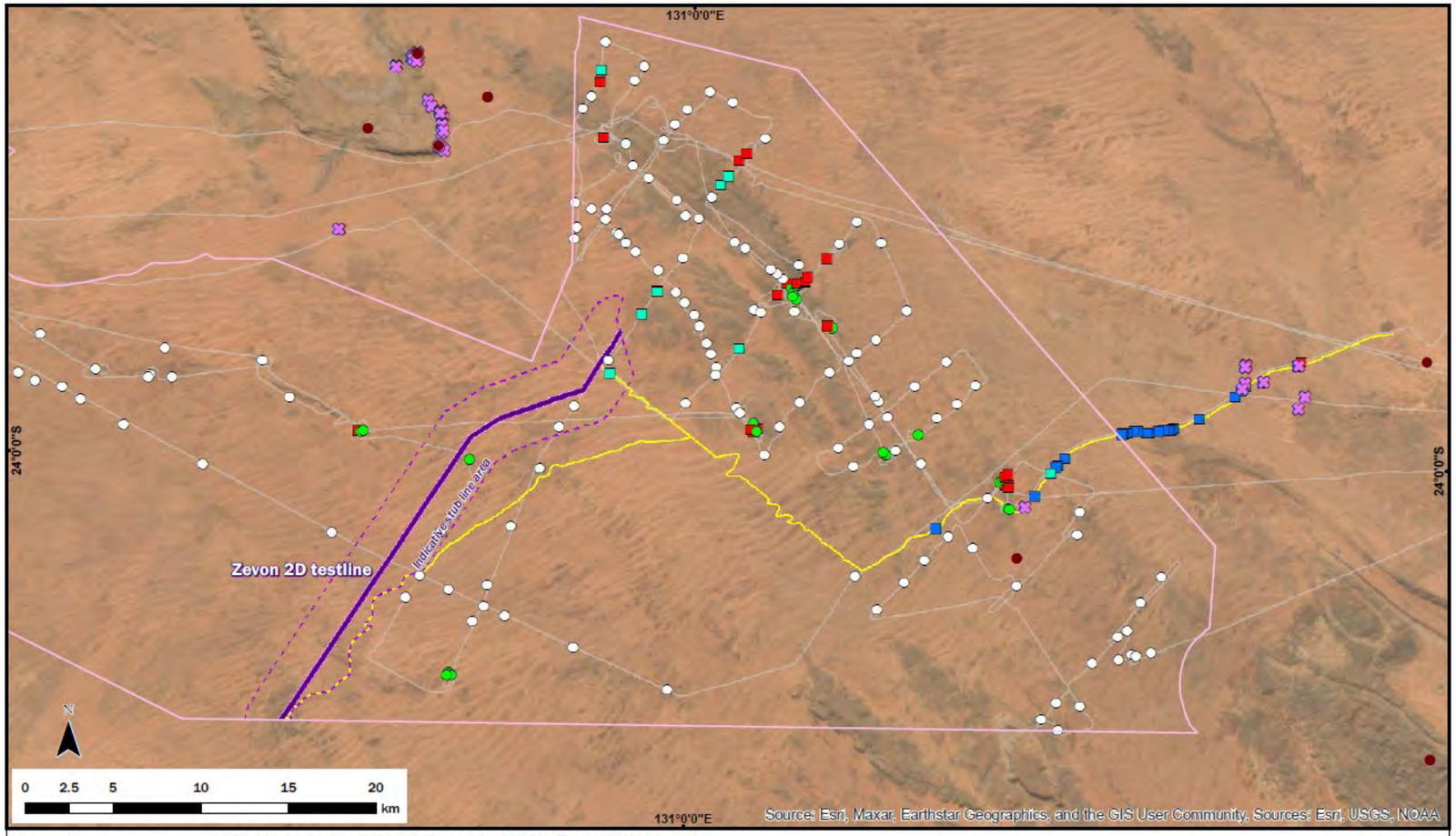
NOTIFICATION, RECORDING AND REPORTING	
Aspect	**Action**
Notification	• Notify the Weed Management Branch within 48 hours of the discovery of a new declared weed species (i.e., not previously identified in weed surveys or recorded in the NR Maps system) within the seismic survey locations. • Initial notification will be by telephone with follow up written notification provided within seven (7) working days. • Written notification is to include a preliminary species identification and location (easting and northing).
Recording	• Weed surveys is undertaken by the Weeds Officer. • Data on weed distribution will be maintained in CP's geographical information system and be provided to the NT government as part of the annual report on performance against the WMP, or when requested by the Weeds Management Branch.
Reporting	• A report on the performance against this WMP will be submitted to DEPWS as part of EMP reporting .

RISKS AND MANAGEMENT CONTROLS	
Key Risks	**Management Controls**
Machinery and equipment from weed infested locations – potential for introduction and spread of weeds	• Machinery wash down prior to entering site. • If coming from known weed-infested areas or interstate, vehicles should have a weed-free certificate issued. • Compulsory site inductions provided to all personnel, contractors, and visitors prior to entering the site.
Spread of weeds due to driving vehicles and trucks along tracks	• Machinery washdown prior to entering and after leaving the site. • Location of weeds reported to Declared Weeds Officer when observed by workers. • Avoid driving through areas of high infestation to low infestation where possible.
Insufficient survey effort Weeds present on site not identified during survey	• Use of NTG spatial data sets to find areas of weed infestations within close proximity to the site. • Completion of a site survey prior to commencing work in new areas.

MANAGEMENT PROCESS			
Process Step	**Objective**	**Actions**	**Frequency**
Weed Identification	Weed species and area of infestation are identified and monitored	• Access tracks, seismic lines, stub lines and all camp areas to include visual checks to be noted during pre-start activities. • Formal weed survey of all disturbance areas noted above undertaken annually by dedicated weeds officer • Photograph weed species identified (and/or areas of infestation recorded with GIS and mapped) • Report to the CP HSE Team and included within weed survey report • Weed survey findings used to determine control programs in consultation with CP or suitable contractors • CP site staff to be trained in identification of weeds, particularly Declared Weeds and WoNS. CP staff should familiarise themselves with declared weeds that have potential to enter the site (e.g. Athel pine)	• Annual Weed survey, or more regularly if determined by Weeds Officer .
Weed prevention	No new declared weeds, WoNS or environmental weed individuals or infestations	• Vehicles and/or equipment coming from an area with Declared Weeds should be cleaned and obtain a weed free certificate from qualified personnel before entry • If areas containing weeds are accessed, clean all equipment and machinery. Wash or blow down vehicles to prevent transfer of weeds to uncontaminated areas • No unnecessary clearing to minimise ground disturbance • Road grading in areas of weeds should start from the outside of the infestation towards the centre of the infestation • No off-road driving • Monitor operational areas and 'hotspots' continually • Report weed sightings to the Weeds Officer	Ongoing as part of activities
Weed Control	Existing weeds are controlled using effective methods Personnel and infrastructure are protected from increased fire risk due to weed infestations No spread of weeds No new weed species present	• Use the correct control and/or removal method selected by trained personnel/contractor based on species present and extent of infestation • Plan a rapid response to seasonal changes to maximise the effectiveness of control activities • Engage local traditional owners, rangers or contractors to assist with mechanical and chemical control of weed species at the site • CP staff will also undertake weed control when they are available during normal operations • Control activities are mapped using the same methods as undertaken in past surveys undertaken by CP to ensure consistent capture of information. This will enable the Weeds Officer to be more aware of the spread or containment of existing weeds and the effectiveness of weed control	Control/removal scheduled to occur prior to weed seeding where practicable - timing with seasons and predicted rainfall (Usually Nov-March)
	Weed control methods result in no environmental harm	• Only suitably trained personnel will use chemicals and herbicides, in accordance with CP's chemical handling and storage procedures • Relevant stakeholders will be consulted prior to chemical herbicide being used • Assess areas outside of operational areas prior to weed control to identify conservation-listed flora. • Ensure non-target conservation-listed species are not impacted by weed control • Minimise drift by spraying on low-wind days • No use of residual herbicide pellets within 2-3 canopy diameters of trees or shrubs • Follow-up surveys will refine the impacts of weed removal of the potential for future vegetation re-growth	During weed control activities as part of operational procedures Prior to weed control in areas outside of operational area.
Disposal of weeds and chemicals	Weeds disposed of in environmentally friendly manner No further weed spread from disposal Correct disposal of chemical containers	• Any weed plant material (leaves, seeds, flowers, branches etc.) that are physically removed from plants chemically treated in situ as part of vegetation clearing will be removed from site (e.g. via waste bins) • It is illegal to transport declared weeds. If declared weeds enter the site, these should be captured by the dedicated weeds officer and provided to the Northern Territory Governments Weeds Management Branch for disposal and to prevent emergence of seeds or seedlings • Chemical containers disposed of correctly	On completion of weed control activities
Reporting	Compliance with NTG requirements	• Annual update provided to DEPWS to include weed control activities, updated locations of weed spread.	Annual survey report provided to DEPWS

Zevon Test Line
Weed Management Plan 2023

IDENTIFIED WEEDS SPECIES			
Common Name	**Scientific Name**	**Image**	**Description**
Buffel grass	*Cenchrus ciliaris*		• Long lived dense tussock grass with deep tap-root system up to 1m tall. Stalks are tough and branched with swollen bases. Leaves are produced at the basal and higher nodes. Rhizomes up to 0.5 m long. • Flower- varies in colour from straw to purple. Long cylindrical, dense, spike-like, 2.5–15 cm long. Leaves- blueish-green, hairy with pointed tips, flat or folded. Seed heads- Dense, hairy, cylindrical spike up to 15 cm long and 2 cm wide. Seeds enclosed in a cluster of bristles, giving 'fluffy' appearance.
Gomphrena Weed	*Gomphrena celosiodes*		• Prostrate and mat-forming to ascending or erect 7 -30 cm tall Leaves narrow y oblong to oblong-elliptic or oblanceolate. Papery white flower heads.
Spiked Malvastrum	*Malvastrum americanum*		• Erect, annual, or short-lived perennial herb to 1m tall. Most parts with short, scattered, stellate hairs, dense on young growth. Leaves ovate to lanceolate. Flowers in a dense terminal spike, yellow to orangish yellow. Can produce root suckers



Map of weed survey results and survey effort within the AOI

ID: 0552-114
Rev:
Date: 9/06/2023
Map Scale is 1:295,768 when printed at A4
Coordinate System: GDA 1994 MGA Zone 52
Map after EcOz 13/12/2021
Survey data: EcOz (Sep 2021)

- Zevon 2D seismic testline
- Indicative stub line area
- Zevon Testline access track to be graded (17/04/2023)
- Area of Interest

Buffel Grass survey results (EcOz, Sept 2021)

- Buffel Grass present (varying densities)
- Potential infestation (aerial observation)
- None observed (on ground inspection)
- Unlikely (based on aerial observation)
- Buffel Grass (EcOz June 2021)
- Helicopter flight path (Sept 2021)

NT Atlas weed records (DEPWS)

- Other weeds (low risk)
- Buffel Grass records

Zevon Test Line

Bushfire Management Plan 2023

Central Petroleum Mereenie Field	
Property land uses	CP operates the Zevon program under EP 115
NT Fire Management Zone	Alice Springs
NT Fire Protection Zone	EP115 is not located within a NT Fire Protection Zone
Aim	To minimise the potential and impact of fires from CPs activities to people, environment, culturally significant sites, public infrastructure and community lands.
Objectives	Minimise the risk of causing bushfires from CP's activities and to prevent accidental fire risk and ensure safe storage of chemicals
Plan Owner	Risk and HSE Manager

	Contact Details	Name
Bushfire Officer	Onsite Company Representative	

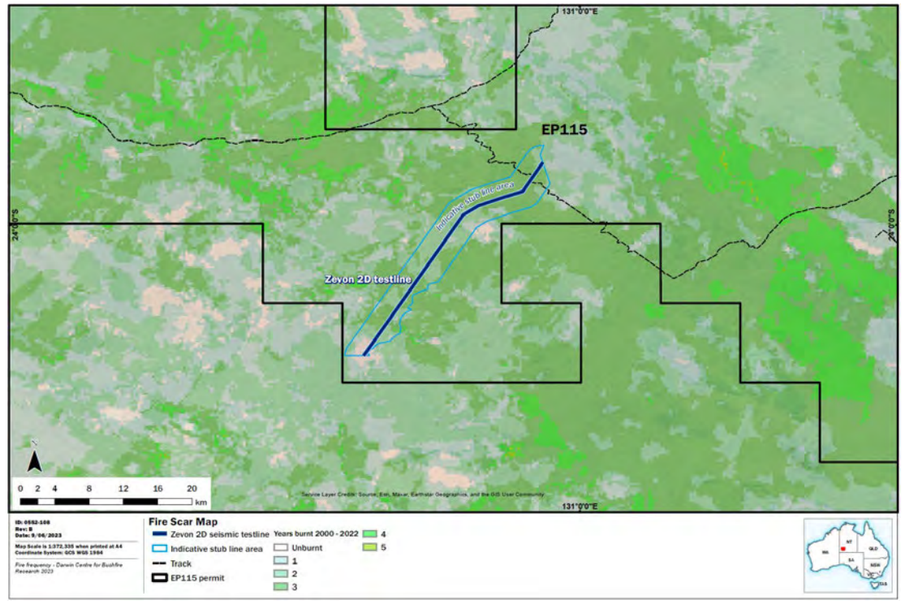
Stakeholders	Contact Details
Emergency	000 0r 112 from mobile
Bushfire NT	[redacted] [redacted]066 (Alice Spring) Bushfires.nt@nt.gov.au
NAFI	www.firenorth.org.au/nafi3/
Bureau of Meteorology	www.bom.gov.au
NT Fire Incident Map	www.pfes.nt.gov.au/incidentmap/
Secure NT	securent.nt.gov.au/alerts
Central Land Council	08 8951 6211
Haasts Bluff Aboriginal Land Trust	08 8962 2343

BUSHFIRE MANAGEMENT ACTIONS	
Activity	**Management Controls**
Seismic exploration program	• Fire extinguishers to be available within vehicles • Designated smoking areas provided • Ignition sources to be managed • Onsite risk assessment to be conducted each day • No open fires permitted
General	• Staff members responsible for managing bushfire risk to be competent in the role they perform • Daily monitoring for fire alerts to be undertaken • Emergency response plans to include response requirements for fires • Inductions to include bushfire risks, hazardous zones, controls, and emergency response procedures • Storage of chemicals to be in accordance with the relevant Australian Standards • Sufficient water to be available onsite to enable CP to provide an initial response to an accidental fire • If unable to control fire notify Bushfires NT and properties where spread is likely to go

BUSHFIRE ALERTS	
Advice	Areas which have either a small fire which is controllable, planned fuel reduction burning or an area likely to be affected by smoke
Watch and Act	An area that has a bushfire approaching a community, changing with conditions or will threaten property or life if not controlled
Emergency Warning	An area that is in immediate danger from the bushfire and you must act now to protect your life

BUSHFIRE RESPONSE—ERP	
Actions	
Move Away	• Move yourself and others away from danger
Raise Alarm	• Raise alarm on field radio *UHF Channel 1* /SOS alarm on tracker/ phone • Notify emergency services • Activate alarms and muster, as required
Gather Information	• Fire location • Wind direction • Wind strength • Size of fire • Type of fire • Any injured/missing personnel
Mobilise SERT	• Mobilise Site Emergency Response Team (SERT) if additional resources are needed • The control of a bushfire rests with owner / occupier of the land—to ensure fire risk is managed to ALARP, all elements of this Management Plan are to be adhered to. SERT will be engaged in the event of fire being reported. • In all instances of uncontrolled fire, the SERT leader shall notify local fire control officers / wardens (ie. Rural Fire Brigades and applicable landowners). SERT will also review what plant must be shut down or additional fire breaks be prepared.
Notify	• Neighbours in surrounding properties and local fire wardens / Rural Fire Brigades.
Monitor	• Weather information • Wind direction • Local fire information/NAFI • Road condition reports
Record and Report	• All fire incidents, near misses and potential hazards are logged through CPs incident reporting system for further investigation and initiating corrective actions

SEASONAL BUSHFIRE RISK CALENDAR			
Month	**Bushfire risk**	**Month**	**Bushfire risk**
Jan	**High**	**Jul**	**Low**
Feb	**High**	**Aug**	**Low**
Mar	**High**	**Sep**	**Low**
Apr	**Medium**	**Oct**	**Medium**
May	**Medium**	**Nov**	**Medium**
June	**Low**	**Dec**	**High**



Zevon Test Line
Rehabilitation Management Plan 2023

CP Rehabilitation Officer	Contact Details	Name
	[redacted]	[redacted]

Location of the Mereenie Field	
Property land uses	Gas exploration and cattle grazing
Climate	In general, EP 115 experience an arid to semi-arid climate, which is characterised by hot dry summers and cool dry winters with a low average annual rainfall. Typically, more rainfall occurs in the summer months associated with monsoonal influences; however, the amount of rainfall in the arid zone has a history of being highly variable.
Site Description (pre-disturbance)	EP 115 located approximately 280km SW of Alice Springs in the Northern Territory adjacent to the existing Mereenie field (OL4)

Rehabilitation Objectives	Actions for successful Rehabilitation
The objectives of this rehabilitation management plan are to: • Minimise disturbance as far as reasonable practicable • Progressively rehabilitate significantly disturbed land which is not required for ongoing activities • Return all disturbed areas to a safe and stable landform as close as possible to the surrounding environment • Ensure significantly disturbed land is re-established to its pre-disturbed condition and land use • No residual contamination • No land management issues for future land managers.	Prior to and during operations, activities are undertaken to improve the success of rehabilitation these include: • Utilisation of a multi-criteria assessment (inclusive of rehabilitation objectives) to select a preferred location • Completion of pre-disturbance surveys • Preparation of maps defining boundaries of different rehabilitation management areas or zones and infrastructure • Topsoil is stockpiled onsite around the edges of the lease in low profile mounds (<2m) to preserve the biological activity • Vegetation stockpiled separately on the edge of the lease preserved for seed bank, habitat and erosion protection • Erosion and sediment devices are put in place as per the ESCP • All wastes managed per the EMP

Environmental Strategies and timing		
Activity	**Strategies**	**Timing**
Analogue sites	Identify appropriate analogue sites for each of the disturbance areas	After the first wet season in conjunction with the first monitoring event
Post seismic activities	• Remove rubbish • Re-instate soils • Re-spread vegetation previously cleared	Commence post seismic activities
Land use	• The disturbed areas will be returned to the original land use.	Commence post seismic activities
Soil Stability	Remove any flow concentration points that may block overland sheet flow Re-instate natural drainage channels (i.e. removal of bunds and structures that temporarily altered flow paths) Return soil profile with topsoil replaced as final layer where possible Ensure all cleared areas have a rough surface to aid in water, seed and litter catchment Erosion and sedimentation devices installed and maintained	Commence post seismic activities
Contaminated soil	Undertake remediation of contaminated soil in accordance with spill management plan / emergency response plan	Remediation of contamination to be undertaken immediately.
Revegetation	Revegetation of disturbed areas is undertaken post soil stability. Where possible natural regeneration of areas will be promoted. If there is limited materials to promote regeneration then seeding a cover crop may be used to assist in soil stability until pioneer species emerge. Where natural regeneration requires assistance seeding of native plants will be undertaken.	Commence post seismic activities
Monitoring	All monitoring to be undertaken by a suitably qualified person and in accordance with this Plan. Identified restricted work areas within 100m of disturbed areas will be monitored during rehabilitation monitoring to ensure no occurrences of weeds or ero-	Refer to the rehabilitation measurement criteria and monitoring program

Rehabilitation Risks	
Key Risks	**Controls**
Drought — impacting the establishment of rehabilitated vegetation	• Time rehabilitation actions to coincide with the beginning of the wet season, to ensure access to the site and maximise the establishment period of vegetation over the wet season • Re-spread topsoil across the site to utilise the local seed bank • Ongoing monitoring to identify if further seed inputs are required • Collection of seed from the local area to ensure seed stock is suited to the climatic conditions of the site.
Fire—impacting revegetation	• Establish a mix of perennial and annual grass species • Ongoing monitoring to determine fire impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required
Grazing —impacting revegetation	• Establish a mix of perennial and annual grass species • Re-spread timber with top soil • Ongoing monitoring to determine grazing impacts on revegetation. • Ongoing monitoring to determine if further seed inputs are required • Ongoing monitoring to determine if fencing is required
Lack of topsoil and soil inversion—impacting rehabilitation success	• Soils are to be returned to pre-disturbance soil profiles • Topsoil spread over the entire lease evenly. • Topsoil may need to be made or brought in if there is a lack of topsoil
Exposed Ground — leading to an increase in weed establishment and/or erosion	• Remove windrows and topsoils • Respread of topsoil and vegetated matter across the site • Annual weed surveys of rehabilitated area once rehabilitation is established • Control of any weed incursions

Seasonal Rehabilitation Calendar					
Mo	**Season**	**Activities**	**Mo**	**Season**	**Activities**
Jan	**Wet**	• Revegetation • Broadcasting seeds • Collection of seeds	**Jul**	**Dry**	• Decommission and remove non-essential infrastructure • Install ESC for new infrastructure • Establish analogue sites for new infrastructure
Feb	**Wet**	• Revegetation • Broadcasting seeds • Collection of seeds	**Aug**	**Dry**	• Decommission and remove non-essential infrastructure • Install ESC for new infrastructure • Establish analogue sites for new infrastructure
Mar	**Wet**	• Revegetation • Broadcasting seeds • Collection of seeds	**Sep**	**Dry**	• Decommission and remove non-essential infrastructure • Install ESC for new infrastructure • Establish analogue sites for new infrastructure
Apr	**Wet**	• Repair ESC controls • Weeds survey and management • Collection of seeds	**Oct**	**Dry**	• Decommission and remove non-essential infrastructure • Install ESC for new infrastructure • Establish analogue sites for new infrastructure • Prepare rehabilitation areas for wet season
May	**Wet**	• Repair ESC controls • Weeds survey and management • Collection of seeds • Complete rehabilitation annual monitoring	**Nov**	**Transition**	• Check ESC controls • Prepare rehabilitation areas for wet season
June	**Transition**	• Repair ESC controls • Monitor and prepare for bushfires	**Dec**	**Wet**	• Revegetation • Broadcasting seeds • Collection of seeds

Decommissioning and Rehabilitation Process		
Asset	**Specific activities to the asset**	**General activities across all assets**
Seismic line	• Remove rubbish • Re-instate soils • Re-spread vegetation previously cleared to promote natural regeneration • Implement ESC devices at high risk erosion areas • Re-seed if required	• Any imported gravel material is removed and returned to the source quarry or utilised elsewhere on CP operational sites • The site is re-contoured as close as possible to the pre-existing natural landscape • Hardstand is deep ripped to relieve compaction, encourage infiltration and water retention • Topsoil is respread evenly over the lease area and lightly scarified to encourage moisture retention and seed capture • Vegetation is respread over the lease, this acts as erosion control, provides habitat and promotes natural revegetation • Any weeds or invasive species are managed per the weed management plan during the rehabilitation process • Temporary erosion and sediment controls to support the rehabilitation designed and installed where required • All waste removed from site • If natural revegetation success is low, seeding may be required, this will be assessed through the monitoring program.
Camps (contracted)	• All services are blinded and left safe or removed • Sewage treatment facility is removed • Temporary fence around the irrigation area removed	

Zevon Test Line Rehabilitation Management Plan 2023—

Rehabilitation measurement criteria and monitoring Program

CP Rehabilitation Officer	Contact Details	Name

Acceptability Criteria				Annual Monitoring Program			Corrective Actions
Rehabilitation Outcome	**Endpoint(s)/Performance Standards**	**Measurement Criteria**	**Rational**	**Frequency**	**Proposed Methodology (adaptive depending on seasonal conditions)**	**Rational**	
• The vegetation composition (e.g. type, density and maturity) of the rehabilitation is recognisable as the target vegetation community and indistinguishable from the surroundings. • The vegetation structure of the rehabilitation is recognisable as, or is trending towards the target plant community. • No adverse erosion	• Dominant species in analogue sites are represented in rehabilitated areas • Community structure is substantially the same as the analogue site/s groundcover, shrubs and trees • Perennials have established, stabilising soils and reducing erosion potential • Habitat structures and habitat quality are substantially similar to analogue sites, creating connection to the adjacent landform and vegetation allowing for fauna re-use of the site • Completely stable (or in dynamic systems such as dunal landforms, same degree of stability as surrounding terrain)	• Ground cover - 75% foliage cover and density of the analogue site • Perennial Cover- recruitment of woody perennial species achieves 75% of the analogue site • Plant species richness and abundance achieves 75% of the analogue site • No declared weed species under the Northern Territory Weeds Management Act • No weed species • 50% of the organic litter and coarse woody debris of the analogue site • No evidence of soil subsidence and <2% erosion across the site (qualitative – photo evidence of scarring, rill/sheet erosion)	• Cover equivalent to 75% of the analogue site/s is likely to self-sustain over time and rehabilitated areas become ecologically integrated with surrounding areas • Species richness shows the rehabilitation site is able to support the full complement of species from analogue sites, even if not all species are yet at the same abundance, noting that in an arid environment, species such as spinifex grow extremely slowly • In arid regions soil stability is critical for the success of rehabilitation	• Annually, commencing after the first wet season, and noting the following: • The Amadeus Basin is located in an arid region and establishment of vegetation generally is slower than areas with higher rainfall. Therefore, it is unlikely that quantitative assessments will provide meaningful data to determine rehabilitation success in years 1, 2 and 3 • In year 1 the analogue sites will be set up, the photo monitoring points will be established and the permanent woody species transect will be established. The site will be assessed for stability and any weed issues. • 2 and 3, if there is no evidence of vegetation regeneration but the sites appear to be stable, and free from erosive forces or fire effects, a visual assessment only of cover and structure will be made. • In year 4, and year 5 monitoring against endpoints will be undertaken. An adaptive approach will be taken year on year for the monitoring. A suitably qualified person may adapt the monitoring based on the seasonal conditions (i.e the wet season). This will be documented in the annual rehabilitation report. • Post 5 years the EMP will need to be updated and the data collected will be used to update the new rehabilitation plan.	**Year 1** • 2 or more analogue sites in nearby undisturbed vegetation community and landforms as per the analogue definition and selected by a suitably qualified person • Establish permanent 100x4m woody species transects • Establish photo monitoring and collect photos • Record any weather events during the period • Check for subsidence across the rehabilitated area • Assess the % of erosion across the rehabilitated area. • Check for any loss of topsoil through erosion and map areas of concern • Check for soil inversion issues and map areas of concern • Weed Survey **Year 2 and Year 3** • Check for integrity of works and ability for future rehabilitation success • Record any weather events during the period • photo monitoring • Check for subsidence across the rehabilitated area • Assess the % of erosion across the rehabilitated area. • Check for any loss of topsoil through erosion and map areas of concern • Check for soil inversion issues and map areas of concern • Weed survey **Year 4** • Woody species transects from the permanent 100x4m • Collect 1x1 m ground cover quadrants every 10m along a transect. Transect to be randomly selected • Photo monitoring collected • Record any weather events during the period • Check for subsidence across the rehabilitated area • Assess the % of erosion across the rehabilitated area. • Check for any loss of topsoil through erosion and map areas of concern • Check for soil inversion issues and map areas of concern • Weed survey **Year 5** • Woody species transects from the permanent 100x4m • Collect 1x1 m ground cover quadrants every 10m along a transect. Transect to be randomly selected • Photo monitoring collected • Record any weather events during the period • Check for subsidence across the rehabilitated area • Assess the % of erosion across the rehabilitated area. • Check for any loss of topsoil through erosion and map areas of concern • Check for soil inversion issues and map areas of concern • Weed survey	• As per the Code of Practice A3.9 (b) the rehabilitation plan should be appropriate to the scale and nature of the activity. In CPs experience operating in the Amadeus Basin, which is an arid region the establishment of vegetation takes time. In CP experience it takes 10+ years for sites to reach the rehabilitation outcomes. The rehabilitation plan has been developed to meet the scale and nature of the rehabilitation (i.e. size of the disturbance and the time to rehabilitation) • As per the Code of Practice A3.9 (e) Regular maintenance and at least yearly monitoring of rehabilitated areas must take place to measure compliance with the Rehabilitation Plan. Rehabilitation success relies on good site preparation and rainfall and an adaptive approach for monitoring is required to take in the seasonal conditions. This will rely on a suitably qualified person to assess the seasonal variations and match the appropriate monitoring to undertake each year. This could include the use of technical advances like drones, satellites, remote sensing and lidar to assess the site stability and vegetation cover. • The quantitative data is of significant value as the rehabilitation matures and reaches the acceptability criteria. In addition, the year on year growth in an arid environment is slow and therefore yearly monitoring of all parameters is not necessary. The key is to assess if the site is on the right trajectory to achieve the acceptability criteria, which aligns with the adaptive management approach.	• Weeds impacting revegetation success – implement the weed management plan • Pest species impacting the rehabilitation success – Identify the pest species and put in place measures to protect the rehabilitated areas (e.g. fencing) • Poor vegetation germination/re-growth is limited in richness/ or community structure inconsistent with the analogue site – Infill seeding and/or top dress with a soil additive/topsoil or fertilise • Erosion and sediment control remediation of failed erosion and sediment controls • Review the re-profiling of the site to address any stabilisation issues. Undertake earthworks for re-profiling as necessary

Zevon Test Line

Spill Management Plan 2023

SPILL RISKS	
Key Risks	**Controls**
Contamination of groundwater	• Avoidance—Groundwater will not be accessed as part of the Zevon test line.
Contamination of surface waters	• The storage of contaminants will be in accordance with relevant SDSs and within dual lined tanks, containers or pallets (with capacity of 110% of storage receptacle) and no closer than 50m of any identified watercourses (ephemeral or running). In the event of a release to grade, the area will be immediately addressed with either a spill kit to contain / absorb the spill or where contaminants have entered a watercourse an appropriate aquatic spill kit will be deployed to contain the spill and suck up contaminated water for waste disposal.
Contamination of soil	• In the event of a release to grade the area will be immediately addressed with either a spill kit to contain / absorb the spill or where contaminants have soaked into topsoil it will be scraped up and disposed of as contaminated material. All contaminated soil is to be captured and disposed of unless deemed significant (ie. Level 3) where a remediation plan will b developed as part of the incident reporting process. This will include an ongoing remdiation and sampling program until deemed 'clean'

CENTRAL PETROLEUM ZEVON TEST LINE	
Property land uses	CP activities for the Zevon program are under EP 115
Aim	To minimise the potential impact of spills from CPs activities to people, environment, culturally significant sites, public infrastructure and community lands.
Objectives	Operate with due care to preventloss of containment, ensure safe storage and handling of potentially contaminating substances and undertaking effective spill clean-up
Communications	

SPILL SCENARIOS AND MANAGEMENT

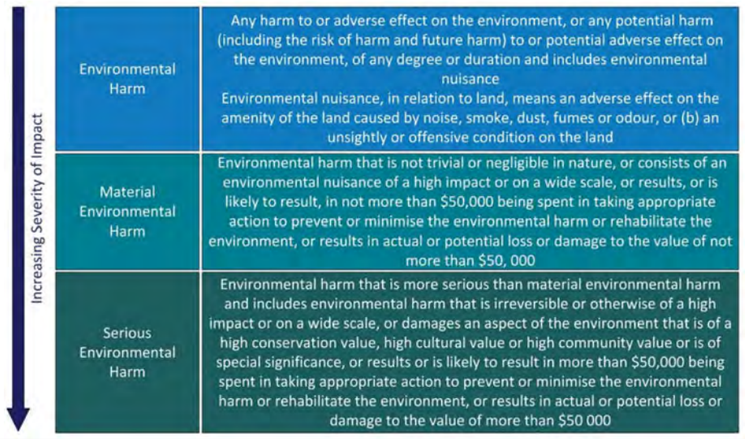
Activity	Activity Duration	Mechanism	Location	Quality	Approximate Quantity (per event)	Key Management Control
Storage of chemicals, hydrocarbons, sewage and greywater	27 days	• Container rupture • Lids / taps not fitted / fitted correctly	Within Vehicles Temporary camp	As per SDS	Vehicle—100L Camp—10,000L	• Daily inspection of vehicles • Minimise the quantity of chemicals carried onsite to only those required for the seismic exploration program • Place spill absorbent pad beneath storage containers to minimise contact with the soil • Secondary containment at the camp site storage areas • Daily check of tanks and secondary containments
Vibroseis Truck refuelling	Daily if required	• Incorrect refuelling setup • Poor refuelling practices	Virobseis Truck		100 L	Operators maintain visual contact whilst refuelling the Vibroseis Truck
Storage of liquid waste (oils degreasers etc)	27 days	• Container rupture • Lids not fitted / fitted correctly	Within vehicles Temporary camp		Less than 2L	Daily inspection of waste storage area and ensure all hazardous liquids are stored in dual lined containers or on bunded pallets.

SPILL TIER LEVELS		Spill (L)		
		20-200L	200-2,500 L	>2,500 L
Receiving environment	Bund or contained impervious area	**Internal report**	**Level 1**	**Level 1**
	Onsite lease pad, camp pad, hardstand, plant operating areas (CTP/ESS), road or work area compacted or sealed surface	**Internal report**	**Level 1**	**Level 2**
	Undisturbed permeable surfaces/areas adjacent to lease pads, camp pads, onsite roads where spills have moved beyond the approved activity area	**Level 1**	**Level 2**	**Level 3**
	Sensitive environmental or cultural feature (waterway, drainage lines, wetland, high valued habitat and sacred site) or where the spill has, or has the potential to, cause material or serious environmental harm	**Level 2**	**Level 2**	**Level 3**

LEVEL 1	• Spills can be contained within the disturbance foot print & cleaned up by site personnel with no external involvement • Spills < 200L • Clean-up time generally < 1 day • Examples: diesel spills during fuel transfer, oil spillage during routine maintenance, chemical spills during mixing, and storage, small wastewater spills • ERP not triggered
LEVEL 2	• Spill that may not be completely contained within the site boundary and/or may require additional resources to clean-up • Has not entered sensitive environment or cultural feature • ERP not triggered • Clean-up time <1 week • ERP not triggered
LEVEL 3	• Spills cannot be contained and require substantial additional resources to clean up or the spill has entered a sensitive environment or cultural feature • Clean-up time > 1 week • ERP triggered • **Offsite incident—**EPA must be notified of any incident outside of the OL that is causing or threatening to cause pollution as soon as practicable, but no less than 24 hours after becoming aware of the incident. NT EPA Pollution Hotline 1800 064 567.

SPILL RESPONSE		
Actions		
Stop		• Request assistance if needed • Ensure all personnel are safe and clear of area -Stay clear of vapour, fumes, smoke and spills • Evacuate and muster (if necessary) • If safe to do so: – Remove any potential escalation factors (e.g. ignition sources etc) – Isolate the spill source • For larger incidents, emergency services may be mobilised to assist under the Emergency Response Plan (ERP)
Contain		• Review SDS • If safe to do so, contain the spill using containment resources • Distribute spill control and absorbent material around and over the entire spill area, working from the outside to inside
Report		• Report the spill and notify as per spill incident reporting requirements • Gather as much information about the spill as you can including spill source and location, type of waste/chemical, spill area, volume released • Notify neighbours in surrounding properties if required under the ERP
Clean-up		• Clean-up the spill using clean-up equipment (e.g. spill kit materials etc) as soon as possible by: – Recover free liquid – Remove contaminated material and store in the waste storage area • Dispose clean-up materials at licenced waste disposal facility • If clean-up takes longer than one day, use fencing to prevent access by personnel, livestock, and terrestrial fauna • Develop a remediation management plan for contaminated sites
Manage/ Improve		• Investigate the root cause of the spill and implement management actions

Definitions of **Environmental Harm** under the NT *Petroleum Act 1984*



SPILL INCIDENT NOTIFICATION

Recordable Incidents	Reportable Incidents	WMPC Act Incident
DETAIL Recordable incidents are defined in the *Petroleum (Environment) Regulations 2016* as meaning an incident, other than a reportable incident, arising from a regulated activity that: • has resulted in an environmental impact or risk not specified in the current EMP for the activity, or • has resulted in a contravention of an environmental performance standard specified in the current EMP, or • is inconsistent with an environmental outcome specified in the current EMP. **ACTION** DEPWS of a recordable incident as soon as practicable but no later than 15-days after the reporting period (agreed period or each 90-day period after the day on which the EMP is approved).	**DETAIL** Reportable incidents are defined in the Regulations7 as meaning an incident, arising from a regulated activity that has caused, or has the potential to cause, material environmental harm or serious environmental harm. **ACTION** An interest holder must notify DEPWS of a reportable incident as soon as practicable but no later than 2 hours after the first occurrence of the incident or after the time the interest holder becomes aware of the incident. DEPWS can be notified via the DEPWS Onshore gas non-compliance hotline on 1800 413 567. Any verbal report to DEPWS must be followed up by a written report from the Project Manager within three days in accordance with the Petroleum (Environment) Regulations. In the unlikely event a spill impacts a restricted works area notification will be made to AAPA and the relevant Traditional Owners as part of ongoing community engagement practices.	**DETAIL** Where contaminants or waste is not confined within the land on which the petroleum activities are undertaken (i.e. the approved disturbance areas where the petroleum activity is occurring). **ACTION** The EPA must be notified of any incident causing or threatening to cause pollution as soon as practicable, but no less than 24 hours after becoming aware of the incident. The notification shall be made to the NT EPA Pollution Hotline 1800 064 567. In the unlikely event a spill impacts a restricted works area ,notification will be made to the relevant Traditional Owners through AAPA .

Types of Incidents

Reportable Incident — an incident, arising from a regulated activity, that has caused or has the potential to cause environmental harm, material environmental harm or significant environmental harm (refer to definition of **environmental harm / material / serious environmental harm** in this plan).

All reportable incidents shall provide notice of the incident within 2 hours (once the interest holder becomes aware of the incident) orally or in writing outlining:

- the contact details of the interest holder; and
- all material facts and circumstances about the reportable incident that the interest holder knows or is able, by reasonable search or enquiry, to find out; and
- information about any action taken to avoid or mitigate material environmental harm or significant environmental harm in relation to the reportable incident; and
- information about the corrective action that has been taken, or is proposed to be taken, to prevent a similar reportable incident.

If notification is provided orally, the interest holder must, not later than 24 hours after giving oral notice, give the Minister a written notice about the reportable incident specifying all the matters mentioned above.

An initial report about the reportable incident shall be given to the Minister within 3 days of the incident first occurring and shall include:

the results of any assessment or investigation of the conditions or circumstances that caused or contributed to the occurrence of the reportable incident, including an assessment of the effectiveness of the designs, equipment, procedures and management systems that were in place to prevent the occurrence of an incident of that nature;

- the nature and extent of the material environmental harm or significant environmental harm that the incident caused or had the potential to cause;
- any actions taken, or proposed to be taken, to clean up or rehabilitate an area affected by the incident;
- any actions taken, or proposed to be taken, to prevent a recurrence of an incident of a similar nature.
- A final report about the reportable incident shall be given to the Minister as soon as practicable but no later than 30 days after the clean up or rehabilitation of the area affected by the reportable incident is completed. The final report will include a root cause analysis of the incident.

Recordable Incident — an incident arising from a regulated activity that:

- has resulted in an environmental impact or environmental risk not specified in the current plan for the activity; or
- has resulted in a contravention of an environmental performance standard specified in the current plan for the activity; or
- is inconsistent with an environmental outcome specified in the current plan for the activity; and
- is not a reportable incident.

All recordable incidents shall be reported within 15 days of end of each reporting period (every 90 days after EMP approval). The report shall contain:

- a record of all recordable incidents that occurred during the reporting period; and
- all material facts and circumstances concerning the recordable incidents that the interest holder knows or is able, by reasonable search or enquiry, to find out; and
- any action taken to avoid or mitigate any environmental impacts and environmental risks of the recordable incidents; and
- the corrective action that has been taken, or is proposed to be taken, to prevent similar recordable incidents.

7 Implementation Strategy

This section covers the wider context of the EMP implementation and the requirements common across all environmental and operational aspects of the Mereenie Field, including EP 115 and the Zevon Project. Consistent with our values, FOG is committed to conducting its operations in an environmentally responsible and sustainable manner aligned with community/social expectations. We believe that achieving and maintaining good environmental outcomes is critical to the success of our business.

Details regarding the implementation of environmental management aspects, including specific monitoring and records management are provided in Section 6.

7.1 Management System

FOG operates under a HSE Management System which contains the policies, procedures, standards and plans which are in place to manage and minimise the impact from its activities. In addition to meeting legal requirements, FOG's activities are also governed by several additional risk focused policies and procedures designed to ensure appropriate industry standards are in place.

7.2 Roles and Responsibilities

FOGs parent company operates the Mereenie Field, adjacent to EP 115 and the Zevon project, utilising the following management structure, with responsibilities aligned with specific roles detailed in Table 27. However, all personnel have a responsibility to operate in a safe and environmentally responsible manner.

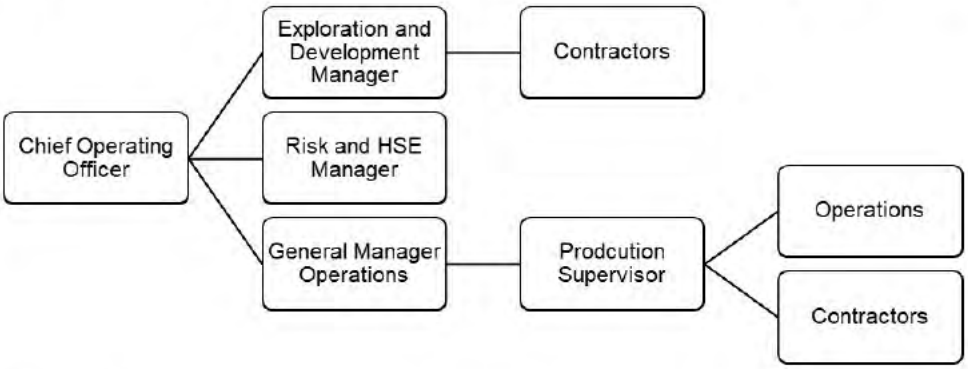


Figure 33: Management Structure

Table 27: Roles and responsibilities

Role	Responsibilities	Activities
Chief Operating Officer	Overall operation of FOG's activities	All
Exploration and Development Manager	Nominated Liaison Officer, Project managing seismic activities	All
Risk and HSE Manager	Providing systems, processes and advice to site/project personnel on the management of risk and the environment	All
Contractors	Deliver projects in line with scope and requirements	All
General Manager Operations	Providing support for project related activities	Support activities
Production Supervisor	Person in charge on-site to operate facilities in a safe responsible manner and provide support for project related activities	Support activities

7.3 Training and Awareness

FOG policies and procedures outlines the training and competency requirements of all personnel (staff, contractors and visitors) to ensure they can fulfil their obligations under this EMP. This enables FOG to work effectively in developing and promoting measures to ensure a high level of HSE knowledge and compliance. The key systems and processes to manage compliance with our standards are:

- Compulsory site and HSE inductions
- Contractor pre-qualification processes
- Contractor management system and processes
- Task specific work instructions and competency requirements

A register of training and competencies for FOG personnel, contractors and visitors is maintained for compliance with FOG's management system.

Key requirements of the EMP are included in the training and induction materials. A copy of the EMP is available on-site and online to all employees, contractors, and visitors.

A toolbox meeting will be held daily, these are designed for FOG personnel and contractors to discuss tasks the HSE controls and specific requirements for the day's operations. In addition, given ongoing operations, FOG has implemented a suitable handover procedure for shift changes and crew changes to ensure that relieving personnel are fully aware of their responsibilities and work status. Shift change handovers include the completion of checklists and other specified documentation.

7.4 Emergency Preparedness and Response

An Emergency Response Plan (ERP) is in place covering the Mereenie Field (Appendix 2). The ERP provides a broad framework for managing actual and potential emergency incidents to minimise the potential risk to human safety and the environment, and includes:

- Decision trees and escalation points
- Emergency contacts
- Emergency action guides
- Details of emergency response personnel, equipment and facilities

When conducting seismic activities, the development of a program specific ERP will be developed in conjunction with the seismic contractor, however as Mereenie is to closest permanent FOG operation, all minimum standards, contacts and response procedures from the Mereenie Field ERP will be carried over (refer to Section 3 of the ERP in Appendix 2). FOG will ensure all personnel, contractors and visitors are aware of the emergency response framework and are trained in emergency response procedures relevant to their role/position. A bridging document will be developed (as required) to ensure the seismic contractor is aware and committed to FOG's ERP.

FOG's emergency management framework is reviewed and updated as part of continuous improvements processes to incorporate the latest information arising from incidents, near misses and emergency simulation training sessions (refer to Section 6 of the ERP in Appendix 2).

7.5 Contractor Management

Most of the work undertaken under this EMP will be performed by FOG personnel using standard work instructions. However, some scopes of work will be undertaken by contractors. Efforts are therefore focused on effective contractor management, to ensure third parties are compliant with the relevant EMP commitment and contractual requirements.

The contract and scope of work are the key mechanisms FOG uses to manage contractors and outline compliance requirements for the contracted activity. Contractors are also provided with:

- Key compliance and system documents
- A list of compliance commitments and responsible person for a specific activity
- A list of inspections, procedures and other tools required to implement the content of the EMP.
- Monitoring and reporting requirements
- Hold Points which require a deliverable to be completed prior to entry into a new activity phase (i.e. prior to mobilisation, operation and demobilisation)
- Maps illustrating the approved work zones and any restricted areas.

Assurance over contractor performance is undertaken prior to, during and post the scope or activities.

7.6 Monitoring and Reporting

7.6.1 Monitoring

Environmental monitoring conducted specific to each environmental aspect is outlined in Sections 6.2 to 6.9.

Any incident identified from our monitoring activities will be captured in incident reporting system and actions will be taken to rectify the incident and prevent its reoccurrence. If incident thresholds are reached a more formal investigation will be undertaken. All personnel are required to proactively report all incidents, and identification of potential hazards not matter how minor to act as an alert and to maintain a program of continual improvement.

All sampling and analyses carried out to meet the requirements of the EMP and the Code will be conducted by suitably qualified and competent persons. Instruments and measuring and metering devices will be maintained and calibrated in accordance with manufacturer's specifications in readiness for use. Calibration of equipment will be prompted and managed via our asset management system with records and evidence, or currency maintained. In addition, and as per the Code, laboratory analyses will be conducted by a laboratory that has National Association of Testing Authorities (NATA) accreditation for such analyses and tests where available or using duplicate samples across independent laboratories where not available and in accordance with Code.

7.6.2 Reporting

Reporting to be undertaken by FOG as part of this exploration EMP includes;

- Annual environment performance report.
- Exploration permit reporting.
- Survey reporting.
- Ad hoc incident reporting (reportable / recordable).
- Water and wastewater reporting in accordance with *NT Waste Management and Pollution Control* (WMPC) *Act 1998* and the *CoP* and;
- Emissions reporting to support the *National Greenhouse and Energy Reporting Act* (NGER) and the *National Environmental Protection Measure (National Pollutant Inventory)*.

Identified reporting timeframes will be provided as per the above legislation and is summarised in Table 28 below.

Table 28: Reporting requirements and timeframes

Type of reporting / incident	Timeframe(s)
Annual environment performance report	Annually in accordance with Schedule 1, clause 11 of the *NT Petroleum (Environment) Regulations 2016*
Exploration permit	Annually (including detail within Schedule 4F of the *NT Petroleum Regulations* pertaining to 2D seismic surveys).
Reportable incident / report	Means: an incident, arising from a regulated activity, that has caused or has the potential to cause material environmental harm or significant environmental harm. All reportable incidents shall provide notice of the incident within 2 hours (once the interest holder becomes aware of the incident) orally or in writing outlining: i. the contact details of the interest holder; and ii. all material facts and circumstances about the reportable incident that the interest holder knows or is able, by reasonable search or enquiry, to find out; and iii. information about any action taken to avoid or mitigate material environmental harm or significant environmental harm in relation to the reportable incident; and iv. information about the corrective action that has been taken, or is proposed to be taken, to prevent a similar reportable incident.

	If notification is provided orally, the interest holder must, not later than 24 hours after giving oral notice, give the Minister a written notice about the reportable incident specifying all the matters mentioned above. An initial report about the reportable incident shall be given to the Minister within 3 days of the incident first occurring and shall include: i. the results of any assessment or investigation of the conditions or circumstances that caused or contributed to the occurrence of the reportable incident, including an assessment of the effectiveness of the designs, equipment, procedures and management systems that were in place to prevent the occurrence of an incident of that nature; ii. the nature and extent of the material environmental harm or significant environmental harm that the incident caused or had the potential to cause; iii. any actions taken, or proposed to be taken, to clean up or rehabilitate an area affected by the incident; iv. any actions taken, or proposed to be taken, to prevent a recurrence of an incident of a similar nature. A final report about the reportable incident shall be given to the Minister as soon as practicable but no later than 30 days after the clean up or rehabilitation of the area affected by the reportable incident is completed. The final report will include a root cause analysis of the incident.
Recordable incident / report	Means: an incident arising from a regulated activity: (a) that: i. has resulted in an environmental impact or environmental risk not specified in the current plan for the activity; or ii. has resulted in a contravention of an environmental performance standard specified in the current plan for the activity; or iii. is inconsistent with an environmental outcome specified in the current plan for the activity; and (b) is not a reportable incident. All recordable incidents shall be reported within 15 days of end of each reporting period (every 90 days after EMP approval). The report shall contain: i. a record of all recordable incidents that occurred during the reporting period; and ii. all material facts and circumstances concerning the recordable incidents that the interest holder knows or is able, by reasonable search or enquiry, to find out; and iii. any action taken to avoid or mitigate any environmental impacts and environmental risks of the recordable incidents; and iv. the corrective action that has been taken, or is proposed to be taken, to prevent similar recordable incidents.
Survey reporting	Weekly stating progress and upon completion start and completion dates and the number of kilometres or samples acquired.
Water / wastewater	Annually.
Discovery of petroleum & estimate	Within 3 months of the date of discovery.

Emissions / NGERs	Annually.

7.7 Records Management

As per standard practice all prescribed environmental records required under this EMP will be maintained in accordance with the *Petroleum (Environment) Regulations 2016* and other relevant legislation. Details of specific records and where they are captured to address environmental risks and performance standards are presented in Sections 5.7 to 5.14. The records obtained for each environmental element will be used to inform reporting requirements detailed above.

7.8 Management of Change

A Management of Change (MoC) process is in place to ensure any changes to activities are appropriately accessed and communicated to ensure no additional unintended risks or impacts are introduced.

The MoC process will only be used when optimising environmental outcomes or to improve operational efficiency where no new regulated activity, risk (including risk level) or impact is introduced. Where a new regulated activity, risk (including risk level) or impact is introduced, then a modification revision of the EMP is required under the Regulations.

7.9 Auditing and Assurance

In addition to regular monitoring as set out in this document, audits assessing compliance against this EMP will be undertaken by FOG or third parties prior to, during and upon completion of the activity and at least annually. Any non-compliances arising from regulated activities will be recorded and corrective actions undertaken to address the gaps. These non-conformances and corrective actions will be recorded, tracked, and reported. Any non-compliance with approved conditions will be reported in the annual environment performance report (AEPR).

7.10 Corrective Action, Review and Continuous Improvement

7.10.1 Corrective Actions

FOG's incident management procedures and systems are part of our HSE management systems and are designed to:

Ensure all incidents and hazards are reported in a standard format so that consistency and accuracy of the process is maintained.
Identify the underlying and basic causes of all incidents and hazards.
Implement corrective/improvement actions to prevent the recurrence of similar incidents and hazards.
Provide information to prepare the incidents and hazards statistics and identify potential trends.
Identify potential suitable corrective actions.

All corrective/improvement associated with incident, hazards, and assurance activities are recorded, tracked and reported. Any overdue actions are followed up and escalated as required.

7.10.2 Review and Continuous Improvement

Implementation of this EMP will be continually assessed and revised as required based on monitoring and assurance results, feedback, change to the proposed work program or a material increase in risk level.

This EMP will be closed upon completion of the Zevon scope of works.

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9 Glossary and Abbreviations

Abbreviation	Details
2D	2 Dimensional (Seismic Survey)
AAPA	Aboriginal Areas Protection Authority
ALARP	As Low As Reasonably Practicable
APPEA	Australia Petroleum Production and Exploration Association
CD	Conservation Dependent
CE	Critically Endangered
CLC	Central Land Council
Competent person	Means a person who has the necessary ability, knowledge, and the relevant experience to conduct the task or activity
FOG	Frontier Oil and Gas Pty Ltd
CSA	Chemical Storage Area
DAWE	Department of Agriculture, Water, and the Environment
DD	Data Deficient
DEPWS	Department of Environment, Parks and Water Security
DITT	Department of Industry, Tourism and Trade
ES	Erosion and Sediment Control Plan
EMP	Environment Management Plan
EMS	Environmental Management System
EN	Endangered
EOPSMC	Environmental Outcome, Performance Standard, Measurement Criteria
EP 115	Exploration Permit 115
EPA	NT Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically Sustainable Development
GIS	Geographic Information System
Ha	Hectare
HSE	Health, Safety and Environment
HSE MS	Health, Safety and Environmental Management System
ISO	International Standards Organisation
Kg	Kilogram
m	Metre
mm	Millimetre
MCA	Multi Criteria Analysis
MNES	Matters of National Environmental Significance
NAFI	Northern Australia Fire Information
NT	Northern Territory
OL3	Operating Licence 3
OL4	Operating Licence 4
PMST	Protected Matters Search Tool
PPE	Personal Protective Equipment
SDS	Safety Data Sheet

Abbreviation	Details
Significant Rainfall	Any rainfall event over 15 mm in 24 hours
SOBS	Site of Botanical Significance
SOCS	Site of Conservation Significance
SSCC	Sacred Sites Clearance Certificate
Suitably Qualified Person	A person who has the professional qualifications, training or skills or experience relevant to the nominated subject matter or task and can give authoritative assessment, advice, and analysis about performance relevant to the subject matter using relevant protocols, standards, methods, literature or conduct tasks in accordance with requirements
TPWC Act	Territory Parks and Wildlife Conservation Act
VU	Vulnerable
WoNS	Weeds of National Significance