YOGI MAGNETITE PROJECT

Environmental Management Plan

FI Joint Venture Pty Ltd

ABN: **51 611 846 023**

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Declaration of accuracy

In making this declaration, I am aware that section 491 of the Environment Protection and *Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and *Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration, and I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed - Seyed Reza Azimi

Full name - Seyed Reza Azimi (Managing Director)

Organisation - FI Joint Venture Pty Ltd (FIJV)

Date - 03 / 04 / 2025

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ACRONYMS

Acronym	Definition
BAM Act	*Biosecurity and Agriculture Management Act 2007*
BC Act	*Biodiversity Conservation Act 2016*
BIF	Banded Iron Formation
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
DPLH	Department of Planning, Lands and Heritage
DPaW	Department of Parks and Wildlife
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPW	Eastern Primary Watercourse
FIJV	FI Joint Venture Pty Ltd
GIS	Geographic Information System
GLpa	Gigalitres per annum
GOS	Groundwater Operating Strategy
ha	Hectares
IBRA	Interim Biogeographic Regionalisation for Australia
mg/L	Milligrams per litre
Mbgl	Meters below ground level
MDE	Mine Development Envelope
MS	Ministerial Statement
MS1225	Ministerial Statement 1225
PDE	Pipeline Development Envelope
PEC	Priority Ecological Community
RIWI Act	*Rights in Water and Irrigation Act 1914*
SRE	Short Range Endemic
TDS	Total Dissolved Solids
TEC	Threatened Ecological Community
WA	Western Australia
WoNS	Weeds of National Significance
WPS	Western Primary Watercourse

EXECUTIVE SUMMARY

Project Name:	Yogi Magnetite Project
Proponent name	FI Joint Venture Pty Ltd (FIJV)
Ministerial Statement	1225
EPBC number	2017-8124
Purpose of this EMP	The purpose of this Environmental Management Plan (EMP) is to establish a framework to ensure implementation of the project does not compromise the protected matters and Key Environmental Factors and objectives. It details how the environmental impacts of activities related to the implementation of the Yogi Magnetite Project will be: ▪ adequately monitored, reported on and subject to adaptive management; and ▪ adequately managed where those impacts are not likely to be able to be managed by an outcome-based condition or limitation on the extent of a proposal ▪ in accordance with EPBC 2017-8124 and Ministerial Statement (MS) 1225 implementation conditions. This EMP has been developed in accordance with the Instructions on how to prepare *Environmental Protection Act 1986 Part IV Environmental Management Plans (EPA 2024)* and *Environmental Management Plan Guidelines*, (Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2024).
Key Environmental Factors and Objectives	
Flora and Vegetation	*To protect flora and vegetation so that biological diversity and ecological integrity are maintained.*
Terrestrial Fauna	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*
Inland Waters	*To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.*
Greenhouse Gas Emissions	*To minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable.*
Social Surroundings	*To protect social surroundings from significant harm.*
Ministerial Statement Condition Clauses	
Refer to Table 4 and 5	
Key Components or Legal Requirements	
Refer to Table 4 and 5	
Proposed Construction and Operation Dates	
Construction – 2025 to 2028 Mine life – Operations are expected to commence in 2029 with a 21 year mine life from the date of substantial commencement to completion of decommissioning.	

1 CONTEXT, SCOPE AND RATIONALE

This Environmental Management Plan (EMP) has been prepared by FI Joint Venture Pty Ltd (FIJV) to support the implementation of the Yogi Magnetite Project. This EMP has been developed in accordance with the *Instructions on How to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans* (EPA 2024) and *Environmental Management Plan Guidelines* (DCCEEW 2024a).

In accordance with the Environmental Protection Authority (EPA) (2024) instructions, this EMP includes the following sections:

- Section 1.1 - the Project that this EMP addresses
- Section 1.3 - Key environmental factors
- Section 1.4 - The condition requirements applicable to the Project
- Section 1.5 - The rationale and approach underlying this EMP
- Section 2 - EMP components
- Sections 3, 4 and 5: detail the adaptive management approach, incident reporting process, and stakeholder consultations.

1.1 PROPOSAL

1.1.1 LOCATION

FI Joint Venture Pty Ltd (FIJV, the Proponent) proposes to construct and operate a magnetite iron ore mine located approximately 225-250 kilometres (km) east-northeast of Geraldton and 15 km northeast of Yalgoo in the Mid-West region of Western Australia (WA) (Appendix A, Figure 1). The Yogi Magnetite Project (the Project) includes a slurry pipeline from the mine site to Geraldton port, a return water pipeline, and a gas supply pipeline from the Dampier to Bunbury Natural Gas Pipeline (Appendix A, Figure 1).

1.1.2 PROJECT COMPONENTS

The Project comprises two key components:

- Mine Development Envelope (MDE) (Appendix A, Figure 1).
- Pipeline Development Envelope (PDE) (Appendix A, Figure 1).

This document represents the Project's overarching EMP and includes both the MDE and PDE. The Project's MDE and disturbance footprint are detailed in Appendix A, Figure 2. This document has incorporated the 'Yogi Magnetite Project - Environmental Management and Rehabilitation Plan

(EMRP) for the Pipeline Corridor.' The EMRP was prepared to address specific management requirements of the Environmental Scoping Document submitted as part of the referral of the Project.

Table 1 provides a summary of the Project, and Table 2 provides a description of key Project characteristics.

Table 1: Summary of Project

Project Title	Yogi Mine Project
Proponent Name	FI Joint Venture Pty Ltd
Proponent Activities	Mine construction and operation
Short Description	The Project is to construct and operate a magnetite iron ore mine approximately 225-250 km east-northeast of Geraldton and 15 km northeast of Yalgoo in the Midwest region of Western Australia. The Project also includes a slurry pipeline from the mine site to Geraldton port, a return water pipeline, and a gas supply pipeline from the Dampier to Bunbury Natural Gas Pipeline.

Table 2: Key Project characteristics

Physical Elements	Location	Proposed extent
Mine Development Envelope (MDE) Including mine pit, mining overburden and waste facilities, dry processing waste facility, mine and processing support infrastructure and corridors	Appendix A, Figure 1	Clearing of no more than 1,530 hectares (ha) within 8,230 ha Mine Development Envelope.
Pipeline Development Envelope (PDE) Including magnetite slurry pipeline, water pipeline and gas pipeline	Appendix A, Figure 1	Clearing of no more than 200 ha within 76,439 ha Pipeline Development Envelope.
Operational elements	**Details**	
Groundwater abstraction (water demand)	Up to 1 gigalitre per annum (GLpa) from the water supply bore field.	
Mine site dewatering	Up to 4 GLpa from the mine pit dewatering (to be used for processing).	
Power	Up to 71.08 megawatt (MW) thermal power station with variable renewable power contributions	
Gas supply	Up to 23 terajoules (TJ)/day.	
Mine life	21 years from the date of substantial commencement to completion of decommissioning	

1.1.3 PROJECT ENVIRONMENTAL CONTEXT

The proposal is located within the Merredin subregion of the Avon Wheatbelt bioregion. The Yalgoo Water Reserve is located approximately 2 km southwest of the MDE and is a Priority 1 Public Drinking Water Source Area. The closest nature reserve is Urawa Nature Reserve, which borders the pipeline DE and is approximately 120 km west of the mine DE. A detailed description of the environmental and survey findings over the Project area is presented in Section 1.5.1.

1.1.4 PROJECT IMPACTS TO MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The Commonwealth Minister for the Environment determined that the Project is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as it is likely to have a significant impact on one or more Matters of National Environmental Significance (MNES). Table 3 provides a summary of impacts to MNES habitat from the Project. Potential indirect impacts are detailed in Section 1.3.

Table 3: Summary of direct impacts to MNES habitat

MNES	Area of impact
Carnaby's Black Cockatoo foraging habitat	8.59 ha
Malleefowl habitat	14.94 ha
Western Spiny-tailed Skink habitat	8.09 ha.

The EPA determined that the Project is not expected to result in an unacceptable or unsustainable impact on any matters of MNES. The terrestrial fauna habitats and exclusion zones for MNES within the MDE to be protected through the implementation of this EMP are outlined in Appendix A, Figure 3.

1.2 ROLES AND RESPONSIBILITIES

The roles and responsibilities of key Project personnel ensuring effective environmental management throughout the Project lifecycle and their responsibilities are outlined below:

- The Site Manager has overall responsibility for the implementation and effectiveness of the EMP.
- The Environmental Manager oversees day-to-day environmental compliance on-site. This includes monitoring compliance with this EMP, monitoring, coordinating environmental training, and leading incident response.
- The Environmental Officers are responsible for specific environmental tasks within the project, such as conducting environmental monitoring programs, managing data collection, and reporting on environmental performance.

However, it is expected that all Project personnel have a basic understanding of their environmental responsibilities, including adhering to environmental procedures, reporting environmental incidents, and practicing environmental awareness.

1.3 KEY ENVIRONMENTAL FACTORS

The Key Environmental Factors identified are:

- Flora and Vegetation;
- Terrestrial Fauna;
- Inland Waters;
- Greenhouse Gas Emissions; and
- Social Surroundings.

A summary of the factors is included Table 4 below.

Table 4: Summary of environmental impact assessment of Key Environmental Factors

Flora and vegetation	
EPA objective	*To protect flora and vegetation so that biological diversity and ecological integrity are maintained.*
Policy and guidance	▪ Statement of Environmental Principles, Factors and Objectives (EPA 2023) ▪ Environmental Factor Guideline: Flora and Vegetation (EPA 2016a) ▪ Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016b)
Project activities	▪ Clearing of native vegetation ▪ Ore processing and transport ▪ Use of explosives
Potential impacts	▪ Loss of vegetation and flora through clearing, including conservation significant vegetation and flora ▪ Dust generation during construction and operations ▪ Introduction and spread of environmental weeds ▪ Habitat loss, fragmentation and edge effects from vegetation clearing ▪ Alteration of fire regimes ▪ Decline of species abundance and diversity
Residual impacts	▪ Clearing of up to 1,730 ha of native vegetation in ‘Excellent’ to ‘Very Good’ condition ▪ Clearing of up to 153 ha of vegetation representative of the P1 PEC Yalgoo vegetation complexes Banded Ironstone Formation and 2.54 ha of vegetation representative of the P3 PEC Eucalypt Woodlands of the WA Wheatbelt.

	▪ Indirect impacts to flora and vegetation associated with dust deposition, spread of weeds, fragmentation, altered fire regimes and altered hydrological regimes.
Terrestrial Fauna	
EPA objective	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*
Policy and guidance	▪ Statement of Environmental Principles, Factors and Objectives (EPA 2023a) ▪ Environmental Factor Guideline: Terrestrial Fauna (EPA 2016b) ▪ Technical Guidance Terrestrial Fauna Surveys (EPA 2016d) ▪ Technical Guidance Sampling methods for terrestrial vertebrate fauna (EPA 2016e) ▪ Technical Guidance Sampling of short-range endemic invertebrate fauna (EPA 2016f) ▪ Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan. Department of Parks and Wildlife (DPaW 2013) ▪ National Recovery Plan for Malleefowl. Department of Climate Change, Energy, the Environment and Water (DCCEEW 2024b) ▪ Department of Environment and Conservation, Western Spiny-tailed Skink (Egernia stokesii) Recovery Plan (DEC 2012).
Project activities	▪ Clearing of native vegetation ▪ Habitat loss, fragmentation and edge effects ▪ Impacts from dust, noise and light emissions ▪ Blasting ▪ Overburden/waste rock handling ▪ Ore transport
Potential impacts	▪ Loss of fauna habitat as a result of clearing vegetation ▪ Displacement and/or death of fauna ▪ Habitat fragmentation ▪ Habitat degradation from the introduction and spread of environmental weeds ▪ Alteration of fire regimes ▪ Introduction and spread of feral animals

Residual impacts	▪ Direct impact to habitat types for significant fauna.
	▪ Within the MDE:
	  • 153 ha of the Banded Ironstone Formation ridgeline habitat for Western-spiny tailed skink
	  • 1.14 ha of granitic formations habitat for Western-spiny tailed skink
	▪ Within the PDE:
	  • 6.95 ha of low granite outcrops habitat for Western-spiny tailed skink
	  • 6.29 ha of mallee over mixed shrubland sandplain habitat for Malleefowl
	  • 8.65 ha of mixed shrubland on sandplain habitat for Malleefowl
	  • 8.59 ha of low value foraging habitat for Carnaby's black cockatoos.

	▪ Direct and indirect impact to terrestrial fauna, including mortality or injury due to construction and operation.
Inland waters	
EPA Objective	*To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.*
Policy and guidance	▪ Statement of Environmental Principles, Factors and Objectives (EPA 2023a) ▪ Environmental Factor Guideline Inland Waters (EPA 2018)
Project activities	▪ Surface water diversions ▪ Dewatering groundwater for mining activities ▪ Drawdown
Potential impacts	▪ Alteration to surface water flows as a result of mining and infrastructure construction and operations, including potentially altering natural erosion and deposition patterns, which could increase the surface water turbidity ▪ Alteration of the hydrology of the area from groundwater abstraction ▪ Impacts to inland wetland communities or groundwater-dependent ecosystems as a result of groundwater drawdown ▪ Contamination of surface water associated with Acid and Metalliferous Drainage ▪ Groundwater contamination from Acid and Metalliferous Drainage ▪ Impacts on inland wetland communities or groundwater-dependent ecosystems as a result of groundwater drawdown and changes to groundwater quality
Residual impacts	▪ Groundwater drawdown from abstraction and dewatering. ▪ Alteration to surface water flow regimes. ▪ Potential impacts to groundwater and surface water quality
Greenhouse Gas Emissions	
EPA Objective	*To minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable.*
Policy and guidance	▪ Statement of Environmental Principles, Factors and Objectives (EPA 2023a) ▪ Environmental Factor Guideline Air Quality (EPA 2020)
Project activities	▪ Mining activities ▪ Ore processing and transport ▪ Power generation
Potential impacts	▪ Emissions from mining and power generation activities ▪ Ore processing ▪ Greenhouse gas emissions.
Residual impacts	▪ Scope 1 emissions of up to 165,867 tCO2-e total during the construction period. Scope 1 emissions of up to 244,187 tCO2-e per annum during operations. ▪ The proposal will not generate any scope 2 emissions. ▪ Scope 3 emissions of up to 331,131 tCO2-e total during the construction period. Scope 3 emissions associated with downstream transportation, processing and waste disposal of up to 7,323,050 tCO2-e per annum.

	▪ Greenhouse gas emissions contribute to climate change, which impacts on WA's environment.
Social Surroundings	
EPA Objective	*To protect social surroundings from significant harm.*
Policy and guidance	▪ Statement of Environmental Principles, Factors and Objectives (EPA 2023a) ▪ Environmental Factor Guideline Social Surroundings (EPA 2023b) ▪ Technical Guidance Environmental impact assessment of Social Surroundings – Aboriginal Cultural heritage (EPA 2023c)
Project activities	▪ Dewatering ▪ Blasting ▪ Groundwater abstraction ▪ Overburden/waste rock handling ▪ Ore transport ▪ Vegetation clearing and topsoil ▪ Surface water diversions ▪ Ore processing
Potential impacts	▪ Loss/disturbance to Aboriginal or European heritage sites ▪ Negative impacts on pastoral lease operations and any tourism activities in the Development Envelope ▪ Impacts on amenity values (including visual landscape, visual aesthetics values and recreational tourism) associated with the Pipeline corridor ▪ Dust generation
Residual impacts	▪ Potential for direct or indirect impact to Aboriginal heritage sites and areas of cultural significance. ▪ Adverse impact to pastoral lease holders and groundwater. ▪ Indirect impacts of noise, dust, and visual amenity.

1.4 CONDITION REQUIREMENTS

The conditions associated with Ministerial Statement 1225 (MS1225) and the section of this Plan which details how they are managed are outlined in Table 5 below.

Table 5: Ministerial Statement 1225 Condition Requirements

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
B1	**Flora and Vegetation**	
B1-1	The proponent must ensure the implementation of the proposal achieves the following environmental **outcomes**:	
1	**Disturbance** to no more than 153 **ha** of vegetation representative of the Yalgoo vegetation complexes Banded	**Section 2.1**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	Ironstone Formation **Priority Ecological Community** within the **mine development envelope**;	
2	**Disturbance** to no more than 2.54 **ha** of vegetation representative of the Eucalypt Woodlands of the **WA Wheatbelt Priority Ecological Community** within the **pipeline development envelope**;	**Section 2.1**
3	**Disturbance** to no more than: (a) 50 individuals of *Dicrastylis linearifolia* recorded in the **flora and fauna survey**; (b) 27 individuals of *Acacia subsessilis* recorded in the **flora and fauna survey**; (c) 288 individuals of *Acacia speckii* recorded in the **flora and fauna survey**;	**Section 2.1**
4	No **adverse indirect impacts** to **conservation significant flora** outside the disturbance footprint in the **pipeline development envelope**;	**Section 2.1**
5	**Disturbance** only in areas that have been subject to survey or **cleared** areas that have previously been **disturbed**; and	**Section 2.1**
6	No **disturbance** to Threatened Ecological Communities or Threatened Flora listed under the *Biodiversity Conservation Act 2016* or *Environment Protection and Biodiversity Conservation Act 1999*.	**Section 2.1**
B1-2	The proponent must ensure implementation of the proposal achieves the following environmental **objectives**:	
1	No **adverse impacts** to flora and vegetation occurring within or directly adjacent to the development envelope from the introduction or spread of **environmental weeds** compared with pre-construction condition;	**Section 2.1**
2	No **adverse impacts** to flora and vegetation occurring within or directly adjacent to the development envelope from **dust emissions** or altered fire regimes; and	**Section 2.1**
3	No **adverse impacts** to flora and vegetation occurring within or directly adjacent to the development envelopes from the alteration to surface water flow regimes or groundwater flow regimes compared with preconstruction condition.	**Section 2.1**
B1-3	The proponent must take reasonable steps to use existing or proposed roads, access tracks, infrastructure corridors and other **cleared** areas that have previously been **disturbed**, including shared use with other existing or proposed **disturbance** areas, to minimise **adverse impacts** to flora and vegetation.	**Section 2.1**
B1-4	The proponent must review and revise the Environmental Management Plan (Version 1, 12 June 2023) and the	**Section 2.1**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	Environmental Management and Rehabilitation Plan for the Pipeline Corridor (Version 1, 12 June 2023) so that it satisfies the requirements of condition C4-1 and condition C5-1 and demonstrates the flora and vegetation environmental **outcomes** in condition B1-1 and environmental **objectives** in condition B1-2 are achieved, and submit it to the **CEO**.	
B2	**Terrestrial Fauna**	
B2-1	The proponent must ensure the implementation of the proposal achieves the following environmental **outcomes**:	
1	Within the **mine development envelope, disturb** no more than: (a) 153 **ha** of the **Banded Ironstone Formation** fauna habitat type considered suitable habitat for Western spiny-tailed skink (*Egernia stokesii badia*), Gilled slender bluetongue (*Cyclodomorphous branchialis*) and Long-tailed dunnart (*Sminthopsis longicaudata*); and (b) 1.14 **ha** of **granitic formations** fauna habitat type considered suitable habitat for Western spiny-tailed skink (Egernia stokesii badia), Gilled slender bluetongue (*Cyclodomorphous branchialis*) and Long-tailed dunnart (*Sminthopsis longicaudata*).	**Section 2.2**
2	Within the **pipeline development envelope, disturb** no more than: (a) 6.95 **ha** of **low granite outcrops** fauna habitat type considered suitable habitat for Western spiny-tailed skink (*Egernia stokesii badia*); (b) 6.29 **ha** of **mallee over mixed shrubland sandplain** fauna habitat type considered potentially suitable habitat for Malleefowl (*Leipoa ocellata*); (c) 8.65 **ha** of **mixed shrubland on sandplain** fauna habitat type considered potentially suitable habitat for Malleefowl (*Leipoa ocellata*); and (d) 8.59 **ha** of low value **foraging habitat** for Carnaby's cockatoo. (3) with the exception of **low impact activities**, no **disturbance** to fauna habitat within the **exclusion zone** in the **mine development envelope.**	**Section 2.2**
B2-2	The proponent must implement the proposal to meet the following environmental **objectives**:	
1	Avoid where practicable and otherwise minimise **adverse impacts** and **disturbance** to native fauna including mortality, physical injury, behavioural changes and health impacts; and	**Section 2.2**
2	Ensure there is no long-term increase in population of feral animals as a result of implementing the proposal.	**Section 2.2**
B2-3	Prior to **ground-disturbing activities**, the proponent must undertake the following actions:	
1	Within seven (7) days prior to **clearing** within the fauna habitat areas identified in condition B2-1(1) and condition B2-1(2), using a suitably qualified or licensed **fauna spotter**, undertake **pre-**	**Section 2.2**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	clearance surveys to detect the presence of **conservation significant fauna** within **clearing** areas;	
2	Where individuals of Western spiny-tailed skink (*Egernia stokesii badia*) are detected under condition B2-3(1), **ground-disturbing activities** shall not commence until either: (a) the individual(s) have been relocated by a licensed **fauna handler** in accordance with the Western Spiny-tailed Skink Relocation Monitoring Program (Revision 0, May 2021) and any subsequent Revisions of the Program; (b) the individual has been observed by the **fauna spotter** to have moved on from the area to adjoining suitable habitat; and (c) the **fauna spotter** considers that the individual no longer occurs in the area	**Section 2.2**
3	Where active Malleefowl (*Leipoa ocellata*) mounds are detected under condition B2-3(1), **ground-disturbing activities** shall not commence until either a five hundred (500) metre exclusion zone is implemented around the active mound during breeding season (October to February), or if outside the breeding season a seventy-five (75) metre exclusion zone is implemented around the active mound.	**Section 2.2**
B2-4	The proponent shall undertake the following actions during **construction activities**:	
1	Visually inspect open trenches for the presence of vertebrate fauna and, where required, remove trapped vertebrate fauna from within open **trenches**, using a suitably trained or licensed **fauna handler**: (a) at least twice daily, with the first daily clearing to be completed no later than three (3) hours after sunrise and the second clearing to be completed between the hours of 3:00 pm and 6:00 pm of that same day, unless otherwise agreed to by the **CEO**; and (b) within one (1) hour prior to backfilling of **trenches**;	**Section 2.2**
2	Ensure open **trench** lengths shall not exceed a length capable of being inspected and cleared by the requirements set out in condition B2-4(3);	**Section 2.2**
3	Ensure ramps providing egress points and/or fauna refuges providing suitable shelter from the sun and predators for trapped vertebrate fauna are to be placed in the **trench** at intervals not exceeding fifty (50) metres;	**Section 2.2**
4	In the event of substantial rainfall, and following the clearing of vertebrate fauna from the **trench**, pump out any pooled water in the open trench and discharge it to adjacent vegetated areas in a manner that does not cause erosion;	**Section 2.2**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
5	Produce and provide a report on fauna management no later than sixty (60) days after the completion of **construction activities** to the **CEO**. The report shall include the following: (a) details of fauna inspections; (b) the number and type of fauna cleared from **trenches** and actions taken; and (c) vertebrate fauna mortalities.	**Section 2.2**
B2-5	The proponent must review and revise the Environmental Management Plan (Version 1, 12 June 2023) and the Environmental Management and Rehabilitation Plan for the Pipeline Corridor (Version 1, 12 June 2023) so that it satisfies the requirements of condition C4-1 and condition C5-1 and demonstrates the terrestrial fauna environmental **outcomes** in condition B2-1 and environmental **objectives** in condition B2-2 are achieved, and submit it to the CEO.	**Section 2.2**
B3	**Inland Waters**	
B3-1	The proponent must ensure implementation of the proposal achieves the following environmental **outcomes**:	**Section 2.3**
4	No **adverse impacts** to groundwater or surface water quality compared with pre-construction baseline quality along the pipeline and at the abstraction bores.	**Section 2.3**
B3-2	The proponent must ensure the implementation of the proposal achieves the following environmental **objectives**:	
1	Avoid, where practicable, and otherwise minimise **adverse impacts** to surface water flow regimes;	**Section 2.3**
2	Avoid, where practicable, and otherwise minimise **adverse impacts** to **Aboriginal cultural heritage** values associated with groundwater or surface water quality and flows.	**Section 2.3**
B3-4	The proponent must include the environmental **outcomes** of condition B3-1(4), and the objective of condition B3-2(1) in the Environmental Management Plan (Version 1, 12 June 2023) and the Environmental Management and Rehabilitation Plan for the Pipeline Corridor (Version 1, 12 June 2023) so that it satisfies the requirements of condition C4 and C5 and demonstrates the inland waters environmental outcomes in condition B3-1 and environmental objectives in condition B3-2 are achieved and submit it to the CEO.	**Section 2.3**
B5	**Social Surroundings - Surrounding Land Use**	
B5-1	The proponent must implement the proposal to meet the following environmental **objectives**:	**Section 2.4**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
1	Maintain a two (2) **km** separation distance to sensitive receptors from areas of ground disturbance within the **mine development envelope** during implementation of the proposal;	**Section 2.4**
2	Ambient dust emissions from implementation of the proposal, measured as particulate matter (PM10), must not exceed forty-six (46) micrograms per cubic metre for a twenty-four (24) hour averaging period at any sensitive receptor;	**Section 2.4**
3	Avoid where practicable and otherwise minimise **adverse impacts** to visual amenity from implementation of the proposal; and	**Section 2.4**
4	Minimise **adverse impacts** to surrounding land uses, such as pastoral station activities.	**Section 2.4**
B5-2	The proponent must review and revise the Environmental Management Plan (Version 1, 12 June 2023) and the Environmental Management and Rehabilitation Plan for the Pipeline Corridor (Version 1, 12 June 2023) so that it satisfies the requirements of condition C5-1 and demonstrates the social surroundings environmental **objectives** in condition B5-1 are achieved and submit it to the **CEO**.	**Section 2.4**
C4	**Environmental Management Plans: Conditions Related to Monitoring and Adaptive Management for Outcomes Based Conditions**	
C4-1	The environmental management plans required under condition B1-3, condition B2-5, condition B3-3, condition B6-2 and condition b8-2 must contain provisions which enable the substantiation of whether the relevant outcomes of those conditions are met, and must include:	
1	**Threshold criteria** that provide a limit beyond which the environmental outcomes are not achieved;	**Section 2**
2	**Trigger criteria** that will provide an early warning that the environmental outcomes are not likely to be met;	**Section 2**
3	Monitoring parameters, sites, control/reference sites, methodology, timing and frequencies which will be used to measure **threshold criteria** and **trigger criteria**. Include methodology for determining alternate monitoring sties as a contingency if proposed sites are not suitable in the future;	**Section 2**
4	Baseline data;	**Section 2**
C5	**Environmental Management Plans: Conditions Related to Management Actions and Targets for Objective Based Conditions**	
C5-1	The environmental management plans required under condition B1-2, condition B2-5, condition B5-2, condition B6-2 and	

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	condition B8-2 must contain provisions which enable the achievement of the relevant objectives of those conditions and substantiation of whether the objectives are reasonably likely to be met, and must include:	
1	**management actions**;	**Section 2**
2	**management targets**;	**Section 2**
3	**contingency measures** if **management targets** are not met; and	**Section 3**
4	Reporting requirements	**Section 2 and Section 4**
C5-2	The environmental management plans required under condition B3-4 are also required to include:	
1	reasonable steps for the proponent to consult with pastoral stations and Traditional Owners in the Environmental Management Plans about the achievement of the **objective** in condition B3-2 for the life of the proposal and any updates to the environmental management plans required in condition B3-4.	**Section 5**

The conditions associated with EPBC 2017/8124 under Section 130(1), 133(1) and 134(1A) of the EPBC Act and how they are managed are outlined in Table 6 below.

Table 6: EPBC 2017/8124 Condition Requirements

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
1	The approval holder must not: a) **Clear** outside of the **development envelope**. b) **Construct** outside of the **development envelope**. c) **Harm** any **protected matters** within the **exclusion zone** other than for the purpose of undertaking **low impact activities**.	**Section 2.2**
2	The approval holder must not **clear** more than: a) 8.59 ha of **Carnaby's Black Cockatoo foraging habitat**. b) 14.94 ha of **Malleefowl habitat**. c) 8.09 ha of **Western Spiny-tailed Skink habitat**.	**Section 2.2**
5	To avoid and mitigate **harm** to **protected matters** as a result of the Action, the approval holder must submit to the **department** an Environmental Management Plan and an Environmental	**This document**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	Management and Rehabilitation Plan for the Pipeline Corridor for approval by the **Minister**. The Environmental Management Plan and the Environmental Management and Rehabilitation Plan for the Pipeline Corridor must be prepared in accordance with the **Environmental Management Plan Guidelines** and condition B2-5 of the **Western Australian Approval**. All commitments, including environmental outcomes, management measures, corrective measures, trigger values, threshold criteria and performance indicators in the Environmental Management Plan and Environmental Management and Rehabilitation Plan for the Pipeline Corridor must be **SMART** and based on evidence of effectiveness. The Environmental Management Plan and the Environmental Management and Rehabilitation Plan for the Pipeline Corridor may be combined as a single document.	
6	To avoid and mitigate **harm** to **protected matters** as a result of the Action, the approval holder must commence implementation of the approved Environmental Management Plan and the approved Environmental Management and Rehabilitation Plan for the Pipeline Corridor no later than the **commencement of the Action** and continue to implement the approved Environmental Management Plan and the approved Environmental Management and Rehabilitation Plan for the Pipeline Corridor until the **completion of the Action**.	
7	By implementing the approved Environmental Management Plan, and the approved Environmental Management and Rehabilitation Plan for the Pipeline Corridor, the approval holder must achieve the following environmental outcomes for the **protected matters**: a) Minimise loss or degradation of habitat. b) Minimise risk of habitat fragmentation and edge effects. c) Reduce risk of faunal displacement and death. d) Reduce impacts from dust, noise and light emission. e) Prevent attraction of fauna and (both native and feral animals) to the development envelope, particularly storage areas of water and food wastes. f) Minimise the introduction of weeds. g) Minimise alteration of surface water flows and surface water quality.	**Section 2.1, 2.2, and 2.3**
8	The approval holder must not exceed any threshold criteria related to **protected matters** specified in a plan required under condition 5 of this approval. In the event of any exceedance of a threshold criterion related to **protected matters** specified in a **plan**, the approval holder must: a) notify the department of the exceedance within 7 days of the exceedance, b) investigate to determine the cause of the exceedance and submit a report of the findings of this investigation to the **department** in writing within 21 days of the exceedance. This investigation must aim to determine the cause of the threshold	**Section 4.1.2**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	exceedance and the extent of any harm to protected matters as a result of the exceedance. This report must include: i) the findings of the incident investigation, ii) details of corrective measures implemented, iii) an evaluation of the effectiveness of the corrective measures implemented, iv) measures to prevent another threshold exceedance occurring in the future.	
15	The approval holder may, at any time, apply to the **Minister** for a variation to a **plan** approved by the **Minister**, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous **plan**.	**Section 3.2**
16	If the **Minister** believes that it is necessary or convenient for the better protection of **protected matters** to do so, the **Minister** may request that the approval holder make specified revisions to a **plan** referred to in these conditions and submit a revision to that **plan** to the **department** for the **Minister's** written approval. The approval holder must comply with any such request. If the **Minister** approves a RAMP then, from the date specified, the approval holder must implement the RAMP in place of the previous **plan**.	**Section 3.2**
17	The approval holder must submit all **plans** required by these conditions electronically to the **department**.	**Section 3.2**
18	Unless otherwise agreed to in writing by the **Minister**, the approval holder must publish each **plan** on the **website** within 15 **business days** of the date: a) the **plan** is approved by the **Minister** in writing, if the **plan** requires the approval of the **Minister**, or b) the **plan** is approved by the **CEO** as required under the **Western Australian Approval** conditions which must be complied with in accordance with these **EPBC Act** conditions.	**Section 3.2**
19	The approval holder must keep all **plans** required by these conditions published on the **website** until the expiry date of this approval.	**Section 3.2**
20	The approval holder is required to exclude or redact **sensitive ecological data** from **plans** published on the **website** or otherwise provided to a member of the public. If **sensitive ecological data** is excluded or redacted from a **plan**, the approval holder must notify the **department** in writing what exclusions and redactions have been made in the version published on the **website**.	**Section 3.2**
37	The approval holder must notify the **department** electronically, within 2 **business days** of becoming aware of any **incident**. The approval holder must specify in each notification: a) any condition or commitment made in a **plan** which has been or may have been not complied with, b) a short description of the **incident**, and c) the location (if applicable, including co-ordinates), date and time of the **incident**.	**Section 4.1.2**
38	The approval holder must provide to the **department** in writing, within 12 **business days** of becoming aware of an **incident**, the details of that **incident**. The approval holder must specify:	**Section 4.1.2**

Condition Number	Condition Requirement	Section of this EMP where this condition is addressed
	a) all corrective measures and investigations which the approval holder has already taken in respect of the **incident**, b) the potential impacts of the **incident**, c) the method and timing of any corrective measures that the approval holder proposes to undertake to address the **incident**, and d) any variation of these conditions or revision of a plan that will be required to prevent recurrence of the **incident** and/or to address its consequences.	

1.5 RATIONALE AND APPROACH

1.5.1 SURVEY FINDINGS

The findings of the surveys undertaken for the Project are included in Table 7.

Table 7: Survey findings per aspect

Aspect	Area	Description of findings
Flora and vegetation	MDE	The MDE is situated within the Yalgoo bioregion and Tallering subregion as defined in the Interim Biogeographic Regionalisation for Australia (IBRA). The mapped vegetation condition ranged from 'Excellent' (93.7%) to 'Very Good' (5.89%) with the remainder (0.41%) cleared. No sheet-flow, groundwater dependent or potentially groundwater dependent vegetation was identified within the MDE (GHD 2020a). No occurrences of threatened ecological communities (TECs) protected under the EPBC Act were recorded within the MDE. One Priority Ecological Community (PEC) was identified in the MDE, the Yalgoo (Gnows Nest/Wolla and Woolgah-Wadgingarra) vegetation complexes Banded Ironstone Formation (BIF) ranked as Priority 1 (P1) by the Department of Biodiversity, Conservation and Attractions (DBCA). The Yalgoo region contains BIF ranges extending northeast, southwest and southeast of the Yalgoo township and is not locally restricted to the mine area. Approximately 1,042 ha (or 2.74%) of the known extent of this PEC intersects the MDE (GHD 2020a). Previous surveys of the BIF in the Yalgoo region recorded fewer significant taxa than the BIF ranges further south, which was considered a function of reduced diversity of habitats among the more subdued landforms such as where the mine occurs (Markey and Dillon 2011 as cited in GHD 2020a). No threatened flora species were recorded within the MDE. Three priority flora species were recorded in the MDE, largely associated with the Yalgoo BIF PEC, and include the following: ▪ *Acacia subsessilis* (P3) ▪ *Acacia speckii* (P4) ▪ *Dodonaea amplisemina* (P4). The proposal will impact *Acacia subsessilis* and *Acacia speckii*, which are known to occur outside the MDE. Nine introduced flora species have been recorded in the MDE, none of which are listed as Declared Pests under the *Biosecurity and Agriculture Management Act*

Aspect	Area	Description of findings
		2007 (BAM Act) or as Weeds of National Significance (WoNS) on the Western Australian Organism List database (GHD 2020a).
	PDE	A reconnaissance flora and vegetation survey undertaken in November 2018 covered 4,655 ha of the eastern pipeline corridor. A further targeted flora survey was completed in August 2020 which covered a 50 m wide search area across the pipeline corridor. The eastern portion was surveyed across the entirety of its length within the search area, patches of native vegetation were targeted in the western portion. Where conservation significant taxa were recorded, the survey area extended outside of the 50 m search area to assess population sizes. The mapped vegetation condition within the eastern portion of the PDE ranged from 'Excellent' to 'Very Good'. Vegetation, outside of cleared areas, in the western portion was in 'Excellent' condition, with some areas showing signs of grazing or clearing and fire. No groundwater dependent vegetation or groundwater dependent ecosystems were identified within the eastern or western portions of the PDE (GHD 2020a). No occurrences of TECs protected under the EPBC Act were recorded within the PDE. Two PECs that will be directly impacted were identified within the PDE as follows: ▪ Yalgoo (Gnows Nest/Wolla and Woolgah-Wadgingarra) vegetation complexes BIF – Priority 1 (DBCA). Approximately 1,042 ha (or 2.74%) of the known extent of this of this PEC intersects the MDE (GHD 2020a) ▪ Eucalypt Woodlands of the WA Wheatbelt – Priority 3 (DBCA). Approximately 70 ha (or 0.007%) of the known extent of this PEC intersects the MDE (GHD 2020a). No EPBC Act listed threatened flora were identified within the PDE. One flora species, *Grevillea phanerophlebia* listed as Threatened under the BC Act, was recorded within the PDE. Six priority flora species ranked by DBCA were recorded in the PDE, including the following: ▪ *Philotheca nutans* (P1) ▪ *Enekbatus dualis* (P1) ▪ *Dicrastylis linearifolia* (P3) ▪ *Cryptandra nola* (P3) ▪ *Acacia speckii* (P4) ▪ *Goodenia neogoodenia* (P4). The proposal will likely impact *Dicrastylis linearifolia* and *Acacia speckii*, which are known to occur outside the PDE, but not the other priority species or the Threatened flora species. No Declared Pests as listed under the BAM Act or WoNS on the Western Australian Organism List database have been recorded in the PDE. One environmental weed *Mesembryanthemum nodiflorum* (Slender Iceplant) was recorded growing near a track south of Yalgoo town site (GHD 2020a).

Aspect	Area	Description of findings
Terrestrial Fauna	MDE	Six broad terrestrial fauna habitat types were identified, ranging from high to moderate value. ▪ BIF ridgeline; ▪ Granitic formations; ▪ Chenopod plain; ▪ Riparian creek line; ▪ Mixed acacia plain; ▪ Floodplain; All fauna habitats except 'Mixed acacia plain' and 'Flood plain' are considered to have high value, with the 'BIF ridgeline' considered moderate-to-high value. The 'Granitic formations' are considered the highest value fauna habitat for the Western spiny-tailed skink, while the 'BIF ridgeline' is not considered a critical or significant habitat for the Western spiny-tailed skink as it has few areas of outcropping and has been heavily grazed by cattle. A total of five vertebrate species listed as conservation significant were recorded or identified as likely to occur within the MDE including: ▪ Western spiny-tailed skink (*Egernia stokesii subsp. badia)* listed Endangered under the EPBC Act and Vulnerable under the BC Act (recorded) ▪ Long-tailed dunnart (*Sminthopsis longicaudata*) listed P4 (DBCA) under the BC Act (recorded) ▪ Gilled slender bluetongue (*Cyclodomorphous branchialis*) listed Vulnerable under the BC Act (likely to occur) ▪ Peregrine falcon (*Falco peregrinus*) listed Specially Protected under the BC Act (recorded but uses the area opportunistically) ▪ Fork-tailed swift (*Apus pacificus*) listed Migratory under the EPBC Act and BC Act (may periodically occur). The Short Range Endemic (SRE) survey identified one likely SRE species and 14 possible SRE species within the MDE. No confirmed SRE species were recorded during the survey.

Aspect	Area	Description of findings
	PDE	In the eastern portion of the PDE, eight broad terrestrial fauna habitat types were identified, ranging from high to moderate value. ▪ Open acacia woodlands/shrublands; ▪ Low granite outcrops; ▪ Chenopod claypan; ▪ Riparian creek line; ▪ Mallee over mixed shrubland sandplain; ▪ Mixed shrubland on sandplain; ▪ Stoney plain; and ▪ Acacia shrubland over shallow soils over granite. All fauna habitats except 'Stony plain' and 'Acacia shrubland over shallow soils over granite' are considered to have high to moderate value. A total of five vertebrate species listed as conservation significant were identified as likely to occur within the PDE, however, none were recorded or confirmed during the surveys, including: ▪ Western Spiny-tailed Skink (*Egernia stokesii* subsp. *badia*) listed Endangered under EPBC Act and Vulnerable under the BC Act ▪ Long-tailed dunnart (*Sminthopsis longicaudata*) listed P4 (DBCA) under the BC Act ▪ Gilled slender bluetongue ((*Cyclodomorphus brachialis*) listed Vulnerable under BC Act ▪ Malleefowl (*Leipoa ocellata*) listed Vulnerable under BC Act and EPBC Act ▪ Peregrine falcon (*Falco peregrinus*) listed Specially Protected under the BC Act. No active Malleefowl mounds were recorded, and one historic mound was identified. Three similarly disused Malleefowl mounds have been previously recorded within the PDE (GHD 2020b). Whilst the western portion of the PDE has been extensively cleared for broad-acre agriculture and livestock grazing, isolated patches of remnant native vegetation potentially provide suitable foraging for Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) (within their mapped non-breeding range), and potentially suitable foraging and breeding habitat for Malleefowl.
Inland waters: Ground water	MDE	The MDE lies within the Gascoyne Groundwater Area proclaimed under the Rights in Water and Irrigation Act 1914 (RiWI Act). Two main aquifers were identified within the MDE, the palaeovalley aquifer, which is largely an alluvial aquifer present within existing and paleo-drainage areas up to a maximum depth of 70 metres below ground level (mbgl), and a fractured rock aquifer under the BIF landform up to a nominal depth of approximately 60 mbgl (GHD 2021). The dewatering for the pit is likely to occur in the fractured rock aquifer; there is no substantial dewatering likely for the pipeline. Groundwater in the vicinity of the proposal is inferred to flow in a general southerly direction, discharging to low ground along the current drainage line of the Salt River. There is a groundwater divide consistent with the catchment divide, located along the higher ground to the immediate west of the proposed mine pit area (GHD 2020a).

Aspect	Area	Description of findings
		Groundwater quality between the palaeovalley (southern area of the MDE) and the pit area (northwest area of the MDE) were noted to have a significant difference in quality. Salinity was notably higher in the paleovalley area, with an average of 10,000 mg/L total dissolved solids (TDS), compared to just over 800 mg/L recorded in the pit area (GHD 2021). The proposal will require up to 1 GLpa from a water supply borefield and up to 4 GLpa from the mine pit dewatering for use in processing. The Yalgoo Water Reserve is located approximately 2 km southwest of the MDE and is a Priority 1 Public Drinking Water Source Area. Groundwater is abstracted from a borefield operated by the Water Corporation, which represents one of the closest licensed groundwater uses to the proposal at approximately 10 km from the proposed mine pit (GHD 2019). Other nearby groundwater users include pastoral stations for stock watering, the Shire of Yalgoo, Main Roads and for mining purposes. No wetlands, groundwater dependent ecosystems or potentially groundwater dependent vegetation were identified within or in proximity to the MDE (GHD 2020a).
Inland waters	MDE	The MDE lies within the catchment of the Salt River, which originates approximately 120 km east of the proposed mine site. The river flows west and then south, towards the Yarra Yarra Lakes and Coonderoo River before connecting with the Moore River. There are no surface water areas proclaimed under the RIWI Act within the mine DE (GHD 2020a). The MDE is intersected by two primary ephemeral streams, the Western Primary Watercourse (WPW), which traverses the western side of the envelope, and the Eastern Primary Watercourse (EPW) along the eastern side of the envelope. These watercourses divide the mine site into two distinct catchment areas. Nineteen ephemeral watercourses intersect the PDE and may be crossed by the 250 km pipeline, the majority of which are minor (GHD 2020a). Some of the watercourses crossed by the pipeline are known to be registered Aboriginal heritage sites. The baseline surface water quality sampling undertaken by the proponent indicated that the surface water is fresh with TDS ranging from 420 mg/L to 630 mg/L, which is considered to represent the high evaporation of standing water and initial flush conditions following an infrequent rain event. The elevated total metal and metalloid concentrations in surface water samples are considered representative of naturally elevated background concentrations due to mineralisation of ore bodies (GHD 2020a).
Social Surroundings	MDE and PDE	The MDE is located within the Shire of Yalgoo approximately 225-250 km east-northeast of Geraldton and 15 km northeast of Yalgoo. The mine and pipeline development envelopes will intersect five pastoral stations. The Yogi mining tenements overlap sheep farming pastoral leases of Carlaminda Station and Wagga Wagga Station. The PDE traverses several Local Government Areas including the Shire of Yalgoo, City of Greater Geraldton, Shire of Murchison, and Shire of Chapman Valley. The pipeline corridor broadly follows the Geraldton-Mount Magnet Road from the MDE west for approximately 80 km from the town of Yalgoo. The MDE and PDE are located within the Widi Mob Native Title Claim (WC1997/072). The PDE also covers the Mullewa Wadjari Community

Aspect	Area	Description of findings
		(WC1996/093), the Wajarri Yamatji (WC2004/010) and the Southern Yamatji (WC2017/002). FIJV completed a desktop assessment using the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System for the MDE and PDE. No Registered Aboriginal Heritage Sites were identified within the MDE, and two Other Heritage Places were identified within the MDE, but outside the proposed footprint for mining or associated infrastructure. Within the PDE there are eight Registered Aboriginal Heritage Sites and 24 Other Heritage Places (Brad Goode and Associates 2019a). Archaeological and ethnographic surveys were conducted within the MDE in April 2019 with representatives of the Widi Mob Native Title Claim (NTC) group. Representatives of the Widi Mob NTC group advised that they were aware of a songline that ran north to south through the broader region in Widi country and connected to significant ceremonial law and meeting grounds at Peak Hill in Wadjari country. It was advised that the songline may have followed the waterways situated nearby and was marked by high landform features, which are both of cultural importance, however there was no specific knowledge of the path of the songline traversing the survey area. The waterways were also defined as important to the Widi people as they travelled and camped along them and were an important resource for survival (Brad Goode and Associates 2019b). Three National Heritage or Commonwealth Heritage listed sites are found within the township of Yalgoo, all approximately 1 km north of the PDE and 17 km west of the MDE, with another heritage listed site located approximately 5 km north of the MDE (GHD 2020a).

1.5.2 KEY ASSUMPTIONS AND UNCERTAINTIES

Key assumptions and uncertainties are detailed in Table 8.

Table 8: Key Assumptions and uncertainties

Aspect	Assumptions and uncertainties
Flora and vegetation	It is assumed that the surveys undertaken have accurately identified and mapped vegetation associations and identified Threatened and Priority flora and their populations within the Project area and surrounds. It is also assumed that the previous assessment of impacts on flora and vegetation associated with the Project are correct and are typically considered minor on a local and regional scale.
Terrestrial Fauna	The findings of the fauna surveys completed to date have formed the basis for the rationale and management approach adopted for the EMP. It is assumed that the surveys undertaken have accurately identified and mapped fauna habitats and recorded fauna occurrences.
Inland waters - Groundwater	The hydrogeological assessment provides a preliminary understanding of baseline conditions; however, as the design of the Project components progresses and operations and monitoring commence, variations may arise,

Aspect	Assumptions and uncertainties
	allowing substantial improvement in the understanding of potential Project impacts. Key assumptions include: ▪ The presented conceptual model and its parameterisation are considered valid for the scale of assessment ▪ Groundwater flow at a regional scale can be approximated with porous flow characteristics ▪ The mining plan is based on uniform progressive deepening of the mining pit over its pit shell footprint at a rate of 6 metres (m) per 6 months of mining to a maximum mining depth of 125 m AHD. The varying surface of the final pit base is honoured by this assessment (ranging between 125 to 200 m AHD).
Inland waters - Surface Water	The surface water assessment provides a preliminary understanding of baseline conditions; however, as the design of the Project components is progressed and operations and monitoring commence, variations may arise, which will allow substantial improvement in the understanding of potential Project impacts. Key uncertainties include: ▪ The surface water assessment was completed based on the Mine Layout plan as of 24 October 2017. The surface water assessment is considered to be preliminary and adaptive and will require review and updating if the mine layout changes as mining progresses. Further, the surface water assessment precedes any environmental, health or operational risk assessments. The setting of surface water management triggers, thresholds and interventions as a result of these risk assessments may also necessitate a review of this plan. ▪ Based on the proposed Project and mine layout, surface water and sediment monitoring locations were selected to provide continuity between pre-development, operation and closure. The proposed monitoring plan will require review and updating if the mine layout changes. ▪ Baseline water quality data is limited to two opportunistic grab samples, both of which were from standing water. Further characterisation of surface water is required to assess background water quality conditions.
Greenhouse Gas Emissions	Refer to the Yogi Greenhouse Gas Management Plan
Social surrounds	It is assumed that the Due diligence risk assessment undertaken (Brad Goode & Associates 2019a) has accurately identified and mapped the Aboriginal registered sites within the project area. It is also assumed that data taken from the Aboriginal Heritage Inquiry System and the State heritage register (Inherit) was up-to-date and correct at the time of enquiry.

1.5.3 MANAGEMENT APPROACH

This EMP has been developed to address the Key Environmental Factors (and relevant EPA environmental objective) of Flora and Vegetation, Terrestrial Fauna, Inland Waters and Social Surroundings.

Greenhouse Gas Emission management is not addressed within this EMP and is addressed within the Proposal's Greenhouse Gas Management Plan.

A systematic approach was utilised where the potential impacts of the Project were assessed and mitigation measures applied. Based on this assessment, residual impacts were identified, and these will be subject to this EMP. Both outcome and objective-based (management) provisions are utilised in this EMP.

1.5.4 RATIONALE FOR CHOICE OF PROVISIONS

Both outcome and objective-based (management) provisions are utilised in this EMP, taking into account that some aspects will have measurable outcomes while others will be procedure driven to manage residual impacts. Where outcomes-based management actions have identified that trigger and/or threshold criteria can be applied at this Project stage (preconstruction), they have been presented in Section 2.

2 EMP COMPONENTS

The EMP will guide the management of environmental commitments on site during construction and operation. Mine closure will be managed in accordance with the Project Mine Closure Plan (MCP) approved by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

Section 2 of this EMP describes the commitments for each Key Environmental Factor identified as relevant to the Project:

- The objective-based and/or outcome-based provisions
- The indicators selected to assess potential environmental impacts against the defined objectives and outcomes.
- The associated monitoring of those indicators.
- The response actions for any exceedances of selected indicators.
- The reporting requirements for any identified exceedances.

2.1 FLORA AND VEGETATION

EPA Factor	Flora and Vegetation			
EPA Objective	*To protect flora and vegetation so that biological diversity and ecological integrity are maintained*			
Outcomes	MS1225 Condition B1-1 (1-6), B1-2 (1-3), and B1-3.			
Key Environmental Values	Native flora and vegetation, conservation significant flora and Priority Ecological Communities.			
Key Impacts and Risks	• Permanent loss of 1,530 ha of native vegetation within the MDE, including conservation significant flora and vegetation • Indirect impacts, from fire, spread of weeds, dieback and dust • Permanent loss of 200 ha of native vegetation within the PDE, including Priority 3 PEC 'Eucalyptus Woodlands of the WA Wheatbelt' and conservation significant flora			
Outcome-based Provisions				
Environmental Criteria (Trigger & Threshold)	**Response Actions** • **Trigger Level Actions** • **Threshold Contingency Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition B1-1 (1) Disturbance to no more than 153 ha of vegetation representative of the Yalgoo vegetation complexes Banded Ironstone Formation Priority Ecological Community within the mine development envelope.				
Trigger Criteria: Extent of Proposal disturbance of BIF PEC is greater than or equal to **145.35** ha (**95%**). **Threshold Criteria:** Extent of Proposal disturbance of BIF PEC is **153** ha.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of the BIF PEC The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to the BIF PEC **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Mine Manager ▪ Investigate causal factors ▪ Confirm the extent of clearing through survey and spatial analysis ▪ Rehabilitation plan developed and implemented for extent of clearing exceedance	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ Geographic Information System (GIS) disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition B1-1 (2) Disturbance to be no more than 2.54 ha of vegetation representative of the Eucalypt Woodlands of the WA Wheatbelt Priority Ecological Community within the pipeline development envelope.				
Trigger Criteria: Extent of Proposal disturbance of the Eucalypt Woodlands of the WA Wheatbelt PEC is greater than or equal to **2.413** ha (**95%**). **Threshold Criteria:** Extent of Proposal disturbance of the Eucalypt Woodlands of the WA Wheatbelt PEC is **2.54** ha.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of the PEC The following may also be undertaken: ▪ Modification to existing clearing plan to limit further disturbance to the PEC **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Rehabilitation plan developed and implemented for extent of clearing exceedance	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.

Condition B1-1(3) Disturbance to no more than (a) 50 individuals of *Dicrastylis linearifolia* recorded in the flora and fauna survey, (b) 27 individuals of *Acacia subsessilis* recorded in the flora and fauna survey, and (c) 288 individuals of *Acacia speckii* recorded in the flora and fauna survey.				
Trigger Criteria: **45** (**95%**) or more individuals of *Dicrastylis linearifolia* have been disturbed as a result of the Proposal activities. **Threshold Criteria:** **50** individuals of *Dicrastylis linearifolia* have been disturbed as a result of the Proposal activities. **Trigger Criteria:** **25** (**95%**) or more individuals of *Acacia subsessilis* have been disturbed as a result of the Proposal activities. **Threshold Criteria:** **27** individuals of *Acacia subsessilis* have been disturbed as a result of the Proposal activities. **Trigger Criteria:** **273** (**95%**) or more individuals of *Acacia speckii* have been disturbed as a result of the Proposal activities. **Threshold Criteria:** **288** individuals of *Acacia speckii* have been disturbed as a result of the Proposal activities.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded for any of the listed flora species, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of the flora species and that the planned future clearing will not result in a Threshold criteria exceedance. **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Review approved permits and permits under assessment to confirm no further clearing of conservation flora species is planned.	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition B1-1(4) No adverse indirect impacts to conservation significant flora outside the disturbance footprint in the pipeline development envelope.				
Trigger Criteria: Annual analysis of conservation significant flora populations outside the disturbance envelope indicates a **15%** decline in the health and/or abundance of flora species compared to control quadrats. **Threshold Criteria:** Annual analysis of conservation significant flora populations outside the disturbance envelope indicates a **30%** decline in the health and/or abundance of flora species compared to control quadrats.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded for any of the listed conservation significant flora species, the following will be undertaken: ▪ Investigate to establish causal factors If the decline in the health and/or abundance is determined to be attributable to the Proposal activities, at least one of the following will be undertaken: ▪ Increase frequency/intensity of dust suppression along pipeline tracks ▪ Increase frequency of weed control measures ▪ Review adequacy of fire response times ▪ Reduce speed limits on service tracks to reduce dust emissions ▪ Undertake surface water modelling to confirm no alteration to surface water regimes **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Investigate causal factors ▪ Confirm the extent of the impacted flora through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas (seeding affected areas with conservation significant flora species)	▪ Monitoring of vegetation health at designated sites outside of the disturbance footprint within the PDE, including trend analysis of vegetation health in comparison to control quadrats in similar environments and baseline, pre-disturbance survey results. ▪ Internal incident reporting records	▪ Vegetation health monitoring is to be undertaken annually during Spring (September – November). ▪ If high variability or poor response to mitigation measures is detected, monitoring frequency will increase to twice annual.	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1**.** Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of Vegetation health monitoring results and any non-compliance.

Condition B1-1(5) Disturbance only in areas that have been subject to survey or cleared areas that have been previously disturbed				
Trigger Criteria: A clearing permit request is submitted through the ground disturbance permitting system over an area that hasn't been subject to survey. **Threshold Criteria:** Disturbance associated with Proposal activities occurs at the boundary of an area that has not been surveyed or has not been previously disturbed.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded for any of the listed conservation significant flora species, the following will be undertaken: ▪ Investigate to establish causal factors; ▪ Consider alternative locations for the proposed development; ▪ Commission a survey of the proposed development site if no suitable alternative location can be found. **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Review approved clearing permits and permits under assessment to confirm no further clearing in unauthorised areas is planned and/or being undertaken.	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ GIS disturbance database review ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition B1-1(6) No disturbance to Threatened Ecological Communities or Threatened Flora listed under the *Biodiversity Conservation Act 2016 (BC Act)* or *Environment Protection and Biodiversity Conservation Act 1999*				
Trigger Criteria: A clearing permit request is submitted within **50** m of a TEC or threatened flora species. **Threshold Criteria:** Disturbance occurs at the boundary of a TEC or threatened flora species occurs due to the Proposal.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded for any of the listed conservation significant flora species, the following will be undertaken: ▪ Investigate to establish causal factors; ▪ Consider alternative locations for the proposed development; ▪ Clearly demarcate TEC or threatened flora if no suitable alternative location can be found. **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Review approved clearing permits and permits under assessment to confirm no further clearing in unauthorised areas is planned and/or being undertaken.	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Objective Based Provisions				
Management Targets	**Management Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition B1-2(1) No adverse impacts to flora and vegetation occurring within or directly adjacent to the development envelope from the introduction or spread of environmental weeds compared with pre-construction condition				
Management Target 1: Avoid the introduction or spread of environmental weeds compared with pre-construction condition due to the Project.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 1: ▪ Site induction will include weed management, monitoring and reporting requirements. ▪ Vehicles and mining equipment access to be limited to designated roads/access tracks and cleared areas. ▪ Implement a biannual weed monitoring and targeted management program following the completion of land clearing activities and during operations and closure activities. ▪ Plant, machinery, equipment, and tools will be cleaned down prior to arrival to site. Clean-down will	▪ Site induction ▪ Weed monitoring program, including opportunistic sightings ▪ GIS database ▪ Internal incident reporting records	▪ Annual review or as required of site induction ▪ Weed monitoring and control programs are to be undertaken biannually, with one program undertaken during growing season, at a minimum. Monitoring will include assessment of weed diversity and abundance. ▪ Vehicle and plant equipment hygiene records are to be	**Internal** ▪ Weed and seed certificates ▪ Weed management records ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance.

	consist of brushing, gouging, scraping and/or water blasting to remove any compacted soil or plant matter. ▪ Weeds and seeds inspections are to be completed prior to vehicles and plant arriving on site. ▪ GPS coordinates of existing and new weeds areas are to be collected and entered into GIS database ▪ Weed-risk topsoil and vegetation will either be treated prior to reuse, buried at least 1.5 m under fill or disposed of appropriately offsite.		reviewed prior to equipment arriving to site. ▪ Vegetation health monitoring to be undertaken annually during Spring (September – November) ▪ Quarterly internal review of ground disturbance records / GIS database and internal incident reporting records	Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include vegetation health monitoring results, details of weed monitoring and management and any non-compliance.
Condition B1-2(2) No adverse impacts to flora and vegetation occurring within or directly adjacent to the development envelope from dust emissions or altered fire regimes				
Management Target 2: Avoid adverse impacts from dust on flora and vegetation within or directly adjacent to the DE.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 2: ▪ Site induction will include Dust management, monitoring and reporting requirements. ▪ Vehicles are restricted to designated routes, where dust control measures are undertaken. ▪ Dust suppression, including the use of water carts on access roads, is to be implemented during Project construction and operational phases.	▪ Dust will be visually monitored as part of normal operations ▪ Environmental compliance inspection will visually inspect dust suppression and control measures ▪ Site induction to include content on dust management, monitoring and reporting ▪ Vegetation health monitoring to include assessment for potential impacts from dust ▪ Internal incident reporting records	▪ Daily monitoring of dust levels (visual) during operations. ▪ The environmental compliance inspection will be undertaken monthly ▪ Annual review or as required of site induction ▪ Vegetation health monitoring to be undertaken annually during Spring (September – November)	**Internal** ▪ Inspection records ▪ Dust hazard report and internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include vegetation health monitoring results and any non-compliance.
Management Target 3: Avoid adverse impacts due to altered fire regimes on flora and vegetation within or directly adjacent to the MDE.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 3: ▪ Site induction to include information on the prevention and management of fires. ▪ All machinery and vehicles to undertake clearing activities will be fitted with firefighting equipment. ▪ A Hot Work Permit system will be implemented. ▪ Firefighting equipment will be located on site, and emergency personnel will be trained in fire response.	▪ Vehicle and plant equipment inspections to check for presence and functionality of firefighting equipment ▪ Site induction to include content on fire management, controls and reporting ▪ Workplace inspections of firefighting equipment ▪ Internal incident reporting records	▪ Quarterly inspections relating to presence of firefighting equipment are conducted in accordance with relevant Health and Safety regulations ▪ Annual review or as required of site induction ▪ Pre-start inspections are to be undertaken minimum weekly ▪ Quarterly internal review of ground disturbance records / GIS database and internal incident reporting records	**Internal** ▪ Inspection records ▪ Hot work permit record system ▪ Training records for firefighting ▪ Pre-start equipment records include check for firefighting equipment present and functional ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of fire impacts due to the Project and any non-compliance.
Condition B1-2(3) No adverse impacts to flora and vegetation occurring within or directly adjacent to the development envelopes from the alteration to surface water flow regimes or groundwater flow regimes compared with pre-construction condition				
Management Target 4: Minimise impacts to flora and vegetation from the alteration to surface and groundwater flows and quality	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 4: ▪ Local drainage will be considered when constructing new infrastructure, haul roads and access tracks. ▪ Disturbance to watercourses will be minimised to that required to achieve safe mine design and asset protection. ▪ Surface water diversions and bunding will be established to convey surface water flows around infrastructure associated with the project. ▪ Culverts will be installed beneath transport corridors that cross key surface water features	▪ Surface water modelling and flood assessment of site is undertaken ▪ Post rainfall event inspections of work areas to assess for excessive ponding (obstruction of key surface water features) ▪ Inspection of site infrastructure and transportation corridors to confirm culverts installed and functional ▪ GIS database	▪ Surface water and flood modelling of site is undertaken prior to construction and when significant changes to site layout are required ▪ Inspection of site service and transportation corridors is undertaken annually or following storm events to ensure flows are maintained	**Internal** ▪ Inspection records ▪ Surface water and flood modelling report ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1.

	▪ GIS database includes records of key surface water features ▪ Groundwater to be managed in accordance with approved Groundwater Operating Strategy and abstraction licencing.	▪ Internal incident reporting records	▪ Environmental compliance inspections are undertaken monthly ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	Annual reporting will be undertaken as detailed in Section 4.2.
Condition B1-3 The proponent must take reasonable steps using existing or proposed roads, access tracks, infrastructure corridors and other cleared areas that have previously been disturbed including shared use with other existing or proposed disturbance areas, to minimise adverse impacts to flora and vegetation				
Management Target 5: Minimise adverse impacts to flora and vegetation by utilising existing disturbance where reasonable	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 5: ▪ Undertake pre implementation survey of all existing disturbance areas within the MDE and PDE ▪ Site layout will utilise previously cleared areas for transportation and service corridors as much as practicable. ▪ Clearing area will be clearly demarcated and checked and approved by the Environmental Supervisor (or a qualified delegate) prior to the commencement of clearing works per the Clearing and Ground Disturbance procedure.	▪ Ground disturbance permitting system ▪ Pre and post-clearing surveys undertaken ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Internal** ▪ Pre and post-clearing inspections ▪ Internal clearing permit system ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.

2.2 TERRESTRIAL FAUNA

EPA Factor	Terrestrial Fauna
EPA Objective	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained*
Outcomes	MS1225 Conditions B2-1 (1-3), B2-2 (1-2), B2-3 (1-3), and B2-4 (1-5) and Condition 1 and 2 of EPBC 2017/8124
Key Environmental Values	Biodiversity and threatened fauna
Key Impacts and Risks	• Permanent loss of up to 1,530 ha of fauna habitat within the MDE • Permanent loss of up to 200 ha of fauna habitat within the PDE • Displacement and death of fauna • Habitat fragmentation • Habitat degradation from the introduction and spread of weeds • Attraction of feral animals and increased predation of native fauna • Altered fire regime leading to temporary destruction of fauna habitat, reduced food sources, increased predation, or lasting degradation due to increased intensity and/or frequency of fire events

Outcome Based Provisions				
Environmental Criteria (Trigger & Threshold)	**Response Actions** • **Trigger Level Actions** • **Threshold Contingency Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition B2-1(1)(a) Within the mine development envelope, disturb no more than 153 ha of the Banded Ironstone Formation fauna habitat type considered suitable for Western spiny-tailed skink (*Egernia stokesii badia*), Gilled slender bluetongue (*Cyclodomorphous banchialis*) and Long-tailed dunnart (*Sminthopsis longicaudata*)				
Trigger Criteria: Extent of proposal disturbance of the Banded Ironstone Formation fauna habitat type within the MDE is greater than or equal to **145.35** ha (**95%**). **Threshold Criteria:** Extent of proposal disturbance of the Banded Ironstone Formation fauna habitat type within the MDE is **153** ha.	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of BIF habitat The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to the BIF habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken:	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.

	▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas			
Condition 2 c) of EPBC 2017/8124 and Condition B2-1(1)(b) Within the mine development envelope, disturb no more than 1.14 ha of the granitic formations fauna habitat type considered suitable habitat for Western spiny-tailed skink (*Egernia stokesii badia*), Gilled slender bluetongue (*Cyclodomorphous banchialis*) and Long-tailed dunnart (*Sminthopsis longicaudata*)				
Trigger Criteria: Extent of proposal disturbance of the granitic formations fauna habitat type within the MDE is greater than or equal to **1.0** ha (**95%**). **Threshold Criteria:** Extent of proposal disturbance of the granitic formations fauna habitat type within the MDE is **1.14** ha	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of granitic habitat The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to the granitic formations habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225** and condition **8** of **EPBC 2017/8124**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition 2 c) of EPBC 2017/8124 and Condition B2-1(2)(a) Within the pipeline development envelope, disturb no more than 6.95 ha of low granite outcrops fauna habitat type considered suitable habitat for Western spiny-tailed skink (*Egernia stokesii badia*)				
Trigger Criteria: Extent of proposal disturbance of the low granite outcrops fauna habitat type within the PDE is greater than or equal to **6.6** ha (**95%**). **Threshold Criteria:** Extent of proposal disturbance of the low granite outcrops fauna habitat type within the PDE is **6.95** ha	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of low granite outcrop habitat The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to the low granite outcrop habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225** and condition **8** of **EPBC 2017/8124**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition B2-1(2)(b) Within the pipeline development envelope, disturb no more than 6.29 ha of mallee over mixed shrubland sandplain fauna habitat type considered potentially suitable habitat for Malleefowl (*Leipoa ocellata*)				
Trigger Criteria: Extent of proposal disturbance of the mallee over mixed shrubland sandplain fauna habitat type within the PDE is greater than or equal to **5.90** ha (95%). **Threshold Criteria:** Extent of proposal disturbance of the mallee over mixed shrubland	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of mallee over mixed shrubland sandplain habitat The following may also be undertaken:	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225** and condition **8** of **EPBC 2017/8124**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1.

sandplain fauna habitat type within the PDE is **6.29** ha	▪ Modification to existing mine plan to limit further disturbance to the mallee over mixed shrubland sandplain habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas			Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition 2 b) of EPBC 2017/8124 and Condition B2-1(2)(c) Within the pipeline development envelope, disturb no more than 8.65 ha of mixed shrubland on sandplain fauna habitat type considered potentially suitable habitat for Malleefowl (*Leipoa ocellata*)				
Trigger Criteria: Extent of proposal disturbance of the mixed shrubland sandplain fauna habitat type within the PDE is greater than or equal to **8.20** ha (**95%**). **Threshold Criteria:** Extent of proposal disturbance of the mixed shrubland sandplain fauna habitat type within the PDE is **8.65** ha	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of mixed shrubland sandplain habitat The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to the mixed shrubland sandplain habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225** and condition **8** of **EPBC 2017/8124**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition 2 a) of EPBC 2017/8124 and Condition B2-1(2)(d) of MS1225 - disturb no more than 8.59 ha of low value foraging habitat for Carnaby's Cockatoo				
Trigger Criteria: Extent of proposal disturbance of the Carnaby's Cockatoo fauna habitat type within the PDE is greater than or equal to **8.10** ha (**95%**). **Threshold Criteria:** Extent of proposal disturbance of the Carnaby's Cockatoo fauna habitat type within the PDE is **8.59** ha	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Investigate to establish causal factors ▪ Review of currently approved clearing permits and permits under assessment to identify if there is any planned further clearing of Carnaby's Cockatoo habitat The following may also be undertaken: ▪ Modification to existing mine plan to limit further disturbance to Carnaby's Cockatoo habitat **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Undertake rehabilitation activities of affected areas	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225** and condition **8** of **EPBC 2017/8124**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Condition B2-1(3) With the exception of low impact activities, no disturbance to fauna habitat within the exclusion zone in the mine development envelope				

Trigger Criteria: A clearing permit is requested (excluding low impact activities) within 500 m of the exclusion zone within the MDE. **Threshold Criteria:** Disturbance associated with Proposal activities has occurred at the boundary of an exclusion zone within the MDE	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded for any of the listed conservation significant flora species, the following will be undertaken: ▪ Investigate to establish causal factors; ▪ Consider alternative locations for the proposed development; ▪ Clearly demarcate exclusion zone boundary and offset any clearing activities by a minimum of 50 m. **Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Clearing activities are to cease until otherwise authorised by the Environment team ▪ Investigate causal factors ▪ Confirm the extent of the over clearing through survey and spatial analysis ▪ Review approved clearing permits and permits under assessment to confirm no further clearing in unauthorised areas is planned and/or being undertaken.	▪ Post-clearing surveys undertaken ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2** of **MS1225**, the exceedance of a threshold criteria represents a non-compliance. Reporting of a threshold exceedance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of disturbance survey records and any non-compliance.
Objective Based Provisions				
Management Targets	**Management Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition 7 of EPBC 2017/8124 and Condition B2-2 (1) of MS1225 - Avoid where practicable and otherwise minimise adverse impacts and disturbance to native fauna including mortality, physical injury, behavioural changes and health impacts				
Management Target 7: Avoid where practicable impacts to native fauna from the Proposal	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 7: ▪ All observations of conservation significant fauna species will be reported to the site's Environmental representative. ▪ As part of their on-site induction, all site personnel will be made aware of fauna species that occur in the locality (native and introduced). ▪ Implement appropriate mitigation measures such as speed limit restrictions. ▪ Vehicles and mining equipment access is limited to designated roads/access tracks and cleared areas. ▪ Removal of dead fauna away from edges of roads. ▪ Injured vertebrate fauna will be given to a trained wildlife carer or if not possible, euthanised humanely in accordance with DBCA/DPaW standard operating procedure.	▪ Road speed and Fauna warning signs are implemented in high-risk fauna areas ▪ Fauna register ▪ Internal incident reporting records	▪ Fauna sightings and deaths are recorded as and when they occur / are reported during construction and operations ▪ Annual review of speed and fauna signage against fauna sightings and death records	**Internal** ▪ Inspection records ▪ Fauna register (sightings and deaths) ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of fauna records (sightings and deaths) and any non-compliance.
Management Target 8: Reduce impacts to fauna from dust, noise and light emission	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 8: ▪ Lighting is directed downwards to illuminate designated operations areas rather than the surrounding landscape. ▪ Dust suppression, including use of water carts on access roads, to be implemented during all Proposal phases. ▪ All equipment and machinery to be fitted with noise attenuating devices and to undergo regular maintenance.	▪ Environmental compliance inspections ▪ Fauna register ▪ Internal incident reporting records	▪ Monthly environmental compliance inspections ▪ Equipment and machinery maintenance is undertaken as per manufacturers recommendations ▪ Fauna sightings and deaths are recorded as and when they occur / are reported during construction and operations	**Internal** ▪ Inspection records ▪ Service and maintenance records ▪ Fauna register (sightings and deaths) ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of fauna records (sightings and deaths) and any non-compliance.

Management Target 9: Reduce impacts to fauna by minimising risk of altered fire regimes	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 9: ▪ Site induction to include information on the prevention and management of fires. ▪ All machinery and vehicles to undertake clearing activities will be fitted with firefighting equipment. ▪ A Hot Work Permit system will be implemented. ▪ Firefighting equipment will be located on site, and emergency personnel will be trained in fire response.	▪ Monitoring of hot works permit system ▪ Daily equipment pre-start inspections to check for presence and functionality of firefighting equipment ▪ Fauna register ▪ Internal incident reporting records	▪ Quarterly review of hot works permit ▪ Inspections relating to presence of firefighting equipment are conducted in accordance with relevant Health and Safety regulations ▪ Pre-start inspections are to be undertaken minimum weekly ▪ Fauna sightings and deaths are recorded as and when they occur / are reported	**Internal** ▪ Inspection records ▪ GIS database records ▪ Hot work permit record system ▪ Training records for firefighting ▪ Pre-start equipment records include check for firefighting equipment present and functional ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of fauna records (sightings and deaths) and any non-compliance.
Condition 7 of EPBC 2017/8124 and Condition B2-2 (2) of MS1225 - Ensure there is no long-term increase in population of feral animals as a result of implementing the proposal				
Management Target 10: Prevent attraction / increase of fauna (native and feral animals) due to implementing the Proposal.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 10: ▪ Putrescible waste bins are to be fitted with lids, with lids to be kept closed at all times. ▪ Disposal of putrescible waste to an appropriate facility. ▪ Site inductions/ Site personnel education and training on feral animal management procedures, such as outlining the prohibition of site personnel feeding native or feral animals. ▪ Maintaining records of feral animal presence at the site on the fauna register. Records are maintained on GIS database. ▪ Regular pest control programs (annual at a minimum).	▪ Environmental compliance inspections ▪ Fauna register ▪ Feral pest control programs ▪ GIS database ▪ Site induction ▪ Internal incident reporting records	▪ Environmental compliance inspections undertaken monthly ▪ Feral fauna sightings are recorded as and when they occur / are reported ▪ Feral pest control program is undertaken annually (at a minimum) ▪ Quarterly internal review of GIS database and internal incident reporting records	**Internal** ▪ Inspection records ▪ Fauna register (sightings, control programs, and deaths) ▪ Feral pest fauna control records ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of feral fauna records (sightings and management) and any non-compliance.
Condition B2-3 (1) Prior to ground-disturbing activities, the proponent must undertake the following actions: **Within seven days prior to clearing within the fauna habitat areas identified in condition B2-1(1) and condition B2-1(2), using a suitably qualified or licenced fauna spotter, undertake pre-clearance surveys to detect the presence of conservation significant fauna within clearing areas**				
Management Target 11: Minimise impacts to conservation significant fauna during ground disturbing activities.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 11: • A pre-clearance survey of any proposed clearing area within fauna habitats identified in condition B2-1(1) and B2-1(2) must be undertaken within seven days prior to the clearing occurring • All pre-clearance surveys of fauna habitat identified in condition B2-1(1) and B2-1(2) must be undertaken by a suitably qualified or licenced fauna spotter	▪ Pre clearance survey records ▪ Ground Disturbance permitting system ▪ GIS disturbance database ▪ Fauna register ▪ Internal incident reporting records	▪ Pre-clearing surveys will be conducted within seven days prior to clearing ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records ▪ Significant fauna are recorded as and when pre clearance surveys are to occur	**Internal** ▪ Fauna spotter qualification / training records ▪ Records of fauna surveys ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2.

				Annual reporting will include disturbance survey records and details of fauna records and any non-compliance.
Condition B2-3 (2) Prior to ground-disturbing activities, the proponent must undertake the following actions: **(2) Where individuals of Western spiny-tailed skink (*Egernia stokesii badia*) are detected under condition B2-3(1), ground disturbing activities shall not commence until either:** **a. The individual(s) have been relocated by a licenced fauna handler in accordance with the Western Spiny-tailed Skink Relocation Monitoring Program (Revision 0, May 2021) and any subsequent revisions of the Program** **b. The individual has been observed by the fauna spotter to have moved on from the area to adjoining suitable habitat** **c. The fauna spotter considers that the individual no longer occurs in the area**				
Management Target 12: Avoid impacts to the Western spiny-tailed skink during ground disturbing activities.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 12: • If an individual of Western spiny-tailed skink is identified by a fauna spotter during a pre-clearance survey, the fauna spotter will undertake at least one of the following measures: o Relocate the individual using a licenced fauna handler and in accordance with the Western spiny-tailed skink Relocation Monitoring Program o Observe the movement of the individual out of the clearance area into adjacent habitat o Confirm the individual to no longer be within the clearance area.	▪ Ground Disturbance permitting system ▪ GIS database ▪ Fauna register ▪ Clearing inspections ▪ Internal incident reporting records	▪ Undertaken when a Western spiny-tailed skink is spotted within clearing footprint. ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records.	**Internal** ▪ Records of fauna surveys ▪ Maintenance of fauna spotter training records ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include disturbance survey records and details of fauna records and any non-compliance.
Condition B2-3 (3) Prior to ground-disturbing activities, the proponent must undertake the following actions: **Where active Malleefowl (*Leipoa ocellata*) mounds are detected under condition B2-3(1), ground-disturbing activities shall not commence until either a five hundred (500) metre exclusion zone is implemented around the active mound during breeding season (October to February), or if outside the breeding season a seventy-five (75) metre exclusion zone is implemented around the active mound.**				
Management Target 13: Avoid impacts to active Malleefowl mounds during ground disturbing activities.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 13: • Pre-clearance surveys are undertaken for Malleefowl mounds • Implementation of a 500m exclusion zone around identified active Malleefowl mounds within clearance footprints during breeding season (October to February) • Implementation of a 75m exclusion zone around identified active Malleefowl mounds within clearance footprints outside of breeding season (March to September)	▪ Ground Disturbance permitting system ▪ Fauna register ▪ GIS database records of identified Malleefowl mounds are up to date ▪ Internal incident reporting records	▪ Pre-clearance surveys will be undertaken as required, in accordance with the ground disturbance permitting system ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records.	**Internal** ▪ Pre-clearance survey records ▪ Malleefowl mound records ▪ GIS database records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include disturbance survey records and details of fauna records and any non-compliance.
Condition B2-4 The proponent shall undertake the following actions during construction activities: **(1) Visually inspect open trenches for the presence of vertebrate fauna and, where required, remove trapped vertebrate fauna from within open trenches, using a suitably trained and licensed fauna handler:** **a. at least twice daily, with the first daily clearing to be completed no later than three (3) hours after sunrise and the second clearing to be completed between the hours of 3:00 pm and 6:00 pm of that same day, unless otherwise agreed to by the CEO; and** **b. within one (1) hour prior to backfilling of trenches;** **(2) Ensure open trench lengths shall not exceed a length capable of being inspected and cleared by the requirements set out in condition B2-4(3);** **(3) Ensure ramps providing egress points and/or fauna refuges providing suitable shelter from the sun and predators for trapped vertebrate fauna are to be placed in the trench at intervals not exceeding fifty (50) metres;** **(4) In the event of substantial rainfall, and following the clearing of vertebrate fauna from the trench, pump out any pooled water in the open trench and discharge it to adjacent vegetated areas in a manner that does not cause erosion;** **(5) Produce and provide a report on fauna management no later than sixty (60) days after the completion of construction activities to the CEO. The report shall include the following:**				

a. details of fauna inspections; **b. the number and type of fauna cleared from trenches and actions taken; and** **c. vertebrate fauna mortalities.**				
Management Target 14: Minimise impacts to native fauna during construction activities.	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 14: ▪ Trenches are to be visually inspected at least twice daily for the presence of fauna, with any identified trapped fauna to be removed by a licenced fauna handler ▪ Trenches are to be inspected within one hour prior to backfilling for the presence of fauna, with any identified trapped fauna to be removed by a licenced fauna handler ▪ Ensure open trench lengths shall not exceed a length capable of being inspected and cleared by the requirements set out in condition **B2-4(3)**; ▪ Fauna egress points will be placed at 50m (minimum) intervals within open trench lengths and will provide shaded shelter to protect fauna from sun exposure and predators ▪ Following significant rainfall events, trenches will be pumped out (after clearing of fauna), with water discharged to an adjacent vegetated area in a manner that does not cause erosion	▪ Trench inspections to identify potentially trapped fauna, open trench lengths and presence of fauna egress ▪ Environmental compliance inspections ▪ Fauna register ▪ Internal incident reporting records	▪ Trench inspections to occur twice daily (minimum). The first no later than three (3) hours after sunrise, and the second between 3:00 PM and 6:00 PM on the same day ▪ Environmental compliance inspections to be undertaken weekly during construction	**Internal** ▪ Trench inspection register ▪ Records of fauna removed from trenches ▪ Internal incident investigation and report **External** Within 60 days of the completion of construction activities, a fauna management report will be provided to the CEO including the following: (a) details of fauna inspections; (b) the number and type of fauna cleared from trenches and actions taken; and (c) vertebrate fauna mortalities. In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include disturbance survey records and details of fauna records and any non-compliance.

2.3 INLAND WATERS

EPA Factor	Inland waters			
EPA Objective	*To maintain the hydrological regimes and quality of groundwater and surface water to protect environmental values.*			
Outcomes	MS1225 Conditions B3-1 (4) and B3-2 (1-2) and 7g of EPBC 2017/8124			
Key Environmental Values	Groundwater and surface water availability and quality			
Key Impacts and Risks	• Localised alteration of hydrological regimes within and adjacent to the MDE from groundwater abstraction and pit dewatering • Excavation of existing site contamination (unknown) causing contamination of surface water or groundwater quality (MDE and PDE) • Spills, leaks or discharges of hazardous materials or wastes causing contamination of surface water and/or groundwater quality (MDE and PDE).			
Outcome Based Provisions				
Environmental Criteria (Trigger & Threshold)	**Response Actions** • **Trigger Level Actions** • **Threshold Contingency Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition B3-1(4) No adverse impacts to groundwater or surface water quality compared with pre-construction baseline quality along the pipeline and at the abstraction bores				
Trigger criteria: A leak is identified along the pipeline via leak detection systems or during an inspection OR A complaint is received from the public or a stakeholder regarding a leak or malfunction of the pipeline. **Threshold criteria:**	**Trigger Criteria Response Actions:** In the event the trigger criteria are exceeded, the following will be undertaken: ▪ Shutdown the pipeline and undertake repairs ▪ Investigate the source of the leak to establish causal factors ▪ Adequately respond to the complaint received ▪ Review maintenance and service frequency The following may also be undertaken: ▪ Localised sampling to assess extent of impacts ▪ Increase frequency of inspections following repairs until it is established the repairs are functional	▪ Complaints register ▪ Service and calibration ▪ Pipeline leak/spill detection systems ▪ Pipeline inspection records ▪ Internal incident reporting records	▪ Pipeline leak/spill detection to be continuous monitoring during operations ▪ Complaints to be addressed within seven days of being received ▪ Service and calibration of equipment to be undertaken as per manufacturers specifications. ▪ Pipeline inspections to be undertaken once a quarter at a minimum	**Trigger Criteria Exceedance** Internal incident investigation and report **Threshold Criteria Exceedance** In accordance with condition **C4-3** and **D1-2**, the exceedance of a threshold criteria represents a non-compliance with MS conditions. Notification of the potential non-compliance must be provided to the CEO within 7 days of identification of the non-compliance (**D1-1(1)**).

A major spill (>1,000m^3 outside of the disturbance footprint) occurs along the pipeline or at an abstraction bore and impacts undisturbed vegetation.	**Threshold Contingency Actions:** In the event threshold criteria is exceeded, the following will be undertaken: ▪ Shutdown the pipeline and undertake repairs ▪ Investigate causal factors ▪ Conduct a detailed investigation of the impacted area (including assessment of surface and groundwater quality) to determine if adverse impacts to groundwater or surface water quality have occurred due to the spill.			A report of the non-compliance must be provided to the CEO within 21 days of identification of the non-compliance (**D1-1(8)**). The report must include: ▪ Contingency measures implemented; ▪ Investigation of cause; ▪ Investigation of environmental impacts; ▪ Advisement of rectification measures to be implemented; ▪ Advisement of any other measures to be implemented to ensure no further impact; and ▪ Advisement of the timeframe in which contingency, rectification and other measures have and/or will be implemented. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include detail any non-compliance.
Objective Based Provisions				
Management Targets	**Management Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**
Condition B3-2(1) Avoid, where practicable, and otherwise minimise adverse impacts to surface water flow regimes **Condition B3-2(2) Avoid, where practicable, and otherwise minimise adverse impacts to Aboriginal cultural heritage values associated with groundwater or surface water quality flows.** **Condition 7g Minimise alteration of surface water flows and surface water quality.**				
Management Target 15 Minimise any alteration to Aboriginal cultural heritage values associated with groundwater and surface water flows regimes.	**Management Action(s):** The following Management Actions will be undertaken to achieve **Management Target 15**: ▪ Complete heritage survey to identify culturally significant surface and groundwater water sources. ▪ Design mine layout where practicable to locate proposed infrastructure in areas less prone to flooding. ▪ Design and construct infrastructure where practicable to minimise adverse impacts to groundwater and surface water flows. ▪ Install appropriate bunding, diversions and cross-drainage along infrastructure to minimize adverse impacts to surface water flows. ▪ Pipelines in the PDE will be buried under water crossings to prevent the alteration of surface water flows. ▪ Install rock armour protection from scour and erosion along external infrastructure areas prone to flooding impacts. ▪ Where irregular flow conditions are observed following an event (e.g. no flow) and are project-related, review discharge regime, frequency, timing and hydrological model. ▪ Maintain bund limits above the estimated 1% AEP flood level. ▪ Monitoring of surface water will be undertaken throughout mine construction, operations and closure to assess potential alteration of flows.	▪ Site and linear infrastructure inspection of surface water management features ▪ Surface water monitoring will be conducted in accordance with the Surface Water Monitoring Plan at proposed locations following significant rainfall events (Appendix B) ▪ Groundwater Monitoring is to be undertaken in accordance with the current approved version of the Groundwater Operating Strategy associated with the 5C licence to take water under the *Rights in Water and Irrigation Act 1914* ▪ Automatic weather station and rain gauge at the mine.	▪ Infrastructure inspection to be completed following rainfall events greater than 40 millimeters (mm) of rainfall within a 24-hour period. ▪ Surface water and groundwater samples will be collected in accordance with the frequency specified in the Surface Water and Groundwater Operating Strategy. ▪ Weather station data is continuous.	**Internal** ▪ Surface water and groundwater monitoring records ▪ Inspection records ▪ Climate monitoring records ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include surface water monitoring results, disturbance survey records and any non-compliance.

2.4 SOCIAL SURROUNDS

EPA Factor	Social Surroundings – Surrounding Land Use			
EPA Objective	*To protect social surroundings from significant harm*			
Objective	MS1225 Condition B5-1(1-4)			
Key Environmental Values	Pastoral lands, Yalgoo Town, heritage sites and visual amenities of the region.			
Key Impacts and Risks	• Localised impacts on air quality from dust (within MDE) (majority of airborne particulates are expected to be greater than PM10) • Localised changes in dust deposition (within MDE) (larger particles tend to settle back to the ground less than 300 m from the source)			
Objective Based Provisions				
Management Targets	**Management Actions**	**Monitoring**	**Timing/Frequency of Monitoring**	**Reporting**

Condition B5-1(1) Maintain a two (2) km separation distance to sensitive receptors from areas of ground disturbance within the MDE during implementation of the proposal				
Management Target 16: Ground disturbance activities within the MDE are not to occur within 2 km of a sensitive receptor	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 16: ▪ Implementation of ground disturbance permitting system ▪ Sensitive receptors and a 2 km buffer are mapped within GIS database ▪ Undertake dust suppression measures during ground disturbance activities to minimise dust emissions	▪ Ground Disturbance permitting system ▪ Post-clearing surveys undertaken ▪ GIS disturbance database ▪ Internal incident reporting records	▪ Post-clearing surveys will be conducted as required, upon the completion of any scheduled clearing works. ▪ Quarterly internal review of ground disturbance records / GIS disturbance database and internal incident reporting records	**Internal** ▪ Inspection records ▪ GIS Database ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include disturbance survey records and any non-compliance.
Condition B5-1(2) Ambient dust emissions form implementation of the proposal, measured as particulate matter (PM_{10}), must not exceed forty-six (46) micrograms per cubic meter for a twenty-four (24) hour averaging period at any sensitive receptor				
Management Target 17: Minimise dust emissions at sensitive receptors	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 17: ▪ Wet down ground prior to blasting activities ▪ Dust suppression to be used on haul roads and access tracks in response to climatic conditions ▪ Cease non-essential mining activities (clearing) during excessively windy conditions ▪ Implement loading and unloading procedures to minimise dust emissions from material handling ▪ All site traffic is required to adhere to the site traffic management plan (speed limits) to minimise dust generated by vehicle movement ▪ Dust monitoring station to include an alarm system which can be configured to trigger when 43.7 micrograms per cubic meter (95% of the limit) in a 24-hour averaging period is exceeded ▪ Implement corrective actions such as increasing water suppression, restricting vehicle movement, and adjusting work schedules to minimise dust emissions promptly upon activation of the dust monitoring station alarm ▪ Maintain complaints register. Complaints to be actioned within seven days.	▪ Monitoring of meteorological data ▪ Environmental compliance area inspections to include assessment of dust suppression activities ▪ Dust monitoring program for Total Suspended Particles (TSP), Particulate Matter (PM10). A monitoring station for TSP and PM10 will be located at the Yalgoo township. ▪ Complaints register ▪ Internal incident reporting records	▪ Monitoring of meteorological data will be undertaken daily ▪ Environmental compliance area inspections will be undertaken monthly ▪ Particulate monitoring will be undertaken continuously ▪ Quarterly internal review of complaints register, ground disturbance records / GIS disturbance database and internal incident reporting records	**Internal** ▪ Inspection records ▪ Dust monitoring results ▪ Climate monitoring records ▪ GIS database ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include dust monitoring results and any non-compliance.
Condition B5-1(3) Avoid where practicable and otherwise minimise adverse impacts to visual amenity from implementation of the proposal				
Management Target 18: Minimise impacts to visual amenity	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 18: ▪ Progressive rehabilitation of disturbed areas will be undertaken in accordance with the approved Mine Closure Plan ▪ Final landform designed to be of equal height or less than surrounding natural landforms ▪ Topsoil will be stockpiled for use in rehabilitation ▪ Direct seeding of native species on rehabilitation areas	▪ Progressive rehabilitation in accordance with Mine Closure Plan ▪ Topsoil stockpile inspections ▪ Rehabilitation monitoring includes visual impact assessment ▪ Complaints register ▪ Internal incident reporting records	▪ Progressive rehabilitation to be undertaken where practicable ▪ Topsoil stockpile inspections to be undertaken quarterly ▪ Monitoring of rehabilitated areas is undertaken in accordance with the approved Mine Closure Plan timing	**Internal** ▪ Monitoring and Inspection records ▪ Records of complaints register ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1.

	▪ Maintain a complaints register. Complaints to be actioned within seven days ▪ Implement dust management.			Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details relevant to adverse impacts to visual amenity and any non-compliance.
Condition B5-1(4) Minimise adverse impacts to surrounding land uses, such as pastoral station activities				
Management Target 19: Minimise impacts to pastoral station activities	**Management Action(s):** The following Management Actions will be undertaken to achieve Management Target 19: ▪ Erosion control measures will be incorporated into the design to minimise erosion and sedimentation ▪ Implement dust management ▪ Minimise impacts to livestock movements across site where practical ▪ Rehabilitation of pastoral leasehold land will be based on minimising adverse impacts on the viability of the pastoral operation where practical ▪ Any land that will not be rehabilitated to its former condition needs to be stabilised and, where necessary, isolated from the surrounding landscape ▪ Maintain a complaints register. Complaints to be actioned within seven days.	▪ Environmental compliance area inspections ▪ Rehabilitation monitoring ▪ Dust monitoring as per Management target 17 ▪ Complaints register ▪ Internal incident reporting records	▪ Environmental compliance inspections undertaken monthly ▪ Monitoring of rehabilitated areas is undertaken in accordance with the approved Mine Closure Plan timing ▪ Dust monitoring timing as per Management target 17 ▪ Quarterly complaints register and internal incident report review	**Internal** ▪ Monitoring and Inspection records ▪ Records of complaints register ▪ Internal incident investigation and report **External** In accordance with condition **C5-3** and **D1-2** of **MS1225**, failure to achieve an environmental objective, or implement a management action represents a non-compliance. Reporting of a non-compliance to external agencies will be undertaken as detailed in Section 4.1. Annual reporting will be undertaken as detailed in Section 4.2. Annual reporting will include details of complaints received and any non-compliance.

3 ADAPTIVE MANAGEMENT

The adaptive management approach aims to proactively minimise environmental impacts and improve management practices throughout the life of the Project. This approach leverages learnings acquired from the monitoring of outcomes and management actions. The key principles of adaptive management are embedded in this EMP through the establishment of early warning (trigger) criteria and associated response actions for the potential environmental impacts associated with the Project activities, detailed in Section 2. The intent is for these criteria to be updated throughout the life of the Project in response to the monitoring information obtained and learnings from the implementation of management and mitigation measures.

3.1 MONITORING AND CORRECTIVE ACTIONS

Internal monitoring of the environmental aspects outlined in this Plan will occur during Project construction and operation. Any non-conformances or incidents within this Plan will be investigated, and rectified or mitigated to ensure minimal ongoing environmental harm. Key learnings identified during investigations will be used to update trigger criteria, management measures and objectives, where relevant.

3.2 MANAGEMENT PLAN REVIEW

The EMP is intended to be dynamic and may be updated to reflect changes in management practices and the natural environment over the life of the Project.

Amendments to management actions will be undertaken based on the investigation outcomes of any incidents or non-conformances to management plans. This will include revision/amendment of management actions that are not achieving the desired outcomes, monitoring and identifying additional impacts and management actions, changes to relevant legislation or improvements to practices to achieve a greater environmental outcome. Based on these outcomes, this EMP will be reviewed when a significant change is identified or as directed by DWER.

The submission and any review of this EMP will be undertaken in accordance with the requirements outlined under Condition C2 of MS 1225 and Condition 15, 16 and 17 of EPBC 2017/8124.

This EMP will be published on the FIJV website in accordance with condition 18, 19 and 20 of EPBC 2017/8124.

These conditions are detailed in Table 9 for MS 1225 and for EPBC 2017/8124.

Table 9: Conditions relating to approval, implementation, review and publication of the EMP

Condition reference	Condition
MS 1225	
C2-2(1)	The proponent may review and revise a confirmed EMP provided it meets the relevant requirements of that EMP, including any consultation that may be required when preparing the EMP
C2-2(2)	The proponent must review and revise a confirmed EMP and ensure it meets the relevant requirements of that EMP, including any consultation that may be required when preparing the EMP, as and when directed by the CEO
C2-2(3)	The proponent must revise and submit the CEO the confirmed EMP if there is a material risk that the outcomes or objectives it is required to achieve will not be complied with, including but not limited to as a result of a change to the proposal
C2-3	Despite condition C2-1, but subject to conditions C2-4 and C2-5, the proponent may implement minor revisions to an EMP if the revision will not result in new or increased adverse impacts to the environment or result in a risk to the achievement of limits, outcomes or objectives which the EMP is required to achieve
C2-4(1-3)	If the proponent is to implement minor revisions to an EMP under condition C2-3, the proponent must provide the CEO with the following at least twenty (20) business days before it implements the revisions: 1) The revised EMP clearly showing the minor revisions 2) An explanation of and justification for the minor revisions 3) An explanation of why the minor revisions will not result in new or increased adverse impacts to the environment or result in a risk to the achievement of the limits, outcomes or objectives which the EMP is required to achieve
C2-5	The proponent must cease to implement any revisions which the CEO notifies the proponent (at any time) in writing may not be implemented
EPBC 2017/8124	
15	The approval holder may, at any time, apply to the Minister for a variation to a plan approved by the Minister, by submitting an application in accordance with the requirements of section 143A of the EPBC Act. If the Minister approves a revised action management plan (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous plan.
16	If the Minister believes that it is necessary or convenient for the better protection of protected matters to do so, the Minister may request that the approval holder make specified revisions to a plan referred to in these conditions and submit a revision to that plan to the department for the Minister's written approval. The approval holder must comply with any such request. If the Minister approves a RAMP then, from the date specified, the approval holder must implement the RAMP in place of the previous plan.

17	The approval holder must submit all plans required by these conditions electronically to the department.
18	Unless otherwise agreed to in writing by the Minister, the approval holder must publish each plan on the website within 15 business days of the date: a) the plan is approved by the Minister in writing, if the plan requires the approval of the Minister, or b) the plan is approved by the CEO as required under the Western Australian Approval conditions which must be complied with in accordance with these EPBC Act conditions.
19	The approval holder must keep all plans required by these conditions published on the website until the expiry date of this approval.
20	The approval holder is required to exclude or redact sensitive ecological data from plans published on the website or otherwise provided to a member of the public. If sensitive ecological data is excluded or redacted from a plan, the approval holder must notify the department in writing what exclusions and redactions have been made in the version published on the website.

3.3 TRAINING AND COMMUNICATION

All construction and operations personnel, including sub-contractors, will undergo a comprehensive environmental induction program. The induction will highlight the importance of adhering to environmental approval conditions (including project approval and contractual requirements) for the *EPBC Act*, *Environmental Protection Act 1986* (EP Act), and the *BC Act*. The induction will also address:

- Environmental risks associated with the project;
- Identification of key points of environmental value and any relevant matters of national environmental significance;
- Responsibilities of personnel in meeting environmental outcomes and targets outlined in the EMP;
- Environmental incident emergency response procedures;
- The environmental controls relevant to the Project; and
- The potential consequences of not adhering to environmental responsibilities.

In addition to the initial induction, supplemental environmental training will be provided on an as-needed basis. This may be triggered by:

- Changes in project activities or environmental risks; and
- Specific incidents requiring additional awareness or response training.

Communication during the construction and operations phase will occur as needed with relevant staff, project managers or external stakeholders to ensure clear communication regarding environmental issues and management practices. At a minimum, weekly toolbox meetings will reinforce messages on environmental protection, relay new information, and encourage and celebrate positive outcomes.

4 REPORTING

4.1 ENVIRONMENTAL INCIDENTS / NON-COMPLIANCE REPORTING

The relevant responsible persons will identify and record environmental incidents and non-compliances. Incidents will be mitigated or rectified where possible within 48 hours of being identified. Non-conformances to this plan will be reported to the Site Manager or equivalent within 48 hours of identification.

4.1.1 NON-COMPLIANCE REPORTING TO DWER

In accordance with condition D1-1 of MS1225, where FIJV becomes aware of a potential non-compliance with this EMP, the following will occur:

- report the non-compliance to the CEO of DWER within seven (7) days;
- implement contingency measures;
- investigate the cause;
- investigate environmental impacts;
- advise rectification measures to be implemented;
- advise any other measures to be implemented to ensure no further impact;
- advise timeframe in which contingency, rectification and other measures have and/or will be implemented; and
- provide a report to the CEO of DWER within twenty-one (21) days of being aware of the potential non-compliance, detailing above.

In accordance with condition D1-2 of MS1225, failure to comply with the requirements of a condition or with the content of this EMP constitutes a non-compliance with these conditions, regardless of whether contingency measures, rectification or other measures in condition D1-1 have been, or are being, implemented by FIJV.

- Any non-conformance to this plan is also to be reported to the DWER Compliance Branch and investigated to determine the following:
- Why the non-conformance occurred;
- What environmental harm or alteration of the environment resulted from the non-conformance;
- What changes to project activities and/or management plans are required; and
- Measures to prevent, control or abate the environmental harm that may have occurred.

4.1.2 NON-COMPLIANCE REPORTING TO DCCEEW

In accordance with condition 8 of EPBC 2017/8124 in the event of any exceedance of a threshold criterion related to protected matters specified in this EMP FIJV will:

- Notify the department of the exceedance within 7 business days of the exceedance,
- Investigate the to determine the cause of the exceedance and submit a report of the findings of this investigation to the department in writing within 21 days of the exceedance. This investigation must aim to determine the cause of the threshold exceedance and the extent of any harm to protected matters as a result of the exceedance. This report must include:

  i) the findings of the incident investigation,

  ii) details of corrective measures implemented,

  iii) an evaluation of the effectiveness of the corrective measures implemented,

  iv) measures to prevent another threshold exceedance occurring in the future.

In accordance with condition 37 of EPBC 2017/8124 FIJV must notify the department electronically, within 2 business days of becoming aware of an incident. The approval holder must specify in each notification:

- Any condition or commitment made in a plan which has been or may have been not complied with,
- A short description of the incident, and
- The location (if applicable, including co-ordinates), date and time of the incident.

In accordance with condition 38 of EPBC 2017/8124 FIJV must provide to the department in writing, within 12 business days of becoming aware of an incident, the details of that incident. The approval holder must specify:

- All corrective measures and investigations which the approval holder has already taken in respect of the incident,
- The potential impacts of the incident,
- The method and timing of any corrective measures that the approval holder proposes to undertake to address the incident, and
- Any variation of these conditions or revision of a plan that will be required to prevent recurrence of the incident and/or to address its consequences.

4.2 ANNUAL REPORTING

All reporting completed for the Project will be consistent with the reporting requirements mandated by the conditions of project approval, and will include:

- A standardised report format;
- A defined reporting schedule or triggers for preparing a report;
- Clearly identified recipients of the report; and
- Established document control procedures in adherence to FIJV's Document Control Procedure (F1000-9000-PRO-Q-0080).

4.2.1 ANNUAL REPORTING TO DWER

A Compliance Assessment Report (CAR) will be prepared and submitted to DWER in accordance with the approved Compliance Assessment Plan (CAP). The CAR will be structured in accordance with the approved CAP and include required content in relation to this EMP such as:

- Information demonstrating compliance with the content of this EMP;
- Results of monitoring and performance reviews associated with the implementation of the EMP; and
- Any improvements to management actions and planned revisions to this EMP (Section 3).

An annual internal audit of the implementation and compliance with the EMP will be undertaken by FIJV, with the results included in the CAR.

4.2.2 ANNUAL REPORTING TO DCCEEW

An Annual Compliance Report (ACR) will be prepared and submitted to DCCEEW for each ACR period. The ACR will comply with the 2023 Annual Compliance Report Guidelines (DCCEEW 2023) and be published on the FIJV website within 20 business days following the end of each ACR period in an easily accessible and downloadable format. FIJV will notify DCCEEW within 5 business days of its publication online and will keep each compliance report and related shapefile published online until the expiry date of EPBC 2017/8124. At a minimum the ACR will include:

- Accurate and complete details of compliance and any non-compliance with:
    i. each condition imposed under the Western Australian Approval, if a condition attached to this approval decision requires compliance with that Western Australian Approval condition;

ii. each condition attached to the EPBC 2017/8124 approval decision;

iii. all commitments made in each plan.

- A schedule of all plans in effect in relation to the conditions outlined in EPBC 2017/8124 during the ACR period;
- Accurate and complete details of how each plan was implemented during the ACR period; and
- If any incident occurred, accurate and complete details of each incident.

If necessary, FIJV will exclude or redact sensitive ecological information from the ACR provided online. In this instance, FIJV will submit the full, unredacted versions of the compliance report and shapefile to DCCEEW within 5 business days of publishing the redacted versions. This submission will be accompanied by a written notification detailing the specific exclusions and redactions made for the public versions.

4.2.3 PUBLICATION

This EMP will be made publicly available in compliance with the Post Assessment Guideline for Making Information Publicly Available (EPA, 2012) and the conditions of EPBC 2017/8124.

4.3 EMERGENCY RESPONSE

The site manager is responsible for managing environmental emergencies associated with the project. They will be empowered to stop and direct work activities as necessary to effectively manage and mitigate emergencies. Their contact detail will be made readily available to all personnel at all times.

Clear procedures for managing environmental emergencies are detailed in the Emergency Response Management Plan (F1001-9000-PLN-Q-0010) which provides detailed guidance on how to respond to an identified emergency situation at the Project. These procedures ensure a prompt, effective, and coordinated response to minimize environmental impacts. The procedures will be reviewed and updated regularly to reflect changes in project activities or regulatory requirements.

5 STAKEHOLDER CONSULTATION

In order to undertake effective consultation, a Yogi Magnetite Project Stakeholder Engagement Strategy (SES) was developed The SES is the overarching framework that identifies key stakeholders and the methodology for engagement throughout Project design, construction and operation phases. The SES includes processes to manage stakeholders who are critical to the project approval and development process, those potentially impacted directly or indirectly by the Project, and those not impacted by the Project but potentially interested in being kept informed of the project activities. The Project's SES aligns to the following Australian and New Zealand Minerals and Energy Council and the Minerals Council of Australia, Principles For Engagement:

- Identification of stakeholders and parties with interests and/or who may be impacted by the project.
- Adopt effective consultation that is inclusive and encompasses all parties throughout the life of the mine.
- Develop and implement a targeted communication strategy that reflects the needs of the stakeholder groups and interested parties.
- Allocate adequate resources to ensure the effectiveness of the consultation process.
- Work with communities, where practical, to manage the potential impacts of mine closure.

A strategic and holistic approach to stakeholder consultations ensures effective and transparent engagement with stakeholders for the Project. This will directly contribute to the success of the project. The stakeholder engagement process will involve the following:

- Building stakeholder understanding of the project to contribute to stakeholder acceptance;
- Building trusted relationships with stakeholders to foster tolerance and compromise for the project; and
- Strengthening the reputation of FIJV as a positive contributor in their host communities.
- To achieve these goals, the objectives of engagement throughout all stages of the project are to:
- Provide clear, objective, and timely information to stakeholders; and
- Seek input and feedback from the key stakeholders to inform the project planning and development.

5.1 STAKEHOLDER CONSULTATION DURING EMP DEVELOPMENT

A summary of the stakeholder consultation undertaken in development of this EMP is detailed in Table 10 below.

Table 10: Stakeholder comments regarding EMP development

Stakeholder	Stakeholder Comments	Proponent Response
DAWE / DCCEEW	Various comments were received from DCCEEW on Version C of the EMP during the Project review period.	The EMP was revised (Version 1 12th of June 2023) to address comments and resubmitted with Response to Submissions which was accepted by the Department and the Project assessment progressed.
DWER - EPA	Various comments were received from DWER – EPA following submission of Version 2 (12th December 2024) in which Version 1 was revised to address conditions of MS1225 and EPBC 2017/8124.	The EMP was revised (Version 2.1 25 March 2025) to address the comments received and resubmitted to DWER – EPA and DCCEEW.
DCCEEW	Various comments were received from DCCEEW following submission of Version 2 (12th December 2024).	The EMP was revised (Version 2.2 28 March 2025) to address the comments received and resubmitted to DCCEEW and DWER – EPA.

5.2 ONGOING CONSULTATION

FIJV will continue to engage with relevant stakeholders to ensure that all concerns are addressed. This includes decision-making authorities, other relevant government authorities, the local community, and environmental non-government organisations. FIJV will ensure stakeholder engagement is undertake the requirements of MS1225 condition C5-2 and consult with pastoral stations and Traditional Owners for the life of the proposal. FIJV is committed to building effective relationships and working transparently with all stakeholders.

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7 APPENDICES

Appendix A:
Figures

Figure 1 - Mine Development Envelope and Pipeline Development Envelope overview of the Project

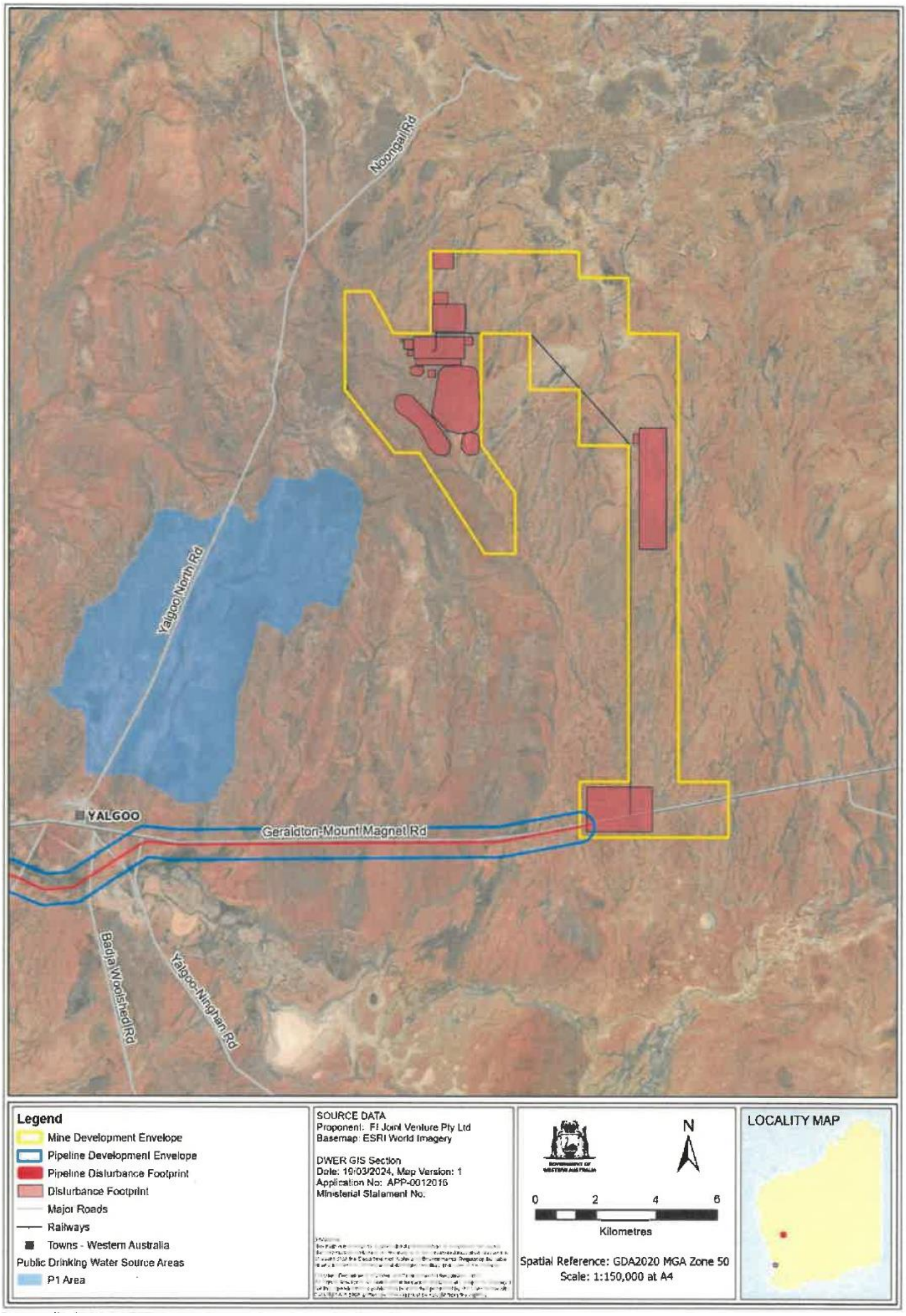

Figure 2 – Yogi Magnetite Project mine development envelope and disturbance footprint

Figure 3 - Terrestrial fauna habitats and exclusion zone in the mine development envelope

Appendix B:
Surface Water Monitoring Plan

YOGI MAGNETITE PROJECT

Surface Water Monitoring Plan

FI Joint Venture Pty Ltd

1 June 2023

Ref: 220011-FIJV-YP-SWMP

Version: 0

Contact: Seyed Reza Azimi (Acting Managing Director) | +61 8 9485 0579 | reza.azimi@fijv.com.au

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DOCUMENT CONTROL

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
	0	JB	RH		RM		31/05/2023

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1 PURPOSE AND SCOPE

The Surface Water Monitoring Plan (the Plan) will be undertaken throughout the Yogi Magnetite Project (the Project) mine construction, operations, and closure to assess for potential contamination and altered flow conditions associated with the Project.

2 SURFACE WATER AND SEDIMENT MONITORING

To monitor for potential impacts from the Project on the surrounding environments surface water and sediments, sampling shall be conducted to analyse surface water and sediment quality and physical properties.

As a reflection of the ephemeral nature of surface flows within the proposal area, monitoring of surface water and sediment samples shall be collected by opportunistic manual grab sampling from the locations detailed Table 2-1 following rainfall events occurring which are greater than 40mm within a 24hour period at the Project (rainfall event).

Baseline surface water and sediment sampling was undertaken in October of 2018 (GHD 2019, *Yogi Magnetite Project – Surface Water Assessment.* Unpublished report prepared for FIJV Pty Ltd. The baseline results, and the trigger values contained within the *Australian Water Quality Guidelines for Fresh and Marine Waters* (ANZECC and ARMCANZ 2000) shall be adopted for assessment of samples.

Eleven indicative water sampling and sediment sampling locations have been selected based on the findings of the desktop assessment and initial site visit, completed to support the Surface Water Assessment (GHD 2019). The indicative monitoring sites are depicted in Figure 2-1 with a summary site description and proposed elements to be monitored detailed in Table 2-1.

Table 2-1: Surface water and sediment monitoring sites

Site name	Easting	Northing	Description
SW01	484590	6867595	Downstream of the mine site, north of the Salt River.
SW02	482446	6872172	Background location.
SW03	482061	6875528	Downstream of the mine site and south the proposed Mine Pit.
SW04	482760	6877370	Alluvial plain downstream of SW09 and the mine site.
SW05	480389	6875962	Upstream of the mine site and east of the water hole.
SW06	478866	6878299	UC-03 upstream of the mine site and west of the proposed Mine Pit.
SW07	478844	6879533	Upstream of mine site.
SW08	482180	6878914	Alluvial plain south of processing plant.
SW09	486947	6882539	UC-04 upstream of the mine site and north-west of the inselberg.
SW10	487845	6880649	EPW within the mine site and south-west of the inselberg.
SW11	488960	6876633	EPW downstream of the mine site and SW10 and south of the inselberg.

2.1 SURFACE WATER QUALITY

Sampling of surface water samples should be undertaken in accordance with the Australian Standard (1998) 5667.1 *Water Quality Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples* (AS 5667.1:1998).

The following general surface water analytical suite shall be undertaken:

- **Physicochemical parameters:** pH, Electrical conductivity (EC), Total Dissolved Solids (TDS), Suspended Solids (SS), Biochemical Oxygen Demand (BOD)
- **Dissolved Organic Carbon** (DOC)
- **Anions:** Chloride (Cl), Sulphate (SO4), Alkalinity [Carbonate (CO3), Hydrocarbonate (HCO3), Hydroxide (OH-), Total Alkalinity, Fluoride (F)
- **Cations:** Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg) + Hardness
- **Nutrients:** Total Nitrogen (Total N), Total Kjeldahl Nitrogen (TKN), Total Oxidised Nitrogen (NO_x-N), Nitrite-N (NO_2-N), Nitrate-N (NO_3-N), Ammonia-N (NH_3-N), Total Phosphorus (Total P), Reactive Phosphorus (Reactive P)
- **Metals:** Arsenic (As), Beryllium (Be), Boron (B), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Mercury (Hg), Lead (Pb), Nickel (Ni), Manganese (Mn), Selenium (Se), Zinc (Zn)
- **Hydrocarbons:** Total Recoverable Hydrocarbons (TRH) after Silica Gel Clean-up

A number of analytes (pH, EH, turbidity, total alkalinity) have holding time limits of 24 hours, which may not be achieved due to difficulty in accessing monitoring points after flow events and due to the remoteness of the site. These parameters shall be assessed *in-situ* and remain included in the analyses for indicative purposes only.

2.2 SEDIMENT QUALITY

Sampling of sediments is based on the Australian Standard – *Guide to the investigation and sampling of sites with potentially contaminated soil* (AS 4482.1-2005).

The following general sediment analytical suite shall be undertaken:

- **Asbestiform minerals**
- **Physicochemical parameters:** pH, EC, and particle size distribution by sieve and hydrometer
- **Total Organic Carbon** (TOC)
- **Nutrients:** Total N, TKN, NO_x-N, NO_2-N, NO_3-N, NH_3-N, Organic Nitrogen, Total P

- **HCl Extractable Metals:** As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn
- **Total Metals:** As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn
- **Hydrocarbons:** TRH after Silica Gel Clean-up
- **Cations:** Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg)

FIJV

Yogi surface water and soil sampling locations

SW09
SW10
SW07
SW08
SW06
SW04
SW11
SW05
SW03
SW02
SW01

6880000
6875000
6870000
6865000

475000
480000
485000
490000
495000

- Soil and surface water sample site
- Defined waterway
- Undefined waterway
- Mine development envelope

EPA indicative activity area

- Administration
- Borefield
- Camp Village
- Crushing Area
- Drainage Water Pond
- Dry Tailing Dam
- Explosive Warehouse
- Fresh Water Pond
- Guard House
- Mine Pit
- Ore Dump
- Power Station
- Processing Plant
- Tailing De-Watering Area
- Topsoil stockpile
- Waste Dump
- Work Shop
- Transport or service infrastructure corridor

Data sources
Tenement: DMIRS Data and Sofware Centre
Indicative site layout and monitoring sites: GHD
ESRI Basemap:Earthstar Geographics

0 2 4
Kilometres
GDA 1994 MGA Zone 50

Date: 22/05/2023 Rev: A
Project: 220011
Author: R. Houlihan; Drawn: L. Weggelaar
Print @ A3

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File: 2023 05 08 - Yogi Surface Water Monitoring Plan

3 CLIMATE MONITORING

An automatic weather station and rain gauge shall be installed at an appropriate location at the mine site.

The proposed weather station shall be capable of logging data at a number of different time scales, and should be set up to log at half-hour intervals.

As a minimum, the following climatic parameters shall be monitored on a continuous basis:

- Rainfall
- Wind speed and direction
- Temperature
- Relative humidity
- Barometric pressure (for adjustment of non-vented groundwater level data).

4 ADAPTIVE MANAGEMENT AND REVIEW

FIJV are committed to ensuring the management approach for the Project is adaptive and responsive to changes in the scientific understanding and advancements in best management practices. This will enable adjustments to the mitigation measures and monitoring protocols to meet the Project's long-term management objectives.

The parameters have been developed to meet the likely variable monitoring requirements over the life of the mine, including pre-development, mine operations and post closure, based on the current mine layout. Following collection of sufficient baseline data the proposed parameters, and associated trigger criteria, will be reviewed and revised as required.

Where changes to the mine plan necessitate, selection of alternative monitoring points will be assessed and implemented as appropriate. Additional infill monitoring may also be required as the mine is developed and infrastructure is constructed, including water storages, drainage, and process waters.

5 REPORTING

Monitoring results will be reported to the relevant regulatory agency within the Annual Compliance Assessment Report (CAR) and Annual Environmental Reports (AER).

In the event that management targets are exceeded, the Department of Water and Environmental Regulation (DWER) and Department of Mines, Industry Regulation and Safety (DMIRS) will be notified in accordance with required reporting timeframes.

Appendix C:
Western Spiny-tailed Skink Relocation Monitoring Program

FI Joint Venture Pty. Ltd.

Yogi - Magnetite Project - Environmental

Western Spiny-tailed Skink (Egernia stokesii) Relocation Monitoring Program

May 2021

Revision No.	Date of Revision	Authorisation	
		Name	Signature
0	24/05/2021	M Brook	

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Appendix A – Figures

Acronyms

Abbreviation	Description
BC Act	*Biodiversity Conservation Act 2016*
BIF	Banded Ironstone Formation
CALM	Department of Conservation and Land Management
DAWE	Department of Agriculture, Water and the Environment (Commonwealth)
DBCA	Department of Biodiversity, Conservation and Attractions
DEC	Department of Environment and Conservation
DotEE	Department of the Environment and Energy
DPWF	Dry processing waste facility
DWER	Department of Water and Environmental Regulation
EMP	Environmental Management Plan
EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ERD	Environmental Review Document
ESD	Environmental Scoping Document
FIJV	FI Joint Venture Pty Ltd
GLpa	Giga Litre per annum
ha	Hectares
km	kilometres
m	Metre
m^3	Cubic metre
MCP	Mine Closure Plan
MDE	Mine Development Envelope
MNES	Matters of national environmental significance
MW	Mega Watt
PDE	Pipeline Development Envelope
PER	Public Environmental Review
TJ	Terajoule
WA	Western Australia
WRD	Waste rock dump

1. Summary

A summary of this Western Spiny-tailed Skink Relocation Monitoring Program (the Program) is provided in Table 1-1 below.

Table 1-1 Summary of the Proposal

Proposal title	North Kiaka Project
Proponent	FI Joint-Venture Pty Ltd
Proponent activities	Mine construction and operation
Short description	**Yogi Mine** The Proposal is to construct and operate an open-cut mine referred to as the Yogi Mine Project and will include construction of all relevant mining infrastructure (such as haul roads, processing plant, dry processing waste facility (DPWF), run mine pad, crusher, electricity generation, fuel storage site, treated ore stockpile pad, crusher, explosive warehouse and general onsite buildings). Mining of magnetite will occur below groundwater and will include open cut mine operation. The operation will involve clearing and topsoil stockpiling, overburden drilling and blasting, followed by removal of material by truck. **Pipeline Corridor** The Proposal also includes construction of a pipeline corridor for a slurry pipeline, water pipeline and gas pipeline. The gas pipeline will supply gas from the Dampier to Bunbury Gas Pipeline Network to the Yogi Mine. The slurry and water pipeline will extend from the Mid-West Ports to the Yogi Mine. The water pipeline will supply water from the Port Dewatering Plant to the Yogi mine for re-use in the processing plant.
Purpose of this Western Spiny-tailed Skink Relocation Monitoring Program	As part of the environmental impact assessment, it was identified the Proposal would result in potential impacts to habitat for the Western Spiny-tailed Skink (*Egernia stokesii*), which is listed as Endangered under the Commonwealth EPBC Act and Vulnerable under the State *Biodiversity Conservation Act 2016* (BC Act). This document has been developed to outline the environmental management requirements associated with the relocation and monitoring of the Western Spiny-tailed Skinks from within the MDE and to ensure the relocation activities are conducted in accordance with animal ethics requirements. This relocation monitoring program does not remove the requirement for project approvals including assessment and approval under Part IV and V of the Western Australia (WA) EP Act, or assessment of the project under the Commonwealth EPBC Act. It is further noted that a Fauna taking (relocation) licence will be required from the Department of Biodiversity, Conservation and Attractions (DBCA) for handling and relocation of native fauna.

	This relocation monitoring program has been prepared with reference to the following documents: • *Western Spiny-tailed Skink (Egernia stokesii) National Recovery Plan* (DEC 2012) • Policy Statement No. 29 Translocation of Threatened Flora and Fauna (CALM 1995) • *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance* (Department of the Environment 2013)
Key Environmental Factors and Objectives	
Terrestrial fauna	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*
Condition clauses	
Not applicable	
Key provisions in the Program	
The focus of this Program is in relation to the following for the Western Spiny-tailed Skink: • Relocation prior to construction and operation of the Proposal • Monitoring the effectiveness of the relocation program.	

1.1 Scope and limitations

This report: has been prepared by GHD for FI Joint Venture Pty. Ltd. and *may only be used and relied on by FI Joint Venture Pty. Ltd. for the purpose agreed between GHD and the FI Joint Venture Pty. Ltd. as set out in Section 1 of this report.*

GHD otherwise disclaims responsibility to any person other than FI Joint Venture Pty. Ltd. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Context, scope and rationale

This Program has been prepared by GHD Pty Ltd on behalf of FI Joint Venture Pty Ltd (FIJV) to support the implementation of the Yogi Magnetite Mine project (the Proposal). The Program will also support the approval given under the *Environmental Protection Act 1986* (EP Act). This Program has been developed in accordance with the *Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans* (GoWA 2020).

In accordance with the EPA (2018) instructions, this EMP includes the following sections:

- Section 2.1- the Proposal that this Program addresses
- Section 2.2 - Key environmental factor Terrestrial Fauna relevant to the construction and operation of the Proposal
- Section 2.3 - The condition requirements applicable to the Proposal
- Section 2.4 - The rationale and approach underlying this Program
- Section 3 details the management provision for the Terrestrial Fauna environmental factor relevant to this Program
- Sections 4 and 5 respectively addressed the adaptive management and stakeholder consultation.

2.1 The Proposal

FI Joint Venture Pty Ltd (FIJV) proposes to establish and operate a magnetite iron ore mine approximately 250 km east-northeast of Geraldton and 15 km northeast of Yalgoo in the Mid-West region of Western Australia (WA) (Figure 1-1 in Appendix A). The Yogi Magnetite Mine project (the Proposal) also includes a slurry pipeline from the mine site to Geraldton port, a return water pipeline, and a gas supply pipeline from the Dampier to Bunbury Natural Gas Pipeline.

FIJV referred the proposal to the Environmental Protection Authority (EPA) under Section 38 (s38) of the *Environmental Protection Act 1986* (EP Act) on 19 December 2017. On 21 February 2018, the EPA determined the Proposal was to be assessed at the level of 'Public Environmental Review' (PER) with a six (6) week public review period, due to the potential of significant environmental impacts. An Environmental Scoping Document (ESD) was submitted to the EPA and was approved on 29 April 2019.

To address the requirements of the ESD, an Environmental Review Document (ERD) for the Yogi Magnetite Mine was submitted the EPA and released for public comment from 15 April 2020 to 28 May 2020. Referral documents, scoping documents and the ERD can be found in the link here: https://www.epa.wa.gov.au/proposals/yogi-magnetite-project

The Proposal was also referred to the Australian Government Department of Agriculture, Water and the Environment (DAWE) on 1 February 2018 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). On 20 April 2018 DAWE deemed the Proposal to be a "Controlled action" under the EPBC Act due to its potential direct or indirect impacts on one of the nine matters of national environmental significance (MNES). This included:

- Listed threatened species or any threatened ecological community, or their habitat.

As part of this decision, the DAWE also prescribed the Proposal will be assessed under Section 87 of the EP Act, as an accredited assessment.

A summary of the proposal is provided in Table 1-1 and the key proposal characteristics for the proposal are outlined in Table 2-1.

The construction of the iron magnetite mine and associated mining infrastructure will have a total footprint of 1,530 ha within an 8,230 ha Mine Development Envelope (MDE). The pipeline will have a maximum footprint of 200 ha within a 75,800 ha pipeline development envelope Pipeline Development Envelope (PDE).

Table 2-1 Key proposal characteristics for the Yogi Mine Project

Physical Elements	Location	Proposed extent
Mine Development Envelope (MDE) Including Mine Pit, Mining overburden and Waste Facilities, Dry Processing Waste Facility, Mine and Processing Support Infrastructure and Corridors	Figure 1-1	Clearing of no more than 1,530 ha within a 8,230 ha MDE
Pipeline Development Envelope (PDE) Including Magnetite Slurry Pipeline, Water Pipeline, and gas pipeline	Figure 1-2	Clearing of no more than 200 ha within the 76,800 ha PDE
Operational Elements	**Details**	
Groundwater Abstraction (Water demand)	Up to 1 gigalitres per annum (GLpa) from water supply borefield	
Mine site dewatering	Up to 4 GLpa (to be used for processing)	
Power	70 MW to be supplied by a combination of 40 MW from an onsite Gas Power Station and 30 MW from a renewable energy source (i.e. solar and/or wind; or possibly a combination of both).	
Gas Supply	Gas to be supplied to the power station via a buried steel pipeline at a rate of 23 TJ/day	
Overburden/ Waste Rock	Disposal of up to 800 million tonnes (over the life of the project)	
Ore Processing Waste	Disposal of up to 80 million m^3 of dry processing waste (over the project life)	
Ore transport	Ore will be transported as a slurry in the new slurry pipeline proposed to be constructed between Yogi Mine and Geraldton Port.	

2.2 Key environmental factor

Table 2-2 below summarises the Proposal's key characteristics specific to water extraction and the potential to affect the Key Environmental Factor – Terrestrial Fauna. Included in Table 2-2 is a summary of the Terrestrial Fauna factor with respect to the Western Spiny-tailed Skink and impacts relating to the construction and operation of the Proposal.

Table 2-2 Key characteristics specific to terrestrial fauna

Proposal element	Characteristic
Mine construction and operation	Clearing of no more than 1,530 ha within a 8,230 ha MDE.
Terrestrial Fauna	
EPA Objective	*To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.*
Policy and guidance	• Environmental Factor Guideline: Terrestrial Fauna (EPA 2016a) • Technical Guidance Terrestrial Fauna Surveys (EPA 2016b) • Technical Guidance Sampling methods for terrestrial vertebrate fauna (EPA 2016c) • Technical Guidance: Sampling of short range endemic invertebrate fauna (EPA 2016d) • Western Spiny-tailed Skink (Egernia stokesii) National Recovery Plan (DEC 2012) • Policy Statement No. 29 Translocation of Threatened Flora and Fauna (CALM 1995) • Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (Department of the Environment 2013).
Project activities	Clearing of no more than 1,530 ha within a 8,230 ha MDE of which no more than 153 ha of the BIF and <1 ha of the Granitic formation will be cleared, which are considered suitable habitat for the Western Spiny-tailed Skink.
Environmental values	Terrestrial fauna - Western Spiny-tailed Skink
Potential impacts – direct impacts	• Loss of up fauna habitat as a result of clearing vegetation • Displacement and death of fauna.
Potential impacts – indirect impacts	• Habitat fragmentation • Habitat degradation from introduction and spread of environmental weeds • Alteration of fire regimes • Introduction and spread of feral animals.

2.2.1 Western Spiny-tailed Skink

Western Spiny-tailed Skinks historically has a patchy distribution which inhabit arid and semi-arid areas of Western Australia. In the northern portion of their range, they are found on Dirk Hartog Island and adjacent mainland to the northern Wheatbelt in the areas of Mullewa south to

Kellerberrin, Perenjori and Mukinbudin in the south. The species varies in habitat use within their range with a rock dwelling population persisting from about Yalgoo to the Cue area including Woolgorong Rock and Twin Peaks Stations (Storr et al 1999, Pearson 2012). The remainder of the population utilises aged woodlands and shrublands with good ground cover and sufficient hide structures, sheltering in logs and hollow branches (Cogger et al 1993, Pearson 2012).

Surveys conducted by Department of the Environment and Conservation (DEC; now Department of Biodiversity, Conservation and Attractions, DBCA) in the Wheatbelt and associated regional reserves recorded one population of skinks in a protected reserve and numerous populations in abandoned farm dwellings in the northern Wheat belt (Pearson 2012).

The species lives in family colonies which comprises of 2-17 individuals in secure environment such as hollow logs or exfoliating rock (Duffield 2002). Occasionally rocky sites are occupied by single animals.

Threats to the Western Spiny Tailed Skink, as outlined in the Recovery Plan (DEC 2012) with relevance to the proposal are discussed in Table 2-3.

Table 2-3 Threats to the Western Spiny-tailed Skink

Threat	Relevance to the Western Spiny-tailed Skink
Habitat loss due to clearing for mining or agriculture	Large scale clearing throughout the Wheatbelt region for agricultural purposes and mining activities in the Mid-west have resulted in a significant loss of habitat for this species. Mining and associated infrastructure has affected individual populations due to the removal of habitat and translocation of populations has previously occurred within the Yalgoo bioregion.
Degradation of existing habitat	Grazing removes understorey and is presumed to restrict a range of plant and invertebrate species for the skink.
Discontinuation or modification to natural processes that generate suitable refuge habitat	Removal of trees and changes to fire regimes have resulted in the lack of recruitment of trees and long-term creation of logs. The skink subspecies *badia* has been translocated in multiple regions due to mining activities, suggesting that suitable habitat for this subspecies is becoming increasingly fragmented and less available.

2.3 Conditional requirements

The Proposal is currently being assessed by the EPA and Commonwealth. A Ministerial Statement and associated conditions are yet to be issued. Where conditions are set through the Ministerial Statement, or as a result of other regulatory processes, this document will be updated to address identified requirements.

2.4 Rationale and approach

2.4.1 Technical assessments

Western Spiny-tailed Skink survey effort

A terrestrial fauna survey was completed within the MDE in August (site reconnaissance) and October 2018 and January 2020 (detailed survey), and in the PDE in November 2018 (site reconnaissance only). A targeted survey effort for the Western Spiny Tailed Skink completed (January 2020) as part of this project. The survey effort within the MDE is summarised in Table 2-4 (GHD 2020b).

During the fauna survey of the MDE, areas of suitable habitat (i.e. BIF Ridgeline and Granitic Formations), as well as individuals and groups of Western Spiny-tailed Skinks were identified.

An additional targeted Western Spiny-tailed Skink survey, including linear transects of the granitic formations, was undertaken in January 2020 to assess current use, and presences of the species within the MDE area. This additional survey also identified potential suitable sites for relocation of individuals that may be affected (refer to Table 3-3 in Section 3.2)

The overarching approach is to avoid and minimise impacts to Western Spiny-tailed Skinks and suitable habitat. However, in the event that identified individuals cannot be avoided, proposed relocation procedures for the Western Spiny-tailed Skink have been developed and are provided in in Section 3.3.

Table 2-4 Supporting terrestrial fauna technical studies and MDE surveys

Report title Author (Year)	Targeted group	Location	Date	Summary	Survey area relevance to Proposal
Vertebrate Fauna Assessment, Yalgoo Iron Project ATA Environmental (2006)	Vertebrate Fauna	Leases P59/1397, E59/642 and P59/108	June 2006	Survey level: Level 1 The key findings included: • One habitat type – scattered mulga • The following conservation significant species may visit the general area: ○ Gilled Slender Bluetongue (*Cyclodomorphous branchialis*) ○ Peregrine Falcon (*Falco peregrinus*) ○ Australian Bustard (*Ardeotis australis*) (no longer conservation significant) ○ White-browed Babbler (western Wheatbelt subspecies) (*Pomatostomus superciliosus ashbyi*) - (no longer conservation significant) ○ Major Mitchell's Cockatoo (*Cacatua leadbeateri*) (no longer conservation significant) ○ Rainbow Bee Eater (*Merops ornatus*) - (no longer conservation significant) ○ Fork-tailed Swift (*Apus pacificus*) An inventory of species noted during the site reconnaissance was not provided in this report.	The study area of this technical study does not intersect the MDE. The study area is adjacent to the southern 'tail' section of lease L 59/156, which is part of the MDE.
Vertebrate Fauna Survey Yalgoo Iron Ore Project Coffey Environments Pty Ltd (2008)	Vertebrate Fauna	Leases E59/642, M59/637 and P59/1397	November 2007 February 2008	Survey Level: Level 2 fauna survey inclusive of trapping program, avifauna, opportunistic survey and bat survey. The key findings included: • Two broad habitat types identified– Tall Shrubland and Tall Open Scrubland • Degraded habitat due to sheep grazing • The survey recorded 82 species of vertebrate fauna, however only one was noted to be of conservation significance (*Merops ornatus*, Rainbow Bee eater) (formerly migratory) • However, the assessment also noted the potential presence of the following in the general area: ○ Gilled Slender Bluetongue ○ Australian Bustard ○ Crested Bellbird (southern subspecies) (*Oreoica gutturalis gutturalis*) - (no longer conservation significant) ○ White-browed Babbler (western Wheatbelt subspecies) ○ Fork-tailed Swift ○ Peregrine Falcon	The study area of this technical study does not intersect the MDE. The study area is adjacent to the southern 'tail' section of lease L 59/156, which is part of the MDE.
Survey for Short Range Endemic Fauna for the Yogi Magnetite Project, Yalgoo, Western Australia Invertebrate Solutions (2019b)	SRE Invertebrate Fauna	Leases M59/740, M59/637 and L 59/156	October 2018	Survey level: Level 2 single season SRE survey undertaken in accordance with EPA (2016f). The key findings include: • 12 potential SRE invertebrate species were recorded from the MDE. • None are 'Confirmed' SRE species. Species determined to be "Possible" SRE taxa is mostly due to incomplete taxonomy and unknown species distributions with almost all the possible SRE species found at multiple locations indicating their distributions are wider than the current survey could determine.	The study area of this technical study is congruent with the MDE and also includes some sampling outside the MDE.
Fauna Assessment GHD (2020b)	Vertebrate Fauna	MDE	August 2018 October 2018 January 2020	Location: Leases M59/740, M59/637 and L 59/156 Desktop assessment was completed to identify environmental values pertaining to the study area and to assist in refining survey design. Historical fauna reports provided by FIJV and government databases were reviewed. Survey completed: Site reconnaissance in August 2018 and trapping program in October 2018 and January 2020 of terrestrial vertebrate fauna. Opportunistic fauna observations were also undertaken. GHD completed two level 2 fauna surveys (October 2018 and January 2020) of the Yogi Mine in accordance with Terrestrial Fauna Surveys (EPA 2016). The key findings include: • Six fauna habitats were recorded within the MDE.	The study area of this technical study is congruent with the MDE.

Report title Author (Year)	Targeted group	Location	Date	Summary	Survey area relevance to Proposal
				• 153 species were recorded as part of the surveys, however only two species of conservation significance (the Western Spiny-tailed Skink and the Long-tailed Dunnart). • Four conservation significant fauna species were identified to be or potentially to be within the MDE: ○ Forked-tailed Swift ○ Peregrine Falcon ○ Western Spiny-tailed skink ○ Gilled Slender Blue Tongue ○ Long Tailed Dunnart	

Key assumptions

Table 2-5 below outlines the key assumptions or parameters used to support the numerical modelling detailed in the *Yogi Magnetite Project – Fauna Assessment* (GHD 2020b).

Table 2-5 Key assumptions

Report	Assumption
Fauna Assessment GHD (2020b)	The findings of the fauna surveys completed to date have formed the basis for the rationale and management approach adopted for this document. It is assumed that the surveys undertaken have accurately identified and mapped fauna habitat and recorded fauna occurrences.

2.4.2 Receiving Environment

To support the *Public Environmental Referral Document* (ERD) (GHD 2020a) for assessment by the EPA under the EP Act, FIJV commissioned technical investigations and studies for the entire proposal area. Table 2-4 below details the technical studies completed for terrestrial fauna in the MDE.

2.4.3 MDE terrestrial fauna habitats

The following six broad habitat types were identified in the MDE:

- Banded Ironstone Formation (BIF) Ridgelines
- Riparian/Creek line
- Flood Plain
- Chenopod Plain
- Mixed Acacia Plain
- Granitic formations (GHD 2002b).

These habitats are mapped in Figure 1-3 in Appendix A, described in Table 2-6 and Plate 1 indicates the typical rock dwelling habitat for the species.

Of the habitats identified in the MDE, the BIF Ridgeline and Granitic Formation habitat types were identified as being suitable habitat for the skink.

The BIF Ridgeline is characterised by open shrublands of *Acacia* sp., *Thryptomene* sp. *Eremophila forrestii*, *E. galeata* and *Ptilotus* sp. on low banded ironstone formation ridgelines and the Granitic Formations by scattered low shrublands of *Acacia, Eremophila, Grevillia, Hakea* and *Borya* amongst granite outcropping.

Micro-habitat availability for the Western Spiny-tailed Skink is known to be sporadic within wider suitable fauna habitat types such as the BIF Ridgeline and Granitic Formations, with the species requiring specific features to facilitate its use of the area. This includes having sufficient hide structures such as smaller enclosed areas formed by rock piles and crevices. The sporadic nature of these micro-habitats demonstrates their occurrence is highly valuable to the species, with the removal of such micro-habitats likely to have a significant impact (GHD 2020b).

Plate 1 Typical habitat for rock dwelling Western Spiny-tailed Skink

2.4.4 Quality of Habitat

The conservation value of each habitat type has been rated based on condition, structural complexity, faunal diversity and habitat for conservation significant fauna (i.e. contains essential habitat for breeding and/or feeding). Habitat values for the two Western Spiny-tailed Skink habitat types are considered moderate to high value. A very small amount of the proposal area contains disturbed habitat comprising of existing tracks, old fencing and historical cleared areas for stock water points. Habitat values have been described in Table 2-6.

Correlating with the records of Western Spiny-tailed Skinks (refer to Section 2.4.1 and Figure 1-4 in Appendix A) the Granitic Formations was assessed as being critical habitat for the species, as it provided more cracks and crevices than the BIF habitat.

In recognition of the value of the Granitic Formation habitat to the skink, where possible, the mine layout has been modified to minimise impacts to these fauna habitats (refer to Figure 1-4 in Appendix A).

2.4.5 Habitat linkages

The mine development area forms part of a large continuous tract of habitat which retains high connectivity to the habitats directly adjacent. Although there are some signs of stress from drought, pastoralism (grazing, trampling of vegetation and soil compaction, clearing around artificial water sources), the majority of the site is uncleared and forms good habitat. Fences run through the proposal area, presenting some barriers to the movement of fauna (GHD 2020b).

Table 2-6 Fauna habitats of the Mine Development Envelope

Habitat Type/ description	Value	Extent in MDE (ha)	Possible Conservation Significant Fauna
BIF Ridgeline Open shrublands of *Acacia* sp., *Thryptomene* sp. *Eremophila forrestii, E. galeata* and *Ptilotus* sp. on low banded ironstone formation ridgelines.	Moderate to High	1,041	• Long- tailed Dunnart (*Sminthopsis longicaudata*) (habitat) • Gilled Slender Bluetongue (*Cylodomorphia branchialis)* (habitat) • Western spiny tailed skink (*Egernia stokesii badia*) (habitat) • Peregrine Falcon (*Falco peregrinus)* (foraging)
Riparian Creek line Tall shrublands: *Callistemon, Eucalyptus, Scaevola* with herbs and grassland along minor creeks and drainage lines	High	215	• Gilled Slender Bluetongue (habitat) • Peregrine Falcon (hunting/foraging)
Flood Plain Mixed shrublands of *Acacia, Eremophila, Grevillia,* and *Hakea* on seasonally inundated floodplain.	Moderate	252	• Peregrine Falcon (hunting/foraging)
Chenopod Plain Low open heathland of *Atriplex, Maireana, Sclerolaena,* and scattered *Acacia* on fine sandy soils	High	391	• Night Parrot (foraging) • Gilled Slender Bluetongue (habitat) • Peregrine Falcon (hunting/foraging)
Mixed Acacia Plain Shrublands of mixed *Acacia* on plain on loam/clay soils	Moderate	5,471	• Gilled Slender Bluetongue (habitat) • Peregrine Falcon (hunting/foraging) • Long-tailed Dunnart (habitat)
Granitic formations Scattered low shrublands of *Acacia, Eremophila, Grevillia, Hakea,* and *Borya* amongst granite outcropping	High	826	• Western Spiny-tailed Skink (habitat) • Long-tailed Dunnart (habitat) • Gilled Slender Bluetongue (habitat) • Peregrine Falcon (foraging)
Sub-Total		**8,196**	-
Cleared		34	-
Total		**8,230**	-

2.4.1 Records of Western Spiny-tailed Skinks

During the field survey (GHD 2020b) four broad locations recorded the Western Spiny-tailed Skink. Three locations were present in granitic areas with one latrine site identified within the BIF formation (refer to Figure 1-4 in Appendix A). Records included actual individual observations or signs of the species via the presence of latrine sites. The species was also recorded in several rocky areas outside, but in close proximity to the survey area representing part of the wider local skink population. It should be noted that mapped skink colony presence was confirmed based on either skinks being detected, or extensive scat latrine present even if no skink was detected (GHD 2020b).

Of the 43 observances (observed animals and latrine sites) of the Western Spiny-tailed Skink, 42occurred in the north-east of the site, within the Granitic Formation habitat located on the outer areas of the MDE and only one (latrine site) was observed in the BIF (refer to Figure 1-3 in Appendix A). Table 2-7 provides a summary of the recorded locations of Western Spiny-tailed Skinks (GHD 2020b)

Observations of animals were between one and five animals at each location, with two locations recording juveniles as well as adults. Camera traps recorded activity at the most northern site (along the northern boundary of the MDE) which consisted of basking (adults and juveniles) and mating or territorial male behaviour.

Table 2-7 Western Spiny-tailed Skink location (GHD 2020b)

Site ID	Skinks observed	Scat latrine notes	Easting	Northing
1	one adult	scats present	482756	6883608
2		fresh scats present	482975	6883339
3		fresh scats present	482975	6883339
4		scats present	483124	6883109
5		scats present	483169	6883002
6		fresh scats present	482597	6883406
7		scats present	479903	6877407
8		fresh scats present	482569	6883529
9	one adult	fresh scats present	486485	6876391
10		scats present	486507	6876377
11	one adult	fresh scats present	486464	6876432
12		scats present	486523	6876385
13	one adult	fresh scats present	486534	6881550
14		scats present	486574	6881547
15		scats present	486576	6881523
16		scats present	486576	6881191
17		scats present	486582	6881192
18	two adults	large scat latrine	485361	6881167
19	one skink	large scat latrine	485216	6881633
20	one skink	large scat latrine, found in quartz	485146	6881493
21		large scat latrine	484535	6882370
22		large scat latrine	484422	6882543
23		small scat latrine, small colony or temp shelter	484395	6882660
24		large scat latrine	484661	6882792
25		small latrine, fresh scats, may be lone adult	484736	6882713
26		large scat latrine, found in quartz	485398	6881717

Site ID	Skinks observed	Scat latrine notes	Easting	Northing
27		scat latrine. mod number scats	485413	6881670
28		fresh scat pile	484693	6881282
29		considerable scat piles	484774	6881310
30		large scat piles, colonial	484388	6881839
31		solitary, small scat pile	484170	6882372
32		extensive quarts boulders, large scat pile	485001	6881415
33		few old scats, possibly solitary individual	485409	6880817
34	three skinks	fresh scat piles, colonial	483347	6883034
35	one skink	large scat pile, colonial	483415	6883022
36		small scat latrine	486748	6878377
37	one skink	large scat latrine, colonial	486706	6878340
38	one skink	scat latrine, colonial	486699	6878328
39		Few old skink scats, potential release site	485382	6881123
40		large scat pile, colonial, outside survey area	489085	6880558
41		large scat pile, colonial, outside survey area	489100	6881037
42	adults and juveniles	large scat pile, colonial, outside survey area black morph	489011	6880939
43		large scat piles in several locations, colonial, outside survey area located	489014	6880865

2.4.1 Potential impacts

The loss or degradation of native vegetation for the development and operation of the Proposal will result in the loss of fauna habitat. Loss of fauna habitat can result in direct mortality of individuals, the forced relocation of fauna and a reduction in foraging or breeding habitat. Table 2-8 quantifies the loss of habitat type for terrestrial vertebrate fauna.

Based on the results of the targeted surveys the footprint was modified to minimise disturbance to Western Spiny-tailed Skink habitat. Given the importance of records within the Granite habitat this has almost been completely avoided. Given the ore resource is located in the BIF ridgeline habitat the clearing has been minimised as much as possible. As indicated in Table 2-8 of the 1,530 ha of fauna habitat within the MDE to be cleared only approximately 153 ha of Western Spiny-tailed Skink habitat (made up of 153 ha of BIF Ridgeline and <1 ha of Granitic Formation) will be cleared.

Table 2-8 Terrestrial vertebrate fauna habitat loss due to clearing

Habitat type / description	Habitat used by Western Spiny-tailed Skink	Area within MDE (ha)	Maximum area to be cleared (ha)	% remaining
BIF ridgeline	Possibly – latrine observed	1,041	153	85
Chenopod plain	No	391	76	81
Riparian creek line	No	215	1	99
Flood plain	No	252	27	89

Habitat type / description	Habitat used by Western Spiny-tailed Skink	Area within MDE (ha)	Maximum area to be cleared (ha)	% remaining
Granitic formations	Yes – Individuals and latrine sites observed	826	<1	100
Mixed acacia plain	No	5,471	1,257	77
Sub-Total		**8,196**	**1,515**	**-**
Cleared		34	15	56
Total		**8,230**	**1,530**	**-**

Table 2-9 provides a summary of the assessment of potential impacts on the Western Spiny-tailed skink.

Table 2-9 Impacts to the Western Spiny Tailed Skink

Impact	Relevance to the Western Spiny-tailed Skink
Habitat loss	Development of the mine and mining of the resource will result in the removal of approximately 15% of BIF Ridgeline and 0% of Granitic Formations, which are identified as critical fauna habitat for this species. Micro-habitat availability for the Western Spiny Tailed Skink is known to be sporadic within wider suitable fauna habitat types such as the BIF Ridgeline and Granitic Formations, with the species requiring specific features to facilitate its use of the area. This includes having sufficient hide structures such as smaller enclosed areas formed by rock piles and crevices. The sporadic distribution of these micro-habitats demonstrates that they are highly valuable to the species persistence, with the removal of suitable habitat potentially having a significant impact.
Habitat fragmentation	Skink habitat fragmentation may result in individuals no longer being able to access nesting or denning habitat or alternatively may lose access to areas where they may forage.
Fauna death	Fauna death of the skink may occur directly relating to mining activities, as they are known to occur on, and inhabit the BIF Ridgeline.
Secondary impacts to dust, noise and light emissions	Secondary impacts relating to emissions are likely to be less of a consideration than direct impacts, particularly dust. However, noise and light has the potential to impact the skink through disrupting their traditional foraging habits.
Altered fire regimes	The implementation of a fire management program will minimise impacts to the existing skink population, and is not assessed to be significant.

Impact	Relevance to the Western Spiny-tailed Skink
Introduction to feral animals and weeds	Given there is currently no management of feral animals in the local area, the management of feral animals during operations, as detailed in the *Yogi Magnetite - Site Environmental Management Plan* (GHD 2020d), may actually reduce the number of feral animals in the local area. This is likely to counterbalance the Proposal's potential to provide improved access by feral predators into the area. The implementation of a pest animal and weed management program is likely to bring about improved outcomes to the existing skink population, and is not assessed to have a significant impact on the skink.

A summary of the assessment of the proposal against the Significant Impact Guidelines 1.1 (DoE 2013) is provided in Table 2-10. The assessment takes into account the mitigation measures outlined in Table 3-2 (refer to Section 3.2).

Table 2-10 Significance test for the Western Spiny Tailed Skink

Criteria for endangered species	Assessment of significant impact
Lead to a long-term decrease in the size of the population	The proposal will result in the removal of 153 ha of Western Spiny-tailed Skink habitat which is comprised of 153 ha of BIF Ridgeline and <1 ha of granitic formations within the MDE. Following the clearing and destruction of these two habitats, 85% and 100% respectively will remain. This indicates that a significant portion of suitable habitat remains within the MDE, and PDE. However, given the sporadic nature of suitable micro-habitats within these fauna habitats, the actual impacts to this species are indeterminable and may be significant.
Reduce the area of occupancy of the species	The number of western Spiny-tailed Skink that may inhabit the MDE and PDE is not definitively known as no targeted surveys have been completed, making determining an area of occupancy for the species in the local area somewhat difficult. The species lives in family colonies which comprises of 2-17 individuals in secure environment such as hollow logs or exfoliating rock (Duffield 2002, as cited in GHD 2019c). Dispersal rates of the skink is thought to be low based on studies of genetic analysis and recapture (Gardner *et al*. 2001; Gardner *et al*. 2007). Based on the results of the targeted survey, where possible, the proposed site layout will be revised to avoid habitat areas. Where colonies of Western Spiny-tailed Skinks are present, and avoidance is not appropriate, these animals will be relocated to new sites.

Criteria for endangered species	Assessment of significant impact
Fragment an existing population into two or more populations	A population of Western Spiny-tailed Skink is comprised of multiple family units, and is expected to extend across the entire suitable habitat area, i.e. granitic formations, BIF ridgeline, and may extend across both habitats if well connected. The proposal is expected to fragment the population present onsite into two or more populations, particularly due to the proposed linear infrastructure (road and utilities corridor). The significance of this is not well understood as a targeted survey has yet to be completed.
Adversely affect habitat critical to the survival of a species	While this BIF Ridgeline represents habitat for the Western Spiny-tailed Skink), the species does not rely solely on this habitat to persist in this region. A more important factor for this species is micro-habitat availability. Micro-habitat availability for the Western Spiny-tailed Skink is known to be sporadic within wider suitable fauna habitat types such as the BIF Ridgeline and Granitic Formations, with the species requiring specific features to facilitate its use of the area. This includes having sufficient hide structures such as smaller enclosed areas formed by rock piles and crevices. The sporadic distribution of these micro-habitats demonstrates their occurrence is highly valuable to the species, with the removal of such micro-habitats likely to have a significant impact. Completion of a targeted survey and review of the mine layout will be completed to assist in minimising impacts to this species.
Disrupt the breeding cycle of a population	The proposal is not likely to impact and is unlikely to disrupt the breeding cycle of an important population of Western Spiny-Tail Skinks. Where colonies of Western Spiny-tailed Skinks are present, and avoidance is not appropriate, these animals will be relocated to new sites.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed activity is expected to remove and destroy Western Spiny-tailed skink throughout the areas of BIF Ridgeline and Granitic Formations. However, prior to completing ground works, a targeted survey will be completed. Known micro-habitats of family units will be conserved within designated areas, and in areas where it is not appropriate, individuals will be migrated to another location where suitable, comparable habitat has been identified.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered habitat	Given there is currently no management of feral animals in the local area, the management of feral animals during operations, as detailed in the *Yogi Magnetite - Site Environmental Management Plan* (GHD 2020d), may actually reduce the number of feral animals in the local area. This is likely to counterbalance the Proposal's potential to provide improved access by feral predators into the area.

Criteria for endangered species	Assessment of significant impact
	The proposed action is unlikely to introduce invasive species that are harmful to the Western Spiny-tailed Skink. Invasive species are not a known threat to the Western Spiny-tailed Skink. The principle threatening processes that has contributed to the decline of the black form of the species is overgrazing by livestock which reduces food availability for the species.
Introduce disease that may cause the species to decline	The proposed action is unlikely to introduce disease that may cause the Western Spiny-tailed Skink to decline. Disease is not a known threat to the Western Spiny-tailed Skink. The principle threatening processes that has contributed to the decline of the black form of the species is overgrazing by livestock which reduces food availability for the species.
Interfere with the recovery of the species	The proposed activity is not likely to interfere with the recovery of the species as a targeted survey will be completed, micro-habitat sites for the skink will be avoided and in areas where this is not appropriate, family units will be removed and relocated to a suitable, comparable habitat location.

2.4.2 Rationale for choice of provisions

Both outcomes based and management based provisions are utilised in this EMP, taking into account that some aspects will have measurable outcomes, while others will be procedure driven to manage residual impacts

3. Proposed management provisions

3.1 Proposed management

Potential impacts to Western Spiny-tailed Skink will be managed under the *Yogi Magnetite Mine - Environmental Management Plan* (EMP) (GHD 2020c). The management actions outlined in the Monitoring Program address the significant main threats listed in Table 2-3 and are listed in Table 3-1 below.

Table 3-1 Proposed management for the Western Spiny-tailed Skink

Threat	Proposed management measures
Habitat loss	• Section of haul road traversing granitic formations and BIF Ridgeline will be deviated and narrowed to avoid and reduce impact to these habitats. • Prior to clearing, areas of the granitic formation and BIF Ridgeline (all suitable habitat) will be targeted searched for Western Spiny-tailed Skink colonies. These areas will be demarcated and logged on the project's GIS database. The proposed site layout will be revised to avoid these areas. Where colonies of Western Spiny-tailed Skinks are present, and avoidance is not appropriate, these animals will be relocated to new sites. This will be discussed further in greater detail in the EMP (GHD 2020c).
Habitat fragmentation	• Minimise clearing and vegetation disturbance within skink habitat is minimally affected. • Conduct clearing in accordance with the permit and clearing procedure (to be developed). • Conduct progressive rehabilitation of disturbed areas, particularly those areas with known conservation significant fauna and associated habitat, in accordance with the Yogi MCP. • As indicated in Figure 1-4 (Appendix A) FIJV has implemented an 'avoidance zone' over the granitic formation habitat to ensure this area of is not disturbed or fragmented for the Western Spiny-tailed Skink.
Fauna death	• Ensure that excavation and trenches are only open as long as necessary to facilitate the construction purpose. • Restrict the movement of vehicles to designated roads and access tracks and prohibit off-road driving.
Secondary impacts from dust, noise, and light emissions	• Lighting designed to illuminate designated operations areas rather than the surrounding landscape. • Dust suppression, including use of water carts on access roads, to be implemented during all Proposal phases.
Introduction of feral animals and weeds	• Develop and implement a Feral Animal Program to effectively manage and control feral animals within FIJV

Threat	Proposed management measures
	controlled sites to minimise impacts on conservation significant fauna. • Implement biannual weed monitoring and targeted spraying program at the Proposal following completion of land clearing activities and during operations and closure activities. • Continued biannual weed monitoring and targeted spraying program along the pipeline route to minimise existing weed populations and reduce potential spread into adjacent land.

3.2 Mitigation

Based on the results of the surveys (refer to Section 2.4.1), where possible, the mine layout will be modified to minimise impacts to these fauna habitats and appropriate mitigation measures will be employed prior to clearing to reduce direct impacts to the Western Spiny-tailed Skink.

FIJV will also implement an 'avoidance area' around the area where most of the Western Spiny-tailed Skinks occurred (Refer to Figure 1-4 in Appendix A).

Additionally, as outlined in the ERD (GHD 2020a) the mitigation hierarchy (avoid, minimise, rehabilitate) will be implemented by FIJV as outlined in Table 3-2.

Table 3-2 Mitigation measures to be implemented

Impact	Mitigation measures
Habitat loss	**Avoid** • Section of haul road traversing granitic formations and BIF Ridgeline has been deviated and narrowed to avoid and reduce impact to these habitats. • Prior to clearing, areas of the granitic formation and BIF Ridgeline (all suitable habitat) will be targeted searched for Western Spiny-tailed Skink colonies. These areas will be demarcated and logged on the project's GIS database. The proposed site layout will be revised to avoid these areas. Where colonies of Western Spiny-tailed Skinks are present, and avoidance is not appropriate, these animals will be relocated to new sites. This will be discussed further in greater detail in the EMP (GHD 2020c). • Disturbance footprint designed to reduce disturbance to fauna habitats. • Vegetation clearing to be limited to 1,530 ha, with no clearing or mining activities to occur on the BIF ridgeline in excess of the required minimum area. • Conduct a risk assessment to identify high risk areas, including areas where conservation significant fauna species and habitat have been identified and potential impacts to guide site design.

Impact	Mitigation measures
	• Ensure infrastructure location, design, construction and operation reflects risk assessment outcomes in minimising impacts on conservation significant fauna and associated habitat. **Minimise** • Ensure staff and contractors are provided with appropriate training to ensure conservation significant fauna and associated habitat are protected. • Prior to conducting ground disturbance activities, ensure known locations of environmentally sensitive areas to be retained and protected from disturbance are identified on the ground by appropriate signage, fencing or flagging. • Record conservation significant fauna and habitat identified during a targeted fauna survey in a centralised database to ensure that these area can be easily identified during mine planning and proposed works. • Internal ground disturbance procedures and permitting system will be implemented. • Develop and establish an internal clearing permit procedure for any required clearing works, which is discussed in the EMP (GHD 2020c). **Rehabilitate** • Waste dumps and general disturbance areas to be rehabilitated in accordance with the Mine Closure Plan (MCP). • The rehabilitation of cleared areas where mining activities are complete to provide more habitat for fauna. • Where possible TSF will be armoured with rock to provide potential crack and crevice habitat used the species.
Habitat fragmentation	**Avoid** • Minimise clearing and vegetation disturbance to ensure conservation significant fauna and associated habitat is minimally affected. **Minimise** • Conduct clearing in accordance with the permit and clearing procedure (to be developed). • Fencing or tape to be in place around areas of fauna habitat outside the approved clearance area. **Rehabilitate** • Conduct progressive rehabilitation of disturbed areas, particularly those areas with known conservation significant fauna and associated habitat, in accordance with the Yogi MCP.
Displacement and death of fauna	**Avoid** • Ensure that excavation and trenches are only open as long as necessary to facilitate the construction purpose. • Vehicles and mining equipment access limited to designated roads/access tracks and cleared areas.

Impact	Mitigation measures
	• During initial clearing, machinery will be sat idle for at least half an hour to allow fauna to migrate away from the disturbance area. A fauna spotter will also be employed to watch for fauna to ensure that they can be moved to a safe location. • Lighting designed to illuminate designated operations areas rather than the surrounding landscape. **Minimise** • Dust suppression, including use of water carts on access roads, to be implemented during all Proposal phases. Daily inspections of the waste storage facility to determine if fauna are entrapped within. • Removal of dead fauna away from edges of roads. • Implement appropriate mitigation measures such as speed limit restrictions, right of way for fauna and the prohibition of off-road driving. • Where possible, clearing should be undertaken on one front only, to provide an opportunity for the fauna to move out of the proposal area. • Develop and implement a ground disturbance permit system and procedure to ensure management requirements as per the EMP are met (GHD 2020c). **Rehabilitation** • In the event that injured skinks are identified, suitably trained site personnel are to capture and care for individuals until they can be transported to a suitable wildlife rescue or rehabilitation centre.
Altered fire regimes	**Avoid** • Proposal site induction to include information on prevention and management of fires. • All machinery and vehicles undertaking clearing activities will be fitted with firefighting equipment. • A Hot Work Permit system will be implemented. **Minimise** • Firefighting equipment will be located on site and emergency personnel will be trained in fire response.
Introduction of feral animals	**Avoid** • No feeding of native or feral animals. **Minimise** • Putrescible wastes associated with site offices to be stored in bins with lids and prior to disposal. • Develop and implement a Feral Animal Program to effectively manage and control feral animals within FIJV controlled sites to minimise impacts on conservation significant fauna. • Fauna access to artificial on-site water sources will be prevented.

3.3 Relocation

During the Phase 2 Level 2 survey (January 2020) (GHD 2020b) potentially suitable relocation sites (refer to Table 3-3) were identified. These potential skink relocation sites were assessed based on the presence of potentially suitable granite structure with sufficiently deep and extensive rock cracks and crevices to provide suitable shelter from predators and extreme weather and lack of evidence of existing/resident colonies i.e. no scat latrines and no skinks.

Table 3-3 Potential relocation sites for the Western Spiny-tailed Skink

Site ID	Comments on potential for skink relocation	Easting	Northing
1	Low granite outcrop, potential relocation site, within survey area	485597	6880794
2	Low granite outcrop, potential relocation site, within survey area	485602	6881003
3	Low granite outcrop, potential relocation site, within survey area	486511	6876482
4	Low granite outcrop, potential relocation site, within survey area	483459	6883206
5	Large extensive granite outcrop outside survey area, black form of Western Spiny-tailed Skink observed which may represent distinct genetic population from skinks recorded within survey area, therefore not suitable site for relocation	489483	6880811
6	Large extensive granite outcrop outside survey area, black form of Western Spiny-tailed Skink observed which may represent distinct genetic population from skinks recorded within survey area, therefore not suitable site for relocation	489212	6880474

The relocation of the Western Spiny-tailed Skink from within the disturbance footprint would be undertaken prior to any ground disturbance activities commenced. The proposed trapping and relocation process is outlined in Table 3-4 below.

Table 3-4 Potential trapping and relocation process

Process	Activities	Qualification requirements for individuals undertaking trapping and relocation
Trapping	• Active hand searching to locate colony and hand capture of any easily-accessible skinks • Trapping using baited cage and box traps, and follow-up surveillance using remote cameras to ensure all skinks have been removed. • Intrusive searching of each colony for any remaining skinks by physical removal / of rocks and crevices to detect and physically extract of skinks safely from rock crevices • Fauna taking (relocation) licence.	• Qualified Zoologist and/or Ecologist • Environmental Consultants Association (or equivalent) fauna training • Experience in fauna handling and relocation

Process	Activities	Qualification requirements for individuals undertaking trapping and relocation
Relocation	• Translocations to conform to DWER's translocation protocols and animal ethics requirements • Individuals to be placed in plastic containers in their original family groups (colony relocated together to a new site). • Adhere to Standard Operating Procedure Hand Capture of Wildlife. • Individual skinks should measured, weighed, and photographed (dorsal and lateral for spot ID). • Where possible, translocate some of the materials under which they had been sheltering • Relocate some of the scat material with the colony at new colony site.	• Experience in fauna trapping for relocations, translocation and approvals assessment • Experience in capture and handling of Western Spiny-tailed Skink.

3.4 Monitoring post relocation

To determine the success of the relocation program FIJV will undertake active and remote monitoring, as outlined in Table 3-5 below, at the relocation sites to confirm:

- establishment of colony/individuals
- ongoing occupancy
- feral predator presence.

3.5 Contingencies

In the event the monitoring of the relocation sites demonstrates the relocation has not resulted in the establishment and ongoing occupancy of colony/individuals FIJV will engage in consultation with the EPA, DWER and DBCA.

3.6 Reporting

Fauna consultants engaged to conduct works described in this program will provide FIJV with a report that demonstrates compliance with the management actions and requirements given in this document.

FIJV will ensure information on the capture, handling and relocation of Western Spiny-tailed Skinks is appropriately maintained and provided to DWER in accordance with fauna handling permitting requirements.

Table 3-5 Proposed ongoing monitoring at relocation sites

Type of survey	Equipment required	Monitor evidence of habitat	Frequency of monitoring	When	Known Activity patterns of species
Active hand searching	• Collection containers, bags, • Nets • Gloves • Crow-bar/ Pry-bar • Weigh scales	• Scat piling outside refuges • Family groups • Crevices or close to hollows	• Within fortnight of translocation (baseline) • 3 monthly for the first year post relocation	• Morning time • Spring/Summer • Winter	• Diurnal species • Overtly bask either alongside crevices or close to its hollow in morning sunshine • Very wary • Likely to forage for short periods in close proximity to its refuge • Use an ambush strategy to dart and grab invertebrate prey • Mating tends to occur in late September to early November with young born in February to March (R. How, pers. comm. 2008).
Remote monitoring.	• Remote Cameras	• Individuals (based on remote camera images showing spot pattern	• Within fortnight of translocation (baseline) • 3 monthly for the first year post relocation	• Morning time • Spring/Summer • Winter monitoring using remote (motion) cameras may be effective	

4. Adaptive management and review of this program

4.1 Adaptive management

It is intended this Program will be a dynamic document with the adoption of the adaptive management approach which aims to reduce impacts by embedding a cycle of monitoring, reporting and implementing change (where required). This document applies the principles of adaptive management through monitoring, corrective actions and implementing changes.

4.2 Monitoring and corrective actions

Internal monitoring of the environmental aspects outlined in this Program will occur during construction and operation. Any non-conformances or incidents within this Program will be investigated, rectified or mitigated as soon as possible to ensure minimal ongoing environmental harm. Where relevant, procedures will be amended/updated, and inductions and other workforce communication will be undertaken in a timely manner to minimise the risk of re-occurrences.

4.3 Management plan review

This Program is intended to be dynamic and may be updated to reflect changes in management practices and the natural environment with time. This will also allow flexibility to adopt new technologies/management measures.

Amendments to management actions will be completed on an as needs basis. This will include revision/amendment of management actions that are not achieving the desired outcomes, monitoring identifying additional impacts and management actions, changes to relevant legislation or improvements to practices achieving a greater environmental outcome.

The review and updates to this Program may include, but are not limited to:

- Updates to management actions which are identified as not achieving the desired outcome and/or to achieve a greater environmental outcome
- Additional management actions required as a result of additional impacts being identified
- Amendments to relevant legislation which may affect the implementation of management actions.

5. Stakeholder engagement

FIJV have engaged with key stakeholders since early 2016, including:

- Government departments and decision-making agencies including the EPA, Commonwealth Department of Agriculture, Water and the Environment, Department of Water and Environmental Regulation (DWER), Department of Mines, Industry Regulation and Safety (DMIRS) and the Department of Biodiversity, Conservation and Attractions to provide information on the project and to initiate approvals processes, through meetings, telephone discussions, emails and letters.
- The City of Greater Geraldton and Shire of Yalgoo to provide information and provide the land access required for botanical surveys as part of the Environmental Assessment.
- The Mid West Ports Authority, with a Memorandum of Understanding established regarding access at Geraldton Port for shipment.
- The pastoral leases of Wagga Wagga Station and Carlaminda Station to provide information on the project and seek access to land for botanical surveys as part of the environmental assessment.

Stakeholder consultation aims to:

- Build stakeholder understanding of the Proposal to contribute to stakeholder acceptance
- Build trusted relationships with stakeholders to foster tolerance and compromise for the Proposal
- Strengthen the reputation of FIJV as a positive contributor in their host communities.

To achieve these goals, the objectives of FIJV's consultation throughout all stages of the Proposal is to:

- Provide clear, objective, and timely information to stakeholders
- Seek input and feedback from the key stakeholders to inform the Proposed Action planning and development.

FIJV will continue to engage with relevant stakeholders throughout the environmental approval process to ensure that all concerns are addressed. This includes decision making authorities and local government representatives. FIJV is committed to building effective relationships and working transparently with all stakeholders.

Any consultation regarding this Program will be captured in subsequent revisions.

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Appendices

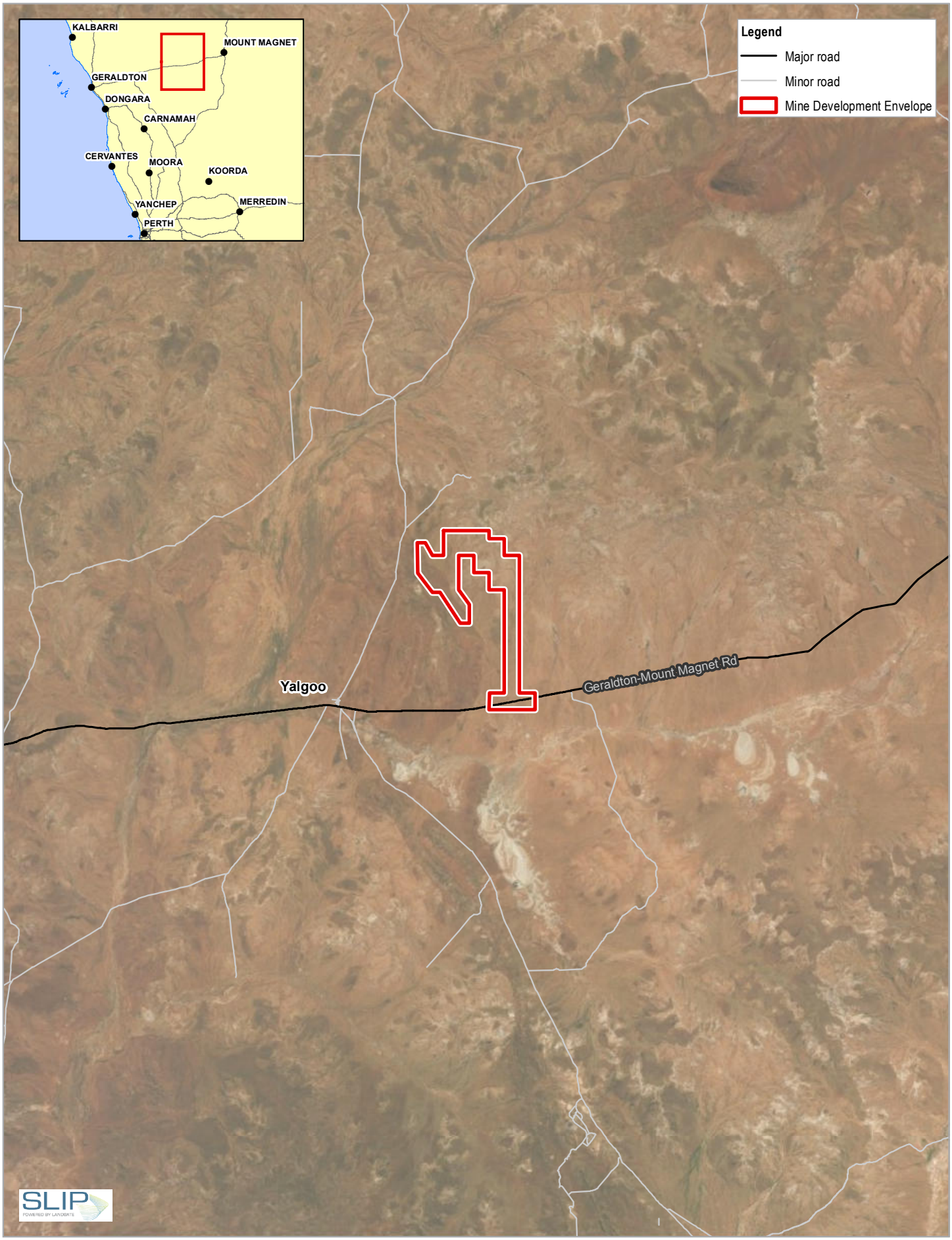
Appendix A – Figures

Figure 1-1 Proposal location

Figure 1-2 Pipeline Development location

Figure 1-3 Fauna habitats within the MDE

Figure 1-4 Records of Western Spiny-tailed Skinks within the MDE



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Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

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GHD

FI Joint Venture Pty Ltd
Environmental Review Document

Proposal Location

Project No. **61-37117**
Revision No. **0**
Date **12 Jul 2019**

FIGURE 1-1

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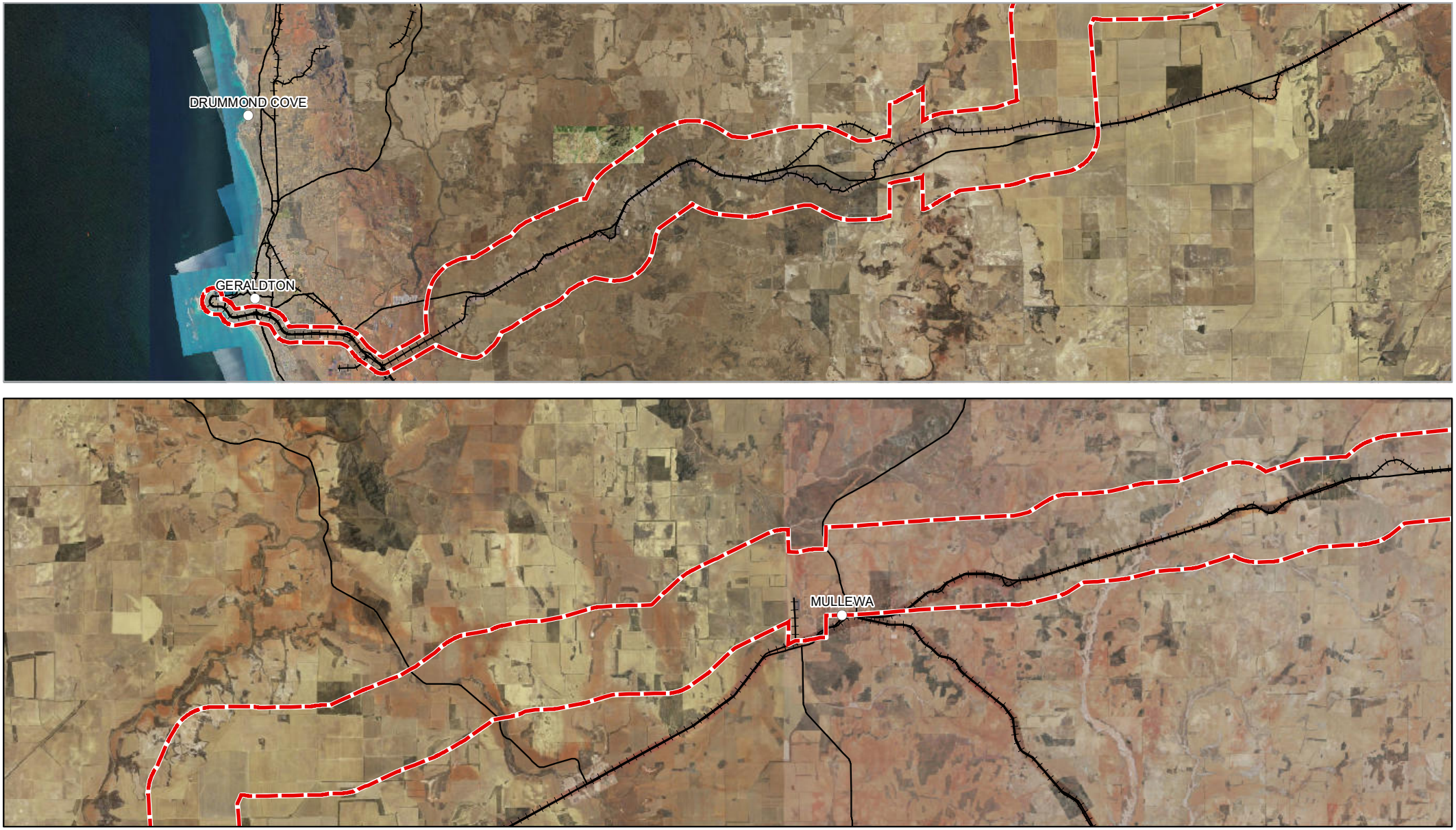
Data source: GHD: Survey Area - 20180622; Landgate: Roads - 20181023, Imagery - Taken September 2012 - Accessed 20181210 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: cgverzosa



Legend

- City
- Main Roads
- Railways
- Pipeline Development Envelope

Paper Size ISO A4

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Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

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FI Joint Venture Pty Ltd
Environmental Review Document

Pipeline Development Envelope

Project No. **61-37117**
Revision No. **0**
Date **13 Mar 2020**

FIGURE 1-2

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Data source: GHD: Pipeline Development Envelope - 20190124, Pipeline Dessign - 20190416; Landgate: Roads - 20190128, Railway - 20190304, Imagery. Created by: cgverzosa

Legend

- Major roads
- Minor roads
- Pipeline Development Envelope
- Cadastral boundary

SLIP POWERED BY LANDGATE

Paper Size ISO A4

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Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

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FI Joint Venture Pty Ltd
Environmental Review Document

Pipeline Development Envelope

Project No. **61-37117**
Revision No. **0**
Date **13 Mar 2020**

FIGURE 1-2

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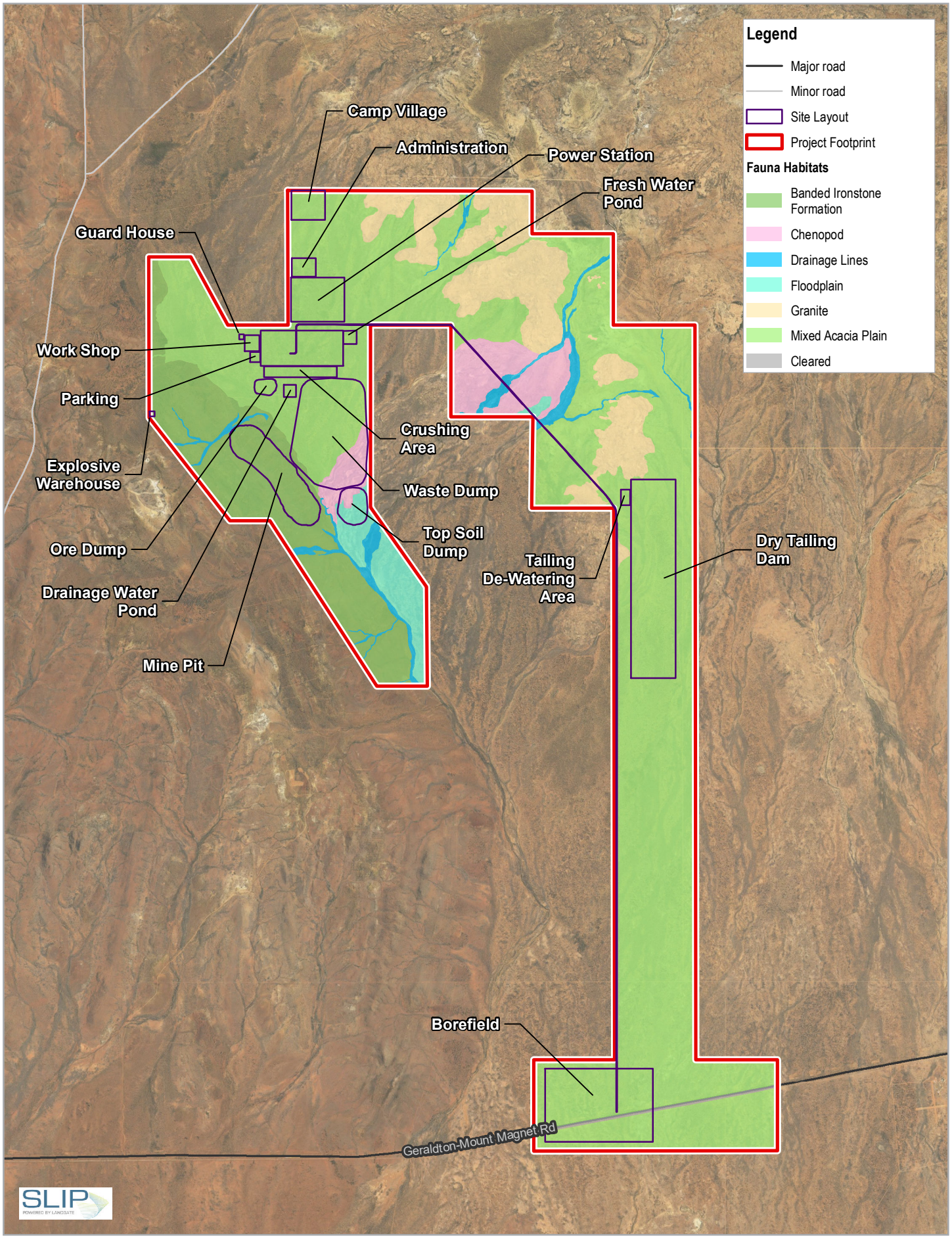

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Kilometres

Map Projection: Transverse Mercator
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FI Joint Venture Pty Ltd
Yogi Fauna Survey

Fauna Habitats

Project No. **61-37117**
Revision No. **1**
Date **19/05/2021**

FIGURE 1-3

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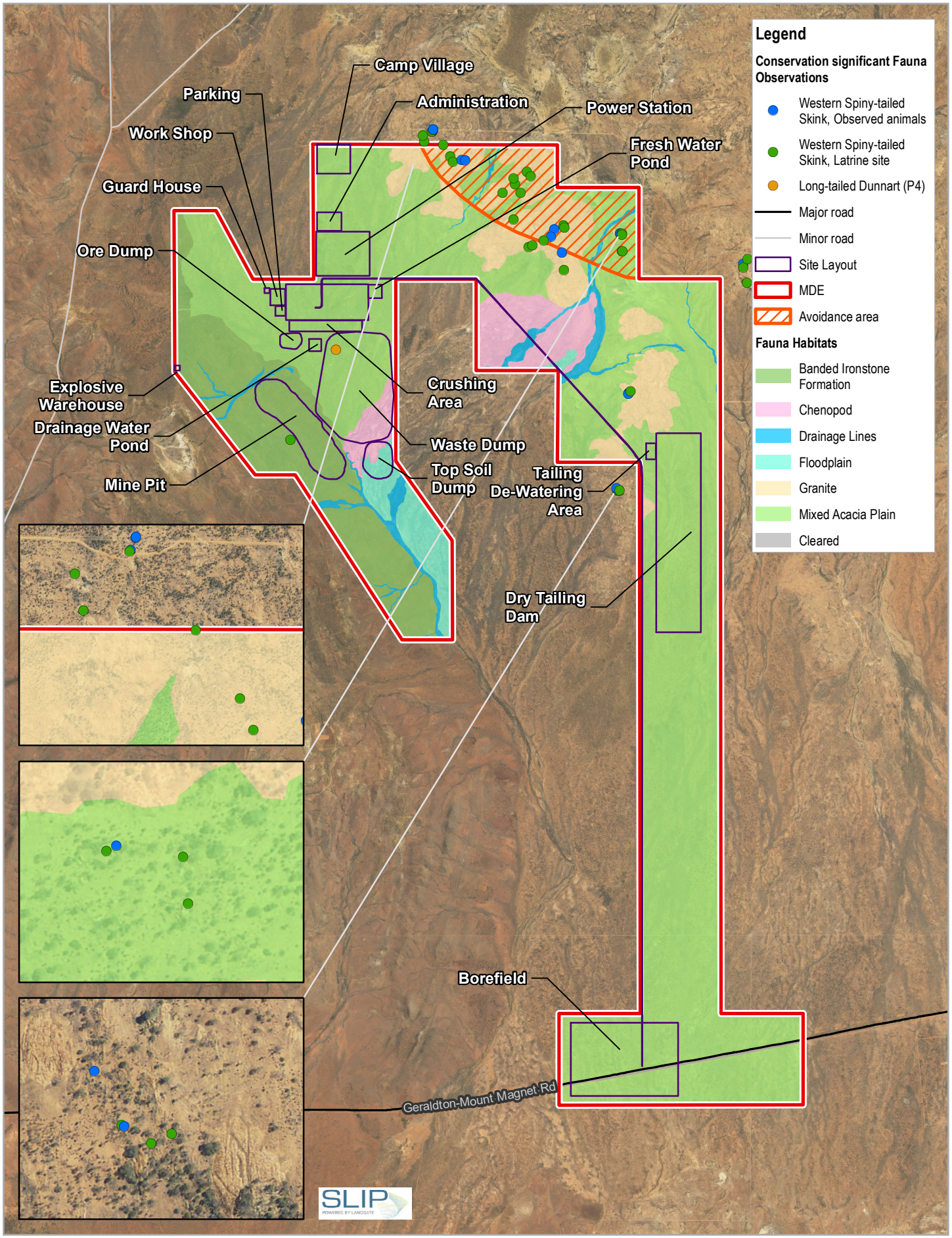
Data source: GHD: Survey Area - 20180622, Fauna Habitats, Potential Accommodation Options - 20201020; Landgate: Roads - 20181023, Exploration Tenement - 20180817, Imagery - Taken September 2012 - Accessed 20181210.Landgate / SLIP. Created by: tngavranic



Paper Size ISO A4

0 1 2 3 4

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

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GHD

FI Joint Venture Pty Ltd
Environmental Review Document

Location of Conservation Significant Terrestrial Fauna in the Mine Development Envelope

Project No. 6137117
Revision No. 1
Date 19 May 2021

FIGURE 1-4

N:\AU\Perth\Projects\61\37117\GIS\Maps\Working\Response to comments\6137117_009-2_LocConSigTerrFaunaMDE_rev1.mxd
Print date: 19 May 2021 - 21:11

Data source: GHD: Survey Area - 20180622, Threatened Fauna - 20181210; Landgate: Roads - 20181023, Imagery - Taken September 2012 - Accessed 20181210.. Created by: tngavranic

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	K Frehill	D Ginger		M Brook		24/05/2021

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Appendix D:
Environmental Policy

FIJV

Environmental Policy

FIJV is committed to achieving the best environmental practices with the aim of minimal environmental impact from our business operations.

As an environmental steward, FIJV will provide adequate tools and resources to achieve the following environmental commitments:

- Assess, reduce and manage the risks and environmental impacts arising from our activities.
- Measure and continuously improve our environmental performance by setting environmental objectives, measures and targets.
- Report our environmental performance to stakeholders in a transparent, timely and regular manner.
- Being receptive to innovative ideas that result in reducing emission discharges, pollution, wastes, energy usage and resource consumption.
- Be aware of areas of cultural heritage which may be impacted by our project activities, value its significance and establish systems to protect and maintain them.
- Comply with all applicable legislation, standards, compliance obligations and codes of practice.
- Understand and acknowledge the expectations of all stakeholders in our operations for diligent environmental management.
- Actively support and recognise opportunities for continuous improvement relating to the environment.
- Align our Environmental Management System to ISO14001.

Signed: Reza Azimi

General Manager

Date: 20.12.22