



Environmental
Protection
Authority

Parker Range (Mount Caudan) Iron Ore Haul Road Proposal

Polaris Metals Pty Ltd (a subsidiary of Mineral Resources Ltd)

Report 1735
February 2023

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA). It describes the outcomes of the EPA's assessment of the Parker Range (Mount Caudan) Iron Ore Haul Road Proposal by Polaris Metals Pty Ltd (a subsidiary of Mineral Resources Ltd).

The Parker Range (Mount Caudan) Iron Ore Haul Road Proposal was determined under the Commonwealth *Environment Protection and Biodiversity Act 1999* to be a controlled action and to be assessed by the EPA under an accredited process. This document is also the result of the EPA's accredited assessment process.

This assessment report is for the Western Australian and Commonwealth Ministers for Environment and sets out:

- what the EPA considers to be the key environmental factors identified during the course of the assessment
- an assessment of the matters of national environmental significance
- the EPA's recommendations as to whether or not the proposal may be implemented and, if it recommends that implementation be allowed, the conditions and procedures, if any, to which implementation should be subject
- other information, advice and recommendations as the EPA thinks fit.

Prof. Matthew Tonts
Chair
Environmental Protection Authority

13 February 2023

Contents

| | |
|--|----|
| Summary | 2 |
| 1 Proposal..... | 9 |
| 2 Assessment of key environmental factors | 21 |
| 2.1 Terrestrial fauna | 21 |
| 2.2 Flora and vegetation | 30 |
| 3 Holistic assessment..... | 39 |
| 4 Offsets | 41 |
| 5 Matters of national environmental significance | 43 |
| 6 Recommendations | 46 |
| 7 Other advice | 47 |

Figures

| | |
|--|----|
| Figure 1: Project location | 13 |
| Figure 2: Development envelope and disturbance footprint – upper northern section..... | 14 |
| Figure 3: Development envelope and disturbance footprint – northern section | 15 |
| Figure 4: Development envelope and disturbance footprint – central section | 16 |
| Figure 5: Development envelope and disturbance footprint – southern central section | 17 |
| Figure 6: Development envelope and disturbance footprint – southern section..... | 18 |
| Figure 7: Development envelope and disturbance footprint – lower southern section..... | 19 |
| Figure 8: Location of the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony | 20 |
| Figure 9: Intrinsic interactions between environmental factors | 39 |

Tables

| | |
|---|----|
| Table 1: Location and proposed extent of proposal elements | 10 |
| Table 2: Conservation significant terrestrial fauna habitat within disturbance footprint..... | 25 |
| Table 3: Summary of assessment for terrestrial fauna | 28 |
| Table 4: Priority Ecological Communities impacted by significant amendment | 33 |
| Table 5: Priority flora species impacted by significant amendment..... | 34 |
| Table 6: Summary of assessment for flora and vegetation | 37 |

Appendices

| | |
|--|----|
| Appendix A: Recommended conditions..... | 48 |
| Appendix B: Decision-making authorities..... | 71 |
| Appendix C: Environmental Protection Act principles | 72 |
| Appendix D: Other environmental factors | 75 |
| Appendix E: Relevant policy, guidance and procedures | 78 |
| Appendix F: List of submitters..... | 79 |
| Appendix G: Assessment timeline | 80 |

| | |
|------------------|----|
| References | 81 |
|------------------|----|

Summary

Proposal

The Parker Range (Mount Caudan) Iron Ore Haul Road Proposal (Haul Road) involves the development of a haul road to transport iron ore from the approved Parker Range (Mount Caudan) Iron Ore Project Mine (PRIOP) to the Koolyanobbing Operations for processing. The proposal is located approximately 15 kilometres (km) south-east of Marvel Loch within the Shire of Yilgarn, in the Eastern Wheatbelt region of Western Australia. The proponent for the proposal is Polaris Metals Pty Ltd, a subsidiary of Mineral Resources Ltd.

The proposal involves the development of a new haul road approximately 52 km in length traversing south to north. Approximately 40 km of the haul road will be adjacent to the State Barrier Fence, and the remaining 12 km of the haul road will traverse north-east towards the Koolyanobbing Operations. The remaining ore haulage will occur on existing public roads and does not form part of the proposal.

The proposal is a significant amendment to Ministerial Statement 892 (MS 892) which was approved for the PRIOP.

Context

The original PRIOP was approved through MS 892 on 12 April 2012 for the development and operation of an iron ore mine and haul road approximately 15 km south-east of Marvel Loch in the Shire of Yilgarn. The original ore transport route was via existing roads and a 7 km section of private haul road to the proposed Moorine Rocks rail siding, and then via existing rail infrastructure to port facilities on the south-west coast of Western Australia. The proponent has not constructed the upper haul road.

The proposal has been subject to some changes since its approval including a change to proposal under section 45C of the *Environmental Protection Act 1986* (EP Act) to change the mine layout and inquiry into implementation conditions through section 46 (s. 46) of the EP Act to clarify the requirements regarding terrestrial fauna.

Following acquisition of the PRIOP, the proponent considered a new transport route using a private haul road to capitalise on existing infrastructure and blending of iron ore to have logistical and public safety advantages.

The proposed significant amendment requires a haul road to connect the PRIOP mine to operations at Koolyanobbing where it has infrastructure for the transport of ore to the south coast Port of Esperance. The significant amendment was originally connected to the mine site but has been subsequently changed through a section 43A (s. 43A) – change to proposal during assessment – and no longer connects to the mine site.

Environmental values

Terrestrial fauna and flora and vegetation are the key environmental factors that would be impacted by the proposal.

Consultation

The Environmental Protection Authority (EPA) published the proponent's referral information for the proposal on its website for 7 days public comment from 27 May 2021 to 2 June 2021. The EPA also published the proponent's additional information on its website for public review for 2 weeks from 8 August 2022 to 21 August 2022. The EPA considered the comments received during these public consultation periods in its assessment.

Mitigation hierarchy

The mitigation hierarchy is a sequence of proposed actions to reduce adverse environmental impacts. The sequence commences with avoidance, then moves to minimisation, rehabilitation, and offsets are considered as the last step in the sequence.

The proponent considered the mitigation hierarchy in the development and assessment of its proposal, and as a result has:

- selected the alignment of the development envelope to run parallel with the State Barrier Fence and other public roads to minimise habitat fragmentation
- avoided and minimised impacts to priority flora and communities
- modified the development envelope to minimise native vegetation clearing and avoid directly impacting the *Camponotus* sp. nr. *terebrans* host ant colony of the Arid Bronze Azure Butterfly (ABAB)
- developed an internal clearing permit system to ensure clearing only occurs within the approved areas
- committed to pre-clearance surveys to identify and avoid direct impacts to active Malleefowl nest mounds and active Chuditch dens
- proposed avoidance buffers to the active Malleefowl nest mounds, active Chuditch dens and the *Camponotus* sp. nr. *terebrans* host ant colony
- proposed to implement a vehicle hygiene system to minimise the risk of introduction or spread of introduced flora and the meat ant *Iridomyrmex purpureus*
- proposed to minimise dust generation through application of dust suppression water during construction and bituminisation of the Haul Road
- proposed to implement surface water management infrastructure to minimise impacts to surface water flow and sedimentation
- offset the residual impact to Malleefowl and Chuditch habitat through land acquisition and management of Lot 1416 located approximately 45 km east north-east of Merredin in the Shire of Yilgarn and the Shire of Westonia.

Assessment of key environmental factors

The EPA has identified the key environmental factors (listed below) in the course of the assessment. For each factor, the EPA has assessed the residual impacts of the proposal on the environmental values and considered whether the environmental outcomes are likely to be consistent with the EPA environmental factor objectives.

As the proposal is a significant amendment to an existing proposal, the EPA's assessment has been undertaken in the context of the existing proposal, having regard to the combined and cumulative effects on the environment. The EPA has also considered whether to inquire into the implementation conditions for the existing proposal.

Terrestrial fauna

| No. | Residual impact or risk to environmental value | Assessment finding |
|-----|--|--|
| 1 | <p>Clearing of 173 ha of potential habitat for Malleefowl (173 ha) and Chuditch (168 ha).</p> <p>The combined effect of the approved PRIOP and the significant amendment will be up to 529.9 ha of Malleefowl habitat cleared.</p> | <p>The residual impact of the clearing of 173 ha of habitat for Malleefowl and 168 ha of habitat for Chuditch is likely to be significant, both on its own and in the context of the existing proposal. This vegetation provides habitat for the 2 conservation significant fauna species.</p> <p>Due to the remaining quantity and quality of habitat types in the local area and region, the significant residual impact could be counterbalanced in accordance with the Western Australia Environmental Offsets Guidelines (Government of Western Australia 2014) and the <i>Environment Protection and Biodiversity Conservation Act 1999</i> Environmental Offsets Policy.</p> <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to:</p> <ul style="list-style-type: none"> • condition A1 'Limitations and extent of proposal' • condition B1 'Terrestrial fauna' • condition B3 'Environmental offsets', <p>which include limiting the footprint of the proposal, the requirement for pre-clearance surveys to be undertaken, avoidance buffers for active Malleefowl mounds and active Chuditch dens, management actions including restrictions to vehicle speeds and blasting, and offsets to counterbalance the significant</p> |

| | | |
|---|--|---|
| | | residual impacts to Malleefowl and Chuditch habitat. |
| 2 | Potential impact to the <i>Camponotus</i> sp. nr. <i>terebrans</i> ant colony, host to the ABAB. | <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to:</p> <ul style="list-style-type: none"> • condition A1 'Limitations and extent of proposal' • condition B1 'Terrestrial fauna' <p>which include limiting the footprint of the proposal, the requirement for pre-clearance surveys to be undertaken, avoidance buffers for the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony and avoidance of direct and indirect impacts to the ABAB if found to be present.</p> |
| 3 | Potential indirect impacts on terrestrial fauna from fragmentation of habitat, mortality and injury during construction and operations (e.g. vehicle strikes), altered fire regimes, dust, noise, light and vibration. | <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor subject to:</p> <ul style="list-style-type: none"> • condition A1 'Limitations and extent of proposal' • condition B1 'Terrestrial fauna' • condition B2 'Flora and vegetation' <p>which include limiting the footprint of the proposal, the requirement to implement management actions to minimise the risk of physical injury or mortality, behavioural changes, health impacts and physical injury, and the requirement to seal the Haul Road to minimise indirect impacts from dust emissions.</p> |

Flora and vegetation

| No. | Residual impact or risk to environmental value | Assessment finding |
|-----|--|--|
| 1 | <p>Clearing of 173 ha of native vegetation in 'Pristine' to 'Degraded' condition.</p> <p>The combined effect of the approved PRIOP (363 ha) and the significant amendment will be up to 536 ha of native vegetation cleared.</p> | <p>There are 2 Priority Ecological Communities (PECs) that will be impacted from the proposal. There are also flora species listed as Priority under the <i>Biodiversity Conservation Act 2016</i> and 2 undescribed flora species that will be impacted from the proposal. Clearing of these species is unlikely represent a significant residual impact.</p> <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to:</p> <ul style="list-style-type: none"> • condition A1 'Limitations and extent of proposal' • condition B2 'Flora and vegetation' <p>which include limiting the extent of impacts to flora and vegetation including to the PECs, Priority 1 flora species and undescribed flora species.</p> |
| 2 | <p>Indirect impacts on flora and vegetation from fragmentation of native vegetation, dust deposition and suppression, altered surface drainage flow patterns, alteration of fire regimes, spillage of hydrocarbons/chemicals and introduced flora (weeds).</p> | <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to:</p> <ul style="list-style-type: none"> • condition A1 'Limitations and extent of proposal' • condition B2 'Flora and vegetation' <p>which limits the footprint of the proposal, requires bituminisation of the Haul Road to minimise dust, and management for weeds and surface water flow regimes.</p> |

Holistic assessment

The EPA recognises that the Great Western Woodlands region is an area of important biodiversity. The EPA is also aware of the potential for industry, including the existing Earl Grey Lithium Project and other activities located within the Great Western Woodlands to influence the complex interactions between environmental factors. These interactions have the potential to influence the environment in a holistic and non-linear nature, affecting all environmental values.

The EPA considered the connections and interactions between relevant environmental factors and values to inform a holistic view of impacts to the whole environment. The EPA formed the view that the holistic impacts would not alter the EPA's conclusions about consistency with the EPA factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the EP Act.

The EPA has recommended that the proposal may be implemented subject to conditions recommended in Appendix A.

Other advice

The EPA may, if it sees fit, include other information, advice, or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal.

The EPA provides the following information for consideration by the Minister. The EPA considers that there should be separate Ministerial Statements for the significant amendment and original proposal for the following reasons:

- The proponent has requested the Minister for Environment to inquire into condition 10 'Residual Impacts and Risk Management Measures' of MS 892 to replace the requirement to constitute the Parker Range Conservation Trust with an Offset Management Plan under s. 46 of the EP Act. The trust is not a matter for consideration during the assessment of the significant amendment and the other offset matters extend beyond the scope of significant amendment to species which do not require an offset during this assessment.
- The majority of impacts to Priority 1 flora species are from the PRIOP. Whilst these species would not require an offset at the mine, the proponent is likely to be required to demonstrate they have been included in rehabilitation plans. The EPA considers that there is limited scope for restoration on a bituminised road with low levels of impacts and there is more scope for this work during the s. 46 at the mine site.
- The proponent is yet to determine a post-mining land use for the Haul Road and this would be negotiated with relevant stakeholders including the Department of Primary Industries and Regional Development, Main Road WA and the Shire of Yilgarn for the possibility of retaining the road for public use or other purposes. The EPA encourages future utilisation of the Haul Road to avoid additional impacts from duplication of infrastructure.

- The development envelope of the significant amendment is physically disconnected from the PRIOP. This was given effect by reduction in impacts through the s. 43A amendment to the proposal during assessment. The development envelope for the significant amendment now sits between 2 approved mining operations.
- The EPA further considers that because the accredited assessment with the Commonwealth is only considering the significant amendment, combining the Ministerial Statements with the PRIOP, may result in difficulties in regulation between the State and Commonwealth.

The EPA notes that the significant amendment will replace the need to implement the 7 km private upper haul road at Moorine Rocks. The proponent should submit an application under s. 45C of the EP Act to remove the infrastructure that is no longer required.

1 Proposal

The Parker Range (Mount Caudan) Iron Ore Haul Road (Haul Road) is a proposal to develop a haul road to transport iron ore from the approved Parker Range Iron Ore Project (PRIOP) mine to the Koolyanobbing Operations for processing. The proposal is located 15 kilometres (km) south-east of Marvel Loch in the Shire of Yilgarn, in the Eastern Wheatbelt region of Western Australia (see Figures 1 to 7). The PRIOP is currently operating and substantially commenced in July 2020.

The proposal involves the development of a new Haul Road approximately 52 km in length south to north. Approximately 40 km of the Haul Road will be adjacent to the Department of Primary Industries and Regional Development (DPIRD) State Barrier Fence, and the remaining 12 km of the Haul Road will traverse north-east towards the Koolyanobbing operations. The remaining 40 km distance will involve ore haulage on existing public roads and does not form part of the proposal.

The proponent for the proposal is Polaris Metals Pty Ltd (a subsidiary of Mineral Resources Ltd). The proponent referred the proposal to the Environmental Protection Authority (EPA) on 14 May 2021. The referral information was published on the EPA website for 7 days public comment. On 10 June 2021, the EPA decided to assess the proposal at the level Referral Information with additional information required. The EPA published the additional information on its website for public review for 2 weeks from 8 August 2022 to 21 August 2022.

The proposal was determined under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to be a controlled action and to be assessed by the EPA under an accredited process.

The elements of the proposal which have been subject to the EPA's assessment are included in Table 1.

The EPA has assessed the residual impacts of the significant amendment and original proposal by considering the expansions and changes which are now proposed in the context of the original proposal. The EPA has also considered the combined impacts of the original proposal and the proposed changes, and cumulative impacts of the significant amendment with other proposals in the region.

The EPA has not reassessed the PRIOP approved under Ministerial Statement 892 (MS 892). The proposal elements for the approved PRIOP proposal are provided in Table 1 for context for the assessment of cumulative impacts.

Table 1: Location and proposed extent of proposal elements

| Proposal element | Location | Approved proposal (Parker Range Iron Ore Project – MS 892, 1060 and 1166) | Significant amendment (Parker Range Iron Ore Haul Road) | Combined proposal (Parker Range Iron Ore Project and Parker Range Iron Ore Haul Road) |
|------------------------------------|----------------|---|---|---|
| <i>Physical elements</i> | | | | |
| Mine and associated infrastructure | Figures 1 to 7 | Clearing of up to 363 ha within a 431 ha development envelope. | Clearing of up to 173 ha within a 339 ha development envelope. | Clearing of up to 536 ha within a 770 ha development envelope. |
| Haul road | Figures 1 to 7 | Upper haul road near Moorine Rocks. | Bitumen seal haul road traversing north-east from the Parker Range (Mount Caudan) Iron Ore Proposal to the Koolyanobbing Operations. | Bitumen seal haul road traversing north-east from the Parker Range (Mount Caudan) Iron Ore Proposal to the Koolyanobbing Operations. |
| <i>Operational elements</i> | | | | |
| Mine and associated infrastructure | Figures 1 to 7 | Mining operations, mining infrastructure and ore haulage. | Mining operations, mining infrastructure and ore haulage. | Mining operations, mining infrastructure and ore haulage. |
| Haul road | Figures 1 to 7 | Ore haulage through upgraded public and new private haul road (upper haul road) with an expected 96 vehicle cycles in a 24 hour period. | Ore haulage operations 24 hours per day, 365 days per year, with nominally between 110 to 160 of ore haulage vehicle movements per day. | Ore haulage operations 24 hours per day, 365 days per year, with nominally between 110 to 160 of ore haulage vehicle movements per day. |
| <i>Timing elements</i> | | | | |
| Project life | | Up to 10 years. | Up to 5 years for haulage of ore. | Up to 10 years. |

Units and abbreviations

ha – hectare

Proposal amendments

The original proposal is set out in section 3 of the proponent's referral document (Mineral Resources Ltd 2021), which is available on the EPA website.

During the assessment process the EPA encouraged the proponent to identify avoidance and mitigation measures for the proposal in addition to those included in the original proposal.

The proponent requested changes to the original proposal during the assessment (section 43A amendment) to reduce the clearing of native vegetation and reduce the size of the development envelope to minimise environmental impacts. The EPA Chair's notice of 28 January 2022 and 15 July 2022 consenting to the change is available on the EPA website.

The consolidated and updated elements of the proposal which has been subject to the EPA's assessment is included in Table 1.

Application of *Environmental Protection Act 1986* amendments to the proposal

The proposal was referred as a revised proposal to the existing PRIOP which was approved through MS 892. The EPA decided to assess the proposal on 10 June 2021. The *Environmental Protection Act 1986* (EP Act) was subsequently amended on 22 October 2021, and one result of the amendments is that the proposal is now considered to be a significant amendment under s. 40AA to the existing PRIOP approved through MS 892.

Given the proposal is a significant amendment to an existing proposal, the EPA's assessment has been undertaken in the context of the existing PRIOP, having regard to combined and cumulative effects on the environment. The EPA has also considered whether to inquire into the implementation conditions for the existing PRIOP. However, the EPA has not re-assessed the approved proposal (MS 892).

Proposal alternatives

The proponent considered alternative iron ore haulage options including consideration of upgrading existing public roads in the region. However, a private haul road option linking the PRIOP to the Koolyanobbing Southern Cross public road and then onto the Koolyanobbing Operations was determined by the proponent to have both logistical and public safety advantages from the originally proposed transport route.

Proposal context

The PRIOP is for the development and operation of an iron ore mine and haul road approximately 15 km south-east of Marvel Loch in the Shire of Yilgarn. The ore transport route was originally proposed to be via existing roads and a new 7 km section of private upper haul road to the Moorine Rocks rail siding and then via existing rail infrastructure to port facilities on the coast. The proponent has not constructed the upper haul road.

Following acquisition of the PRIOP, the proponent considered that a new transport route using a private haul road to capitalise on existing infrastructure and blending of iron ore to be more advantageous.

The proposed significant amendment requires a haul road to connect the PRIOP mine to operations at Koolyanobbing where it has infrastructure for the transport of ore to the Port of Esperance. The significant amendment was originally connected to the mine site but has been subsequently changed through a section 43A (s. 43A) – change to proposal during assessment – and no longer connects to the mine site.

Original proposal implementation

The PRIOP was originally approved through MS 892, issued on 12 April 2012.

On 13 July 2017, Ministerial Statement 1060 was issued under section 46 of the EP Act, which allowed for a time extension to implement the proposal.

On 26 June 2020, the EPA Chair under delegated authority consented to changes to the proposal under section 45C of the EP Act, which included a reduction in the development envelope and disturbance footprint, change to the open pit dimensions, removal of the tailings storage facility, change in pit dewatering volume and change in surplus dewater management.

On 14 May 2021, Ministerial Statement 1166 was issued under section 46 of the EP Act, which provided clarification on the extent of impacts to terrestrial fauna, particularly to Malleefowl.

The PRIOP substantially commenced operations in July 2020, however, the upper haul road was not progressed. Annual compliance assessment reports have been submitted since 2013 as required by MS 892. The proponent has not been subject to any enforcement action and met their requirements under MS 892.

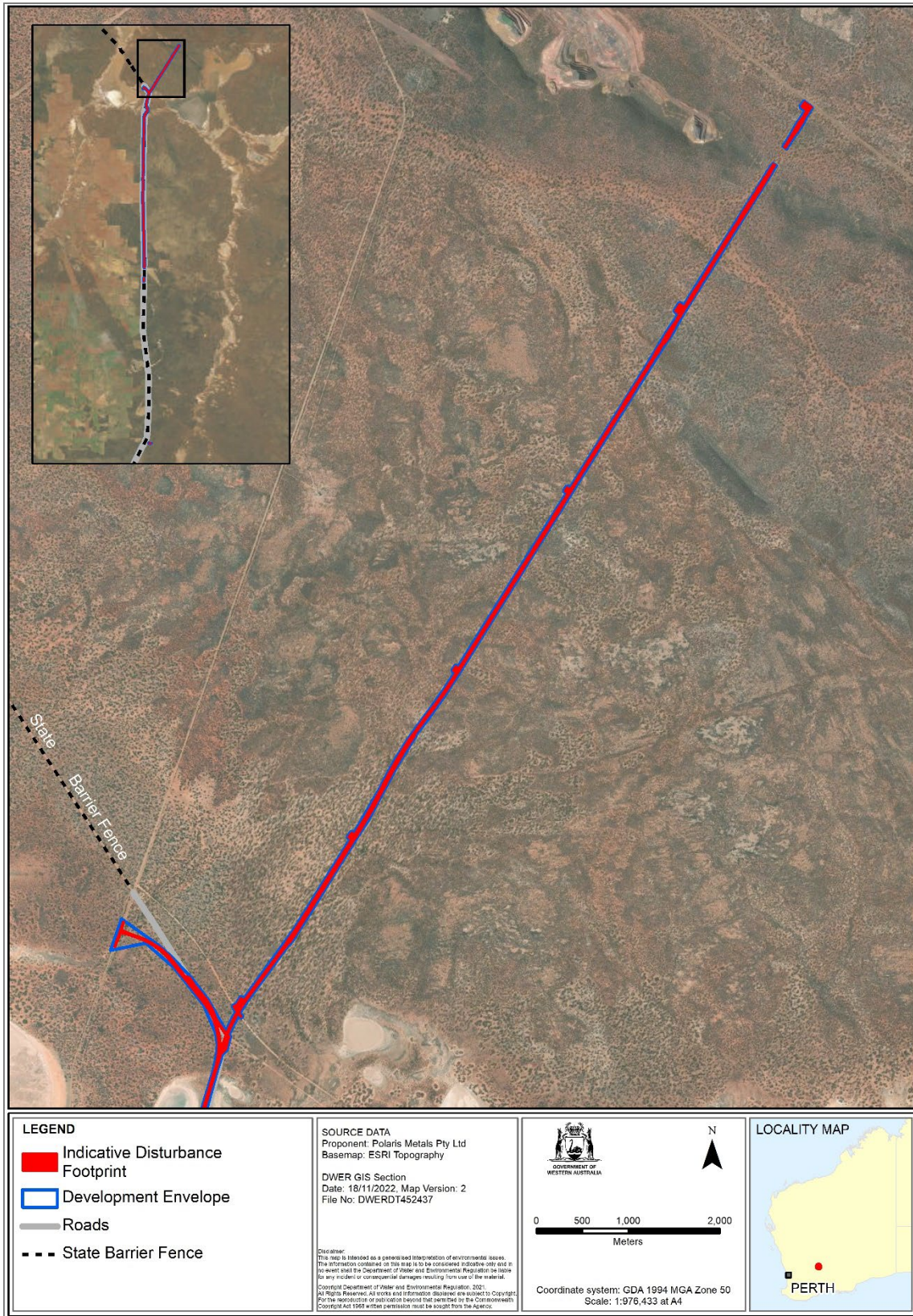


Figure 2: Development envelope and disturbance footprint – upper northern section

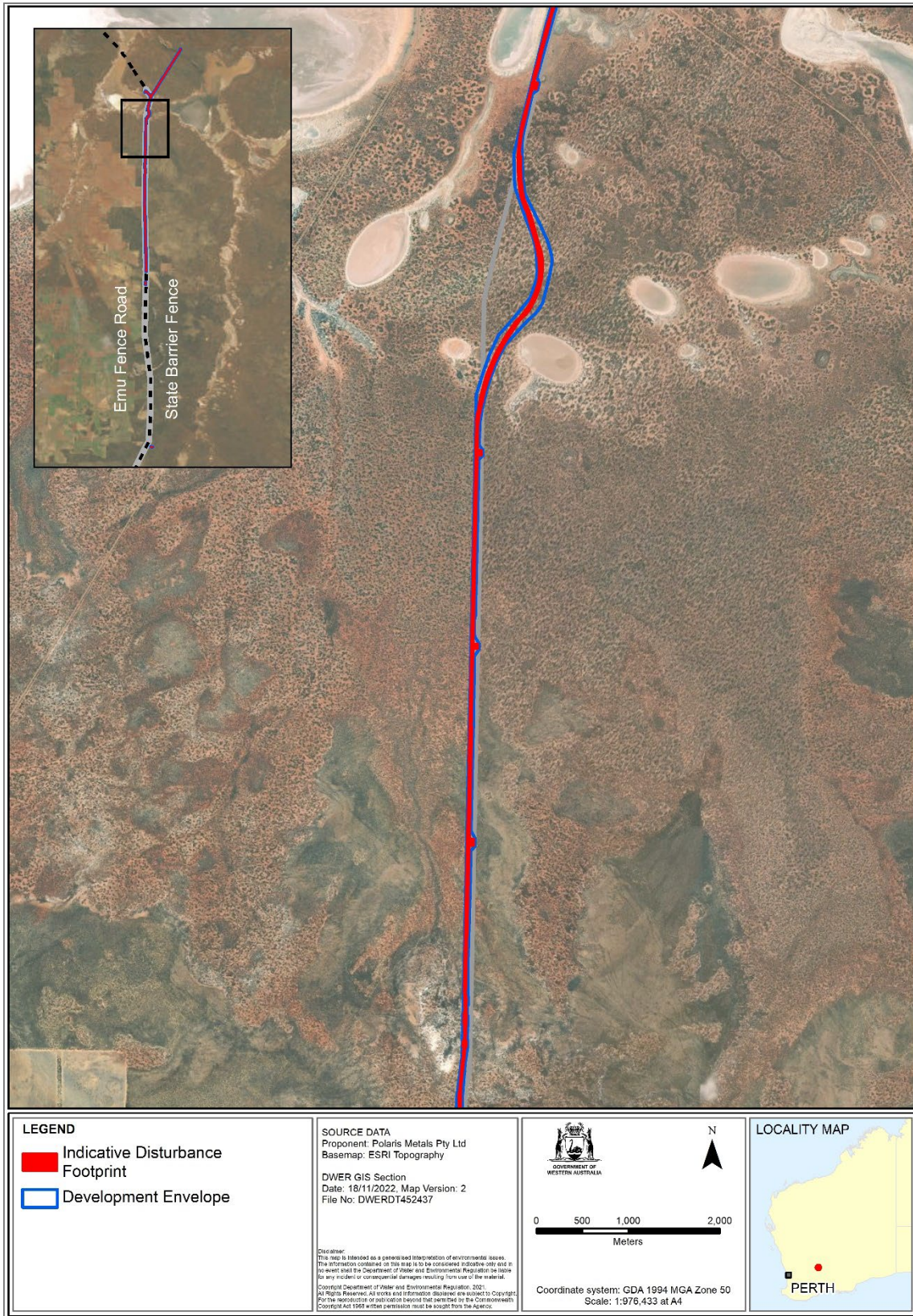
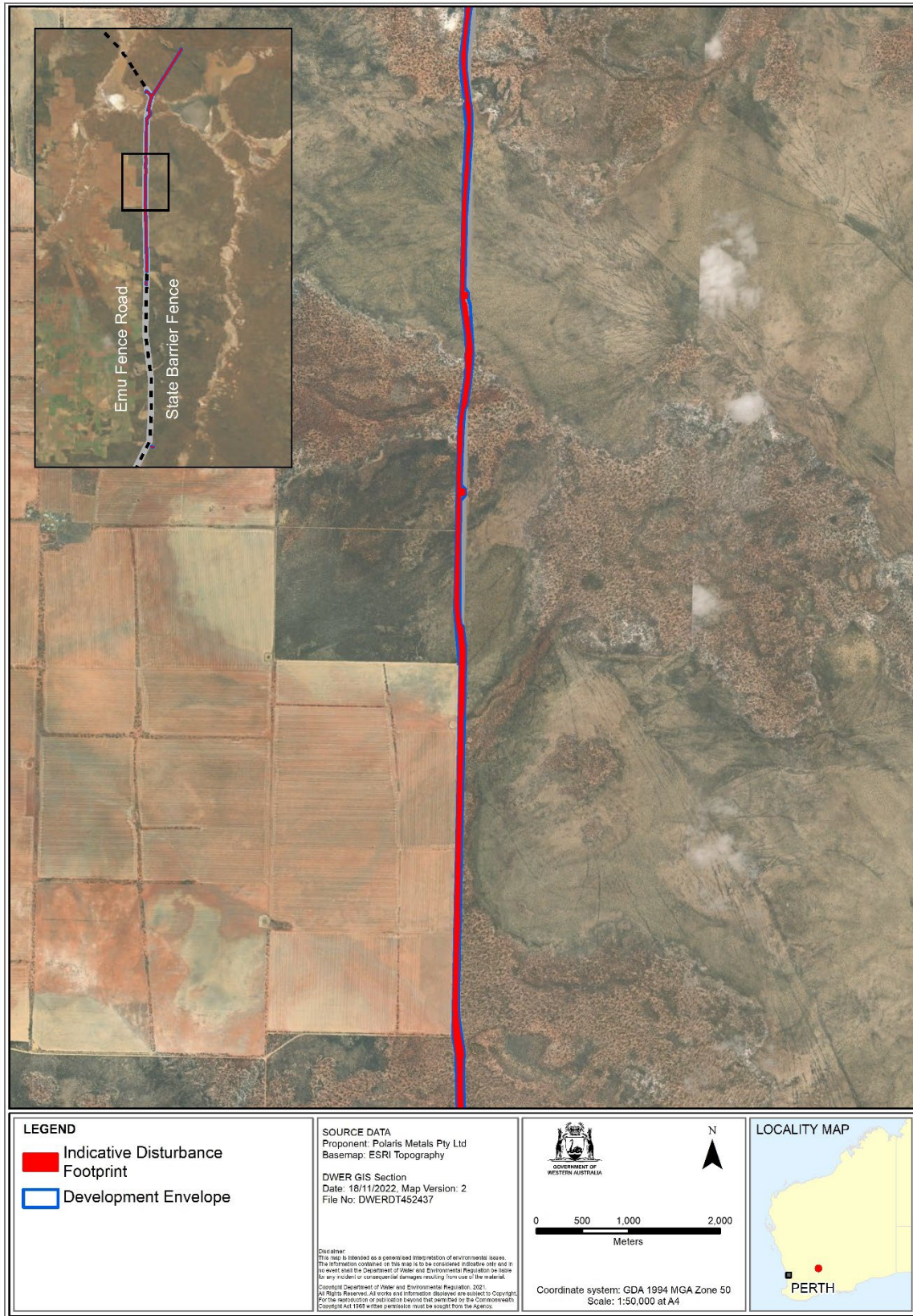


Figure 3: Development envelope and disturbance footprint – northern section



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Unique Record ID

Figure 4: Development envelope and disturbance footprint – central section

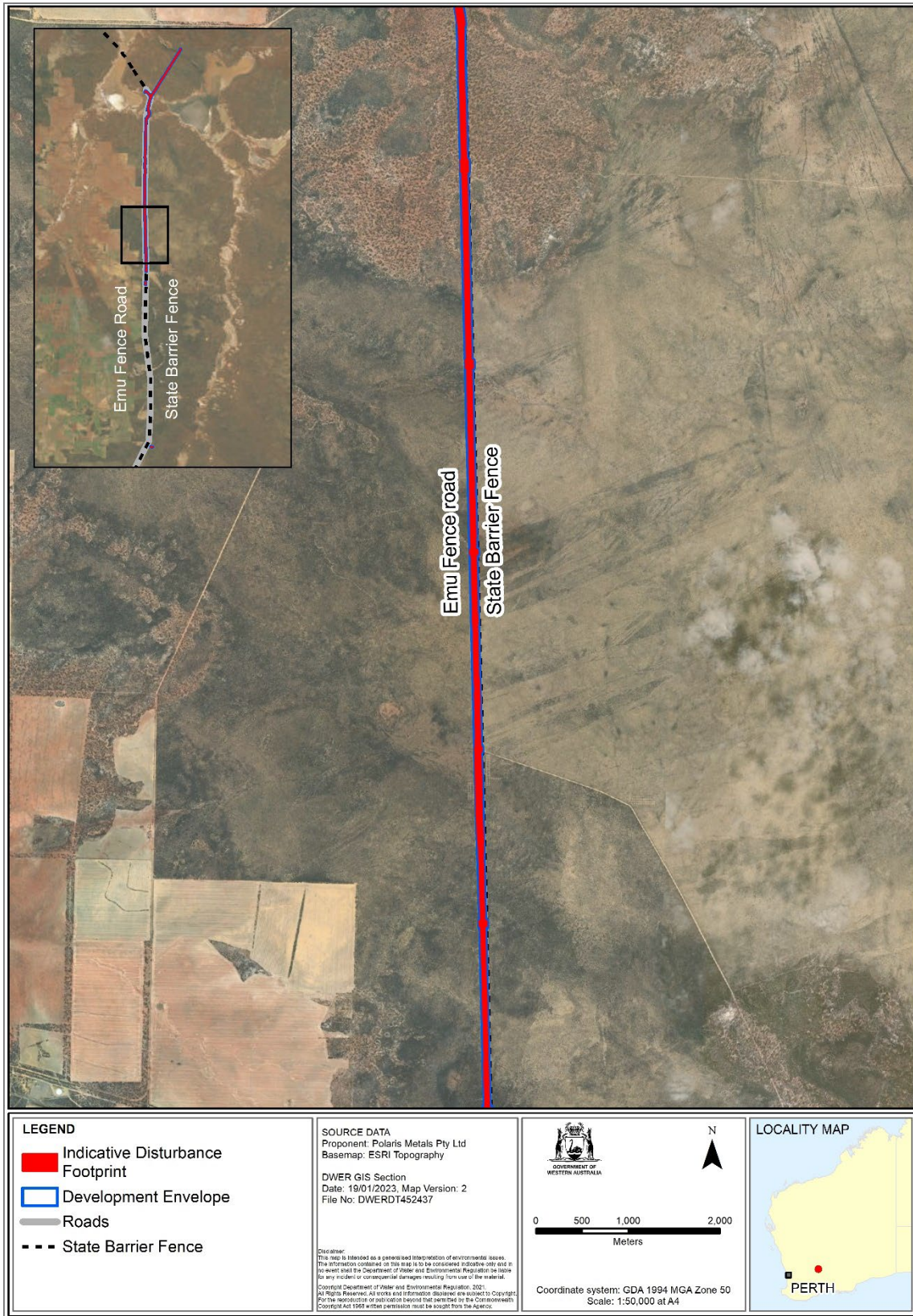


Figure 5: Development envelope and disturbance footprint – southern central section



Figure 6: Development envelope and disturbance footprint – southern section



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Unique Record ID

Figure 7: Development envelope and disturbance footprint – lower southern section

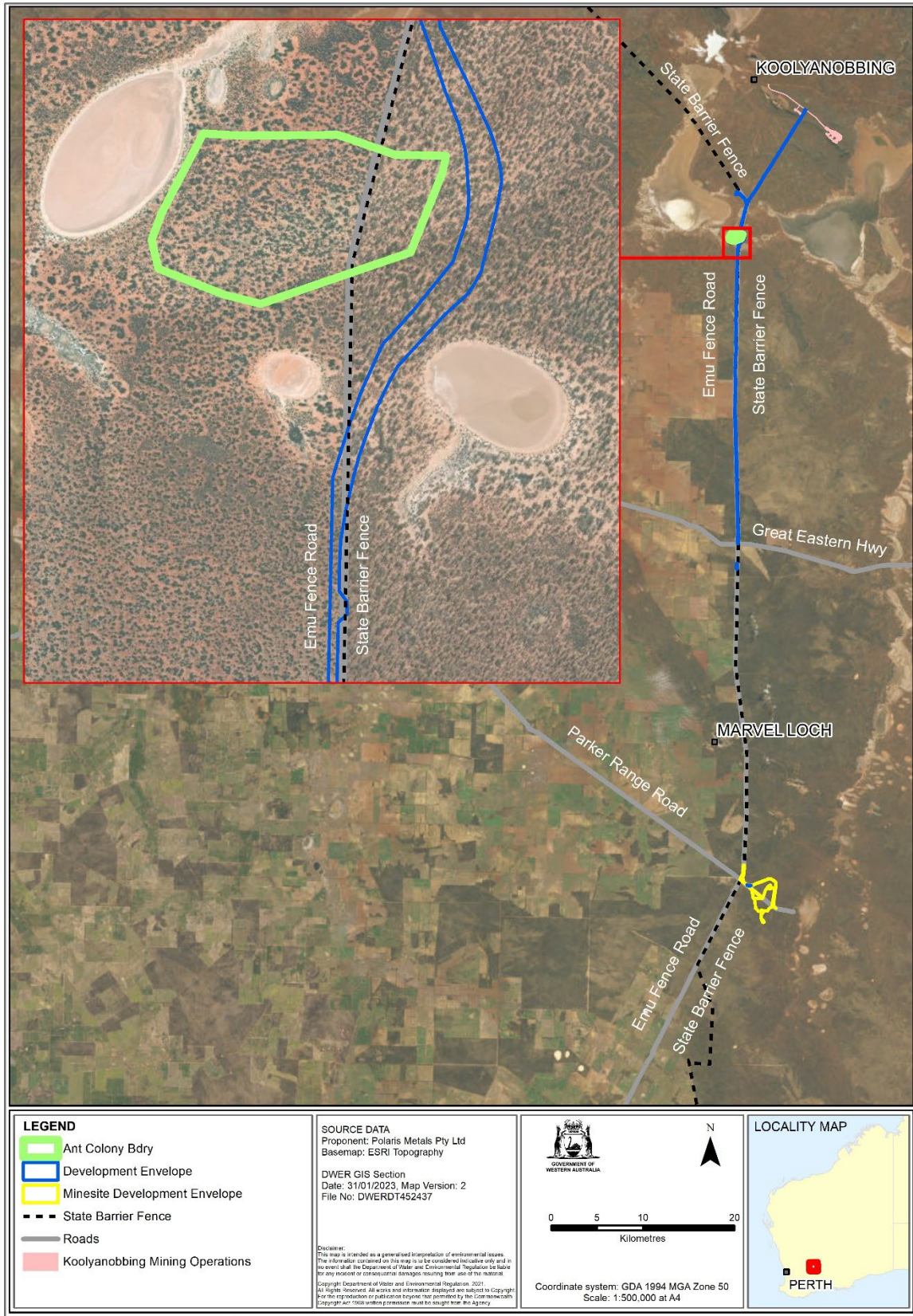


Figure 8: Location of the *Camponotus* sp. nr. *terebrans* host ant colony

2 Assessment of key environmental factors

This section includes the EPA's assessment of the key environmental factors. The EPA also evaluated the impacts of the proposal on other environmental factors and concluded these were not key factors for the assessment. This evaluation is included in Appendix D.

The EPA has assessed the proposal in the context of the approved proposal (MS 892, 1060 and 1166) while having regard to the combined and cumulative effect that the implementation of the approved proposal may have on the following environmental factors.

2.1 Terrestrial fauna

2.1.1 Environmental objective

The EPA environmental objective for terrestrial fauna is *to protect terrestrial fauna so that biological diversity and ecological integrity are maintained (EPA 2016a)*.

2.1.2 Investigations and surveys

The EPA advises the following investigations and surveys were used to inform the assessment of the potential impacts to terrestrial fauna:

- Mineral Resources Limited (2022) *Parker Range Iron Ore Project Haul Road – Significant Fauna Management Plan* (Appendix D of the Environmental Review Document (ERD))
- Phoenix Environmental Sciences Pty Ltd (2022a) *Baseline Flora, Vegetation and Fauna Surveys for the Parker Range Haul Road Project*. Report prepared by Scanlon J (Dr), Leach D (Dr), Findlay S and Crews K of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. Revision 3.0. January 2022
- Phoenix Environmental Sciences Pty Ltd (2022b) *Baseline Flora, Vegetation and Fauna Surveys for the Parker Range Haul Road Project – Northern Extension*. Report prepared by Strickland P, Lohr M (Dr), Leach D (Dr), Findlay S, Morald T, Loneragan B and Crews K of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. Revision 3.0. March 2022
- Phoenix Environmental Sciences Pty Ltd (2021) *Parker Range Haul Road Survey for Camponotus sp. nr. terebrans*. Memorandum Report prepared by Scanlon J (Dr) of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. June 2021
- Phoenix Environmental Sciences Pty Ltd (2022c) Targeted Survey for Arid Bronze Azure Butterfly (ABAB) for the Parker Range Iron Ore Project Haul Road. Memorandum. Report prepared by Eastwood R (Dr) and Jacks A of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. January 2022
- Phoenix Environmental Sciences Pty Ltd (2022d) Targeted Survey for ABAB for the Parker Range Iron Ore Project Haul Road. Memorandum. Report

prepared by Eastwood R (Dr) and Jacks A of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. November 2022.

The surveys have been conducted in accordance with the *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020c).

The EPA considers that it has sufficient information to assess impacts on terrestrial fauna.

2.1.3 Assessment context: existing environment

The proposal occurs on the western edge of the Great Western Woodlands and runs parallel to the State Barrier Fence. The Great Western Woodlands is a landscape of generally continuous woodlands and shrublands and represent an area of 16 million hectares in the southwest area of Australia.

Biological surveys identified 6 broad fauna habitat types in the survey area. Four fauna habitat types occur on level or undulating plains and are distinguished by upper storey vegetation of low shrubs, mid to tall shrubs, mallees and tree eucalypts. Most of the survey area is occupied by shrub vegetation with open to sparse mallees, with smaller areas of pure shrublands. Eucalyptus woodlands occur on some higher areas, hill slopes and around breakaways. The remaining 2 fauna habitat types are influenced by topography with one occurring at areas of high topography and the other at areas of low topography.

More than 80% of all recorded fauna habitat is comprised of 2 fauna habitat types being Mallee over shrubland and Open Woodland. The other 4 fauna habitat types comprise of Mid to Tall Shrubland, Bare Playa, Breakaway Platform and Low Open Shrubland and make up the remainder of the survey area.

The results of the biological surveys identify more than 80 native fauna species and 8 introduced fauna species. The recorded fauna species consisted of 7 fauna species of conservation significance (Table 2). Two vertebrate species were listed as 'Threatened' under the EPBC Act and the *Biodiversity Conservation Act 2016* (BC Act). The species with the highest potential for significant impacts and their habitat are outlined below.

There were 7 habitat types identified in the survey area as suitable for short range endemic fauna but none recorded are of listed conservation significance. The fauna habitats are not restricted geographically.

Malleefowl

Malleefowl in the survey area are likely to range over all habitats, favouring patches of shrubland for nest mound construction. The surveys identified a number of nest mounds within the survey area. Of the mounds recorded, one was identified as 'recently active' located in the southern end of the survey area with a separation distance greater than 1 km from the development envelope. A total of 7 'inactive' mounds were identified, with the nearest approximately 40 metres distance from the

development envelope. Surveys recorded tracks, foraging evidence and direct sightings of Malleefowl; however no active, inactive or dormant Malleefowl mounds were recorded within the development envelope.

Chuditch

Chuditch are likely to occur in fauna habitats of Open Woodland and Mallee over Shrubland, both within and beyond the survey area into the Great Western Woodlands. Chuditch were recorded in the survey area from camera trap images and scats, mostly in fauna habitats of Open Woodland and at breakaways, with few records in Mallee over Shrubland. Records of foraging evidence were identified within the development envelope. It is likely one to 2 Chuditch individuals could be present in or around the development envelope based on the survey records and the availability of suitable habitat. No active Chuditch dens were recorded within the development envelope.

Camponotus sp. nr. *terebrans* Host Ant Colony

A *Camponotus* sp. nr. *terebrans* host ant colony was identified within the survey area but outside of the development envelope (Figure 8). The colony is greater than 80 ha in size and is considered to be a larger colony. The ABAB was not recorded as occurring at the *Camponotus* sp. nr. *terebrans* host ant colony, with most recent targeted surveys in September and October 2022.

2.1.4 Consultation

The additional information required under section 40(2)(a) of the EP Act was advertised for 2 weeks public review. Matters raised during stakeholder consultation and the proponent's responses are provided in the response to submissions document (Mineral Resources Ltd 2022c). Public consultation on the proposal raised concerns about the loss of Malleefowl and Chuditch habitat and potential impacts to the ABAB.

2.1.5 Potential impacts from the proposal

The proposal has potential to impact on terrestrial fauna through the:

- clearing of 173 ha of native vegetation which coincides with 173 ha of potential breeding and foraging habitat for Malleefowl and 168 ha of potential breeding and foraging habitat for Chuditch
- indirect impacts to the *Camponotus* sp. nr. *terebrans* host ant colony, which provides potential habitat for the ABAB
- indirect impacts including from loss or fragmentation of fauna habitat, mortality and injury of fauna from construction and operations including vehicle strikes, displacement of fauna from dust, noise, changes to fire regimes, and changes in introduced fauna abundance and activity through additional access.

2.1.6 Avoidance measures

The proponent has designed the proposal to avoid impacts to terrestrial fauna habitat by:

- realigning the proposal to reduce the native vegetation clearing and development envelope (proposed during assessment through s. 43A)
- avoiding direct impacts to the *Camponotus* sp. nr. *terebrans* host ant colony and maintaining a 100 metre separation distance (based on a peer review of separation distances) from the disturbance footprint
- avoiding direct impacts to any active Malleefowl and Chuditch dens including implementing an avoidance buffer.

2.1.7 Minimisation measures (including regulation by other DMAs)

The proponent outlined the following minimisation measures to reduce both direct and indirect impacts to terrestrial fauna:

- establishing a 50 m separation distance from any active Malleefowl mounds or active Chuditch dens
- implementation of an internal clearing permit procedure
- dust suppression during construction
- bituminisation of the Haul Road to minimise dust emissions during operations
- vehicle hygiene system to minimise the risk of introduction or spread of the meat ant *Iridomyrmex purpureus*, a competitor of the *Camponotus* host ant
- restricting vehicle speed limits during construction and operations.

2.1.8 Assessment of impacts to environmental values

The EPA considered that the key environmental values likely to be impacted by the proposal are habitat for Malleefowl and Chuditch, and the *Camponotus* sp. nr. *terebrans* host ant colony which provides suitable habitat to the ABAB.

The EPA has assessed the proposal in the context of the approved proposal (MS 892, 1060 and 1166) while having regard to the combined and cumulative effect that the implementation of the approved proposal may have on terrestrial fauna environmental values.

In the assessment of the approved PRIOP, the EPA at the time noted that implementation of the PRIOP would result in the loss of 414 ha of Malleefowl breeding, feeding and dispersal habitat and the loss of 0.7% of potential breeding hollows and 0.4% of potential Western Rosella habitat, within the *Plant assemblages of the Parker Range System* Priority 3 PEC (Parker Range PEC). The EPA considered that the proposal was unlikely to cause regional impacts as a result of clearing to other conservation significant species including the Rainbow Bee-eater, Crested Bellbird, White-browed Babbler and the Treestem Trapdoor Spider as they have wide distributions and a loss of a small portion of habitat is not considered to be significant.

Since the assessment of the PRIOP, a change to proposal under s. 45C of the EP Act to reduce native vegetation clearing from 418.1 ha to 363 ha was approved on 26 June 2020. Hence, the impacts to Malleefowl habitat reduced to 358.8 ha. The

conservation status of the Western Rosella has also changed from Vulnerable to Priority 4 under the BC Act.

The proponent's ERD indicates that the significant amendment will require the clearing of 173 ha of native vegetation that coincides with the conservation significant species listed in Table 2. The species with habitat (foraging and breeding) subject to direct impacts are Malleefowl and Chuditch. No ABAB were found during surveys, but a host ant colony occurs in proximity to the development envelope.

The EPA has considered cumulative impacts with the PRIOP and notes the significant amendment will result in an increase of impacts to significant fauna habitat including Malleefowl, as well as with other mines in the Yilgarn, Goldfields and Great Western Woodlands. While the native vegetation clearing of 173 ha from the significant amendment is small within the largely intact Great Western Woodlands, the EPA recognises that this ecosystem may be under increasing pressure such as from pests, weeds, bushfires and other developments. See section 7 of this report for further discussion about the EPA's consideration of these matters.

Table 2: Conservation significant terrestrial fauna habitat within disturbance footprint

| Common name | Species | Priority or Listing under BC Act | Listing under EPBC Act |
|-----------------------------|-------------------------------------|--|------------------------|
| Malleefowl | <i>Leipoa ocellata</i> | Vulnerable | Vulnerable |
| Chuditch | <i>Dasyurus geoffroii</i> | Vulnerable | Vulnerable |
| Peregrine Falcon | <i>Falco peregrinus</i> | Other Specially Protected Species | N/A |
| Arid Bronze Azure Butterfly | <i>Ogyris subterrestris petrina</i> | Critically Endangered | Critically Endangered |
| Greater Stick-nest Rat | <i>Leporillus conditor</i> | Species of Special Conservation Interest | Vulnerable |
| Bandicoot | <i>Isodon sp.</i> | Undescribed | Undescribed |

Malleefowl

The significant amendment will require the clearing of 173 ha breeding and foraging habitat for Malleefowl in 'Pristine' to 'Degraded' condition. The original PRIOP contains approximately twice as much Malleefowl habitat as the significant amendment, amounting to a combined loss of 529.9 ha of Malleefowl habitat.

The habitat that would be impacted by the proposal does not include active mounds or recently used mounds. The habitat for the significant amendment is not considered to be distinct or different to the habitat occurring across the Great Western Woodlands and is subject to more fragmentation from the State Barrier Fence and edge effects from close proximity to the eastern Wheatbelt.

Indirect impacts to Malleefowl will need to be appropriately managed to avoid broader impacts (for example from fire) and local impacts (for example degradation

of habitat from indirect effects) including controlling vehicle speeds and fire management. The proponent has proposed construction speed limits of 40 km per hour (km/hr) and operational speed limits of 80 km/hr to minimise the risk of vehicle strike. The EPA notes that the construction speed limits are appropriate and practical to minimise the risk to Malleefowl. While there are no active Malleefowl mounds within the development envelope, the EPA considers it appropriate for speed limits to be reduced to 40 km/hr within 1 km of any active Malleefowl mound identified within the development envelope to minimise the risk to Malleefowl. Malleefowl are also known to not use burnt habitat for several years following a fire, so this represents a broader-scale risk than other indirect impacts.

The EPA has assessed the residual impact to Malleefowl to be significant due to the impact of the significant amendment and loss of foraging habitat for a listed species. This is consistent with the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014) and *EPBC Act Environmental Offsets Policy* definition of significant residual impact. The EPA considers that the offset proposed by the proponent, as described and assessed in section 4, is likely to adequately counterbalance this significant residual impact.

Chuditch

The significant amendment will require clearing of 168 ha of breeding and foraging habitat for Chuditch in 'Pristine' to 'Degraded' condition. Based on broad habitat types, the PRIOP would contain habitat that is suitable for Chuditch. The cumulative impact is relatively small in comparison to the habitat available in the Great Western Woodlands for Chuditch. Other proposals in the broader region (for example Earl Grey Lithium mine) have also been required to provide offsets for Chuditch, but the cumulative impacts even with the broader development proposals in the region are relatively small in comparison to the habitat available.

The proponent did not identify any impacts to denning or critical habitat for Chuditch. The habitat for the significant amendment is not considered to be distinct or different to the habitat occurring across the Great Western Woodlands and is subject to more fragmentation from the State Barrier Fence and edge effects from close proximity to the eastern Wheatbelt. Indirect impacts to Chuditch will need to be managed in a similar manner to Malleefowl.

The EPA has assessed the residual impact to Chuditch to be significant due to the impact of the significant amendment and loss of foraging habitat for a listed species. This is consistent with the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014) and *EPBC Act Environmental Offsets Policy* definition of significant residual impact. The EPA considers that the offset proposed by the proponent, as described and assessed in section 4, is likely to adequately counterbalance this significant residual impact.

The EPA advises that the significant residual impact is likely to be able to be regulated through reasonable conditions and counterbalanced by offsets so that Malleefowl and Chuditch are protected; and the environmental outcome is likely to be consistent with the EPA objective for terrestrial fauna. See section 4 of this report for the EPA's assessment of offset requirements.

Camponotus sp. nr. terebrans Host Ant Colony

The *Camponotus* sp. nr. *terebrans* host ant colony itself may be considered as potential habitat for the ABAB, even if it is not currently used by the ABAB. The proposal has been designed so that the host ant colony occurs outside of the development envelope. Given the redesign of the Haul Road to avoid directly impacting the colony, potential indirect impacts to the ABAB are not expected to be significant through pre-clearance surveys to confirm its absence and a 100 metre avoidance buffer.

Other conservation significant fauna

The majority of the survey area represents potential foraging habitat for the Peregrine Falcon with nesting most likely in rocky hills to the north and east of the survey area. The Peregrine Falcon was recorded by a single individual over-flying in the northern end of the survey area towards the southern Koolyanobbing Range, which includes a known nesting site. The nesting site would not be impacted by the proposal. The Peregrine Falcon has a broad regional distribution and potential foraging habitat, and the species is highly mobile.

A single old and abandoned nest of the Greater Stick-nest Rat was recorded within the survey area, however, no individuals were recorded. The Greater Stick-nest Rat is recognised as regionally extinct and the occurrence of individuals of this species within the survey area is considered to be unlikely.

Conical diggings resembling distinctive foraging signs of short-nosed bandicoots (*Isoodon* sp.) were recorded within the survey area. Individuals of the *Isoodon* genus have not previously been recorded within the survey area, which lies well outside of the recognised range of the common Quenda *Isoodon fusciventer*. Targeted searches and camera trappings were undertaken, however, no sightings of bandicoot individuals or scats were recorded that could be used to positively identify the species. While the taxonomy remains unresolved, the diggings were recorded at multiple locations spanning a length of greater than 25 km, indicating the local distribution of the species is unlikely to be restricted within the fauna habitats recorded within the survey area.

With the limitations to the proposal footprint, implementation of pre-clearance surveys and requirements to manage indirect impacts, the overall impacts to other conservation significant fauna are expected to be minimal. The EPA notes that implementation of the significant amendment would contribute to further habitat fragmentation on conservation significant fauna habitat. Cumulatively the impacts are not expected to alter the likely environmental outcomes of the significant amendment.

2.1.9 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the proposal in the context of the approved proposal (MS 892,1060 and 1166) on terrestrial fauna environmental values. In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can mitigate potential inconsistency

with the EPA factor objective. The EPA assessment findings are presented in Table 3.

The EPA has also considered the principles of the EP Act in assessing whether the residual impacts will be consistent with its environmental factor objectives (see Appendix C) and whether reasonable conditions can be imposed (see Appendix A).

Table 3: Summary of assessment for terrestrial fauna

| Residual impact | Assessment finding | Recommended conditions and DMA regulation |
|---|--|---|
| <p>1. Clearing of 173 ha of potential habitat for Malleefowl (173 ha) and Chuditch (168 ha).</p> <p>The combined effect of the approved PRIOP and the significant amendment will be up to 529.9 ha of Malleefowl habitat cleared.</p> | <p>The residual impact on 173 ha of potential foraging and breeding habitat for Malleefowl and Chuditch from the significant amendment is likely to be significant. This vegetation provides habitat for the 2 conservation significant fauna species.</p> <p>Due to the remaining quantity and quality of habitat types in the local area and region, the significant residual impact could be counterbalanced in accordance with the WA Environmental Offsets Guidelines and EPBC Act Environmental Offsets Policy.</p> <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to limitations on the proposal footprint through condition A1 'Limitations and extent of proposal', condition B1 'Terrestrial fauna' and condition B3 'Environmental offsets'.</p> | <p>Condition A1 'Limitations and extent of proposal'</p> <p>Limit on the extent of the proposal including the development envelope and clearing extent.</p> <p>Condition B1 'Terrestrial fauna'</p> <p>Requirement for pre-clearance surveys to be undertaken with a suitably qualified fauna spotter, maintenance of appropriate avoidance buffers for any active Malleefowl and active Chuditch dens identified, and management of indirect impacts including through restrictions to vehicle speeds.</p> <p>Condition B3 'Environmental offsets'</p> <p>Requirement to offset the significant residual impacts on Malleefowl and Chuditch habitat from land acquisition and on-ground management of a suitable offset site.</p> |

| Residual impact | Assessment finding | Recommended conditions and DMA regulation |
|--|---|---|
| <p>2. Potential indirect impact to the <i>Camponotus</i> sp. nr. <i>terebrans</i> ant colony, host to the ABAB.</p> | <p>The ABAB is not present at the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony located within proximity to the development envelope.</p> <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to limitations on the proposal footprint through condition A1 'Limitations and extent of proposal' and recommended condition B1 'Terrestrial fauna'.</p> | <p>Condition A1 'Limitations and extent of proposal'</p> <p>Limit on the extent of the proposal including the development envelope and clearing extent.</p> <p>Condition B1 'Terrestrial fauna'</p> <p>Requirement to maintain a 100 metre avoidance buffer from the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony and avoid direct and indirect impacts to the ABAB if found to be present.</p> |
| <p>3. Potential indirect impacts on terrestrial fauna from fragmentation of habitat, mortality and injury during construction and operations (e.g. vehicle strikes), altered fire regimes, dust, noise, light and vibration.</p> | <p>The environmental outcome is likely to be consistent with the EPA's objective, subject to limitations on the proposal footprint through condition A1 'Limitations and extent of proposal', condition B1 'Terrestrial fauna' and condition B2 'Flora and vegetation'.</p> | <p>Condition A1 'Limitations and extent of proposal'</p> <p>Limit on the extent of the proposal including the development envelope and clearing extent.</p> <p>Condition B1 'Terrestrial fauna'</p> <p>Requirement to meet the implement management actions to minimise the risk of physical injury or mortality, behavioural changes, health impacts and physical injury.</p> <p>Condition B2 'Flora and vegetation'</p> <p>Requirement for the Haul Road to be bituminised to minimise indirect impacts from dust emissions.</p> |

2.2 Flora and vegetation

2.2.1 Environmental objective

The EPA environmental objective for flora and vegetation is *to protect flora and vegetation so that biological diversity and ecological integrity are maintained* (EPA 2016b).

2.2.2 Investigations and surveys

The EPA advises the following investigations and surveys were used to inform the assessment of the potential impacts to flora and vegetation:

- Phoenix Environmental Sciences Pty Ltd (2022a) *Baseline Flora, Vegetation and Fauna Surveys for the Parker Range Haul Road Project*. Report prepared by Scanlon J (Dr), Leach D (Dr), Findlay S and Crews K of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. Revision 3.0. January 2022.
- Phoenix Environmental Sciences Pty Ltd (2022b) *Baseline Flora, Vegetation and Fauna Surveys for the Parker Range Haul Road Project – Northern Extension*. Report prepared by Strickland P, Lohr M (Dr), Leach D (Dr), Findlay S, Morald T, Loneragan B and Crews K of Phoenix Environmental Sciences Pty Ltd for Mineral Resources Ltd. Revision 3.0. March 2022.
- Mineral Resources Limited (2022) *Parker Range Iron Ore Project Haul Road – Significant Flora Construction Management Plan* (Appendix C of the ERD).

The surveys were consistent with the *Technical Guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016d).

2.2.3 Assessment context – existing environment

The proposal occurs entirely within the Southern Cross Sub-region of the Coolgardie Bioregion, based on the Interim Biogeographic Regionalisation of Australia classification. The Southern Cross Sub-region has subdued relief, comprising gently undulating uplands dissected by broad valleys with bands of low greenstone hills, and occurs on the Southern Cross Terrains of the Yilgarn Craton where granite strata are interrupted by parallel intrusions of Archaean greenstone.

Mapping of the pre-European extent of vegetation associations identified 9 vegetation associations coinciding with the development envelope. All vegetation associations occur within the Coolgardie Bioregion, with each vegetation association having greater than 60% of their mapped pre-European extent remaining.

The biological field surveys mapped an area totalling approximately 11,280 ha, comprising 10,370 ha (92%) of native vegetation and 910 ha (8%) of cleared/disturbed land. Within the survey area, a total of 38 vegetation types were mapped, of which 27 vegetation types coincide with the development envelope as described in Table 13 of the ERD. Native vegetation condition within the survey area comprising the development envelope ranges from 'Pristine' to 'Degraded' condition, with majority of the mapped vegetation (greater than 80%) in a 'Pristine' condition.

No occurrences of Threatened Ecological Communities or threatened flora taxa protected under the EBPC Act and BC Act were recorded in the surveys. Two Priority Ecological Communities (PECs) were mapped within the survey areas and coincides with the development envelope of the significant amendment.

The surveys identified 25 priority native flora as classified by the Department of Biodiversity, Conservation and Attractions (DBCA) and 3 undescribed species, as described in Table 14 of the ERD. Of these, 9 Priority flora and 2 undescribed species occur within the development envelope.

A total of 14 introduced flora species were also identified during surveys and is described in Table 15 of the ERD. None of the recorded introduced flora species are listed as Declared Plant Pest under the *Biosecurity and Agriculture Management Act 2007* (WA) or listed as a Weed of National Significance.

2.2.4 Consultation

The additional information required under section 40(2)(a) of the EP Act was advertised for 2 weeks public review. Matters raised during stakeholder consultation and the proponent's responses are provided in the response to submissions document (Mineral Resources Ltd 2022c). Specific issues raised related to direct and indirect impacts to flora and vegetation, and post-construction land use and rehabilitation.

2.2.5 Potential impacts from the proposal

The proposal has the potential to significantly impact on flora and vegetation from:

- direct impacts from clearing up to 173 ha native vegetation including to 2 PECs, 9 priority flora species and 2 undescribed flora species.
- indirect impacts from construction and operation activities including dust deposition, water used for dust suppression, altered surface drainage flow patterns, alteration of fire regimes, introduction and/or spread of introduced flora and spillage of hydrocarbons or chemicals.

The issues raised during the public consultation about potential direct and indirect impacts to flora and vegetation have been considered in this assessment.

2.2.6 Avoidance measures

The proponent has designed the proposal to avoid impacts to flora and vegetation by:

- utilising existing public roads for part of the ore haulage
- amending the significant amendment under section 43A to reduce the development envelope from 539 ha to 339 ha and the native vegetation clearing from 298 ha to 173 ha.

The issues raised during public consultation about the additional clearing required has been considered by the proponent through the above avoidance measures.

2.2.7 Minimisation measures (including regulation by other DMAs)

The proponent has proposed the following measures to minimise impacts to flora and vegetation:

- internal clearing permit system to minimise clearing and ensure clearing occurs only within approved areas
- dust suppression during construction to minimise air emissions of dust
- vehicle hygiene inspections during construction to identify and minimise the risk of introduction and/or spread of introduced flora
- surface water management infrastructure to minimise impacts to surface water flow and sediment movement
- bituminisation of the Haul Road to minimise dust emissions during operations.

2.2.8 Rehabilitation measures

The proponent has not yet confirmed the post-mining land use for the Haul Road and this has been raised during public consultation. Further discussions between the proponent and the Shire of Yilgarn, Department of Mines, Industry Regulation and Safety (DMIRS), DPIRD and Main Roads WA are expected to occur to determine whether there is an ongoing beneficial use for the retention of the Haul Road following commencement of mining operations. The EPA encourages future utilisation of the Haul Road to avoid additional impacts from duplication of infrastructure.

Should the road not be retained for public use or other use, the proponent will be decommissioning and rehabilitating the proposal area. The rehabilitation works will seek to restore the native vegetation values and actions to be undertaken will be detailed in the updated mine closure plan incorporating the Haul Road to be submitted under the *Mining Act 1978* (Mining Act). Mine closure plans are required to be submitted to the DMIRS, which will assess the post-mining land use, stakeholder engagement and closure outcomes in accordance with the Mining Act and consistent with the *Statutory Guidelines for Mine Closure Plans* (2020). Regulation of mine closure plans under the Mining Act is likely to meet the EPA's objectives.

2.2.9 Assessment of impacts to environmental values

The EPA considered that the key environmental values for flora and vegetation likely to be impacted by the proposal are locally significant vegetation communities and Priority flora species.

Priority Ecological Communities (PEC)

There are 2 PECs which might be impacted as a result of the significant amendment. The combined impact is considered in the context of the significant amendment and the approved proposal (MS 892, 1060 and 1166) in Table 4.

Table 4: Priority Ecological Communities impacted by significant amendment

| Priority Ecological Community | Priority | Significant amendment (Haul road) | Combined impact (Approved mine and haul road) | Percentage regional impact (Approved mine and haul road) |
|--|------------|-----------------------------------|---|--|
| <i>Plant assemblages of the Parker Range System</i> | Priority 3 | 1 ha | 360 ha | < 1% |
| <i>Koolyanobbing vegetation complexes – banded ironstone formation</i> | Priority 1 | 5 ha | 0 ha | < 1% |

Plant assemblages of the Parker Range System (Priority 3)

The Parker Range PEC was mapped within the southern end of the survey area and extends 40,700 ha, of which 359 ha coincides with the PRIOP and 1 ha (less than 0.1%) coincides with the significant amendment. The cumulative impact of the PRIOP and the significant amendment has a regional impact of less than one%. The community is unlikely to change its conservation status due to the significant amendment.

Koolyanobbing vegetation complexes – banded ironstone formation (Priority 1)

The *Koolyanobbing vegetation complexes – banded ironstone formation* Priority 1 PEC (Koolyanobbing Ranges PEC) has a mapped area extending 6,700 ha and of this, approximately 5 ha (less than 0.1%) coincides with the significant amendment. While the Koolyanobbing Ranges PEC does not coincide with the approved PRIOP, approximately 100 ha (2%) is impacted by the Koolyanobbing Range mine operations which cumulatively with the significant amendment has a regional impact of 2%. The community is unlikely to change its conservation status due to the significant amendment.

Priority Flora

Priority flora species might be impacted as a result of the significant amendment. The combined impact is considered in the context of the significant amendment and the approved proposal (MS 892, 1060 and 1166), with the percentage loss being to known populations. The direct impacts on priority flora species from the significant amendment in a regional context are shown in Table 5. Only those species which have a higher cumulative impact are considered further below. No species conservation status is likely to change as a result of the significant amendment.

Table 5: Priority flora species impacted by significant amendment

| Species | Priority | Significant amendment (Haul road) | Combined impact (Approved mine and haul road) | Percentage regional impact (Approved mine and haul road) |
|---|-------------|-----------------------------------|---|--|
| <i>Lepidosperma</i> sp. Mt Caudan | Priority 1 | 64 individuals | 3,694 individuals | <5% |
| <i>Westringia acifolia</i> | Priority 1 | < 1 ha mapped area | Approximately 8 ha mapped area | <5% |
| <i>Acacia asepala</i> | Priority 2 | 26 individuals | 26 individuals | 3.3% |
| <i>Lissanthe scabra</i> | Priority 2 | 82 individuals | 82 individuals | 7% |
| <i>Acacia desertorum</i> var. <i>nudipes</i> | Priority 3 | 16 individuals | 17 individuals | <1% |
| <i>Baeckea grandibracteata</i> ssp. Parker Range (reclassified as <i>Balaustion grandibracteatum</i> ssp. <i>grandibracteatum</i>) | Priority 3 | 2 individuals | 24 individuals | 7% |
| <i>Bossiaea</i> sp. Jackson Range | Priority 3 | 15 individuals | 15 individuals | <1% |
| <i>Phebalium drummondii</i> | Priority 3 | 1 individual | 1 individual | <1% |
| <i>Verticordia stenopetala</i> | Priority 3 | 5 individuals | 6 individuals | <0.1% |
| <i>Lepidosperma</i> aff. <i>costale</i> | Undescribed | 427 individuals | 427 individuals | 7% |
| <i>Streptoglossa</i> aff. <i>cylindriceps</i> | Undescribed | 250 individuals | 250 individuals | 3% |

***Lepidosperma* sp. Mt Caudan (Priority 1)**

The significant amendment will require the additional removal of 64 individuals of *Lepidosperma* sp. Mt Caudan. The original proposal authorised the clearing of 3,630 individuals, which results in a total combined impact of 3,694 individuals. The population data obtained during the assessment indicates a regional population of >75,000 individuals (Mineral Resources Ltd 2022c). The combined impact is expected to be less than 5% of the regional population. The additional clearing of individuals from the significant amendment is considered unlikely to be significant within the context of its range and regional population.

Westringia acifolia (Priority 1)

The original proposal would impact on 541 individuals of *Westringia acifolia*. The proponent outlined in their ERD that they were not able to quantify all the *Westringia acifolia* identified during surveys due the large area of occupancy identified, hence the mapped area was used to predict the relative impact. Based on the spatial distribution, the footprint of the significant amendment will coincide with < 1 ha of *Westringia acifolia*. The total habitat identified for *Westringia acifolia* was determined to be 160 ha. In the Response to Submissions, and on request to provide an estimate of cumulative impacts, the proponent has determined that the likely cumulative impact on *Westringia acifolia* habitat would be less than 5% (Mineral Resources Ltd 2022c). It is likely that the actual cumulative impacts are less based on the known habitat available (for example 160 ha) and likely level of impact (for example 8 ha). The additional clearing of individuals from the significant amendment is considered unlikely to be significant within the context of its regional population.

Acacia asepala (Priority 2)

The significant amendment will impact on 26 individuals of *Acacia asepala*, with a regional impact of 3.3%. This species is not impacted from the original proposal. This species is known from 17 records in WA and is described as abundant for a few records. The impacts on the species from the significant amendment based on the known records and abundance, is not likely to be significant.

Lissanthe scabra (Priority 2)

The significant amendment will directly impact on 82 individuals of *Lissanthe scabra*, with a regional impact of 7%. This species is not impacted from the original proposal. This species is known from 12 records in WA and over a range of at least 200 km. The species is relatively abundant in locations to the north of the proposal. The impacts on the species from the significant amendment based on the known range and abundance, is not likely to be significant.

Baeckea grandibracteata ssp. Parker Range (reclassified as *Balaustion grandibracteatum* ssp. *grandibracteatum*) (Priority 3)

The proponent's ERD indicates that the significant amendment would directly impact 2 individuals of *Baeckea grandibracteata* ssp. Parker Range. The original proposal has a direct impact on 22 individuals of *Baeckea grandibracteata* ssp. Parker Range.

Following the finalisation of the proponent's ERD, *Baeckea grandibracteata* ssp. Parker Range has been taxonomically reassigned as *Balaustion grandibracteatum* ssp. *grandibracteatum*. This taxon has a recognised broader distribution of approximately 80 km linear distance with greater than 20 location records. This has resulted in a revised regional population of 340 individuals and a reduced combined impact of 7%. Given the updated range, regional population and reduction in regional impact, the significant amendment is not likely to have a significant impact on the species.

Other priority flora species

The proponent's ERD indicates that the significant amendment would directly impact on *Acacia desertorum* var. *nudipes* (Priority 3), *Bossiaea* sp. *Jackson Range* (Priority 3), *Phebalium drummondii* (Priority 3) and *Verticordia stenopetala* (Priority 3). Most of the impacts on these priority flora species are from the significant amendment and

have a regional impact of less than 1%. These species are known from several records in WA and the impacts are not likely to be significant.

Undescribed taxa

Two undescribed flora species of potential conservation significance, *Lepidosperma* aff. *costale* and *Streptoglossa* aff. *cylindriceps* were recorded from the surveys undertaken by the proponent. The taxa occur both within and outside of the development envelope.

The proponent's ERD indicates that 427 individuals of *Lepidosperma* aff. *costale* would be impacted from the significant amendment, with a regional impact of 7%. The proponent has reviewed other well-studied taxa of the *Lepidosperma costale* complex, which indicates the likelihood of a greater distribution and population size, and the limited records of *Lepidosperma* aff. *costale* are likely from the restricted area of survey rather than a restriction in the population and distribution of this taxon. As a result, the impacts are not likely to be significant.

The proponent's ERD indicates that 250 individuals of *Streptoglossa* aff. *cylindriceps* would be directly impacted from the significant amendment, with a regional impact of 3%. This flora species represents a range extension of *Streptoglossa cylindriceps*, which has a recorded distribution of over 1,100 km and 80 record locations. Due to the likely range and number of recorded locations, the impacts are not likely to be significant.

Impacts to flora and vegetation

The significant amendment and the PRIOP combined will result in clearing of up to 536 ha of native vegetation. While the native vegetation clearing of 173 ha from the significant amendment is small within the largely intact Great Western Woodlands, the EPA recognises that this ecosystem may be under increasing pressure such as from pests, weeds, bushfires and other developments.

The EPA received a range of advice on flora and vegetation during the assessment. In particular, the EPA noted advice from the DBCA that subject to full implementation of proposed impact avoidance management measures, the proponent appears likely to be able to effectively manage the impacts on identified conservation significant values.

The EPA has recommended specific percentage limits for the removal of the Parker Range PEC and Koolyanobbing Ranges PEC, Priority 1 flora species *Lepidosperma* sp. Mt Caudan and *Westringia acifolia*, and the 2 undescribed flora species *Lepidosperma* aff. *costale* and *Streptoglossa* aff. *cylindriceps* which would be directly impacted (condition B2).

While the flora and vegetation do not represent a significant residual impact from direct or cumulative impacts if considered against the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014), the EPA advises that the residual impacts to flora and vegetation should be subject to implementation conditions (recommended condition B2) to ensure protection of the priority flora and the undescribed flora taxa and ensure the environmental outcome is consistent with the EPA objective for flora and vegetation.

2.2.10 Summary of key factor assessment and recommended regulation

The EPA has considered the likely residual impacts of the proposal on flora and vegetation environmental values in the context of the approved proposal (MS 892, 1060 and 1166). In doing so, the EPA has considered whether reasonable conditions could be imposed, or other decision-making processes can ensure consistency with the EPA factor objective. The EPA assessment findings are presented in Table 6.

The EPA has also considered the principles of the EP Act (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective and whether reasonable conditions can be imposed (see Appendix A).

Table 6: Summary of assessment for flora and vegetation

| No. | Residual impact or risk to environmental value | Assessment finding | Recommended conditions and DMA regulation |
|-----|--|---|--|
| 1. | <p>Clearing of 173 ha of native vegetation in 'Pristine' to 'Degraded' condition.</p> <p>The combined effect of the approved PRIOP (363 ha) and the significant amendment will be up to 536 ha of native vegetation cleared.</p> | <p>The proposal will directly impact on the Parker Range PEC and the Koolyanobbing Ranges PEC.</p> <p>There are 9 flora species listed as Priority under the BC Act and 2 undescribed flora species that will also be impacted from the proposal.</p> <p>The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to limitations on the clearing extent through condition A1 and limitations to direct impacts on Priority 1 and undescribed flora species.</p> | <p>Condition A1 (Limitations and extent of proposal)</p> <p>Limit on the extent of the proposal including the development envelope and clearing extent.</p> <p>Condition B2 (Flora and Vegetation)</p> <p>Flora and vegetation limits on:</p> <ul style="list-style-type: none"> • Parker Range PEC and Koolyanobbing Ranges PEC • Priority 1 flora species <i>Lepidosperma</i> sp. Mt Caudan and <i>Westringia acifolia</i> • Undescribed flora species <i>Lepidosperma</i> aff. <i>costale</i> and <i>Streptoglossa</i> aff. <i>cylindriceps</i>. <p>DMA legislation</p> <p>Should an ongoing, post-mining land use not be identified,</p> |

| No. | Residual impact or risk to environmental value | Assessment finding | Recommended conditions and DMA regulation |
|-----|---|---|---|
| | | | decommissioning and rehabilitation could be adequately regulated under the <i>Mining Act 1978</i> . |
| 2. | Indirect impacts on flora and vegetation from fragmentation of native vegetation, dust deposition and suppression, altered surface drainage flow patterns, alteration of fire regimes, spillage of hydrocarbons/chemicals and introduced flora (weeds). | The environmental outcome is likely to be consistent with the EPA's objective for this factor, subject to limitations on the proposal footprint through condition A1 and the development and implementation of recommended condition B2 requiring the management of dust, weeds and surface water management. | <p>Condition A1 (Limitations and extent of proposal)</p> <p>Limit on the extent of the proposal including the development envelope and clearing extent.</p> <p>Condition B2 (Flora and Vegetation)</p> <p>Requirement for bituminisation of the Haul Road to minimise dust and ensuring that there are no indirect impacts from weeds and changes to surface water regimes.</p> |

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors and environmental values individually in the key factor assessments above, given the link between terrestrial fauna and flora and vegetation, the EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole environment.

Figure 9 illustrates the connections and interactions between the key environmental factors described in Appendix D, to inform the EPA's holistic assessment.

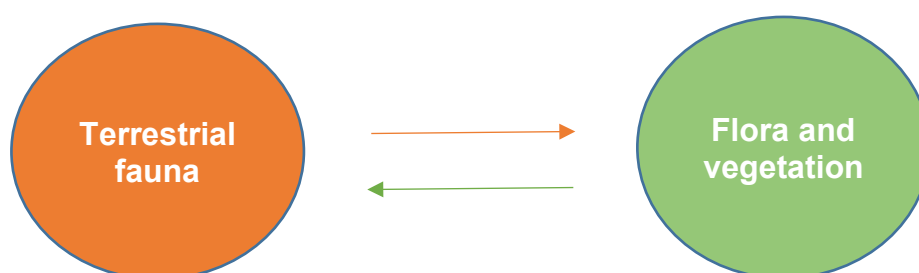


Figure 9: Intrinsic interactions between environmental factors

Terrestrial fauna and flora and vegetation

The EPA's assessment has considered the connections and interactions between terrestrial fauna and flora and vegetation, and the overall impact of both the approved mine and proposed Haul Road on the environment.

Terrestrial fauna has a key reliance on flora and vegetation for habitat. The 173 ha of native vegetation proposed to be cleared provides foraging and breeding habitat for BC Act and EPBC Act listed fauna species including Malleefowl and Chuditch. The EPA notes that the alignment of the Haul Road is designed to be adjacent to existing linear infrastructure including public roads and the State Barrier Fence to minimise direct impacts and potential indirect impacts from fragmentation of native vegetation and fauna habitat.

While the significant amendment is located on the eastern edge of the Great Western Woodlands boundary, the EPA recognises that the Great Western Woodlands are under increasing pressure such as from pests, weeds, and bushfires. The EPA is also aware of the potential for industry, including the existing Earl Grey Lithium Project and other activities located within the Great Western Woodlands to influence the complex interactions between environmental factors. These interactions have the potential to influence the environment in a holistic and non-linear nature, affecting all environmental values.

The EPA has considered the proposal in the context of its cumulative impact and notes that while impacts are small in proportion to the mapped fauna habitat and wider Great Western Woodlands, the EPA recognises the Great Western Woodlands

as an area of important biodiversity. As such, the EPA recommends specific limits on impacts and offsets to counterbalance impacts and ensure consistency with the EPA environmental factor objectives.

The EPA considers that the proposed mitigation and management measures and recommended conditions for impacts to terrestrial fauna and flora and vegetation, including the provision of offsets to counterbalance impacts to terrestrial fauna, are likely to be consistent with the EPA environmental factor objectives.

Summary of holistic assessment

When the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the EPA formed the view that the impacts from the proposal would not alter the EPA's views about consistency with the EPA's factor objectives as assessed in section 2.

4 Offsets

Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual impacts of a proposal.

Consistent with the *WA Environmental Offsets Guidelines* (Government of Western Australia 2014), the EPA may consider the application of environmental offsets to a proposal where it determines that the residual impacts of a proposal are significant, after avoidance, minimisation and rehabilitation have been pursued.

In the case of this proposal, likely (and potential) significant impacts are clearing of up to 173 ha of native vegetation, consisting of:

- 173 ha of fauna habitat for Malleefowl (*Leipoa ocellata*)
- 168 ha of fauna habitat for Chuditch (*Dasyurus geofroii*).

Environmental offsets are not appropriate in all cases. In this case the EPA considers offsets are appropriate for terrestrial fauna values given the:

- proponent's application of the mitigation hierarchy to reduce potential impacts (principle 1 of the *WA Environmental Offsets Policy*)
- magnitude of the likely significant residual impacts on environmental biodiversity values including threatened fauna habitat (principle 2 of the *WA Environmental Offsets Policy*)
- residual impacts can be counterbalanced by the provision of offsets that are expected to have a long-term strategic environmental benefit (principle 6 of the *WA Environmental Offsets Policy*).

The Fauna Offset Strategy was advertised during the public review period for the proposal and has since been updated to address issues raised during the public review period as part of the Response to Submissions (Mineral Resources Ltd 2022c).

The Fauna Offset Strategy includes the acquisition of a suitable offset site containing Malleefowl and Chuditch habitat and protecting, maintaining and improving the offset site to support Malleefowl and Chuditch.

The proponent has identified and acquired a freehold land parcel Lot 1416 on Plan 209061 in the Shire of Yilgarn and the Shire of Westonia as a suitable offset site to mitigate the significant residual impacts from impacting on significant fauna habitat. The offset site comprises 870 ha of native vegetation and is located between 4 existing Conservation Reserves. The offset site and adjacent Conservation Reserves would collectively result in approximately 4,389 ha of connected fauna habitat.

Biological field surveys at the offset site have confirmed suitable habitat for both Malleefowl and Chuditch. In surveys, a single old Malleefowl nest mound was found south of the offset site and recently active Malleefowl nest mound within the offset site. Malleefowl tracks were recorded and in most recent surveys in November 2022,

an individual was recorded by camera trap in the adjacent Conservation Reserve. Chuditch scats and tracks were recorded north of the offset site, with potential refuge and denning sites identified within the offset site. Tracks recorded in the recent November 2022 survey estimated the tracks were less than 12 hours old. The surveys additionally recorded signs of predation in the adjacent Conservation Reserves from scats, tracks and observation of a single individual fox.

The majority of the proposed offset site has a 'Pristine' vegetation condition, with areas of burnt shrubland and presence of introduced fauna. Due to the vegetation condition, the management actions proposed to be implemented within the site are to enhance and protect habitat for Malleefowl and Chuditch and focuses on controlling the threatening processes including restricting unauthorised access, prevention of introduced flora (weeds), grazing by agricultural fauna, fire management and control of introduced fauna (predation).

The EPA notes advice from the DBCA that the proposed offset site is conditionally suitable for reservation and management under the *Conservation and Land Management Act 1984*, subject to processes under the *Land Administration Act 1997*. These processes require the support of DMIRS for a change in land tenure from private land to conservation reserve. DMIRS advised that the portion of Lot 1416 considered for offset purposes affects granted exploration licence E 77/2443 and E 77/2766, however in consideration of the lower prospectivity of this lot, DMIRS is supportive of the transfer of freehold ownership to DBCA.

The EPA has considered whether the proposed offsets are likely to counterbalance significant residual impacts. The EPA's view is that the protection and conservation of significant fauna habitat through the provision and implementation of offsets is likely to be consistent with the EPA's objectives for terrestrial fauna.

The EPA recommends condition B3 'Environmental offsets' requiring the proponent to undertake offset measures to counterbalance the significant residual impact of direct and indirect impacts to terrestrial fauna habitat be imposed. Condition B3 sets out the requirements to develop and implement a Fauna Offset Management Plan including management measures, completion criteria and contingency to demonstrate that the objective to counterbalance the significant residual impacts will be met.

5 Matters of national environmental significance

The Commonwealth Minister for the Environment has determined that the proposal is a controlled action under the EPBC Act as it is likely to have a significant impact on one or more matters of national environmental significance (MNES) (EPBC 2021/8955). It was determined that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and communities (s. 18 and s. 18A).

The EPA has assessed the controlled action on behalf of the Commonwealth as an accredited assessment under the EPBC Act.

This assessment report is provided to the Commonwealth Minister for Environment who will decide whether or not to approve the proposal under the EPBC Act. This is separate from any Western Australian approval that may be required.

Commonwealth policy and guidance

The EPA had regard to the following relevant Commonwealth guidelines, policies and plans during its assessment:

- *Commonwealth EPBC Act Environmental Offsets Policy* (Commonwealth of Australia 2012)
- Chuditch (*Dasyurus geoffroii*) National Recovery Plan: Wildlife Management Program No.54, (Benshemesh 2012)
- National Recovery Plan for Malleefowl (Department for Environment and Heritage 2007)
- *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities 2012)

The EPA considers that the approach taken by the proponent generally aligns with the requirements of the recovery plans and policies.

EPA assessment

Impacts to the environment relating to MNES are also covered under the key environmental factors terrestrial fauna (section 2.1 of this report) and flora and vegetation (section 2.2 of this report).

Listed threatened species and communities (sections 18 and 18A)

Malleefowl (*Leipoa ocellata*)

Potential impacts to Malleefowl have been considered in the context of the National Recovery Plan for Malleefowl (Department for Environment and Heritage 2007). Malleefowl will be impacted through the direct clearing of 173 ha of native vegetation which includes potential breeding and foraging habitat for the species. Malleefowl

may also be indirectly impacted through fragmentation of native vegetation, injury from construction and operations, displacement of fauna from dust, noise, changes to fire regimes, and changes in introduced fauna abundance and activity from additional access.

Biological surveys recorded tracks, foraging evidence and direct sightings of Malleefowl; however no active, inactive or dormant Malleefowl mounds were recorded within the development envelope.

The EPA has assessed the direct and indirect impacts of the proposal to this species and considers that there will be a significant residual impact from the clearing of potential breeding and foraging habitat of Malleefowl. The EPA has recommended condition B1 to manage direct and indirect impacts to terrestrial fauna and an offset in condition B3 (see section 4) which takes into account the significant residual impact to Malleefowl habitat.

Chuditch (*Dasyurus geoffroii*)

Potential impacts to Chuditch have been considered in the context of the Chuditch National Recovery Plan (Benshemesh 2012). Chuditch will be impacted through the direct clearing of 168 ha of native vegetation which includes potential breeding and foraging habitat for the species. Chuditch may be indirectly impacted through fragmentation of native vegetation, injury from construction and operation, displacement of fauna from dust, noise, changes to fire regimes, and changes in introduced fauna abundance and activity from additional access.

The EPA has assessed the direct and indirect impacts of the proposal to this species and considers that there will be a significant residual impact from the clearing of potential breeding and foraging habitat of Chuditch. The EPA has recommended condition B1 to manage direct and indirect impacts to terrestrial fauna an offset in condition B3 (see section 4) which takes into account the significant residual impact to Chuditch habitat.

Summary

The EPA recommends the following environmental conditions to minimise impacts on MNES:

- limit the authorised extent of the clearing of vegetation to 173 ha in condition A1 (Limitations and Extent of Proposal)
- condition B1 (Terrestrial Fauna) which requires actions to mitigate direct and indirect impacts to Malleefowl and Chuditch including avoiding direct disturbance and maintaining a separation distance to active mounds and active dens within the development envelope
- condition B3 (Environmental Offsets) which requires implementation of an offset to counterbalance the significant residual impacts to MNES including Malleefowl and Chuditch through the clearing of 173 ha of potential breeding and foraging habitat.

The EPA's view is that the impacts from the proposal on the above-listed MNES are therefore not expected to result in an unacceptable or unsustainable impact on listed threatened species and communities.

6 Recommendations

The EPA has taken the following into account in its assessment of the proposal:

- environmental values which may be significantly affected by the proposal
- assessment of key environmental factors, separately and holistically (this has included considering cumulative impacts of the proposal where relevant)
- likely environmental outcomes which can be achieved with the imposition of conditions
- consistency of environmental outcomes with the EPA's objectives for the key environmental factors
- EPA's confidence in the proponent's proposed mitigation measures
- whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment
- principles of the EP Act.

The EPA recommends that the proposal may be implemented subject to the conditions recommended in Appendix A.

7 Other advice

The EPA may, if it sees fit, include other information, advice or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal.

The EPA provides the following information for consideration by the Minister:

- The EPA considers that there should be separate Ministerial Statements for the significant amendment and original PRIOP for the following reasons:
 - The proponent has requested the Minister for Environment to inquire into condition 10 'Residual Impacts and Risk Management Measures' of MS 892 to replace the requirement to constitute the Parker Range Conservation Trust with an Offset Management Plan under s. 46 of the EP Act. The trust is not a matter for consideration during the assessment of the significant amendment and the other offset matters extend beyond the scope of significant amendment to species which do not require an offset during this assessment.
 - The majority of impacts to Priority 1 flora species are from the PRIOP. Whilst these species would not require an offset at the mine, the proponent is likely to be required to demonstrate they have been included in rehabilitation plans. The EPA considers that there is limited scope for restoration on a bituminised road with low levels of impacts and there is more scope for this work during the s. 46 at the mine site.
 - The proponent is yet to determine a post-mining land use for the Haul Road and this would be negotiated with relevant stakeholders including the DPIRD, Main Road WA and the Shire of Yilgarn for the possibility of retaining the road for public use or other purposes. The EPA encourages future utilisation of the Haul Road to avoid additional impacts from duplication of infrastructure.
 - The development envelope of the significant amendment is physically disconnected from the PRIOP. This was given effect by reduction in impacts through the s. 43A amendment to the proposal during assessment. The development envelope for the significant amendment now sits between 2 approved mining operations.
 - The EPA further considers that because the accredited assessment with the Commonwealth is only considering the significant amendment, combining the Ministerial Statements with the PRIOP, may result in difficulties in regulation between the State and Commonwealth.
- The EPA notes that the significant amendment will replace the need to implement the 7 km private upper haul road at Moorine Rocks. The proponent should submit an application under s. 45C of the EP Act to remove the infrastructure that is no longer required.

Appendix A: Recommended conditions

Section 44(2)(b) of *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This appendix contains the EPA's recommended conditions and procedures.

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (*Environmental Protection Act 1986*)

PARKER RANGE (MOUNT CAUDAN) IRON ORE HAUL ROAD PROPOSAL

Proposal: The proposal involves the development of a Haul Road to transport iron ore from the Parker Range (Mount Caudan) Iron Ore Project to the Koolyanobbing Operations.

Proponent: Polaris Metals Pty Ltd
Australian Company Number 085 223 570

Proponent address: 20 Walters Drive
OSBORNE PARK WA 6017

Assessment number: 2297

Report of the Environmental Protection Authority: 1735

Introduction: The Proposal is a significant amendment to the existing Parker Range (Mount Caudan) Iron Ore Project approved proposal which was agreed to be implemented under Ministerial Statement 892. The EPA's Report for the existing Parker Range (Mount Caudan) Iron Ore Project proposal is 1410, EPA Assessment Number 1811.

Pursuant to section 45 of the *Environmental Protection Act 1986*, it is now agreed that:

1. the significant amendment proposal described and documented in the proponent's Proposal Content Document of the referral of 12 May 2021, as amended by the change to proposal approved under s. 43A on 15 July 2022, may be implemented and that the implementation of the significant amendment proposal is subject to the following implementation conditions and procedures.
2. Ministerial Statement 892 for the existing Parker Range (Mount Caudan) Iron Ore Project proposal continues to apply to the existing Parker Range (Mount Caudan) Iron Ore Project proposal under section 40AA (6) (a) of the *Environmental Protection Act 1986*.

Conditions and procedures

Part A: Proposal extent

Part B: Environmental outcomes, prescriptions and objectives

Part C: Environmental management plans and monitoring

Part D: Compliance and other conditions

PART A: PROPOSAL EXTENT

Limitations and Extent of Proposal

A1-1 The proponent must ensure that the proposal is implemented in such a manner that the following limitations or maximum extents / capacities / ranges are not exceeded:

| Proposal element | Location | Maximum extent |
|---|---|--|
| Physical elements | | |
| Development envelope | Figure 1 | No more than 339 ha |
| Disturbance footprint | Within the development envelope shown in Figure 1 | No more than 210 ha within a 339 ha development envelope |
| Direct disturbance of native vegetation | Within the development envelope shown in Figure 1 | No more than 173 ha within a 339 ha development envelope |
| Direct disturbance of Malleefowl (<i>Leipoa ocellata</i>) habitat | Within the development envelope shown in Figure 1 | No more than 173 ha within a 339 ha development envelope |
| Direct disturbance of Chuditch (<i>Dasyurus geoffroii</i>) habitat | Within the development envelope shown in Figure 1 | No more than 168 ha within a 339 ha development envelope |
| Timing elements | | |
| Project life – transportation of iron ore | | Up to 10 years from date of substantial commencement |

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

B1 Terrestrial fauna

B1-1 The proponent must ensure the implementation of the proposal achieves the following environmental outcome:

- (1) Avoid **direct disturbance** of and **adverse impacts** to the ***Camponotus sp. nr. terebrans* ant colony** and the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*).

B1-2 The proponent must implement the proposal to achieve the following environmental objective:

- (1) Minimise the risk of **adverse impacts** and **indirect disturbance** to native fauna including physical injury or mortality, behavioural changes, and health impacts.

Clearing for construction

B1-3 Prior to **ground-disturbing activities** within the development envelope delineated in Schedule 1, the proponent must undertake the following action:

- (1) within thirty (30) days prior to clearing, using a licenced **fauna spotter**, undertake pre-clearance surveys of clearing areas.

B1-4 The proponent must undertake the following actions during construction activities:

- (1) ensure the presence of fauna spotters during all clearing activities;
- (2) avoid **direct disturbance** within one hundred (100) metres from the ***Camponotus sp. nr. terebrans* ant colony**;
- (3) avoid **direct** and **indirect disturbance** and **adverse impacts** to the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) if identified to be present at the ***Camponotus sp. nr. terebrans* ant colony** during pre-clearance surveys required by condition B1-3(1);
- (4) avoid **direct disturbance** within fifty (50) metres from any **active Malleefowl (*Leipoa ocellata*) mound** or **active Chuditch (*Dasyurus geoffroii*) den** identified within the development envelope during the pre-clearance surveys required by condition B1-3(1);
- (5) provide the results of the pre-clearance survey prior to completion of construction activities to the **DCCEEW**; and

- (6) produce and provide a report on fauna management no later than sixty (60) days after the completion of construction activities to the **CEO** and **DCCEEW**. The report must include the following:
 - (a) details of fauna inspections, including presence of a **fauna spotter**;
 - (b) results of the pre-clearance survey; and
 - (c) vertebrate fauna mortalities from construction activities.

Blasting

B1-5 The proponent must undertake blasting activities, if required, only during **day-time** hours.

Speed limits

B1-6 During construction, vehicle and machinery speed limits on the haul road must not exceed:

- (1) 40 **km/hr** on unsealed or gravel roads and within 1 kilometre of an **active Malleefowl (*Leipoa ocellata*) mound** or **active Chuditch (*Dasyurus geoffroii*) den** identified by a licenced **fauna spotter** within the development envelope.

B1-7 During operations, vehicle and machinery speed limits on the haul road must not exceed:

- (1) 80 **km/hr** on sealed haul road; and
- (2) 40 **km/hr** within one (1) kilometre of an **active Malleefowl (*Leipoa ocellata*) mound** or **active Chuditch (*Dasyurus geoffroii*) den** identified by a licenced **fauna spotter** within the development envelope.

Mortality register

B1-8 The proponent must develop and maintain a vertebrate fauna mortality register during operations.

B2 Flora and Vegetation

B2-1 The proponent must ensure the implementation of the proposal achieves the following environmental outcomes:

- (1) clearing of no more than 173 **ha** of native vegetation;
- (2) the loss of no more than

- (a) 1% of the **known population** of *Plant assemblages of the Parker Range System* Priority Ecological Community;
- (b) 1% of the **known population** of *Koolyanobbing vegetation complexes – banded ironstone formation* Priority Ecological Community;
- (c) 5% of the **known population** of *Lepidosperma sp. Mt Caudan*;
- (d) 5% of the **known population** of *Westringia acifolia*;
- (e) 7% of the **known population** of *Lepidosperma aff. costale*; and
- (f) 3% of the **known population** of *Streptoglossa aff. cylindriceps*.

B2-2 The proponent shall undertake the following actions during construction and operation activities:

- (1) bituminisation of the haul road to minimise **adverse impacts** to flora and vegetation;
- (2) implement management controls to ensure that **surface water flow regimes** are maintained compared to the pre-construction condition to minimise **adverse impacts** to flora and vegetation;
- (3) implement management controls to ensure there are no project attributable **adverse impacts** to flora and vegetation from the introduction or spread of **environmental weeds** compared with pre-construction condition outside of the development envelope; and
- (4) implement management controls to ensure there are no project attributable **adverse impacts** to flora and vegetation from **dust emissions**.

B3 Environmental Offsets

B3-1 The proponent must implement offsets to counter-balance the significant residual impacts of the proposal on the following environmental values:

- (1) **Malleefowl (*Leipoa ocellata*) habitat**; and
- (2) **Chuditch (*Dasyurus geoffroi*) habitat**.

B3-2 The proponent must ensure the implementation of the offsets achieves the following environmental objectives:

- (1) counterbalance the significant residual impacts listed in condition B3-1;

- (2) measurable and **tangible improvement** of habitat quality for Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*) which is part of the Fauna Offset Environmental Management Plan; and
- (3) demonstrate a **strategic conservation benefit** for Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*).

Fauna Offset Environmental Management Plan

B3-3 The proponent must, in consultation with the **DBCA** and **DCCEEW**, prepare the Fauna Offset Environmental Management Plan that demonstrates how the environmental outcomes and objectives in condition B3-2 will be achieved, and how this achievement will be substantiated, and submit it to the **CEO**.

B3-4 The Fauna Offset Environmental Management Plan must include the implementation of the offset measures to the extent and at the location as set out and described in Table 1:

Table 1: Environmental values, locations and extent and type of offset measures required to meet condition B3-1

| Environmental value | Offset location | Extent of area to receive offset measures (hectares) | Type of offset measures |
|---|---|--|--|
| <i>Malleefowl (Leipoa ocellata) and Chuditch (Dasyurus geoffroii) breeding and foraging habitat</i> | <i>Lot 1416 (Plan 209061) in the Shire of Yilgarn and Shire of Westonia</i> | <i>870</i> | <i>– land acquisition – on-ground management</i> |

B3-5 The Fauna Offset Environmental Management Plan must:

- (1) demonstrate how the environmental objectives in condition B3-2 will be met;
- (2) describe how the offset measures will be implemented consistent with condition B3-4;
- (3) be prepared in consultation with **DBCA** and **DCCEEW**;
- (4) spatially identify the area (**Proposed Offset Conservation Area**) in condition B3-4 as:
 - (a) **acquired** lands offset area to receive **on-ground management** offset measures; and

-
- (b) offset area or lands to receive **on-ground management** offset measures.
- (5) demonstrate how the environmental values within the **Proposed Offset Conservation Area** will be maintained and managed in order to counterbalance the significant residual impact to the environmental value elements in condition B3-1 and achieve the environmental objectives in condition B3-2;
- (6) demonstrate application of the principles of the WA Environmental Offsets Policy, the *WA Environmental Offsets Metric* and the WA Offsets Template, as described in the *WA Environmental Offsets Guidelines*, and the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy Assessment Guide*, or any subsequent revisions of these documents and recovery plans;
- (7) identify how the ongoing performance of the offset measures, and whether they are achieving the objectives in condition B3-2, will periodically be made publicly available;
- (8) for the land acquisition offsets identified in condition B3-4:
- (a) demonstrate that the **Proposed Offset Conservation Area** contain the minimum extents of the environmental values identified in condition B3-1;
- (b) identify how the **Proposed Offset Conservation Area** will be protected, being either the sites are ceded to the Crown for the purpose of management for conservation, or the sites are managed under other suitable mechanism for the purpose of conservation as agreed by the **CEO** by notice in writing;
- (c) specify the quantum of works associated with establishing the **Proposed Offset Conservation Area**; and
- (d) identify the **relevant management body** for the on-going management of the **Proposed Offset Conservation Area**, including its role, and the role of the proponent, and confirmation in writing that the **relevant management body** accepts responsibility for its role.
- (9) For **on-ground management** offsets identified in condition B3-4:
- (a) state the targets for each environmental value to be achieved by the **on-ground management**, including completion criteria, which will result in a **tangible improvement** to the environmental values being offset.

- (b) demonstrate the consistency of the targets with the environmental objectives in condition B3-2 and the objectives of any relevant guidance, including but not limited to, recovery plans or area management plans;
- (c) detail the **on-ground management** actions, with associated timeframes for implementation and completion, to achieve the targets identified in condition B3-5(9)(a); and
- (d) detail the monitoring, reporting and evaluation mechanisms for the targets identified under conditions B3-(9)(a).

Contingency offsets

- B3-6 If, after receiving the ongoing performance review of the offsets and monitoring, reporting and evaluation required by condition B3-5 (7) and B3-5 (9) (d), the **CEO**, in consultation with **DCCEEW**, determines that the proposal has not met the environmental objectives in condition B3-2, and after notifying the proponent in writing, the proponent must undertake an additional offset to counterbalance the significant residual impact that is not counterbalanced to Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*).
- B3-7 Within twelve (12) months of receiving notice in writing from the **CEO** that an additional offset is required under condition B3-6 the proponent must update the Fauna Offset Environmental Management Plan required by condition B3-3 to include acquiring additional offsets to counterbalance the significant residual impacts to Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*).

PART C – ENVIRONMENTAL MANAGEMENT PLANS AND MONITORING

C1 Environmental Management Plans: Conditions Related to Commencement of Implementation of the Proposal

C1-1 The proponent must not undertake:

- (1) **ground-disturbing activities** until the **CEO** has confirmed in writing that the environmental management plan required by condition B3-3 meets the requirements of that condition and condition C4.

C2 Environmental Management Plans: Conditions Relating to Approval, Implementation, Review and Publication

C2-1 Upon being required to implement an environmental management plan under Part B, or after receiving notice in writing from the **CEO** under condition C1-1 that the environmental management plan(s) required in Part B satisfies the relevant requirements, the proponent must:

- (1) implement the most recent version of the **confirmed** environmental management plan; and
- (2) continue to implement the **confirmed** environmental management plan referred to in condition C2-1(1) until the **CEO** has confirmed by notice in writing that it has been demonstrated that the relevant requirements for the environmental management plan have been met, or are able to be met, under another statutory decision-making process, and the implementation of the environmental management plan is no longer required.

C2-2 The proponent:

- (1) may review and revise a **confirmed** environmental management plan provided it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan; and
- (2) must review and revise a **confirmed** environmental management plan and ensure it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan, as and when directed by the **CEO**.

C2-3 Despite condition C2-1, but subject to conditions C2-4 and C2-5, the proponent may implement minor revisions to an environmental management plan if the 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 environmental management plan is required to achieve.

C2-4 If the proponent is to implement minor revisions to an environmental management plan under condition C2-3, the proponent must provide the **CEO** and **DCCEEW** with the following at least twenty (20) business days before it implements the revisions:

- (1) the revised environmental management plan clearly showing the minor revisions;
- (2) an explanation of and justification for the minor revisions; and
- (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 environmental management plan 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.

C2-6 **Confirmed** environmental management plans, and any revised environmental management plans under condition C2-4(1), must be published on the proponent's website and provided to the **CEO** in electronic form suitable for on-line publication by the Department of Water and Environmental Regulation within twenty (20) business days of being implemented, or being required to be implemented (whichever is earlier).

C3 Conditions Related to Monitoring

C3-1 The proponent must undertake monitoring capable of:

- (1) substantiating whether the proposal limitations and extents in Part A are exceeded; and
- (2) **detecting** and substantiating whether the environmental outcomes identified in Part B are achieved (excluding any environmental outcomes in Part B where an environmental management plan is expressly required to monitor achievement of that outcome).

C3-2 The proponent must submit as part of the Compliance Assessment Report required by condition D2, a compliance monitoring report that:

- (1) outlines the monitoring that was undertaken during the implementation of the proposal;
- (2) identifies why the monitoring was capable of substantiating whether the proposal limitation and extents in Part A are exceeded;
- (3) for any environmental outcomes to which condition C3-1(2) applies, identifies why the monitoring was scientifically robust and capable of **detecting** whether the environmental outcomes in Part B are met;

- (4) outlines the results of the monitoring;
- (5) reports whether the proposal limitations and extents in Part A were exceeded and (for any environmental outcomes to which condition C3-1 (2) applies) whether the environmental outcomes in Part B were achieved, based on analysis of the results of the monitoring; and
- (6) reports any actions taken by the proponent to remediate any potential non-compliance.

C4 Environmental Management Plans: Conditions Related to Management Actions and Targets for Objective Based Conditions

C4-1 The environmental management plans required under condition B3 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**;
- (2) **management targets**;
- (3) **contingency measures** if **management targets** are not met; and
- (4) reporting requirements.

C4-2 The environmental management plan required under condition B3 are also required to include:

- (1) baseline data to inform the **management actions** and **targets** required by condition C4-1(1) and C4-1(2);
- (2) estimates of the likely population density of Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*) after implementation of **management actions** required by condition C4-1(1);
- (3) **fire management regimes** based on fuel load monitoring and fire behaviour modelling to reduce the threat to Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*);
- (4) **management actions** for **environmental weeds**;
- (5) **management actions** for introduced and feral fauna; and
- (6) requirements for fencing to protect Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*).

Without limiting condition C2-1, the failure to achieve an environmental objective, or implement a **management action**, regardless of whether **contingency measures**

have been or are being implemented, represents a non-compliance with these conditions.

PART D – COMPLIANCE, TIME LIMITS, AUDITS AND OTHER CONDITIONS

D1 Non-compliance Reporting

D1-1 If the proponent becomes aware of a potential non-compliance, the proponent must:

- (1) report this to the **CEO** within seven (7) days;
- (2) implement **contingency measures**;
- (3) investigate the cause;
- (4) investigate environmental impacts;
- (5) advise rectification measures to be implemented;
- (6) advise any other measures to be implemented to ensure no further impact; and
- (7) provide a report to the **CEO** within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(6) above.

D1-2 Failure to comply with the requirements of a condition, or with the content of an environmental management required under a condition, constitutes a non-compliance with these conditions, regardless of whether the **contingency measures**, rectification or other measures in condition D1-1 above have been or are being implemented.

D2 Compliance Reporting

D2-1 The proponent must provide an annual Compliance Assessment Report to the **CEO** for the purpose of determining whether the implementation conditions are being complied with.

D2-2 Unless a different date or frequency is approved by the **CEO**, the first annual Compliance Assessment Report must be submitted by 30 April addressing the period of the preceding calendar year from 1 January to 31 December, and subsequent reports must be submitted annually from that date.

D2-3 Each annual Compliance Assessment Report must be endorsed by the proponent's Chief Executive Officer, or a person approved by proponent's Chief Executive Officer to be delegated to sign on the Chief Executive Officer's behalf.

D2-4 Each annual Compliance Assessment Report must:

- (1) state whether each condition of this Statement has been complied with, including:

- (a) exceedance of any proposal limits and extents;
 - (b) achievement of environmental outcomes;
 - (c) achievement of environmental objectives;
 - (d) requirements to implement the content of environmental management plans;
 - (e) monitoring requirements;
 - (f) implement **contingency measures**;
 - (g) requirements to implement adaptive management; and
 - (h) reporting requirements;
- (2) include the results of any monitoring (inclusive of any raw data) that has been required under Part C in order to demonstrate that the limits in Part A, and any outcomes or any objectives are being met;
- (3) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;
- (4) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;
- (5) be provided in a form suitable for publication on the proponent's website and online by the Department of Water and Environmental Regulation;
- (6) be prepared and published consistent with the latest version of the approved Compliance Assessment Plan required by condition D2-5 which the **CEO** has confirmed by notice in writing satisfies the relevant requirements of Part C and Part D.

D2-5 The proponent must prepare a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition D2-2, or prior to implementation of the proposal, whichever is sooner.

D2-6 The Compliance Assessment Plan must include:

- (1) the frequency of compliance reporting and details of what, when and how information will be collected and recorded to assess compliance;
- (2) the methods which will be used to assess compliance and potential non-compliances and corrective actions taken;

- (3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;
- (4) the retention of compliance assessments;
- (5) the table of contents of Compliance Assessment Reports, including audit tables; and
- (6) how and when Compliance Assessment Reports will be made publicly available, including usually being published on the proponent's website within sixty (60) days of being provided to the **CEO**.

D3 Contact Details

D3-1 The proponent must notify the **CEO** of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

D4 Time Limit for Proposal Implementation

D4-1 The proposal must be substantially commenced within five (5) years from the date of this Statement.

D4-2 The proponent must provide to the **CEO** documentary evidence demonstrating that they have complied with condition D4-1 no later than fourteen (14) days after the expiration of period specified in condition D4-1.

D4-3 If the proposal has not been substantially commenced within the period specified in condition D4-1, implementation of the proposal must not be commenced or continued after the expiration of that period.

D5 Public Availability of Data

D5-1 Subject to condition D5-2, within a reasonable time period approved by the **CEO** upon the issue of this Statement and for the remainder of the life of the proposal, the proponent must make publicly available, in a manner approved by the **CEO**, all validated environmental data collected before and after the date of this Statement relevant to the proposal (including sampling design, sampling methodologies, monitoring and other empirical data and derived information products (e.g. maps)), environmental management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

D5-2 If:

- (1) any data referred to in condition D5-1 contains trade secrets; or

- (2) any data referred to in condition D5-1 contains particulars of confidential information (other than trade secrets) that has commercial value to a person that would be, or could reasonably be expected to be, destroyed or diminished if the confidential information were published,

the proponent may submit a request for approval from the **CEO** to not make this data publicly available and the **CEO** may agree to such a request if the **CEO** is satisfied that the data meets the above criteria.

- D5-3 In making such a request the proponent must provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

D6 Independent Audit

- D6-1 The proponent must arrange for an independent audit of compliance with the conditions of this statement, including achievement of the environmental outcomes and/or the environmental objectives and/ or environmental performance with the conditions of this statement, as and when directed by the **CEO**.

- D6-2 The independent audit must be carried out by a person with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition D6-1.

- D6-3 The proponent must submit the independent audit report with the Compliance Assessment Report required by condition D2, or at any time as and when directed in writing by the **CEO**. The audit report is to be supported by credible evidence to substantiate its findings.

- D6-4 The independent audit report required by condition D6-1 is to be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

Table 1: Abbreviations and definitions

| Acronym or abbreviation | Definition or term |
|---|--|
| Active Chuditch (<i>Dasyurus geoffroii</i>) den | Den that has recently or is being used by Chuditch (<i>Dasyurus geoffroii</i>) as determined by a Fauna spotter/handler. |
| Active Malleefowl (<i>Leipoa ocellata</i>) mound | As defined in the <i>National Malleefowl Monitoring Manual (2019)</i> or its updates. |

| Acronym or abbreviation | Definition or term |
|--|---|
| Acquired | The protection of environmental values on an area of initially unprotected land for the purpose of conservation through improved security of tenure or restricting the use of land (e.g. ceding land to the Crown or perpetual conservation covenants). This includes upfront costs of establishing the offset site and the on-going management of costs of maintaining the offset for the long term (20 years). |
| Adverse impacts | Negative change that is neither trivial nor negligible that could result in a reduction in health, diversity or abundance of the receptor/s being impacted, or a reduction in environmental value. Adverse impacts can arise from direct or indirect disturbance, or other impacts from the proposal such as (but not limited to) hydrological change, spread or introduction of environmental weeds, altered fire regimes, introduction or spread of disease, changes in erosion/deposition/accretion and edge effects. |
| <i>Camponotus</i> sp. nr. <i>terebrans</i> ant colony | The ant colony as identified in <i>Targeted survey for Arid Bronze Azure Butterfly for the Parker Range Iron Ore Project Haul Road</i> (Phoenix Environmental Services 2022). |
| CEO | The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <i>Environmental Protection Act 1986</i> , or the CEO's delegate. |
| Clearing | The cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting, or burning of vegetation (but not including weeds - see the Australian weeds strategy 2017 to 2027 (Commonwealth of Australia 2017) for further guidance). |
| Confirmed | <p>In relation to a plan required to be made and submitted to the CEO, means, at the relevant time, the plan that the CEO confirmed, by notice in writing, meets the requirements of the relevant condition.</p> <p>In relation to a plan required to be implemented without the need to be first submitted to the CEO, means that plan until it is revised, and then means, at the relevant time, the plan that the CEO confirmed, by notice in writing, meets the requirements of the relevant condition.</p> |

| Acronym or abbreviation | Definition or term |
|----------------------------------|---|
| Contingency measures | Planned actions for implementation if it is identified that an environmental outcome, environmental objective, threshold criteria or management target are likely to be, or are being, exceeded. Contingency measures include changes to operations or reductions in disturbance to reduce impacts and must be decisive actions that will quickly bring the impact to below any relevant threshold, management target and to ensure that the environmental outcome and/or objective can be met. |
| Day-time | The period between sunrise and sunset on any given day. |
| DBCA | The government agency responsible for the administration of the <i>Biodiversity Conservation Act 2016</i> , which at the time of this Ministerial Statement is the Department of Biodiversity, Conservation and Attractions. |
| DCCEEW | The government agency responsible for the administration of the Environment Protection and Biodiversity Conservation Act, which at the time of this Ministerial Statement is the Department of Climate Change, Energy, the Environment and Water. |
| Detectable/ Detecting | The smallest statistically discernible effect size that can be achieved with a monitoring strategy designed to achieve a statistical power value of at least 0.8 or an alternative value as determined by the CEO . |
| Disturb /disturbance | <p>Flora – result in death, destruction, removal, severing or doing substantial damage to</p> <p>Fauna – has the effect of altering the natural behaviour of fauna to its detriment</p> <p>Direct – causes or immediately has the disturbance effect</p> <p>Indirect – materially contributes to the disturbance effect</p> |
| Dust emissions | Airborne particulate matter from the erosion of soil, sand and rock. |
| Environmental value | A beneficial use, or ecosystem health condition (<i>from EP Act</i>) |
| Environmental weeds | Any plant declared under section 22(2) of the <i>Biosecurity and Agriculture Management Act 2007</i> , any plant listed on the Weeds of National Significance List and any weeds listed on the Department of Biodiversity, Conservation and Attractions' Wheatbelt Impact and Invasiveness Ratings list, as amended or replaced from time to time. |

| Acronym or abbreviation | Definition or term |
|---|--|
| Fauna spotter/handler | A person who is qualified and has attained the appropriate licence(s) and authorisation(s) the <i>Biodiversity Conservation Act 2016</i> and Biodiversity Conservation Regulations 2018. |
| Fire management regimes | Management actions to reduce the frequency, intensity, seasonality and patchiness of fire. |
| Ground disturbing activities | Any activity undertaken in the implementation of the proposal, including any clearing, civil works or construction. |
| Ha | Hectares. |
| Km/hr | Kilometres per hour. |
| Known population | Number of individuals for species as defined by <i>Parker Range Iron Ore Project Haul Road: Environmental Review Document</i> (Revision 1, April 2022) and the <i>Parker Range Iron Ore Project Haul Road; Response to Submissions</i> (Revision 1, December 2022) or by any biological field survey that is undertaken subsequent to the <i>Parker Range Iron Ore Project Haul Road: Environmental Review Document</i> (Revision 1, April 2022) and <i>Parker Range Iron Ore Project Haul Road; Response to Submissions</i> (Revision 1, December 2022) that has been submitted to the CEO. |
| Malleefowl (<i>Leipoa ocellata</i>) habitat | Habitat types including Mallee over Shrubland, Mid to Tall Shrubland, Open Woodland and Low Open Shrubland. |
| Chuditch (<i>Dasyurus geoffroii</i>) habitat | Habitat types including Open Woodland, Mallee over Shrubland, Breakaway Platform and Low Open Shrubland. |
| Management action/s | The identified actions implemented with the intent of to achieving the environmental objective. |
| Management target/s | A type of indicator to evaluate whether an environmental objective is being achieved. |
| On-ground management | This includes revegetation (re-establishment of native vegetation in degraded areas) and rehabilitation (repair of ecosystem processes and management of weeds, disease or feral animals) with the objective to achieve a tangible improvement to the environmental values in the offset area. |

| Acronym or abbreviation | Definition or term |
|--|---|
| Operations | Operation of the infrastructure for the proposal. |
| Priority flora species | Species listed by DBCA that may possibly be threatened, that do not meet the criteria for listing under the <i>Biodiversity Conservation Act 2016</i> because of insufficient survey or are otherwise data deficient, are included on the Priority Lists under Priorities 1, 2 or 3. These three (3) categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened. |
| Proposed Offset Conservation Area | The area of land identified in condition B3-5(4). |
| Relevant management body | A party or parties that has a role in the establishment and/or on-going management of the Proposed Offset Conservation Area. Note: This includes the role of the proponent. |
| Strategic conservation benefit | Overall or long-term improvements in ecological resilience and/or function. |
| Surface water flow regimes | The quantity, duration and seasonal pattern of any body of water above ground, including streams, rivers, lakes, wetlands, reservoirs and creeks. |
| Tangible improvement | A perceptible, measurable and definable improvement that provides additional ecological benefit and/or value. |
| Trigger criteria | Indicators that have been selected for monitoring to provide a warning that if exceeded the environmental outcome may not be achieved. They are intended to forewarn of the approach of the threshold criteria and trigger response actions. |
| Threshold criteria | The indicators that have been selected to represent limits of impact beyond which the environmental outcome is not being met. |

Figures (attached)

Figure 1 Parker Range (Mount Caudan) Iron Ore Haul Road Development envelope (This figure/map is a representation of the co-ordinates referenced in Schedule 1)



Figure 1 Parker Range (Mount Caudan) Iron Ore Haul Road development envelope

Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 1994 (GDA94).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation. Record no. DWERDT547384.

Appendix B: Decision-making authorities

Table B1: Identified relevant decision-making authorities for the proposal

| Decision-Making Authority | Legislation (and approval) |
|--|--|
| 1. Minister for Aboriginal Affairs | <i>Aboriginal Heritage Act 1972</i> - section 18 consent to impact a registered Aboriginal heritage site) |
| 2. Minister for Environment | <i>Biodiversity Conservation Act 2016</i> - section 40 authority to take or disturb threatened species |
| 3. Minister for Mines and Petroleum | <i>Mining Act 1978</i> - granting of a mining lease/exploration licence/general purpose licence |
| 4. Minister for Water | <i>Rights in Water and Irrigation Act 1914</i> - dewatering licence |
| 5. Chief Executive Officer, Department of Biodiversity, Conservation and Attractions | <i>Biodiversity Conservation Act 2016</i> - authority to take flora and fauna (other than threatened species) |
| 6. Chief Dangerous Goods Officer Department of Mines, Industry Regulation and Safety | <i>Dangerous Goods Safety Act 2004</i> - storage and handling of dangerous goods |
| 7. Executive Director Resource and Environmental Compliance, Department of Mines, Industry Regulation and Safety | <i>Mining Act 1978</i> - mining proposal and mine closure plan |
| 8. Mining Registrar, Department of Mines, Industry Regulation and Safety | <i>Mining Act 1978</i> - miscellaneous license |
| 9. State Mining Engineer, Department of Mines, Industry Regulation and Safety | <i>Mines Safety and Inspection Act 1994</i> - mine safety - approval to commence mining operations |
| 10. Chief Executive Officer, Department of Water and Environmental Regulation | <i>Environmental Protection Act 1986</i> - Part V works approval and licence |
| 11. Chief Executive Officer Shire of Yilgarn | <i>Planning and Development Act 2005</i> - planning approval <i>Building Act 2011</i> - building permit |

Appendix C: Environmental Protection Act principles

Table C1: Consideration of principles of the *Environmental Protection Act 1986*

| EP Act principle | Consideration |
|---|--|
| <p>1. The precautionary principle</p> <p><i>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.</i></p> <p><i>In application of this precautionary principle, decisions should be guided by –</i></p> <p>(a) <i>careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and</i></p> <p>(b) <i>an assessment of the risk-weighted consequences of various options.</i></p> | <p>The EPA has considered the precautionary principle in its assessment and has had particular regard to this principle in its assessment of flora and vegetation and terrestrial fauna.</p> <p>Biological surveys have been undertaken to inform the impacts on flora and vegetation and terrestrial fauna. The haul road alignment was selected to be adjacent to existing public roads and the State Barrier Fence to minimise potential indirect impacts from fauna habitat fragmentation, introduced species and cumulative impacts. The development envelope has additionally been realigned to avoid impacts to the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony which provides potential habitat for the Arid Bronze Azure Butterfly (ABAB).</p> <p>Pre-clearance biological surveys will be undertaken to ensure impacts to conservation significant fauna including active Malleefowl mounds and Chuditch dens are avoided, maintaining a buffer for the <i>Camponotus</i> sp. nr. <i>terebrans</i> host ant colony and avoidance of direct and indirect impacts to the ABAB if found to be present.</p> <p>The EPA has recommended conditions to ensure risks are minimise or avoided where possible and that the proponent undertakes relevant measures to manage residual impacts (condition B1 and B2). The EPA also recommends offsets be imposed to ensure that the significant residual impacts for terrestrial fauna are counterbalanced (condition B3).</p> |
| <p>2. The principle of intergenerational equity</p> <p><i>The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.</i></p> | <p>The EPA has considered the principle of intergenerational equity in its assessment and has had particular regard to this principle in its assessment of flora and vegetation and terrestrial fauna.</p> <p>The proposal is expected to have a short operational life, after which it is proposed the Haul Road infrastructure will either be removed and rehabilitated with native vegetation, or alternatively retained should a future beneficial use be identified.</p> <p>The EPA notes that the proponent has identified measures to avoid and minimise impacts to the factors of flora and vegetation, and terrestrial fauna. The EPA has</p> |

| EP Act principle | Consideration |
|--|--|
| | <p>considered these measures during its assessment and has recommended conditions to ensure that appropriate measures are implemented. The EPA recommends offsets be imposed to ensure that the significant residual impacts for terrestrial fauna are counterbalanced and that a net environmental gain is achieved for terrestrial fauna habitat (condition B3).</p> <p>The EPA also encourages the proponent to identify an ongoing beneficial use for the Haul Road beyond the life of the proposal through further consultation with relevant stakeholders including the DMIRS, DPIRD and Shire of Yilgarn.</p> |
| <p>3. The principles of the conservation of biological diversity and ecological integrity</p> <p><i>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</i></p> | <p>The EPA has considered the principle of conservation of biological diversity and ecological integrity in its assessment and has had particular regard to this principle in its assessment of flora and vegetation, and terrestrial fauna.</p> <p><u>Flora and vegetation and terrestrial fauna</u></p> <p>The EPA has considered the extent that potential impacts from the proposal can be ameliorated for flora and vegetation and terrestrial fauna to ensure consistency with the principle of conservation of biological diversity and ecological integrity, including the provision of offsets.</p> <p>Biological surveys have been used to inform the assessment of the proposal and the proposed environmental management strategies with a focus on the mitigation hierarchy. The EPA has concluded that given the nature of the impacts to habitat for conservation significant fauna species from clearing of native vegetation, offsets are required to counter-balance the impacts of the loss of biological diversity and ecological integrity.</p> |
| <p>4. Principles relating to improved valuation, pricing and incentive mechanisms</p> <p><i>(1) Environmental factors should be included in the valuation of assets and services.</i></p> <p><i>(2) The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.</i></p> <p><i>(3) The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the</i></p> | <p>In considering this principle, the EPA notes that the proponent will bear the costs relating to implementing the proposal to achieve environmental outcomes, and management and monitoring of environmental impacts during construction, operation and decommissioning of the proposal. The EPA has had particular regard to this principle in considering flora and vegetation and terrestrial fauna.</p> <p>The EPA also notes that the proponent will be responsible for bearing the cost of acquisition and management of the proposed offset.</p> |

| EP Act principle | Consideration |
|---|--|
| <p><i>use of natural resources and assets and the ultimate disposal of any wastes.</i></p> <p><i>(4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.</i></p> | |
| <p>5. The principle of waste minimisation</p> <p><i>All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</i></p> | <p>The EPA has considered the principle of waste minimisation in its assessment of the proposal.</p> <p>The EPA notes that the proponent will be implementing appropriate management of wastes on site and will be avoiding and minimising discharge of emissions into the environment. The EPA also notes that in the original proposal, the proponent has adopted the waste management hierarchy through collection and off-site management of wastes generated and recycling of waste materials where possible, to minimise impacts to the environment.</p> <p>The EPA encourages the proponent to identify an ongoing beneficial use for the Haul Road beyond the life of the proposal through further consultation with relevant stakeholders including the DMIRS, DPIRD and Shire of Yilgarn to avoid any additional impacts from duplication of similar infrastructure.</p> |

Appendix D: Other environmental factors

Table D1: Evaluation of other environmental factors

| Environmental factor | Description of the proposal's likely impacts on the environmental factor | Government agency and public comments | Evaluation of why the factor is not a key environmental factor |
|-----------------------------------|---|---|---|
| Land | | | |
| Terrestrial environmental quality | The proposal activities including clearing of native vegetation will disturb the soil profile in the development envelope and has potential to cause localised soil erosion. | No comments were received for this factor during public consultation. | <p>The proposal will incorporate standard engineering controls to manage surface water and allow for ephemeral surface water flows during high rainfall events to minimise impact from erosion.</p> <p>Accordingly, the EPA did not consider terrestrial environmental quality to be a key environmental factor at the conclusion of its assessment.</p> |
| Water | | | |
| Inland waters | The proposal has potential to impact on nearby surface water regimes from surficial erosion resulting in sedimentation of surface water following rainfall events and potentially altering natural surface water flows. | <p><u>Comments</u></p> <ul style="list-style-type: none"> The Department of Mines, Industry Regulation and Safety advised that should the Haul Road remain vested with stakeholders after mining, specific closure strategies for the reinstatement and continuation of natural surface water flows are to be included in the mine closure plan. | <p>An assessment of surface water flows was completed by Rockwater (2020) to inform the surface water drainage design. No permanent surface water features occur within the development envelope and the proposal is unlikely to substantially impact on regional hydrology.</p> <p>The proponent will be implementing surface water engineering controls including floodways, culverts and erosion control to manage surface water sheet flow.</p> <p>The proposal will not involve discharges to the environment or impact on groundwater.</p> <p>Accordingly, the EPA did not consider inland waters to be a key environmental factor at the conclusion of its assessment.</p> |

| Environmental factor | Description of the proposal's likely impacts on the environmental factor | Government agency and public comments | Evaluation of why the factor is not a key environmental factor |
|--------------------------|---|---|--|
| Air | | | |
| Air quality | Air emissions including dust have potential to be generated during construction activities involving land clearing and vehicle movements. | No comments were received for this factor during public consultation. | <p>There are no sensitive receptors located within 500 metres of the development envelope.</p> <p>The proponent will be implementing dust management measures including the use of water carts during earthworks. The Haul Road will also be bituminised to minimise dust emissions during operational use.</p> <p>Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment.</p> |
| Greenhouse gas emissions | Construction and operation of the Haul Road have potential to contribute to greenhouse gas emissions. | No comments were received for this factor during public consultation. | <p>An assessment of the greenhouse gas emissions estimated that the maximum annual scope 1 emissions for the Haul Road is equivalent to 45,049 tCO₂-e per annum, occurring in year 2, based on vegetation clearing of 281 ha. The proponent has since amended the proposal to reduce native vegetation clearing to 173 ha, hence it is expected that scope 1 emissions of the proposal would be less than 45,049 tonnes CO₂-e per annum.</p> <p>The EPA notes that the estimated average greenhouse gas emissions associated with the initial development, mining, processing, power and water generation from infrastructure and road haulage operations for the original Parker Range (Mount Caudan) Iron Ore Project were 43,129 tonnes CO₂-e per annum.</p> |

| Environmental factor | Description of the proposal's likely impacts on the environmental factor | Government agency and public comments | Evaluation of why the factor is not a key environmental factor |
|----------------------|--|---|---|
| | | | <p>The greenhouse gas emissions of the proposed Haul Road and mine combined is expected to be less than the 100,000 tonnes per annum threshold.</p> <p>Accordingly, the EPA did not consider greenhouse gas emissions to be a key environmental factor at the conclusion of its assessment.</p> |
| People | | | |
| Social surroundings | The proposal has potential to impact on Aboriginal heritage sites. | <p><u>Comments</u></p> <ul style="list-style-type: none"> The Department of Planning, Lands and Heritage (DPLH) notes that the proposed Haul Road intersects with the public dithered boundary of Aboriginal heritage place ID 38837 (MRL_HR_03) but not the actual boundary as administered by DPLH. Archaeological and Ethnographic surveys have been undertaken for the proposal. Despite isolated artefacts being located, no Aboriginal sites were located within the development envelope during surveys. | <p>The proposal is located next to existing infrastructure including public roads and the State Barrier Fence, however there are no sensitive receptors located within 500 metres of the development envelope.</p> <p>The proposal is within proximity to heritage sites, however archaeological and ethnographic surveys undertaken in 2020 and 2021 found no Aboriginal heritage sites within the development envelope. The proposal has been designed to avoid impacting on heritage sites.</p> <p>Accordingly, the EPA did not consider social surroundings to be a key environmental factor at the conclusion of its assessment.</p> |

Appendix E: Relevant policy, guidance and procedures

The EPA had particular regard to the policies, guidelines and procedures listed below in the assessment of the proposal.

- *Environmental factor guideline – Flora and vegetation* (EPA 2016)
- *Environmental factor guideline – Greenhouse gas emissions* (EPA 2020)
- *Environmental factor guideline – Terrestrial fauna* (EPA 2016)
- *Environmental impact assessment (Part IV Divisions 1 and 2) procedures manual* (EPA 2021)
- *WA Environmental Offsets Policy* (Government of Western Australia 2011)
- *WA Environmental Offsets Guidelines* (Government of Western Australia 2014)
- *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021)
- *Environmental impact assessment (Part IV Divisions 1 and 2) administrative procedures 2021* (State of Western Australia 2021)
- *Technical guidance – Flora and vegetation surveys for environmental impact assessment* (EPA 2016)
- *Technical guidance – Sampling of short-range endemic invertebrate fauna* (EPA 2016)
- *Technical guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020).

Appendix F: List of submitters

7-day comment on referral

Organisations and public

- Birdlife Western Australia
- Wildflower Society of Western Australia
- The Wilderness Society WA Inc.
- Private submitter (3)

Public review of proponent information

Organisations and public

- Private submitter

Government agencies

- Department of Climate Change, Energy, the Environment and Water (Commonwealth)
- Department of Biodiversity, Conservation and Attractions
- Department of Mines, Industry Regulation and Safety
- Department of Planning, Lands and Heritage
- Department of Water and Environmental Regulation
- Main Roads Western Australia
- Shire of Yilgarn

Appendix G: Assessment timeline

| Date | Progress stages | Time (weeks) |
|------------------|--|--------------|
| 10 June 2021 | EPA decided to assess – level of assessment set | |
| 23 July 2021 | EPA requested additional information | 6 |
| 22 July 2022 | EPA received additional information | 48 |
| 26 July 2022 | EPA accepted additional information | 1 |
| 8 August 2022 | EPA released additional information for public review | 2 |
| 21 August 2022 | Public review period for additional information closed | 2 |
| 5 December 2022 | EPA received final information for assessment | 15 |
| 15 December 2022 | EPA completed its assessment | 2 |
| 17 February 2023 | EPA provided report to the Minister for Environment | 9 |
| 22 February 2023 | EPA report published | 3 days |
| 15 March 2023 | Appeals period closed | 3 |

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

The EPA must give the Assessment report to the Minister so far as is practicable, no later than 6 weeks after the EPA completes its assessment or reassessment (s. 44(2b)).

In this case, the EPA provided its assessment report to the Minister 9 weeks after completing its assessment as it was not practicable to provide it within 6 weeks, due to finalisation of the report coinciding with the Christmas/New Year holiday period and one recommendation requiring agreement/confirmation with DCCEE.

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