

## **Title of Proposal - Brockman Syncline**

# **Section 1 - Summary of your proposed action**

Provide a summary of your proposed action, including any consultations undertaken.

### **1.1 Project Industry Type**

Mining

### **1.2 Provide a detailed description of the proposed action, including all proposed activities.**

The Brockman Syncline Proposal (the Proposed Action) consists of an extension to the existing iron ore mining operations at Nammuldi-Silvergrass, Brockman Syncline 2 and Brockman Syncline 4. This will involve the following key elements as well as any associated activities:

- Clearing of up to 9,977 hectares (ha) within the 73,706 ha Brockman Syncline Iron Ore Development Envelope, which encompasses both the existing approved operations as well as the Proposed Action.
- Above and below water table mining of additional mining areas at Silvergrass, Brockman 2 and Brockman 4, including open-cut pits, waste dumps, land bridges, topsoil and sub-soil stockpiles.
- New processing infrastructure and new and upgraded processing infrastructure at existing operations.
- Support facilities: including workshops, hydrocarbon storage, explosive storage facilities, laydown areas and offices.
- Linear infrastructure: including heavy and light vehicle access roads, conveyors, pipelines and power (including sub-stations) and communications distribution networks.
- Infrastructure for surface water management: including diversion drains, levees and culverts.
- Infrastructure for groundwater abstraction and utilisation to enable BWT mining, including: bores and pipelines.
- Surplus water management and associated infrastructure: including use in processing, on-site use, use at the Nammuldi Agriculture project, discharge to disused mine pits, discharge to surface water systems; and aquifer reinjection.

#### **Exclusions**

- Low impact activities, including drilling and associated activities, for the purposes of resource evaluation, geotechnical assessment and hydrogeological investigations required to inform the environmental impact assessment of the Proposed Action. These activities will be subject to relevant provisions under Part V of the Environmental Protection Act 1986 (EP Act) (WA), and the Rights in Water and Irrigation Act 1914 (RiWI Act) (WA).
- Activities that are part of or required for continuation of the existing mining operations at Nammuldi-Silvergrass, Brockman 2 and Brockman 4 (as approved under Ministerial Statements [MS] 925, 131, 867 and 1000 respectively).

Further details are provided in the attached Supporting Information documentation.

**1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.**

Area	Point	Latitude	Longitude
Approximate Proposal Location	1	-22.215314620055	117.07818135582
Approximate Proposal Location	2	-22.313174454067	117.66045674644
Approximate Proposal Location	3	-22.391920877639	117.67144307457
Approximate Proposal Location	4	-22.398269455415	117.54647359215
Approximate Proposal Location	5	-22.455393602085	117.55334004722
Approximate Proposal Location	6	-22.601270524199	117.36794576011
Approximate Proposal Location	7	-22.611412747192	117.40777119957
Approximate Proposal Location	8	-22.580983836203	117.70714864097
Approximate Proposal Location	9	-22.638032524517	117.71264180504
Approximate Proposal Location	10	-22.673517538473	117.37069234215
Approximate Proposal Location	11	-22.627892264763	117.28417500816
Approximate Proposal Location	12	-22.658310798634	117.11388692222
Approximate Proposal Location	13	-22.774852677042	117.00265034996
Approximate Proposal Location	14	-22.805238568296	116.83510884605
Approximate Proposal Location	15	-22.730527790509	116.83648213707
Approximate Proposal Location	16	-22.611412747192	117.03835591636
Approximate Proposal Location	17	-22.58985962994	117.0411024984
Approximate Proposal Location	18	-22.582251841752	116.95870503746
Approximate Proposal Location	19	-22.498538466276	116.97930440269
Approximate Proposal Location	20	-22.525180045758	117.094660848
Approximate Proposal Location	21	-22.493463297719	117.24434956871
Approximate Proposal Location	22	-22.409696164816	117.26357564293

Area	Point	Latitude	Longitude
Location			
Approximate Proposal	23	-22.309363015026	117.23061665855
Location			
Approximate Proposal	24	-22.28140928404	117.07818135582
Location			
Approximate Proposal	25	-22.215314620055	117.07818135582
Location			

**1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).**

The Proposed Action is located approximately 60 km west-north-west of Tom Price in the central Pilbara region of Western Australia.

Existing land uses in the region are mining and pastoral activities. Inland regions of the Pilbara are sparsely populated, with the largest inland towns (such as Tom Price, Paraburdoo and Newman) established specifically to support the mining industry.

**1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?**

The Proposed Action requires clearing of up to 9,977 ha within the 73,706 ha Development Envelope.

**1.7 Is the proposed action a street address or lot?**

Lot

**1.7.2 Describe the lot number and title.** The Proposed Action is centred on deposits located within State Agreement Mineral Lease (ML) ML4SA,

**1.8 Primary Jurisdiction.**

Western Australia

**1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?**

No

**1.10 Is the proposed action subject to local government planning approval?**

No

**1.11 Provide an estimated start and estimated end date for the proposed action.**

Start date 01/2022

End date 01/2023

**1.12 Provide details of the context, planning framework and State and/or Local government requirements.**

The Proposed Action will be constructed and operated in accordance with a range of Western Australian laws. key government requirements for the Proposed Action are set out below.

**Western Australian statutory requirements relevant to the Proposed Action**

**Agency/Authority - Approval required**

Environmental Protection Authority (EPA) / Minister for Environment - Proposal approval under Part IV of the EP Act

Department of Jobs, Tourism, Science and Innovation / Minister for Jobs, Tourism, Science and Innovation - Proposal approval under the *Iron Ore (Hamersley Range) Agreement Act 1963*

Department of Water and Environment Regulation - Project environmental impact assessment under Part IV of the EP Act; Works approval and licences under Part V of the EP Act; Permits and licences to interfere with the bed and banks of a watercourse, take water and manage its use and construct and alter wells under the RiWI Act.

Department of Mines, Industry Regulation and Safety - For any clearing required outside of the Part IV EP Act approval; Native vegetation Clearing Permits under Part V of the EP Act; Mining Proposals under the Mining Act 1978 (WA).

Minister for Aboriginal Affairs - Consent to undertake a purpose that may impact Aboriginal sites under the *Aboriginal Heritage Act 1972* (AH Act) (WA)

Department of Planning, Lands and Heritage - Consideration and approval of proposals to salvage or impact Aboriginal sites under the AH Act and referrals to the Aboriginal Cultural

Material Committee for advice and recommendations.

**1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.**

Consultation has been undertaken and is ongoing with the following decision-making agencies and key stakeholders:

Department of Water and Environmental Regulation (DWER)

Department of Biodiversity, Conservation and Attractions (DBCA)

Department of Mines, Industry Regulation and Safety (DMIRS)

Cheela Plains Pastoral Station leaseholders

Mt Stuart Pastoral Station leaseholders.

A pre-referral consultation with EPA Services (DWER) in relation to the Proposed Action was held on 5 July 2019. There has been ongoing consultation with the native title holders for the area subject to the Proposed Action, regarding the protection and management of cultural heritage sites.

The Proposed Action is located within three Native Title determined areas:

Puutu Kunti Kurrama and Pinikura (PKKP) people

Eastern Guruma (EG) people

Robe River Kuruma (RRK) people (formerly known as the Kuruma Marthudunera people).

The Proponent has negotiated and executed claim wide land use agreements with all three Traditional Owner groups. These agreements provide the frameworks through which the Proponent and the Traditional Owner groups work together on country to manage and maintain the cultural values in the areas in which the Proponent operates. Ongoing engagement with the groups is maintained through formal and informal engagement frameworks. The Proponent will continue to consult with relevant stakeholders before and during the environmental assessment process.

**1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.**

The key legislative requirements relating to this Proposed Action include assessment under Part IV of the EP Act and consideration of potential impacts to MNES protected under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act; this referral).

The Proponent referred the Proposed Action to the WA Environmental Protection Authority (EPA) under section 38 of the EP Act on 18 July 2019. It is expected that this Proposed Action will be assessed under the accredited bilateral process.

**1.15 Is this action part of a staged development (or a component of a larger project)?**

No

**1.16 Is the proposed action related to other actions or proposals in the region?**

Yes

**1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation).**

This Proposed Action is related to the actions already approved by the WA government and undertaken at other deposits for the three existing operations (Nammuldi-Silvergrass, Brockman Syncline 2 and Brockman Syncline 4).

## Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The [interactive map tool](#) can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

- [Profiles of relevant species/communities](#) (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- [Significant Impact Guidelines 1.1 – Matters of National Environmental Significance](#);
- [Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies](#).

**2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?**

No

**2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?**

No

**2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?**

No

**2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?**

Yes

### 2.4.1 Impact table

Species	Impact
Northern Quoll ( <i>Dasyurus hallucatus</i> ) Known from Development Envelope	Direct impacts: • Loss of critical habitat including potential denning and foraging habitat • Potential interactions with vehicles/machinery

Species	Impact
	<p>causing injury or mortality Indirect impacts: • Potential degradation of riparian habitats as a result of groundwater drawdown or surplus water discharge See attached Referral Supporting Documentation for details of the species' presence within the Development Envelope and assessment of the significance of impacts.</p>
<p>Ghost Bat (<i>Macroderma gigas</i>) Known from Development Envelope</p>	<p>Direct impacts: • Loss of critical habitat including roosting and foraging habitat • Potential interactions with vehicles/machinery causing injury or mortality • Potential entanglement in fencing causing injury or mortality Indirect impacts: • Potential changes to riparian habitats or pools from groundwater abstraction or surplus water discharge • Vibration disturbance to roosts • Dust and light emissions. See attached Referral Supporting Documentation for details of the species' presence within the Development Envelope and assessment of the significance of impacts.</p>
<p>Pilbara Leaf-nosed Bat (<i>Rhinonictis aurantia</i>) Known from Development Envelope</p>	<p>Direct impacts: • Loss of critical habitat including roosting and foraging habitat • Potential collision with vehicles/machinery causing injury or mortality • Potential entanglement in fencing causing injury or mortality Indirect impacts: • Potential changes to riparian habitats or pools from groundwater abstraction or surplus water discharge • Vibration disturbance to roosts • Dust and light emissions See attached Referral Supporting Documentation for details of the species' presence within the Development Envelope and assessment of the significance of impacts.</p>
<p>Pilbara Olive Python (<i>Liasis olivaceus barroni</i>) Known from Development Envelope</p>	<p>Direct impacts: • Loss of critical habitat including potential denning/breeding habitat • Interactions with vehicles and machinery causing injury or mortality Indirect impacts: • Potential changes to riparian habitats or pools from groundwater abstraction or surplus water discharge See attached Referral Supporting Documentation for details of the species' presence within the Development Envelope and assessment of the significance of impacts.</p>



#### **2.4.2 Do you consider this impact to be significant?**

Yes

#### **2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?**

Yes

##### **2.5.1 Impact table**

<b>Species</b>	<b>Impact</b>
Fork-tailed Swift ( <i>Apus pacificus</i> ) Recorded over-flying Development Envelope	Species almost entirely aerial. No impact to breeding habitat. No impact to an important population or an ecologically significant proportion of the population. See attached Supporting Documentation for details of the species' presence within the Development Envelope and assessment of the significance of impacts.

#### **2.5.2 Do you consider this impact to be significant?**

No

#### **2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?**

No

#### **2.7 Is the proposed action to be taken on or near Commonwealth land?**

No

#### **2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?**

No

#### **2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?**

No

#### **2.10 Is the proposed action a nuclear action?**

No

**2.11 Is the proposed action to be taken by the Commonwealth agency?**

No

**2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?**

No

**2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?**

No

## Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

### 3.1 Describe the flora and fauna relevant to the project area.

Ecological surveys have been undertaken across the Development Envelope over multiple years. The combined coverage of these surveys has enabled a detailed understanding of the existing flora, vegetation and terrestrial fauna values. Additional fauna surveys are currently being undertaken to ensure full survey coverage within the Development Envelope.

#### Vegetation

The Development Envelope is situated within the Pilbara bioregion and Hamersley IBRA subregion, which is described as (Hamersley PIL3): dissected bold plateaux and ranges of flat lying, moderately folded sandstone and quartzite with vegetation of Mulga low woodland over tussock grasses occurring on fire textured soils in valley floors, with scattered Snappy gum (*Eucalyptus leucophloia*) over *Triodia brizoides* on skeletal soils of the ranges.

The majority of intact vegetation in the Development Envelope is considered to be in Good to Excellent condition; however, some areas are ranked as Poor or Very Poor due to weed invasion (Buffel Grass [*Cenchrus ciliaris*]) and grazing.

No Environmentally Sensitive Areas or EPBC listed Threatened Ecological Communities (TECs) are present within the Development Envelope; however, one TEC and two Priority Ecological Communities (PECs) listed under the *Biodiversity Conservation Act 2016* (BC Act) (WA) occur in proximity to the Development Envelope including:

- \* *Themeda* sp. Grasslands on cracking clays TEC
- \* Brockman iron cracking clay communities of the Hamersley Range PEC
- \* Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara – Palm Springs PEC.
- \* Vegetation considered to represent a groundwater dependent ecosystem (GDE), or potential GDE, is also known to occur within the Development Envelope.

#### Flora

No threatened flora species listed under the EPBC Act have been recorded within the Development Envelope. A search of the Department of the Environment and Energy (DotEE) Protected Matters Search Tool (PMST) identified no flora listed as MNES as potentially occurring in the Development Envelope. Several State-listed Priority flora species have been

recorded within the Development Envelope, including:

**Priority 1 (P1):**

*Hibiscus* sp. Mt Brockman (E. Thoma ET 1354)

*Sida* sp. Hamersley Range (K. Newbey 10692)

*Goodenia pedicellata*

*Eremophila* sp. Hamersley Range

*Euphorbia inappendiculata* var *queenslandica*

*Helichrysum oligochaetum*

*Abutilon* sp. Pritzelianum

*Calotis squamigera*

*Tetratheca butcheriana*

*Peplidium* sp. Fortescue Marsh (S. van Leeuwen 4865)

*Grevillea* sp. Turee (J. Bull & G. Hopkinson ONS JJ 01.01).

**Priority 2 (P2):**

*Hibiscus* sp. Gurinbiddy Range (M.E. Trudgen MET 15708)

*Oxalis* sp. Pilbara (M.E. Trudgen 12725)

*Pentalepis trichodesmoides* subsp. *hispida*

*Ipomoea racemigera*.

Numerous Priority 3 (P3) and Priority 4 (P4) flora species have also been identified within the proposed Development Envelope.

**Terrestria fauna**

Seven broad-scale fauna habitats occur in the Development Envelope (below). Fauna habitats are generally considered to be in Good to Excellent condition, with some localised areas being affected to some extent by grazing and trampling by cattle and feral donkeys.

**Fauna habitat - Value to MNES**

Major and minor drainage - High value; Provide suitable foraging and dispersal habitat for a number of MNES species.

Gorges and gullies - High value; Provide potential breeding and roosting habitat for a number of MNES species.

Hummock grasslands and *Acacia* shrublands - Moderate value; provide suitable foraging and/or dispersal habitat.

Mixed woodlands and shrublands - Moderate value; provide suitable foraging and/or dispersal habitat.

Mulga woodlands and shrublands - Moderate value; provide suitable foraging and/or dispersal habitat.

Hills and plains - Moderate value; provide suitable foraging and/or dispersal habitat.

Clay soils - Low value; provide little or no suitable habitat for MNES species.

None of these habitats are restricted to the Development Envelope. All habitat types are relatively common in the region and wider Hamersley subregion.

Four threatened fauna species and one migratory species listed as MNES under the EPBC Act have been recorded or considered likely to occur in and around the Development Envelope.

Northern Quoll (*Dasyurus hallucatus*)

Ghost Bat (*Macroderma gigas*)

Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*)

Pilbara Olive Python (*Liasis olivaceous* subsp. *barroni*)

Fork-tailed Swift (*Apus pacificus*).

A PMST report identified an additional four threatened species (Curlew Sandpiper, Night Parrot, Australian Painted Snipe and Bilby) and one terrestrial migratory species (Barn Swallow) listed as MNES under the EPBC Act; however, these species have not been recorded in the Development Envelope and are considered unlikely to occur based on the absence of suitable habitat.

The following State listed conservation significant species have also been recorded or are considered likely to occur in the Development Envelope:

Western Pebble Mound Mouse (*Pseudomys chapmani*) – Department of Biodiversity, Conservation and Attractions (DBCA) Priority 4

Lakeland-downs Mouse (*Leggadina lakedownensis*) – DBCA Priority 4

Lined Soil-crevice Skink (*Notoscincus butleri*) – DBCA Priority 4

Long-tailed Dunnart (*Sminthopsis longicaudata*) - DBCA Priority 4

Peregrine Falcon (*Falco peregrinus*) – listed as other specially protected fauna under Schedule 7 of the BC Act. Relevant surveys are currently in preparation and will be provided with the Environmental Review Document. A summary of previous survey results is provided in the attached Supporting Documentation.

### **3.2 Describe the hydrology relevant to the project area (including water flows).**

The Proposed Action is located within the two major sub-catchments of the Ashburton River catchment, namely the Duck Creek subcatchment (which encompasses Caves Creek, Ducks Creek and Boolgeeda Creek) and the Hardey River subcatchment.

Caves Creek, Duck Creek and Boolgeeda Creek are all located to the west of the Development Envelope and all flow west to the Ashburton River, which runs north-west and reaches the coast just west of Onslow. As for most parts of the Pilbara, the normal condition for these watercourses is dry. Runoff is ephemeral, occurring only after significant and intense rainfall events. Several surface water pools are present in the greater Brockman region, including permanent and semi-permanent pools. Permanent pools of note include Palm Springs to the west of Silvergrass and Plunge Pool located to the east Brockman 4. Hydrological investigations are currently underway and results are not yet available.

### **3.3 Describe the soil and vegetation characteristics relevant to the project area.**

Soils in the Pilbara are generally shallow, stony soils on hills and ranges and sands on sandplains.

The majority of intact vegetation is in Good to Excellent condition. Over 100 vegetation associations have been mapped within the Development Envelope. No EPBC listed TECs are known to occur within the Development Envelope. One State-listed TEC (*Themeda* sp. grasslands on cracking clays TEC) and two PECs (Brockman iron cracking clay communities of the Hamersley range PEC; and Riparian flora and plant communities of springs and river pools with high water permanence of the Pilbara – Palm Springs PEC) occur in proximity to the Development Envelope.

**3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.**

There are no outstanding natural features or other important or unique values relevant to the Development Envelope. The Proposed Action is located approximately 105 km from Karijini National Park; Western Australia's second largest National Park, covering more than 627,000 ha within Hamersley subregion of the Pilbara bioregion.

**3.5 Describe the status of native vegetation relevant to the project area.**

Vegetation across the Development Envelope, where intact, is generally in Good to Excellent condition; however, some areas are ranked as Poor or Very Poor due to weed invasion of Buffel Grass (*Cenchrus ciliaris*) and grazing. No native vegetation recorded in the Development Envelope is unique to the Development Envelope. No Commonwealth listed threatened flora or threatened ecological communities occur in the Development Envelope.

**3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.**

The gradient within the Development Envelope ranges from flat or gently undulating in the footslopes and plains, to very steep, in association with gorges, gullies, and ridges.

**3.7 Describe the current condition of the environment relevant to the project area.**

The Development Envelope includes mostly uncleared land but includes existing mining operations (Nammuldi-Silvergrass, Brockman Syncline 2 and Brockman Syncline 4). Development Envelope comprises areas of remnant native vegetation in Good to Excellent condition; however, some areas are ranked as Poor or Very Poor due to weed invasion of Buffel Grass (*Cenchrus ciliaris*) and grazing.

**3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.**

Not applicable.

**3.9 Describe any Indigenous heritage values relevant to the project area.**

The Development Envelope is located within three Native Title determined areas:

Puutu Kunti Kurrama and Pinikura (PKKP) people

Eastern Guruma (EG) people

Robe River Kuruma (RRK) people (formerly known as the Kuruma Marthudunera people).

Surveys to date have recorded numerous archaeological sites within the proposed Development Envelope including: artefact scatters; rock shelters; scarred trees; painted rock art; camp sites; other significant landmarks. Some of these sites contain heritage features that are considered to be of high archaeological significance to the Traditional Owner groups.

Several sites of high ethnographic significance have been identified in the greater Brockman region including creeklines (e.g. Caves Creek, Duck Creek, and Purlykuti Creek), pools (including Palm Springs and Plunge Pool) and possible burial sites. The Proposed Action may result in some disturbance to these sites.

The Proponent will avoid sites of high ethnographic and / or archaeological significance to Traditional Owners wherever possible at its Pilbara operations and has committed to managing cultural heritage values in consultation with the relevant Traditional Owners.

### **3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.**

The existing operations (Nammuldi-Silvergrass, Brockman Syncline 2 and Brockman Syncline 4) are located on Mineral Leases 4SA and 272SA which were granted under the *Iron Ore (Hamersley Range) Agreement Act 1963* (WA). Aspects of the three operations that are located outside of State Agreement tenure are supported by various tenure granted under the *Mining Act 1978* (WA) and *Land Administration Act 1997* (WA).

This Proposed Action is also located on the same Mineral Leases (4SA and 272SA). Areas of the Proposed Action located on Exploration Licences and third-party tenure within the proposed Development Envelope will be subject to the grant of additional tenure or subject to access agreements prior to ground disturbing activities in these areas.

### **3.11 Describe any existing or any proposed uses relevant to the project area.**

The Proposed Action footprint will occur within the Development Envelope which also includes the existing operations (Nammuldi-Silvergrass, Brockman Syncline 2 and Brockman Syncline 4). No other proposed uses are relevant to the Proposed Action footprint.



## **Section 4 - Measures to avoid or reduce impacts**

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

### **4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.**

#### **Additional targeted survey**

The Proponent is undertaking additional targeted conservation significant fauna surveys in Spring 2019 within and surrounding the Development Envelope to further understand the occurrence of habitat utilisation of Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Pilbara Olive Python.

#### **Avoid**

- \* Terrestrial fauna surveys will identify terrestrial fauna and supporting habitat of significance which may be able to be avoided during the detailed design of the Proposed Action
- \* Direct impacts to recorded high value (maternity and diurnal) bat roosts will be avoided if practicable
- \* Light spill to high value habitats will be avoided through the use of directional lighting
- \* Barbed wire fencing will be avoided. Where required by legislation, reflectors will be installed to deter bats.

#### **Minimise**

- \* Where it cannot be avoided, clearing of critical habitat for MNES will be minimised where possible
- \* Vibration impacts to roosts will be minimised through implementation of a blast management framework including vibration triggers and thresholds and ongoing vibration monitoring\* Vehicle speed limits will be enforced at all times
- \* Dewatering will be minimised to that necessary to access the below water table resource
- \* Discharge of surplus water to creeklines will be minimised through use of water to supply operational requirements in the first instance

\* Dust emissions will be minimised through dust management measures.

## **Rehabilitate**

The Proponent has well established closure strategies which will outline closure objectives and will implement a Mine Closure Plan in accordance with the joint DMIRS and EPA Guidelines for Preparing Mine Closure Plans (2015). This will ensure that post-mining, disturbed land will be rehabilitated at the end of their serviceable or operational life, vegetation is self-sustaining and to ensure compatible final land uses. These activities will be undertaken progressively during the operating life of the mine where possible.

### **4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.**

Following the application of the management measures described above, the following outcomes are predicted for the five MNES known or likely to occur within the Development Envelope:

- \* Habitat critical to the survival of the Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Pilbara Olive Python will continue to be available for these species in the Development Envelope and across the wider region.
- \* Important populations of the Northern Quoll, Ghost Bat, Pilbara Leaf-nosed Bat and Pilbara Olive Python will continue to be persist in the Development Envelope and wider region.
- \* The availability and use of roost sites by Ghost Bat and Pilbara Leaf-nosed Bat will persist.

## **Section 5 – Conclusion on the likelihood of significant impacts**

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

### **5.1.1 World Heritage Properties**

No

### **5.1.2 National Heritage Places**

No

### **5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)**

No

### **5.1.4 Listed threatened species or any threatened ecological community**

Listed threatened species and communities - Yes

### **5.1.5 Listed migratory species**

No

### **5.1.6 Commonwealth marine environment**

No

### **5.1.7 Protection of the environment from actions involving Commonwealth land**

No

### **5.1.8 Great Barrier Reef Marine Park**

No

### **5.1.9 A water resource, in relation to coal/gas/mining**

No

### **5.1.10 Protection of the environment from nuclear actions**

No

#### **5.1.11 Protection of the environment from Commonwealth actions**

No

#### **5.1.12 Commonwealth Heritage places overseas**

No

#### **5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.**

The Proponent is currently in the process of assessing the potential environmental impacts of the Proposed Action. An initial analysis (see Referral Supporting Document) concludes the Proposed Action has the potential to result in impacts on MNES and that further work is required to both better understand and avoid/reduce impacts. Therefore, the Proponent is adopting a precautionary approach and suggesting the Proposed Action be considered a Controlled Action. This will facilitate further assessment of the Proposed Action under the EPBC Act (via the WA accredited assessment process).

## **Section 6 – Environmental record of the person proposing to take the action**

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

### **6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.**

The Proponent is a member of the Rio Tinto group of companies. Rio Tinto's iron ore business has over 50 years of experience mining iron ore responsibly in the Pilbara region of Western Australia. With a network of 15 mines, including joint ventures, four port facilities, 1,700 km of rail network and related infrastructure, the company produces more than 300 million tonnes of iron ore annually.

Rio Tinto has developed and refined environmental management policies, systems and procedures over decades of operational mining experience in the Pilbara region. These are successfully applied at the company's existing Pilbara iron ore mine sites.

The key components of Rio Tinto's environmental management approach that are applicable to the Proposed Action include:

- \* Rio Tinto's Iron Ore Health, Safety, Environment, Communities and Quality Policy (HSECQ). The HSECQ Policy is the guiding document for environmental management and provides context and direction for continuous improvement.

- \* Rio Tinto's Environmental Management System (EMS). This is a continuous improvement model that covers key elements including systematic assessment of environmental risk and legal requirements and the development of objectives and targets for improvement, as well as systems for training, operational control, communication, emergency response, corrective actions, audits and review.

- \* An Environmental Management Plan will be implemented for the Proposed Action, incorporating trigger criteria, response actions, monitoring procedures and reporting commitments.

### **6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.**

No proceedings have been taken against the Proponent or are known to be in the process of being taken against the Proponent, under the EPBC Act or any State or Territory law for the

protection of the environment.

**6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?**

Yes

**6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.**

The Rio Tinto Iron Ore HSECQ is the guiding document for environmental management and provides context and direction for continuous improvement.

Rio Tinto's iron ore mines in the Pilbara region operate under an Environmental Management System (EMS) which is a continuous improvement model covering systematic assessment of environmental risk and legal requirements and the development of objectives and targets for improvement; as well as systems for training, operational control, communication, emergency response, corrective actions, audits and review. The Proposed Action will be undertaken in accordance with both HSECQ Policy and the EMS.

See the attached HSEC Policy.

**6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**

Yes

**6.4.1 EPBC Act No and/or Name of Proposal.**

Hamersley Iron Pty Limited has previously referred a number of other iron ore mining projects in the Pilbara under the EPBC Act including:

2018/8341 Western Australia/Greater Paraburdoo Iron Ore Hub, WA2012/6681 Western Turner Syncline Stage 2, B1 & Section 17 Deposits, WA2012/6391 Turee Syncline Iron Ore Project2007/3720 Marandoo Mine Phase 2 Project2005/2289 Brockman Syncline 4 Iron Ore Project.

## Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

### 7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Protected Matters Search Tool, 1 July 2019	High – database managed by DotEE	May include old records, inferred species distributions and habitat preferences
Brockman Syncline 4 Marra Mambas Level 2 Vegetation and Flora Survey (Biota 2015)	High – based on expert knowledge and opinion	High – based on expert knowledge and opinion
Boolgeeda Creek Riparian Vegetation Extension Survey (Ecological Australia 2015)	High – based on expert knowledge and opinion	Survey results are indicative of flora and vegetation and may not identify every species present within the survey area.
Nammuldi Creeks Riparian Vegetation Monitoring: Phase 5 (Biota 2015)	High – based on expert knowledge and opinion	Survey results are indicative of flora and vegetation and may not identify every species present within the survey area.
Flora and Vegetation Survey for Nammuldi Silvergrass Extension (Pits 1E, 11-13) (Ecological Australia 2014)	High – based on expert knowledge and opinion	High – based on expert knowledge and opinion
Brockman 2 Pit 2/3 Biological Assessment (Astron 2014)	High – based on expert knowledge and opinion	Survey results are indicative of flora and vegetation and may not identify every species present within the survey area.
Brockman Syncline 4 Marra Mambas Vegetation and Flora Survey (Biota 2013)	High – based on expert knowledge and opinion	Survey results are indicative of flora and vegetation and may not identify every species present within the survey area.
Brockman Syncline 4 Marra Mambas, Pilbara WA, Location of Upper Beasley River Pilbara leaf-nosed bat diurnal roost 2016 (Bat Call 2017)	High – based on expert knowledge and opinion	Abundance estimates of bats are impossible to calculate precisely from ultrasonic recordings due to the possibility of multiple passes by individual bats. Instead activity levels were documented based on the number and timing of calls.
Brockman Syncline 4 Marra Mambas Level 2 Fauna Survey (Biota 2016)	High – based on expert knowledge and opinion	Single-phase survey conducted in winter, which is outside the optimal seasonal timing for a

Reference Source	Reliability	Uncertainties
		number of vertebrate taxa including the Pilbara Olive Python.
Brockman 2 Nammuldi-Silvergrass Targeted Terrestrial Vertebrate Fauna Survey (Biologic 2014)	High – based on expert knowledge and opinion	Due to the time of year, Pilbara Olive Python would be less active and less likely to be detected.
Greater Nammuldi Irrigated Agriculture Project Level 2 Terrestrial Vertebrate Fauna Assessment (Ecologia 2011)	High – based on expert knowledge and opinion	Cooler weather than is usual was experienced during phase-two of the survey. This could result in certain taxa being less active including Pilbara Olive Python.
Brockman 2 Sustaining Tonnes Targeted Fauna Survey (Biota 2010)	High – based on expert knowledge and opinion	The fauna records reported here are from a single-phase survey only. It is likely that a seasonal survey would increase the number of species recorded from the study area. This study was a targeted survey and therefore not all fauna were sampled systematically.
A targeted terrestrial fauna survey of expansion areas at Nammuldi-Silvergrass (Biota 2009a)	High – based on expert knowledge and opinion	These records are from a single-phase survey only. It is likely that a seasonal survey would increase the number of species recorded from the study area. Access to the western area was not possible during the survey period, however a site visit to this area was undertaken at a later date
Silvergrass West Vertebrate Fauna, SRE and Habitat Assessment (Biota 2009b)	High – based on expert knowledge and opinion	Not all sections of the survey area were equally ground-truthed or sampled for fauna and as such survey may not identify every species present within the survey area.
A Targeted Terrestrial Fauna Survey of the Brockman Syncline 2 Pit 7 Extension Area (Biota 2009c).	High – based on expert knowledge and opinion	These records are from a single-phase survey only. It is likely that a seasonal survey would increase the number of species recorded from the study area. Not all sections of the survey area were equally ground-truthed or sampled for fauna and as such survey may not identify every species present



Reference Source	Reliability	Uncertainties
		within the survey area.

## **Section 8 – Proposed alternatives**

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

### **8.0 Provide a description of the feasible alternative?**

No alternative iron ore deposits have been identified as being suitable for development within the timeframe required to maintain both the type of iron ore product and efficient existing operations.

### **8.1 Select the relevant alternatives related to your proposed action.**

#### **8.27 Do you have another alternative?**

No

## **Section 9 – Contacts, signatures and declarations**

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

### **9.0 Is the person proposing to take the action an Organisation or an Individual?**

Organisation

#### **9.2 Organisation**

##### **9.2.1 Job Title**

Director

##### **9.2.2 First Name**

Rowena

##### **9.2.3 Last Name**

Albones

##### **9.2.4 E-mail**

tammy.savage@riotinto.com

##### **9.2.5 Postal Address**

GPO Box A42  
Perth WA 6837  
Australia

##### **9.2.6 ABN/ACN**

ABN

49004558276 - HAMERSLEY IRON PTY. LIMITED

##### **9.2.7 Organisation Telephone**

08 9327 2000

##### **9.2.8 Organisation E-mail**

tammy.savage@riotinto.com

**9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:**

Not applicable

**Small Business Declaration**

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

**9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations**

No

**9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made**

**Person proposing the action - Declaration**

I, ROWENA ALBONES, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 26 August 2019

I, ROWENA ALBONES, the person proposing the action, consent to the designation of HAMERSLEY IRON PTY. LIMITED as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 26 August 2019

**9.3 Is the Proposed Designated Proponent an Organisation or Individual?**

Organisation

**9.5 Organisation**

**9.5.1 Job Title**

Director

**9.5.2 First Name**

Rowena

**9.5.3 Last Name**

Albones

**9.5.4 E-mail**

tammy.savage@riotinto.com

**9.5.5 Postal Address**

GPO Box A42  
Perth WA 6837  
Australia

**9.5.6 ABN/ACN**

ABN

49004558276 - HAMERSLEY IRON PTY. LIMITED

**9.5.7 Organisation Telephone**


08 9327 2000

**9.5.8 Organisation E-mail**

tammy.savage@riotinto.com

**Proposed designated proponent - Declaration**

I, ROWENA ALBONES, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:  Date: 26 August 2019

**9.6 Is the Referring Party an Organisation or Individual?**

Organisation

## 9.8 Organisation

### 9.8.1 Job Title

Superintendent Environmental Approvals

### 9.8.2 First Name

Tammy

### 9.8.3 Last Name

Savage

### 9.8.4 E-mail

tammy.savage@riotinto.com

### 9.8.5 Postal Address

GPO Box A42  
Perth WA 6837  
Australia

### 9.8.6 ABN/ACN

ABN

49004558276 - HAMERSLEY IRON PTY. LIMITED

### 9.8.7 Organisation Telephone

08 9327 2000

### 9.8.8 Organisation E-mail

tammy.savage@riotinto.com

## Referring Party - Declaration

I, Tammy Savage, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:  Date: 25/09/2019

## **Appendix A - Attachments**

The following attachments have been supplied with this EPBC Act Referral:

1. Brockman Syncline EPBC referral supporting doc\_v3opt.pdf
2. Fig 1-1 PDE0168783v2\_Figure 1\_Location of Brockman Syncline Proposal.pdf
3. Fig 1-2 PDE0168783v2\_Figure 2\_Brockman Syncline Proposal.pdf
4. Rio Tinto\_HSEC\_Policy.pdf