BHP

Application to Amend NVCP CPS 8940/1 Ministers North Conveyor Geotechnical Investigations

Native Vegetation Clearing Permit Amendment Application Supporting Document

May 2025

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1 INTRODUCTION

BHP Iron Ore Pty Ltd (BHP) currently operates a number of Iron Ore mines and associated rail and port infrastructure within the Pilbara region of Western Australia (WA). Current mining operations include the:

- Newman Operations consisting of:
  - The Mount Whaleback hub (including Orebodies 29, 30 and 35) located approximately two kilometres (km) west of Newman Township; and;
  - The Eastern Ridge hub (Consisting of Orebodies 23, 24, 25 25 West and 32) located approximately 5 km east of Newman Township;
- Mining Area C / South Flank Hub located approximately 90 km north west of Newman Township;
- Orebodies 18 and Wheelarra Hill (Jimblebar) Mine located approximately 35 km east of Newman Township; and
- Yandi Mine located approximately 100 km north west of Newman Township.

Ore from the above mining operations is transported to Port Hedland via the BHP Newman to Port Hedland Mainline (and associated spur lines) and is then shipped out through Port Hedland at the BHP facilities at Nelson Point and Finucane Island.

BHP currently holds NVCP CPS 8940/1 to clear up to 40 hectares of native vegetation for the purposes of geotechnical investigations and associated activities. The full scope of these works are yet to be undertaken and therefore BHP is seeking to amendment the permit to:

- Include fibre optic cables to allow for BHP to relocate Rio Tinto's rail fibre optic cable.
- Extend the Clearing period to 30 November 2025;
- Extend the permit duration to 30 November 2035; and
- Updated the Permit holder to "BHP Iron Ore Pty Ltd".

No other changes to the permit are required

In accordance with Part V Division 2 of the *Environmental Protection Act 1986* (EP Act), BHP hereby refers the application to amend NVCP CPS 8940/1 to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

BHP considers that the proposed amendment application will not result in any significant environmental or social impacts and that the proposed Project complies with the 'Ten Clearing Principles', as defined in Schedule 5 of the *Environmental Protection Act 1986* (EP Act).

1.1 LOCATION

The Amendment Application Area is located from the Yandi Hub to the south eastern boundary of M270SA (**Figure 1**).

1.2 TENURE

The Amendment Application Area is located on Mining Lease M270SA.

1.3 LOCAL GOVERNMENT JURISDICTION

The Amendment Application Area is located within the Shire of East Pilbara.

1.4 PROPONENT

The Amendment Application Area is managed and operated by BHP on behalf of the owners, the Yandi Joint Venture (YJV).

The split between the partners of the YJV is as follows:

- BHP Billiton Minerals Pty Ltd 85%
- Itochu Minerals and Energy Australia Pty Ltd 8%
- Mitsui Iron Ore Corporation Pty Ltd 7%

The key contact for this proposal is:

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1.5 PROJECT DESCRIPTION

The proposed works will involve geotechnical investigations and associated works

1.6 PROJECT CHARACTERISTICS AND COMMITMENTS

BHP commits to undertake the Project in accordance with the details set out in **Table 1**.

Table 1: Project Characteristics and Commitments

Permit Characteristics		
Authorising Agency:	DEMIRS.	
Permit Title:	Ministers North Conveyor Route Geotechnical Investigations.	
Area to be cleared:	40 hectares.	
Amendment Application Area:	2,097.14 hectares.	
Purpose of the permit:	Clearing for the purposes of geotechnical investigations, fibre optic cables and associated activities.	
Tenure:	Mining Lease M270SA	
Clearing Duration:	Until 30 November 2030	
Permit Duration:	Until 30 November 2035	
Proposed Annual Reporting Date:	01 October for the previous Financial Year	
Proposed Final Reporting Date:	30 November 2035	
Application Boundary:	Map Reference: • Figure 1: MIN_006NVCP_001_RevA_0 • Figure 2: MIN_006NVCP_002_RevA_0 • Figure 3: MIN_006NVCP_003_RevA_0 BHP Shapefile 1 Doc Reference: https://waio-dctm.bhp.com/D2/?docbase=bhpbio_od_prod&locateId=0b03c41a84c5acf5&application=ManagedDocuments	
Application Commitments		**Section**
Populations of Priority flora will be avoided by a 10 m buffer where practicable.		3.4.1
Control of established weed populations will be carried out according to BHP's standard Weed Control and Management Procedures.		3.4.3 6.7.4
Active mounds of the Western Pebble-mound Mouse will be avoided using a 10 m buffer, where practicable.		3.4.4 6.2
Where practicable, existing cleared tracks will be used to cross areas identified as Major Drainage Lines (Figure 3). If it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow.		3.6 6.6
The Project Environmental Aboriginal Heritage Review Procedure will be used to manage any potential environmental impacts of the proposal.		4

1.7 NVCP RECORDS

BHP reports on each NVCP in accordance with the permit reporting conditions. For a majority of BHP reports on each NVCP in accordance with the permit reporting conditions. For a majority of NVCPs this is incorporated into BHP Iron Ore's Annual Environmental Report (AER) which is submitted to government prior to the 01 October each year.

Clearing commenced in 2020 with a total of 3.56 ha cleared to the end of FY24 (BHP, 2024). These cleared areas are still required for the purpose for which they were cleared and are yet to be rehabilitated.

Clearing has been minimised by restricting activities to the minimal required for safety and equipment access. Populations of significant flora have been avoided using the BHP Project Environmental and Heritage Review (PEAHR) procedure. This internal BHP procedure authorises ground disturbing activities. No environmental offsets are required for this NVCP.

2 ASSOCIATED APPROVALS

There are a number of heritage sites located within the proposed NVCP Amendment Application Area. No sites will be disturbed without the relevant government approvals.

Any other additional approvals will be sought as required.

3 EXISITING ENVIRONMENT

3.1 CLIMATE

Newman Aero meteorological site (007176) is the closest Bureau of Meteorology (BoM) station to the to the Amendment Application Area. Average annual rainfall at Newman Aero is 318.0 mm (BOM, 2024a). This is mainly derived from tropical storms and cyclones during summer, producing sporadic, heavy rains over the area. Mean monthly rainfall varies from 4.6 mm in September to 71.6 mm in February (BoM, 2024a). Daily rainfall is highly variable; the highest maximum daily rainfall ranges from 34.8 mm in October, to 305.6 mm in February (BoM, 2024a). The mean maximum temperature in summer months (October to March) is 35.2°C to 39.4°C, and mean maximum temperature in winter (April to September) is between 23.0°C and 32.1°C (BoM, 2024a).

Wittenoom meteorological site (005026) is the closest station to the Amendment Application Area that records daily evaporation. Wittenoom is located approximately 120 km northwest of the Amendment Application Area. Mean daily evaporation at Wittenoom throughout the year is 8.6 mm/day (BoM, 2023b), which equates to 3.1 metres per year. Evaporation greatly exceeds rainfall in the region throughout the year and on a month-by-month basis (BoM, 2024b).

3.2 BIOREGION, LANDFORMS AND LAND SYSTEMS

The proposed Amendment Application Area is located in the Hamersley subregion of the Pilbara biogeographic region. The Hamersley subregion is described as:

> "the southern section of the Pilbara Craton. Mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges. Drainage into either the Fortescue (to the north), the Ashburton to the south, or the Robe to the west." (Kendrick, 2001).

It is also located in the following land systems, as mapped by van Vreeswyk *et al.* (2004).

McKay: Hills, ridges, plateaux remnants and minor breakaways of sedimentary and meta sedimentary rocks, relief up to 100 m."

Robe: "Conspicuous chains of limonite mesas and buttes with steep breakaway faces, source of iron ore as pisolitic limonite, relief up to 50 m."

3.3 GEOLOGY AND SOILS

Soils of the Pilbara region have been defined and mapped at a scale of 1:2,000,000 by Bettenay et al. (1967). The following soil unit occurs within the Amendment Application Area, based on mapping by Bettenay et al. (1967):

Fa13: "Loamy soils with weak pedological development; largely associated with the Hamersley ranges. Shallow coherent and porous loamy soils; ranges of banded jaspilite and chert along shales, dolomites and iron formations; some areas of ferruginous duricrust and narrow winding valley plains and steeply dissected pediments. The soils are frequently shallow and stony and there are extensive areas without soil cover: chief soils are stony earthy loams."

3.4 FLORA, VEGETATION AND FAUNA

The most recent vegetation, flora and fauna surveys conducted across the Amendment Application Area are:

- *BHP Yandi Operations Targeted Flora Survey* (Biologic, 2022) (**Appendix 1**);
- *Consolidation of Regional Vegetation Mapping BHP Billiton Iron Ore Pilbara Tenure* (Onshore Environmental, 2014) (**Appendix 2**);
- *Ministers North Fauna Survey Level 1 Survey* (GHD, 2021) (**Appendix 3**); and
- *Consolidation of Regional Fauna Habitat Mapping BHP Billiton Iron Ore Pilbara Tenure* (Biologic, 2017) (**Appendix 4**).

The Amendment Application Area is within the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara Bioregion (Department of Environment and Heritage, 2005). According to the Government of Western Australia (2013), the Pilbara bioregion is 99.9% vegetated (**Table 2**).

The vegetation within the Amendment Application Area is classified as the following vegetation association, as mapped by Beard (1975):

18 Low woodland; mulga (*Acacia aneura*)
82 Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*

There is more than 99% of the pre-European vegetation remaining of this vegetation association (**Table 2**). The Amendment Application Area is not part of any significant remnant vegetation in the wider regional area.

Table 2: Extent of pre-European and current vegetation in the Pilbara bioregion and vegetation associations represented in the Amendment Application Area (Government of Western Australia, 2013)

	Pre-European Extent (ha)	Current Extent (ha)	Remaining (%)	Pre-European % in IUCN Class I-IV Reserves
Pilbara IBRA Bioregion	17,808,657	17,733,583	99.58	6.34
Vegetation association 18 within Western Australia	19,890,664	19,843,409	99.76	2.13
Vegetation association 18 within the Pilbara Bioregion	676,556	672,424	99.39	16.78
Vegetation association 82 within Western Australia	2,565,901	2,553,217	99.51	10.25
Vegetation association 82 within the Pilbara Bioregion	2,563,583	2,550,898	99.51	10.26

3.4.1 Flora

No species listed under the *Environment Protection and Biodiversity Conservation Act*, *1999* (EPBC Act) or gazetted as Threatened Flora species under the *Biodiversity Conservation Act, 2016* (BC Act) were identified within the Amendment Application Area.

Two Priority Flora have been identified within the Amendment Application Area (**Figure 2**):

- *Ipomoea racemigera* (Priority 2); and
- *Rostellularia adscendens* var. *latifolia* (Priority 3).

Populations of Priority flora will be avoided by a 10 m buffer where practicable.

3.4.2 Vegetation Communities

Onshore Environmental (2014a) mapped a total of seven broad floristic communities with 14 vegetation associations within the Amendment Application Area (**Table 3; Figure 2**).

Table 3: Vegetation associations of the Amendment Application Area (Onshore 2014a)

Broad Floristic Community	Vegetation Association	
Acacia High Shrubland	MA AtpApypAse Ecr ThmbTtCyp	High Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia pyrifolia* var. *pyrifolia* and *Acacia sericophylla* with Scattered Trees of *Eucalyptus camaldulensis* subsp. *refulgens* over Open Tussock Grassland of *Themeda* sp. Mt Barricade (M.E. Trudgen 2471), *Themeda triandra* and *Cymbopogon procerus* on brown loam and gravels on major drainage channels.
Acacia Low Open Forest	SA Aa TpTwTb CcChf	Low Open Forest of *Acacia aptaneura* over Open Hummock Grassland of *Triodia pungens*, *Triodia wiseana* and *Triodia basedowii* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chrysopogon fallax* on red brown sandy loam on sandy plains and undulating low hills.
Acacia Open Scrub	MI AtpPlAm TpTs ChEll	Open Scrub of *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* and *Acacia monticola* over Open Hummock Grassland of *Triodia pungens* and *Triodia* sp. Shovelanna Hill (S.van Leeuwen 3835) with Low Open Woodland of *Corymbia hamerselyana* and *Eucalyptus leucophloia* subsp. *leucophloia* on red brown sandy loam on minor drainage lines.
Acacia Shrubland	MI AbAdAma Tp TtPamuEua	Shrubland of *Acacia bivenosa*, *Acacia dictyophleba* and *Acacia maitlandii* over Open Hummock Grassland of *Triodia pungens* over Open Tussock Grassland of *Themeda triandra*, *Paraneurachne muelleri* and *Eulalia aurea* on brown sandy loam on minor drainage lines.
Melaleuca High Open Forest	MA MaEcrEv MgAcpAtr Cyv	High Open Forest of *Melaleuca argentea*, *Eucalyptus camaldulensis* var. *refulgens* and *Eucalyptus victrix* over High Open Shrubland of *Melaleuca glomerata*, *Acacia coriacea* subsp. *pendens* and *Acacia trachycarpa* over Very Open Sedges of *Cyperus vaginatus* on alluvial gravelly soils on major drainage channels with seasonal pools.
Themeda Tussock Grassland	GG TtErmuThmb EllChCf AtpGoroPl	Tussock Grassland of *Themeda triandra*, *Eriachne mucronata* and *Themeda* sp. Mt Barricade with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Corymbia ferriticola* over High Shrubland of *Acacia tumida* var. *pilbarens*, *Gossypium robinsonii* and *Petalostylis labicheoides* on red brown sandy loam in narrowly incised rocky drainage lines.
Triodia Hummock Grassland	FS TsTpTw Ell AbApaAanc	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia pungens* and *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Acacia bivenosa*, *Acacia pachyachra* and *Acacia ancistrocarpa* on red brown loam on footslopes and low undulating hills
	HC Tw AiAb InrSeao	Hummock Grassland of *Triodia wiseana* with High Open Shrubland of *Acacia inaequilatera* and *Acacia bivenosa* over Low Open Shrubland of *Indigofera rugosa* and *Senna artemisioides* subsp. *oligophylla* on red silty loam on dolerite hill crests.
	HC TwTbrTp EllCh AmaGrwhAb	Hummock Grassland of *Triodia wiseana*, *Triodia brizoides* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over High Open Shrubland of *Acacia maitlandii*, *Grevilllea wickhamii* subsp. *hispidula* and *Acacia bivenosa* on red brown sandy loam on hill crests and upper hill slopes.
	HS TeTw Ch AiAan	Hummock Grassland of *Triodia epactia* and *Triodia wiseana* with Low Open Woodland of *Corymbia hamersleyana* over High Open Shrubland of *Acacia inaequilatera* and *Acacia ancistrocarpa* on red brown sandy loam on granite and quartz hill slopes and footslopes.
	HS TsTwTp EllCh AhiAaa	Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxa* on red brown sandy loam on hill slopes
	HS TwTbr Ai Inr	Hummock Grassland of *Triodia wiseana* and *Triodia brizoides* with High Open Shrubland of *Acacia inaequilatera* and Low Open Shrubland of *Indigofera rugosa* on brown sandy loam on dolerite hillslopes.

Broad Floristic Community	Vegetation Association	
	ME TpTlo ExAciCh PlApypGoro	Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamerselyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains
	SP TbTp HlAancAi Ch	Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with High Open Shrubland of *Hakea lorea* subsp. *lorea*, *Acacia ancistrocarpa* and *Acacia inaequilatera* and Scattered Low Trees of *Corymbia hamersleyana* on red brown loamy sand on stony plains.

None of these vegetation associations are representative of a Threatened Ecological Community (TEC) (Onshore Environmental, 2014a).

Vegetation condition within the Amendment Application Area ranges from Excellent to Completely Degraded (Onshore Environmental, 2014). Vegetation adjacent to the Amendment Application Area is in similar condition to the vegetation of the Amendment Application Area.

3.4.3 Weeds

Nineteen introduced flora species (weeds) were recorded within the Amendment Application Area (**Table 4**). Control of established weed populations will be carried out according to BHP's standard *Weed Control and Management Procedures.*

Table 4 Introduced Flora of the Amendment Application Area

Species	Common Name	DBCA Rating (DPAW, 2016)	Declared Pest[1]
**Aerva javanica*	Kapok Bush	High and Rapid	No
**Argemone ochroleuca* subsp. *ochroleuca*	Mexican Poppy	Unknown and Rapid	Yes
**Bidens bipinnata*	Bipinnate Beggartick	Unknown and Rapid	No
**Cenchrus ciliaris*	Buffel Grass	High and Rapid	No
**Cenchrus setiger*	Birdwood Grass	High and Rapid	No
**Conyza bonariensis*	Flaxleaf Fleabane	Unlisted	No
**Datura leichhardtii*	Native Thornapple	Unknown and Unknown	Yes
**Digitaria ciliaris*	Summer Grass	Unlisted	No
**Flaveria trinervia*	Speedy Weed	Unlisted	No
**Lactuca serriola*	Prickly Lettuce	Unlisted	No
**Malvastrum americanum*	Spiked Malvastrum	Unknown and Rapid	No
**Rumex vesicarius*	Ruby Dock	High and Rapid	No
**Setaria verticillata*	Whorled Pigeon Grass	High and Rapid	No
**Solanum nigrum*	Black Berry Nightshade	Low and Rapid	No
**Sonchus asper*	Rough Sowthistle	Unlisted	No
**Sonchus oleraceus*	Common Sowthistle	Low and Rapid	No
**Tribulus terrestris*	Caltrop	Unknown and Medium	No
**Tridax procumbens*	Tridax	Unlisted	No
**Vachellia farnesiana*	Mimosa Bush	High and Rapid	No

3.4.4 Fauna

Biologic (2014) undertook a project to consolidate all fauna mapping undertaken on BHP Billiton Iron Ore tenure and identified the following six fauna habitat types occur within the Amendment Application Area (**Figure 3**):

- **Drainage Area / Floodplain:** Characterised by *Eucalyptus xerothermica* and *Corymbia hamersleyana* woodland over broad-leafed *Acacia* shrubland on sandy loam soils sometimes with exposed rocky areas. These can have high vegetation density, complexity and diversity, and because they tend to occur on accretional or depositional areas, often have deeper and

[1] *Biosecurity and Agriculture Management Act*, 2007 (BAM Act) s22

richer soils than other fauna habitats. Grasses tend to be dominated by tussock grasses rather than spinifex, or the weed Buffel Grass **Cenchrus ciliaris*.

- **Hillcrest / Hill slope:** These fauna habitats tend to be more open and structurally simple due to their recent depositional history than other fauna habitats, and are dominated by varying species of spinifex. A common feature of these habitats is a rocky substrate, often with exposed bedrock, and skeletal red soils. These are usually dominated by *Eucalyptus* woodlands, *Acacia* and *Grevillea* scrublands and *Triodia* spp. low hummock grasslands.
- **Minor Drainage Line:** Located within the minor gullies and depressions, generally through the Crest/Slope habitat. Consists primarily of *Acacia* low shrubland. The understorey generally lacks density and often consists solely of sparse tussock grassland, often including the weed Buffel Grass **Cenchrus ciliaris* where it has been introduced. The substrate can be sandy in places but generally consists of a skeletal loam gravel or stone.
- **Major Drainage Line:** Major Drainage Lines comprise mature River Red Gums, Coolibahs and stands of Silver Cadjeput over river pools. Open, sandy or gravelly riverbeds characterise this habitat type. In ungrazed areas, the vegetation adjacent to the main channel or channels is denser, taller and more diverse than adjacent terrain and can include reedbeds around pools.
- **Mulga Woodland:** This habitat includes woodlands and other ecosystems in which Mulga (*Acacia aneura*) is dominant, either as the principal *Acacia* species or mixed with others. It consists of disintegrating groves on stony soils with spinifex. This habitat type is grouped with other habitat occurring on the plains; however it is noted that small groves of Mulga occur on ridgelines.
- **Sand Plain:** Sand Plain habitat is characterised by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat transitions into patches of Mulga in places. This habitat often occurs as terraces along Major Drainage Lines.

The surveys undertaken across the Amendment Application Area have resulted in one fauna species of conservation significance being recorded from within the Amendment Application Area (**Figure 3**):

- Western Pebble-mound Mouse (*Pseudomys chapmani*) (Priority 4, DBCA).

Based on the occurrence of the habitat types and conservation significant fauna species previously recorded in the vicinity, an additional three species are considered to potentially occur within the Amendment Application Area (i.e. those considered ‘likely’ or ‘possible’ to occur within the Amendment Application Area):

- Fork-tailed Swift (*Apus pacificus*) (Migratory, EPBC Act; Schedule 5, BC Act);
- Northern Quoll (*Dasyurus* hallucatus) (Endangered EPBC Act; Schedule 2 BC Act);
- Pilbara Olive Python (*Liasis olivaceus barroni*) (Vulnerable, EPBC Act; Schedule 3, BC Act);

An assessment of the potential impact of the proposed clearing on the species of conservation significant fauna that may occur in the application amendment area is provided in **Table 5**.

Table 5: Conservation Significant Fauna Potentially Occurring within the Amendment Application Area (biologic, 2014)

Conservation Significant Species	Conservation Status	Distribution and Ecology	Habitat Relevance	Likelihood	Potential Impact on Species
Birds					
Fork-tailed Swift (*Apus pacificus*)	Migratory (EPBC Act) Migratory (BC Act)	The Fork-tailed Swift breeds in north-east and east Asia, wintering in Australia and southern New Guinea (Johnstone and Storr, 1998). Fork-tailed Swifts are entirely aerial within the Pilbara and may forage sporadically over the Amendment Application Area in the summer months, associated with thunderstorms and cyclonic systems (Johnstone and Storr, 1998).	The Fork-tailed Swift is largely an aerial species and has a broad distribution across much of Western Australia. It is viewed as a nomadic species and may fly over the Amendment Application Area.	Possible	**Negligible** As this species is entirely aerial and not reliant on terrestrial habitats, the impact to this species is considered to be negligible.
Mammals					
Northern Quoll (*Dasyurus hallucatus*)	Endangered (EPBC Act) Endangered (BC Act)	Northern Quoll populations occur in six geographical centres around Australia, including: Drummond Range, central Queensland; the wet tropics of Northern Queensland; northern Cape York Peninsula; northern and western Top End, Northern Territory; north Kimberley and the Pilbara, Western Australia (Braithwaite and Griffiths, 1994). Northern Quoll denning habitat in the Pilbara is associated with rocky habitats or riverine habitats with mature Eucalypt trees with hollows (SEWPaC, 2011).	There has been one historical record of this in the broader area. This species may forage within the Major Drainage Line Habitat of the Amendment Application Area and use the remainder of the Amendment Application Area in a transitory manner when conditions are suitable.	Possible	**Low** While the Major Drainage Line habitat within the Amendment Application Area may be utilised by the Northern Quoll the proposed area for clearing is small in a regional context and is contiguous with habitats in the local and regional area.
Western Pebble-mound mouse (*Pseudomys chapmani*)	Priority 4 (DBCA)	The Western Pebble-mouse is restricted to the Pilbara region, where it is recognized as an endemic species. Abandoned mounds to the east of its current range indicate a decline in distribution (Menkhorst and Knight, 2004). Abandoned mounds in disturbed areas suggest that the species is under threat by grazing and mining activities. The construction of extensive pebble mounds, built from small stones, which typically cover areas from 0.5-9.0 square metres, is characteristic of this species. Mounds are restricted to suitable class stones, and are usually found on gentle slopes and spurs (van Dyck and Strahan, 2008).	The Crest / Slop and Stony Plain habitats of the Amendment Application Area provides suitable habitat for this species. This species has been recorded from a number of locations within the Amendment Application Area and are very common in the broader region. Active mounds of the Western Pebble-mound Mouse will be avoided using a 10 m buffer, where practicable.	Recorded	**Low** This species has been recorded from a number of locations within the Amendment Application Area, however there is a large area of suitable habitat adjacent to the Amendment Application Area and active mounds of the Western Pebble-mound Mouse will be avoided using a 10 m buffer, where practicable.

Conservation Significant Species	Conservation Status	Distribution and Ecology	Habitat Relevance	Likelihood	Potential Impact on Species
Reptiles					
Pilbara Olive Python (*Liasis olivaceus barroni*)	Vulnerable (EPBC Act) Vulnerable (BC Act)	The Pilbara Olive Python is found in a range of habitats, including drier areas of woodland, escarpments, rocky gorges, gullies and around watercourses (Wilson and Swan, 2010). Pearson (2003) has reported that Pilbara Olive Pythons are widespread across the Pilbara, with many significant populations remaining.	This species has been recorded in the Major Drainage Line habitat adjacent to the Amendment Application Area. This species may forage within the Major Drainage Line Habitat of the Amendment Application Area and use the remainder of the Amendment Application Area in a transitory manner when conditions are suitable.	Possible	**Low** This species has a broad regional distribution that extends well outside of the Amendment Application Area and its preferred habitat (Gorge/Gully and Major Drainage Line habitats) extend outside the Amendment Application Area and are represented throughout the Pilbara.

3.5 GROUNDWATER

The Amendment Application Area is located in the Pilbara Groundwater Area, proclaimed under the RIWI Act (DoW, 2009a).

There is one main aquifer within the Amendment Application Area:

1. Hamersley – Fractured Rock Aquifer: The Precambrian rocks of the Hamersley Basin are principally volcanics, shales and iron formations. Groundwater is contained within fractures within these rocks. The groundwater level may be deep below the surface, and is generally fresh. The main use of this aquifer is for mining and mine dewatering from iron ore mines. Bores have also been drilled for road and railway construction. There will be increasing dewatering from the fractured rocks around iron ore mines as the pits become deeper (DoW, 2015).

3.6 SURFACE WATER

The Amendment Application Area is located in the Pilbara Surface Water Area, proclaimed under the RIWI Act (DoW, 2009b).

The Amendment Application Area contains one major non-perennial water course (Marillana Creek) and several unnamed non-perennial minor drainage lines.

Where practicable, existing cleared tracks will be used to cross areas identified as Major Drainage Lines (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow.

4 ENVIRONMENTAL MANAGEMENT

4.1 CORPORATE LEVEL PLANS AND PROCEDURES

The management of the environmental aspects of BHP's operations for the Prescribed Premises are managed under the company's AS/NZS ISO 14001:2016 certified Environmental Management System (EMS). The EMS describes the organisational structure, responsibilities, practices, processes and resources for implementing and maintaining environmental objectives at all BHP sites.

Additionally, operational controls for environmental management for the Amendment Application Area are guided by BHP's Charter values. The Charter Values outline a commitment to develop, implement and maintain management systems for sustainable development that drive continual improvement and set and achieve targets that promote efficient use of resources. In order to give effect to the Charter Values, a series of "Global Documents" documents have been developed.

BHP has also developed a Sustainable Development Policy for its Iron Ore operations. The Sustainable Development Policy outlines a commitment to setting objective and targets to achieve sustainable outcomes and to continually improve our performance.

To support these documents BHP has an internal Project Environmental and Aboriginal Heritage Review (PEAHR) system for its Iron Ore operations. The purpose of the system is to manage implementation of environmental, Aboriginal heritage, land tenure and legal commitments prior to and during land disturbance. All ground disturbance activities will meet the requirements of the PEAHR system.

5 PROJECT COMPLIANCE WITH THE TEN CLEARING PRINCIPLES

BHP consider that the clearing within the Amendment Application Area will not result in any significant environmental or social impacts, and complies with the Ten Clearing Principles, as defined in Schedule 5 of the EP Act. **Section 6** provides an assessment of project compliance with the Ten Clearing Principles.

6 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

The information used to assess the application against the Ten Clearing Principles has been based on the findings of multiple baseline surveys (**Section 3**).

6.1 PRINCIPLE A

Native vegetation should not be cleared if it comprises a high level of biological diversity

This proposal is not likely to be at variance to this Principle.

Similar habitat to the Amendment Application Area is located outside the Amendment Application Area. These other areas of similar vegetation type are therefore expected to have a similar or better biological diversity and conservation value than that of the Amendment Application Area.

The proposed clearing is therefore unlikely to have any significant impact on the biodiversity of the region.

Table 6 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle A.

Table 6: Assessment against Principle A components

Principle	Criteria	Assessment	Outcome
a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	a1) Native vegetation should not be cleared if it is representative of an area of outstanding biodiversity in the Bioregion.	The native vegetation within the Amendment Application Area is represented in the same or better condition within the broader region and is not considered to be of outstanding biodiversity in the Bioregion.	Not at variance with clearing principle.
	a2) Native vegetation should not be cleared if it has higher diversity of indigenous aquatic or terrestrial plant or fauna species than native vegetation of that ecological community in good or better condition in the Bioregion.	The native vegetation within the Amendment Application Area is in the same condition as other areas of similar vegetation type within the broader region.	Not at variance with clearing principle.
	a3) Native vegetation should not be cleared if it has higher diversity of indigenous aquatic or terrestrial plant or fauna species than the remaining vegetation of that ecological community in the local area.	The native vegetation within the Amendment Application Area is not considered to have higher biodiversity and conservation value than that of the surrounding vegetation within the local area.	Not at variance with clearing principle.
	a4) Native vegetation should not be cleared if it has higher ecosystem diversity than other native vegetation of that local area.	The native vegetation within the Amendment Application Area is not considered to have a higher ecosystem diversity than other native vegetation of that local area.	Not at variance with clearing principle.
	a5) Native vegetation should not be cleared if it has higher genetic diversity than the remaining native vegetation of that ecological community.	The native vegetation within the Amendment Application Area is not considered to have a higher genetic diversity than the remaining native vegetation of that ecological community as the vegetation is contiguous with adjacent native vegetation and has no special features.	Not at variance with clearing principle.
	A6) Native vegetation should not be cleared if it is necessary for the continued *in situ* existence of significant habitat for priority flora species published by the Department of Parks and Wildlife.	Two priority flora species were recorded in the Amendment Application Area (Onshore, 2014 and Biologic, 2022). The records of identified DBCA Priority flora populations will be avoided using a 10 m buffer where practicable.	Not at variance with clearing principle.

6.2 PRINCIPLE B

Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia

This proposal is not likely to be at variance to this Principle.

There are seven broad fauna habitat types within the Amendment Application Area (**Figure 3**).

The vegetation and habitat found within the Amendment Application Area are considered to be well represented in the Pilbara bioregions.

One fauna species of conservation significance has been recorded from within the Amendment Application Area (**Table 5; Figure 3**) with an additional three species are considered to potentially occur within the Amendment Application Area (**Table 5**). As described in **Section 3.4.4** and **Table 5** clearing of the Amendment Application Area is expected to have a low impact on these species.

Table 7 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle B.

Table 7: Assessment against Principle B components

Principle	Criteria	Assessment	Outcome
b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	b1) Native vegetation should not be cleared if it is or is likely to be habitat for fauna that is declared Specially Protected under the BC Act.	Three BC Act protected species are considered 'possible' or 'likely' to occur within the Amendment Application Area. These BC Act protected species are unlikely to be significantly impacted by this proposal as: • All species are wide-ranging and found throughout the broader region; • All species are likely to be transitory within the Amendment Application Area and will be able to move away from disturbance; • There will be a small amount of clearing within a large Amendment Application Area; • Where practicable existing cleared tracks will be used to cross areas identified as Major Drainage Line habitat (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow. The impact to the BC Act protected species recorded within the Amendment Application Area and those considered 'possible' or 'likely' to occur will be low (**Table 5**).	Not likely to be at variance with clearing principle.
	b2) Native vegetation should not be cleared if it is or is likely to be habitat for Priority Listed Fauna.	One priority fauna species has been recorded within the Amendment Application Area, the Western Pebble-mound Mouse. As detailed in **Table 5** this species is unlikely to be impacted for the following reasons: • It are unlikely be reliant solely on habitat within the Amendment Application Area; • Active mounds of the Western Pebble-mound Mouse will be avoided using a 10 m buffer, where practicable; and • Suitable breeding and foraging habitat in the same or better condition is widespread in the Amendment Application Area surrounds.	Not likely to be at variance with clearing principle.
	b3) Native vegetation should not be cleared if it is or is likely to be habitat for fauna that is otherwise significant.	Habitat found within the Amendment Application Area may be suitable for use by conservation significant fauna, however similar habitat in the same or better condition is widespread in the Amendment Application Area surrounds	Not at variance with clearing principle.
	b4) Native vegetation should not be cleared if it provides significant habitat for fauna species in the local area.	Habitat within the Amendment Application Area is not considered significant habitat for fauna species within the local area. Similar habitat to that proposed to be cleared is located to the area surrounding of the Amendment Application Area.	Not at variance with clearing principle.
	b5) Native vegetation should not be cleared if it maintains ecological functions and processes that protect significant habitat for fauna.	The clearing of native vegetation is not considered to alter ecological functions and processes that protect significant habitat for fauna.	Not at variance with clearing principle.

Principle	Criteria	Assessment	Outcome
	b6) Native vegetation should not be cleared if it forms, or is part of, an ecological linkage that is necessary for the maintenance of fauna.	No ecological linkages run through the Amendment Application Area that are necessary for the maintenance of fauna.	Not at variance with clearing principle.
	b7) Native vegetation should not be cleared if it provides significant habitat for fauna communities (assemblages) and meta-populations.	The Amendment Application Area is not considered to contain significant habitat for faunal assemblages that are not also present in other areas within the vicinity. The Amendment Application Area is not considered likely to contain geographically isolated fauna populations.	Not at variance with clearing principle.

6.3 PRINCIPLE C

Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora

This proposal is not likely to be at variance to this Principle.

No species listed under the EPBC Act, gazetted as Threatened Flora under the WC Act were recorded in the Amendment Application Area (Onshore, 2014a; GHD, 2011).

Table 8 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle C.

Table 8: Assessment against Principle C components

Principle	Criteria	Assessment	Outcome
c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	c1) Native vegetation should not be cleared if it is necessary for the continued *in situ* existence of populations of Threatened Flora under the *BC Act 2016*.	No Threatened Flora were recorded in the Amendment Application Area.	Not at variance with clearing principle.
	c2) Native vegetation should not be cleared if it is necessary for the continued *in situ* existence of other significant flora.	No species listed under the EPBC Act or other significant flora species were recorded in the Amendment Application Area.	Not at variance with clearing principle.

6.4 PRINCIPLE D

Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community

This proposal is not likely to be at variance to this Principle.

No TECs, Environmentally Sensitive Areas or PECs are located in the Amendment Application Area (Onshore, 2014).

Table 9 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle D.

Table 9: Assessment against Principle D components

Principle	Criteria	Assessment	Outcome
d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	d1) Native vegetation should not be cleared if threatened ecological communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* are present.	No EPBC Act TECs are present in the Amendment Application Area.	Not at variance with clearing principle.
	d2) Native vegetation should not be cleared if it is necessary for the maintenance of Threatened Ecological Communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.	No EPBC Act TECs or associated native vegetation will be impacted by the proposed works.	Not at variance with clearing principle.
	d3) Native vegetation should not be cleared if other significant ecological communities are present.	No other significant ecological communities are known to occur or are likely to occur within the Amendment Application Area.	Not at variance with clearing principle.
	d4) Native vegetation should not be cleared if it is necessary for the maintenance of other significant ecological communities.	No DBCA listed TECs or associated native vegetation will be impacted by the proposed works.	Not at variance with clearing principle.
	d5) Native vegetation should not be cleared if it is necessary for the continued *in situ* existence of significant examples of priority threatened ecological communities published by the Department of Environment and Conservation.	No DBCA listed PECs or associated native vegetation will be impacted by the proposed works.	Not at variance with clearing principle.

6.5 PRINCIPLE E

Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared

This proposal is not likely to be at variance to this Principle.

The habitat and vegetation within the Amendment Application Area is well represented in the Land Systems of the region (**Table 2**). It therefore is unlikely that individual species would be restricted to a particular habitat and vegetation occurring in the Amendment Application Area.

Table 10 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle E.

Table 10: Assessment against Principle E components

Principle	Criteria	Assessment	Outcome
e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	e1) Native vegetation should not be cleared if the remaining native vegetation represents less than 30%, or the clearing would reduce the representation of remaining native vegetation to less than 30% in the Bioregion (or subregion where applicable).	Clearing native vegetation within the Amendment Application Area will not reduce the extent of native vegetation below 30% in the bioregion or subregion.	Not at variance with clearing principle.
	e2) Native vegetation should not be cleared if an ecological community represents less than 30% of its original extent or clearing would reduce the representation of any ecological community to less than 30% of its original extent in the Bioregion (or subregion where applicable).	Clearing native vegetation within the Amendment Application Area will not significantly reduce the known extent of the ecological community from pre-European extents. Current extents of this vegetation community in the bioregion are almost 100% of pre-European extents.	Not at variance with clearing principle.
	e3) Native vegetation should not be cleared if clearing would reduce an ecological community to less than 1% of the Bioregion (or subregion where applicable)	Clearing native vegetation within the Amendment Application Area will not significantly reduce the known extent of the vegetation community in the bioregion.	Not at variance with clearing principle.
	e4) Native vegetation should not be cleared if the remaining native vegetation represents less than 30% or the clearing would reduce the representation of remaining native vegetation to less than 30% in the Local Area.	Clearing native vegetation within the Amendment Application Area will not reduce the representation of remaining native vegetation to less than 30% in the local area.	Not at variance with clearing principle.
	e5) Native vegetation should not be cleared if an ecological community represents less than 30% of its original extent or clearing will reduce the representation of any ecological community to less than 30% of its original extent in the Local Area.	Clearing native vegetation within the Amendment Application Area will not reduce the representation of any ecological community to less than 30% of its original extent in the local area.	Not at variance with clearing principle.
	e6) Native vegetation should not be cleared if clearing would reduce any ecological community to less than 1% of the Local Area.	Clearing native vegetation within the Amendment Application Area will not significantly reduce the known extent of the vegetation community in the local area.	Not at variance with clearing principle.

6.6 PRINCIPLE F

Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland

This proposal is not likely to be at variance to this Principle.

The Amendment Application Area contains one major non-perennial water course (Marillana Creek) and several unnamed non-perennial minor drainage lines.

Where practicable, existing cleared tracks will be used to cross areas identified as Major Drainage Lines (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow.

An assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle F is provided in **Table 11**.

Table 11: Assessment against Principle F components

Principle	Criteria	Assessment	Outcome
f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	f1) Native vegetation should not be cleared if it is growing in a watercourse or wetland that has been identified as having significant environmental values.	Disturbance within Marillana Creek will be minimised. Where practicable existing cleared tracks will be used to cross areas identified as Major Drainage Lines (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow. The minimal amount of clearing required and the use of existing crossings make it unlikely that the activities would have a significant impact to Marillana Creek.	Unlikely to be at variance with clearing principle.
	f2) Native vegetation should not be cleared if it provides a buffer area for watercourses and wetlands identified in criteria (f1) and (f2).	No native vegetation occurs within the Amendment Application Area that provides a buffer to watercourses or wetlands that have been identified as having significant environmental values.	Not at variance with clearing principle.
	f3) Native vegetation should not be cleared if water tables are likely to change and adversely affect ecological communities that are wetland or groundwater dependent.	Due to the small scale of clearing this project is not considered likely to adversely alter water tables, and as such will not impact on any ecological communities that are wetland or groundwater dependent.	Not at variance with clearing principle.
	f4) Native vegetation should not be cleared if it is growing in other watercourses or wetlands.	One major non-perennial water course (Marillana Creek) and several unnamed non-perennial minor drainage lines. Where practicable existing cleared tracks will be used to cross areas identified as Major Drainage Lines (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow.	Unlikely to be at variance with clearing principle.

6.7 PRINCIPLE G

Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation

This proposal is not likely to be at variance to this Principle.

Land degradation may include impacts such as erosion, changes to pH, water logging, salinisation or spread of weeds. These potential impacts are assessed in the sections below. **Table 12** provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle G.

Given the proposed management strategies for weed species and the low susceptibility of the soils to erosion, it is considered that the project will not be at variance to Principle G.

6.7.1 Erosion

It is not anticipated that the removal of vegetation will contribute to increased amounts of wind or water erosion in the Amendment Application Area or adjacent areas.

6.7.2 Changes to pH

The Amendment Application Area is not in an area at risk of acid sulphate soils and there are no recorded acid sulphate soils within the Amendment Application Area. It is not expected that the proposed clearing will result in changes to soil pH.

6.7.3 Water logging and salinisation

No water logging or increased salinisation is expected to occur as a result of the proposed clearing.

6.7.4 Weeds

Nineteen introduced flora species (weeds) were recorded within the Amendment Application Area (**Table 4**). Control of established weed populations will be carried out according to BHP's standard *Weed Control and Management Procedures*.

Table 12: Assessment against Principle G components

Principle	Criteria	Assessment	Outcome
g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	g1) Native vegetation should not be cleared if wind or water erosion of soil is likely to be increased (on or off site).	Soil erosion is not anticipated to occur as any areas cleared that are no longer required will be re-vegetated, where practicable.	Not at variance with clearing principle.
	g2) Native vegetation on land with soils with high or low pH should not be cleared.	The Amendment Application Area is not considered to contain soils at risk of having acid sulphate soils present. No vegetation on soils with significantly low (or high) pH will be impacted by the proposed works.	Not at variance with clearing principle.
	g3) Native vegetation should not be cleared if water logging is likely to be increased (on or off site).	It is not expected the proposal will result in significant water logging within or adjacent to the Amendment Application Area by the clearing of native vegetation within the Amendment Application Area.	Not at variance with clearing principle.
	g4) Native vegetation should not be cleared if land salinisation is likely to be increased (on or off site).	Soil salinity is not considered to be increased in the Amendment Application Area (on or off site) by the clearing of native vegetation.	Not at variance with clearing principle.

6.8 PRINCIPLE H

Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area

This proposal is not likely to be at variance to this Principle.

The Amendment Application Area is not within any conservation areas as listed by the DBCA or those protected under the EPBC Act. The closest conservation area is Karijini National Park which is more than 45 km west of the Amendment Application Area.

The Amendment Application Area is not considered to form an ecological linkage to any conservation areas.

An assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle H is provided in **Table 13** below.

Table 13: Assessment against Principle H components

Principle	Criteria	Assessment	Outcome
h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	h1) Native vegetation should not be cleared if it contributes significantly to the environmental values of a conservation area.	The vegetation of the Amendment Application Area does not contribute significantly to the environmental values of a conservation area.	Not at variance with clearing principle.
	h2) Native vegetation should not be cleared if that vegetation provides a buffer to a conservation area.	There are no conservation areas within the vicinity of the Amendment Application Area.	Not at variance with clearing principle.
	h3) Native vegetation should not be cleared if the land contributes to an ecological linkage to a conservation area.	The Amendment Application Area is not an ecological linkage to a conservation area.	Not at variance with clearing principle.
	h4) Native vegetation should not be cleared if it provides habitats not well represented on conservation land.	There are no habitats within the Amendment Application Area that are not well represented on conservation land.	Not at variance with clearing principle.

6.9 PRINCIPLE I

Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water

This proposal is not likely to be at variance to this Principle.

The Amendment Application Area is located in the Pilbara Groundwater Area and the East Murchison Groundwater Area, proclaimed under the (RIWI Act) (DoW, 2009a),

There is one main aquifer within the Amendment Application Area: Hamersley – Fractured Rock.

The small amount of clearing is unlikely to cause deterioration in the quality of any surface or underground water.

Where practicable existing cleared tracks will be used to cross areas identified as Major Drainage Lines (**Figure 3**). If it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow.

Table 14 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle I.

Table 14: Assessment against Principle I components

Principle	Criteria	Assessment	Outcome
i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	i1) Native vegetation should not be cleared if clearing the vegetation will reduce the quality of surface or underground water in proclaimed, gazetted or declared areas or catchments.	The clearing of native vegetation is not considered likely to alter the quality of surface or groundwater within the Amendment Application Area due to the: • small amount of clearing; and • the lack of permanent waterbodies in the vicinity.	Not at variance with clearing principle.
	i2) Native vegetation should not be cleared if sedimentation, erosion, turbidity or eutrophication of water bodies on or off site is likely to be caused or increased.	Localised erosion will not impact any waterbodies as no permanent waterbodies are present within the vicinity of the Amendment Application Area.	Not at variance with clearing principle.
	i3) Native vegetation should not be cleared if water tables are likely to change significantly altering salinity or pH.	The clearing of native vegetation is not considered likely to alter the quality of surface or ground water within the Amendment Application Area due to the: • small amount of clearing; and • the lack of permanent waterbodies in the vicinity.	Not at variance with clearing principle.
	i4) Native vegetation should not be cleared if the clearing is likely to alter the water regimes of groundwater-dependent ecosystems on or off site, causing degradation to the biological communities associated with these systems.	The clearing of native vegetation is not considered likely to alter the regimes of surface or groundwater dependent vegetation within the vicinity of the Amendment Application Area.	Not at variance with clearing principle.

6.10 PRINCIPLE J

Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding

This proposal is not likely to be at variance to this Principle.

In the Pilbara massive surface water runoff and localised flooding occurs following intense rainfall events. However, the incidence or intensity of flooding is not likely to be significantly influenced by either the proposed the small amount of vegetation clearing. It is highly improbable that surface runoff generated from the cleared area could create sufficient concentrated water volumes to cause even a localised flood event.

Table 15 provides an assessment of the proposed clearing activities within the Amendment Application Area against the components of clearing Principle J.

Table 15: Assessment against Principle J components

Principle	Criteria	Assessment	Outcome
j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	j1) Native vegetation should not be cleared if it is likely to lead to an incremental increase in peak flood height.	The clearing of native vegetation is not considered likely to cause any alteration to peak flood height.	Not at variance with clearing principle.
	j2) Native vegetation should not be cleared if it is likely to lead to an incremental increase in duration of flood peak.	The clearing of native vegetation is not considered likely to cause any impact on duration of flood peak.	Not at variance with clearing principle.

7 HERITAGE

The Land Access Unit is the internal group within BHP Billiton Iron Ore that manages Aboriginal heritage matters. The Land Access Unit is responsible for ensuring that BHP Billiton Iron Ore complies with the *Aboriginal Heritage Act 1972*, and all other state and federal heritage legislation. All land disturbance activities are subject to ethnographic and archaeological surveys as part of an internal PEAHR. The PEAHR process ensures that all heritage sites in the vicinity of the Amendment Application Area are identified and avoided where practicable.

The Proposal is situated within the Banjima Native Title Claim (WC2011/006). Ethnographic and archaeological surveys of the Amendment Application Area have been conducted in consultation with the Banjima people. A number of heritage sites were identified within the Amendment Application Area (site details are not provided here out of respect of the wishes of the Traditional Owners).

If any heritage site cannot practicably be avoided, BHP Billiton Iron Ore would consult the relevant traditional owners and seek approval under the *Aboriginal Heritage Act 1972* before the site is disturbed.

8 CONCLUSION

The proposed clearing of up to 40 ha of native vegetation within the 2,097.14 ha Amendment Application Area is unlikely to be at variance to any of the Ten Clearing Principles and is therefore unlikely to have any significant negative impacts on biodiversity and environmental values in the area.

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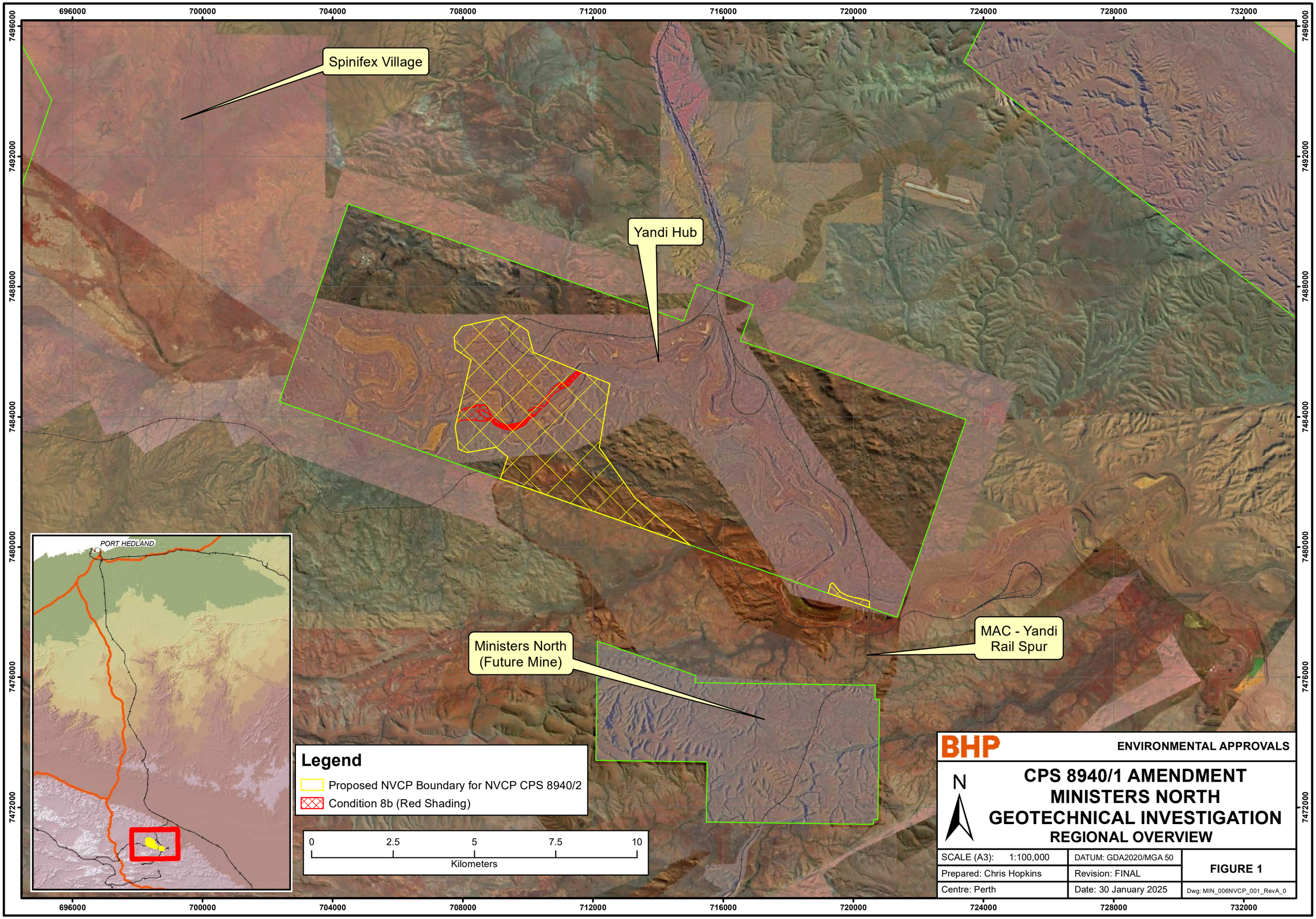
Figures



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Legend

Proposed NVCP Boundary for CPS 8940/2

Conservation Significant Flora

- Ipomoea racemigera (Priority 2)
- Rostellularia adscendens var. latifolia (Priority 3)

Vegetation Associations (Onshore, 2014)

- Acacia High Shrubland (MA AtpApypAse Ecr ThmbTtCyp)
- Acacia Low Open Forest (SA Aa TpTwTb CcChf)
- Acacia Open Scrub (MI AtpPlAm TpTs ChEll)
- Acacia Shrubland (MI AbAdAma Tp TtPamuEua)
- Melaleuca High Open Forest (MA MaEcrEv MgAcpAtr Cyv)
- Themeda Tussock Grassland (GG TtErmuThmb EllChCf AtpGoroPl)
- Triodia Hummock Grassland (FS TsTpTw Ell AbApaAanc)
- Triodia Hummock Grassland (HC Tw AiAb InrSeao)
- Triodia Hummock Grassland (HC TwTbrTp EllCh AmaGrwhAb)
- Triodia Hummock Grassland (HS TeTw Ch AiAan)
- Triodia Hummock Grassland (HS TsTwTp EllCh AhiAaa)
- Triodia Hummock Grassland (HS TwTbr Ai Inr)
- Triodia Hummock Grassland (ME TpTlo ExAciCh PlApypGoro)
- Triodia Hummock Grassland (SP TbTp HlAancAi Ch)
- Cleared

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Kilometers

BHP ENVIRONMENTAL APPROVALS

N

MINISTERS NORTH CONVEYOR GEOTECHNICAL INVESTIGATION NVCP
VEGETATION AND SIGNIFICANT FLORA

SCALE (A3): 1:36,000	DATUM: GDA2020/MGA 50	FIGURE 2
Prepared: Chris Hopkins	Revision: FINAL	
Centre: Perth	Date: 31 January 2025	Dwg: MIN_006NVCP_002_RevA_0

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7486000 7484000 7482000 7480000 7478000

Legend

Proposed NVCP Boundary for CPS 8940/2

Conservation Significant Vertebrate Fauna

Pseudomys chapmani (Western Pebble-mound Mouse) (DBCA Priority 4)

Vertebrate Fauna Habitat Mapping

Drainage Area/ Floodplain
Hillcrest/ Hillslope
Major Drainage Line
Minor Drainage Line
Mulga Woodland
Sand Plain
Cleared

0 0.5 1 1.5 2
Kilometers

BHP

ENVIRONMENTAL APPROVALS

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MINISTERS NORTH CONVEYOR GEOTECHNICAL INVESTIGATION NVCP

FAUNA HABITAT AND SIGNIFICANT FAUNA

SCALE (A3): 1:36,000	DATUM: GDA2020/MGA 50	FIGURE 3
Prepared: Chris Hopkins	Revision: FINAL	
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Appendices

Appendix 1: *BHP Yandi Operations Targeted Flora Survey* (Biologic, 2022)

Appendix 2: Consolidation of Regional Vegetation Mapping BHP Billiton Iron Ore Pilbara Tenure (Onshore Environmental, 2014)

Appendix 3: Ministers North Fauna Survey Level 1 Survey (GHD, 2021)

Appendix 4: Consolidation of Regional Fauna Habitat Mapping BHP Billiton Iron Ore Pilbara Tenure (biologic, 2017)