



**ACHM**

AUSTRALIAN CULTURAL  
HERITAGE MANAGEMENT

*Cultural Heritage Assessment Report*

# Social Surroundings Assessment 6-10 May 2024

Section 38 Mulga Downs Iron Ore  
Project

**MDM-85000-EN-SOW-0004**

**By:** Paul Connolly, Ron Colman, Fiona Sutherland, Dr Paul  
Dottin, Clive Taylor and Dr Shaun Canning

**Date:** 12 June 2024

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**Aboriginal Cultural Heritage Present within the Activity Area: Yes**

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## Spatial Data

*Spatial data captured by Australian Cultural Heritage Management (Victoria) Pty Ltd in this document for any newly recorded sites has been obtained by using hand held or differential GPS units using the GDA94 co-ordinate system.*

## Abbreviations

Term	Meaning
<b>ACH</b>	<b>Aboriginal Cultural Heritage (sites and cultural material)</b>
ACH Council	Aboriginal Cultural Heritage Council
ACHA	<i>Aboriginal Cultural Heritage Act 2021 (WA) (Repealed)</i>
ACHM	Australian Cultural Heritage Management
ACMC	Aboriginal Cultural Material Committee
AHA	<i>Aboriginal Heritage Act 1972 (WA)</i>
DPLH	Western Australian Department of Planning, Land and Heritage
EPA	Environmental Protection Agency
GIS	Geographic Information System
GPS	Global Positioning System
HPPL	Hancock Prospecting
SOW	Scope of Works
WA	Western Australia

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1 Introduction

This document reports the results of the environmental aspects of a social surroundings consultation commissioned by Karijini Development Pty Ltd for HanRoy Pty Ltd.

HanRoy is seeking approval under Part IV of the *Environmental Protection Act 1986* (WA) for the Mulga Downs Iron Ore Project and Mulga Downs Hub and Spur Project (the Proposal).

This report summarises environmental matters raised by the Banjima People during a social surroundings consultation for HanRoy’s proposal under section 38 of the *Environmental Protection Act 1986* (WA) titled “Mulga Downs Iron Ore Project” and “Mulga Downs Hub and Rail Spur” (collectively referred to as “the Proposal”) on 6 to 10 May 2024.

Through this Social Surroundings Assessment, HanRoy must demonstrate that the Proposal will not significantly harm Banjima’s social, cultural, aesthetic, and economic values. This document summarises Banjima's environmental values raised during the consultation and documents draft recommendations in relation to the Proposal.

## 2 Proposal

The Proposal is located approximately 180 km northwest of Newman on Mulga Downs Station. The entirety of the mine and hub and about half of the rail spur lies within the Banjima Native Title Determination Area. The remaining northern section of the rail spur lies within the Palyku and Kariyarra native title determinations.

The Proposal consists of the following (from the Proposal Content Documents, EPA website 15 May 2024):

### 2.1.1 Mine

The Proposal is for the development of the Mulga Downs Iron Ore Mine located 210 km south of Port Hedland and 180 km northwest of Newman in the Pilbara Region of Western Australia (refer to Figure 1.1 1.1 — regional context map). The proposal includes, and is not limited to, the following:

- The development of a series of above and below-water table mine pits.
- Ore processing facility.
- Groundwater abstraction for water supply (for the mine and all associated infrastructure) and for the dewatering to facilitate the recovery of ore below water in the mine pits.
- Surplus water management with discharge of excess water either via limited direct disposal to the environment (into existing creek lines) and injection via managed aquifer reinjection (MAR);
- Mineral waste management (waste management (waste rock dumps (WRD), and tailings storage facilities (TSFs));
- Infrastructure to manage surface water (diversion of creeks and surface water to manage surface water (diversion of creeks and surface water flows);
- Linear infrastructure (haul roads, powerlines, pipelines and conveyor corridors);
- Mine-associated infrastructure and support facilities (including, but not limited to, accommodation camp, energy supply infrastructure, airstrip; wastewater treatment plant, landfill, offices, workshops, laydown areas, etc.) and;
- Transport of the ore via the Great Northern Highway to Port Hedland for export. The Great Northern Highway transport option will enable the commencement of the Mulga Downs Iron Ore Mine. Future transport options (e.g. rail) will be subject to a separate approvals process.

The mine is located within a 24,851.5 ha Development Envelope and will require clearing up to 8,422.5 ha of native vegetation. This is a reduction in area for the Development Envelope and disturbance footprint since the original referral via two section 43A applications to amend a referred proposal during assessment (originally a 40,653 ha Development Envelope with a disturbance footprint of up to 9,628 ha).

### 2.1.2 Hub and Rail Spur

The hub will consist of:

- Truck unloading facilities
- Product rehandling facilities
- Train loading facilities
- Product sampling facility
- Sedimentation pond(s)
- Rail loop
- Stockyards
- Laboratory
- Bulk fuel storage and fuelling facility
- Borrow pits and laydown areas.
- Construction offices and support buildings
- Energy supply infrastructure (power station)
- Roads for construction and operational haul



- Ancillary buildings (e.g. workshops, buildings, telecommunications, offices, ablutions, warehouse, security gatehouse)
- Construction and operational water supply/bores and water storage
- Telecommunication towers
- Wastewater treatment plant
- Water diversion channels and catchment ponds
- Accommodation
- Airstrip.

The Rail spur will include:

- Rail Spur line
- Lateral access tracks and rail maintenance service tracks
- Rail-associated infrastructure, including passing loops, sidings, fibre optic cable, telecommunications towers, water bores, borrow pits and laydown areas
- Construction offices and support buildings
- Access tracks
- Water storage for construction and operations water supply.

The hub and rail spur are located within a 21,268.6 ha Development Envelope and will require clearing up to 2,796.8 ha of native vegetation. This is an increase in areas for the Development Envelope and disturbance footprint since the original referral via a section 43A application to amend a referred proposal during assessment (originally a 17,714.01 ha Development Envelope with a disturbance footprint of up to 2,304.74 ha).

### 3 Legislation

The EP Act definition of “environment” includes “social surroundings”:

*Environment, subject to subsection (2), means living things, their physical, biological and social surroundings, and interactions between all of these (Subsection 3(1)).*

The EP Act further defines “social surroundings” as follows:

*In the case of humans, the reference to social surroundings in the definition of environment in subsection (1) is a reference to aesthetic, cultural, economic and other social surroundings to the extent to which they directly affect or are affected by physical or biological surroundings.*

The EPA’s (2016) *Environmental Factor Guideline: Social Surroundings* states that the environmental objective for the factor social surroundings is:

*To protect social surroundings from significant harm.*

Impacts upon social surroundings may be managed (in a regulatory sense) under several different statutes and correlating guidance and policies. Table 3–1: outlines current legislation, environmental policy and guidance relevant to the assessment of impacts on the social surroundings environmental factor.

Table 3–1: Legislation and Guidelines relevant to the assessment of the social surroundings environmental factor

Document	Description
<i>Environmental Protection Act 1986</i> (WA) (EP Act)	An Act to provide for an Environmental Protection Authority, for the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing.
<i>Aboriginal Heritage Act 1972</i> (WA) (AH Act)	An Act to make provision for the preservation of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith, and for other purposes incidental thereto.
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Cth)	An Act to preserve and protect places, areas and objects of significance to Indigenous people, and for related purposes.
<i>Native Title Act 1993</i> (Cth)	An Act for the advancement and protection of Aboriginal peoples and Torres Strait Islanders and is intended to further advance the process of reconciliation among all Australians.
EPA Guidance Statement Number 41: Assessment of Aboriginal Heritage	Considers Aboriginal Heritage in the environmental approvals process when heritage values are linked to the environment
EPA Environmental Factor Guideline: Social Surroundings (EPA 2023)	Communicates how the factor Social Surroundings is considered by the EPA in environmental impact assessment (EIA) process.
EPA Technical Guidance – Environmental impact assessment of Social Surroundings – Aboriginal cultural heritage (EPA 2023)	Outlines the EPA EIA process for Social Surroundings.
EPA Statement of environmental principles, factors, objectives and aims of EIA (EPA 2023)	Communicates how, for the purposes of environmental impact assessment, the EPA considers various aspects of the EP Act in the context of EIA.

## 4 The Banjima People

*“Wirlankarra yanama. Yurlu nyinku mirda yurdarirda.”*

Go with a clear, open and accepting spirit, and the country will not treat you badly.

Banjima people have occupied their homelands for tens of thousands of years. The landscape is replete with both physical (archaeology) and intangible (ethnographic, story / song) places. According to Banjima people, their *lore*, culture, and ceremony have been practiced ‘forever’<sup>1</sup> throughout Banjima ‘yurlu’ (country) and the Proposal area is no exception. The evidence of this connection to country is not only seen in countless archaeological sites, but in the named places, the knowledge of lore, culture and ceremony and the deep connection to the country of their ancestors held deeply by Banjima people.

The Banyjima people recognise two linguistic groups within the Banjima country (yurlu). - the ‘Bottom End’ or Martidja Banyjima (MIB) and ‘Top End’ or Milyuranpa Banyjima. Alan Dench (1991:126) noted, ‘...two named dialects of Panyjima were originally spoken on the Hamersley Range. The Pantikura dialect was spoken on the higher plateaus of the Hamersley Range, while the Milyarranpa dialect was spoken in lower area’ generally to the south and west of the ranges.

The ‘Bottom End’ Banjima people are more commonly known as the ‘Fortescue or Pantikura Banjima’ as their traditional country is focused on the clay pans, creeks and springs of their estate which feed the Fortescue River (Mungurdu) and associated marsh lands through the Hamersley (Karijini) ranges. Weeli Wolli Creek, Yandicoogina Creek, and Marillana Creek are three of the main tributaries, all eventually flowing north into the Fortescue River.

### 4.1 When the World Was Soft

In the time when the ‘world was soft’, ancestral beings brought the *Wardilba (lore)* to the land of the Banjima people. These ancestral beings, known as the *Babu Kutjara* were the first two beings to go ‘through the lore’. These ancestral beings travelled from the west coast towards the east, spreading the *Wardilba* as they went, onwards east towards the desert (Draper et al, 2010:12) creating the land, its people and the stories of those times and places.

*Wardilba* is a series of sacred songs sung by initiated men at lore time from dusk until dawn. They teach the young men (initiates) about the special places, stories, animals, birds, and the ancestral mythology of the Banjima people. The *Wardilba* and the continued use of these cultural practices keeps the country and its people alive.

The *Wardilba* is not seen just as demonstrating an entitlement to ‘speak for’ or make use of the country to which the *Wardilba* relates, but more than that, it is the continuation and transmission of knowledge between the generations. The ongoing performance of the *Wardilba* and the continued connection to (and use of) country is seen as essential to the survival of both the Banjima people and the country itself - its biota and its waterways. The *Wardilba* and the lessons about country and customs that it embodies is not just learned and sung at the end of *lore* business when new male initiates are returned to the community, it is sung continuously whenever people are travelling through country, hunting, and gathering resources, or visiting specific places (Draper et al, 2010: 13).

### 4.2 Back When

The 1,600 or so generations of Banjima people's ancestors who have lived on and around the Hamersley Plateau have created a tangible legacy visible in the tens of thousands of archaeological sites situated in the landscape across the region. Archaeological excavations across the region have revealed evidence of a more or less continuous occupation of the Hamersley plateau from around 50,000 years ago (Cropper and Law, 2018). Within the Banjima determination area there are some 10,000 known archaeological sites, some dating to the earliest periods of the human occupation of the region.

### 4.3 Here and Now

When Aboriginal citizenship was recognised in 1967, and Aboriginal station workers were granted equal pay by the Commonwealth around the same time (Gifford 2007: 13-14), many of those people lost their “jobs”, with residential station camps closed down and Aboriginal people literally barred from residence or access to much of their traditional country.

<sup>1</sup> Pers Comms. Slim Parker, senior Banjima Elder.

A few Banjima people (such as important elders Herbert and Horace Parker<sup>2</sup>) maintained contact with country through contract work, but the usual access for travel, hunting, camping and congregating at *lore* grounds to conduct *lore* business was closed off for some time. During this time, Banjima *lore* survived and continued by the people practicing their *lore* and culture near Onslow at Cane River, which is still an important *lore* place for contemporary Banjima people, even after easier access to land has resumed.

*'My father (Herbert Parker) now deceased, was born on the new Mulga Downs Station, Kunangkawinghadetha... My father was a respected elder of the Punjima (sic) people... The old man worked on Mulga Downs, Roy Hill, Marillana, Abydos and White Springs Stations. He finally left that area in about 1957 and worked in the Ashburton district... He stayed there for almost twenty years working on the station. The old man moved away from his traditional land for work and also because of compulsory schooling. That's really how we came to be in Onslow...' '...my traditional country is on the Fortescue Tableland. The family always goes back to see our country.'* (Slim Parker in Olive 1997: 134-5).

Following the dispersal of Aboriginal people in the late 1960's and their relocation to coastal towns in search of work (i.e., Onslow), Banjima people were inadvertently absent from the inland region for over 20 years. In the early 1990's however, Banjima people became part of the wider 'homelands or 'outstation' movement, and a number of Banjima people relocated back to Mulga Downs, eventually founding Youngaleena<sup>34</sup>.

The first people moving back to country originally 'stopped at' Gorge Bore for a time (near what is now known as Youngaleena). The camp at Gorge Bore, and an associated *lore* camp are the places now remembered to be where Banjima *Lore* (the *Wardilba*) was 'brought back by the old people'<sup>5</sup> (reintroduced) to Banjima country.

Banjima *lore* is still practiced extensively at Youngaleena, 5-Mile and Wirrilimarra on Banjima country, as well as Cane River near Onslow.

#### 4.4 Cultural Significance of Water

The centrality of water to indigenous people in the Pilbara is well documented. In 2011, the CSIRO were commissioned by Rio Tinto to undertake a study of the relationship between water and Indigenous people in the Pilbara. The research determined that:

*The meaning and significance of water to Indigenous people in the Pilbara is consistent with the meanings generated by Indigenous groups in a number of Australian regions. It demonstrates that in Indigenous belief systems, water is perceived as an elemental part of the broader cultural landscape, held and managed under customary systems of law. Water sources are derived from the actions of mythic beings during the Dreaming and are the most important features of the Pilbara cultural landscape. Sustaining and protecting the country, including the relationships traditional owners have with particular water places, was found to be the primary obligation for people (Barber, M and Jackson, S 2011).*

To the Banjima people, 'Water is life. Without water, the land dies. If the land dies, then there is nothing'<sup>6</sup>.

Not only is water the life blood of the land, but it is also the essential life force of the Banjima people themselves.

Consequently, the Fortescue River and all of its tributaries are of central importance to the Banjima people.

The significance of these waterways mostly lies in them being the pathway of the *warlu* (the water serpent creation ancestor). All underground, surface and ephemeral waterways are equally important to the free movement of the *warlu* through country. Anything that impedes the progress of the *warlu* through country is dangerous to the country and the Banjima people.

For Banjima people, there are three different kinds of water that make their way into the Fortescue River from across Banjima country - salty water, red water from claypans and fresh water.

<sup>2</sup> Both deceased

<sup>3</sup> Pers Comms. Tim Parker, senior Banjima Elder and Youngaleena community leader.

<sup>4</sup> Myers, Fred; Peterson, Nicolas (January 2016). "1. The origins and history of outstations as Aboriginal life projects". In Peterson, Nicolas; Myers, Fred (eds.). *Experiments in self-determination: Histories of the outstation movement in Australia*. ANU Press. Monographs in Anthropology. ANU Press. p. 2.

<sup>5</sup> Pers Comms. Tim Parker, senior Banjima Elder and Youngaleena community leader.

<sup>6</sup> Pers Comms. Maitland Parker, 15 June 2023 at Marillana Creek during the field visit for this report.

The People know each kind of water (colour, taste, flow) and where it comes from. There are stories, ceremonies, and songs for each kind of water that flows down the various creeks and streams. The distribution of water flowing downstream to other tribes also relates to the rule of *lore* and culture. Banjima *lore* comes eastwards from Millstream down near the coast, up the Fortescue River, while the water flows the other way back to the coast carrying the *warlu* and aspects of lore and culture with it<sup>7</sup>.

During a visit to Weeli Wolli Spring in July 2006, MIB Elders Elizabeth Dowton, Margaret Lapthorne and Marjorie Parker told ACHM anthropologist *Fiona Sutherland* that:

*Warlu made Weeli Wolli Creek (and other creeks) in the Dreamtime. He moves along the creek, within the water table underground. He can also turn into clouds to move from one place to another. The traditional owners that told me this story are concerned that with the dewatering, warlu will be upset by the disturbance, the noise and changes to the water table. He might leave. Then the water will dry up, trees will die, there will be no food for the animals and they will die. They are also worried that the disturbance caused by the changes in water levels and associated work will also affect Karijini National Park - there are lots of warlu there. Disturbing the water table can upset warlu over a large area, extending from Weeli Wolli Spring to Karijini National Park (Draper et al, 2010).*

The Banjima people have a very keen sense of their cultural responsibility to maintain the Fortescue River system including its tributaries, so that the *warlu* can move freely throughout country, thereby ensuring lore and culture are maintained. They also have a responsibility to neighbouring groups, to ensure that no impacts are suffered in the area of the marsh and associated waterways that could have subsequent detrimental impacts on neighbouring groups downstream.

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<sup>7</sup> Pers Comms. Maitland Parker. Preservation of Evidence fieldwork, April 2007.

## 5 Mulga Downs and Surrounds

The Mulga Downs area is of significant ethnographic value to the Martu Idja Banyjima (MIB) people. The Fortescue marsh area is intrinsically linked to the cultural beliefs and practices of the MIB people. Certain geographical features have direct associations with named Creation Ancestors and are represented in traditional songs, dances, rituals, practices, and artwork that have been handed down for several millennia (Sivak and Butler 2012a).

The MIB people see themselves as 'environmental caretakers', responsible for maintaining the quality and flow of water within their country. This cultural tradition is not just for their own survival, but also for the benefit of neighbouring groups, both Aboriginal and non-Aboriginal. The fact that all the creeks within the proposed project area flow into the Fortescue Marsh, a highly culturally significant place to MIB people, adds a cultural dimension to this responsibility.

MIB Elders describe a circuitual route their ancestors took linking creeks and reliable water sources across the region.

Extensive ethnographic consultation and archaeological survey has been undertaken within the wider Proposal area over the last 20 years or so.

The following sections provide contextual ethnographic information regarding specific places of cultural significance to the Banjima people within the broader project area. These areas lie outside of the proposed development footprint.

### 5.1 Hamersley Range (Karijini)

The hills, escarpments and valleys that are collectively known as the Hamersley Range (Karijini) provide a dramatic backdrop to the south of the MDIOP project. Many of the most prominent peaks and gorges along the face of the range, which fronts onto the Fortescue Marsh, are named places of cultural significance to Banjima people. Goonadayna is one such gorge. Travelling west from Goonadayna, other significant places include Munjina Gorge, Yampire Gorge, Kalamina Gorge, Wittenoom Gorge and Rio Tinto Gorge. Each of these places have a Banjima language name.

### 5.2 Fortescue Marsh and Floodplain (Mungurdu)

The Fortescue Marsh and floodplain are called Mungurdu in the Banjima language. As mentioned, (for example Sivak and Butler 2012), all water features and water sources in Banjima country are culturally significant owing to associations with the Warlu. The Fortescue Marsh and floodplain carry that same mythological connection, although the Mungurdu to Banjima people also refers to the 'floods', when annual rains dramatically change the country and provide life to a landscape that has become dry and barren throughout the winter months. Several aspects of the Mungurdu are celebrated in the Wardilba, from these mythological connections to more fundamental social elements that teach participants survival skills and ceremonial rites. Furthermore, the Banjima people identify themselves according to the Mungurdu. Often called '*Bottom End Banjima*' because of traditionally occupying the lowlands areas around the Fortescue Marsh (Day 2005: 32; Dench 1991: 126; O'Connor 1996: 7).

The Fortescue Marsh in its entirety is of enormous cultural significance and social amenity to the Banjima people.

### 5.3 Significant Places at Mulga Downs

There are a large number of significant ethnographic sites within proximity of the Proposal area. These locations include numerous burial sites, lore grounds, clay pans, camp sites and birth places. Arguably, the most significant site in all of the Banjima native title determination is at risk of significant impact from mining - the Fortescue Marsh.

### 5.4 Discussion

Both the Fortescue Marsh and Hamersley Range are deeply complex cultural landscapes that are intricately connected to Banjima people through both personal connections and on-going law and culture. These areas provide the setting for rich histories of human activity, within which smaller specific ethnographic and archaeological places exist as evidence of that activity.

## 6 Consultation Team

The **consultation team** involved in the social surroundings consultation are detailed below.

### 6.1 Banjima representatives

Banjima People who were consulted were as follows:

- Trevor Parker Snr
- Timothy Parker\*
- Rex Parker\*
- Wes Carey
- Amoy Wilfert
- Carmen Murdock
- Brenda Simmonds
- Carmel Parker
- Dahlia Parker
- Sydnie Parker

\* Person was not present for the whole consultation.

### 6.2 Banjima Native Title Aboriginal Corporation representatives

Banjima Native Title Aboriginal Corporation (BNTAC) representatives present were as follows:

- Jane Dunne (Senior Project Officer)

### 6.3 Banjima Consultants

Karijini Development Pty Ltd (KD) commissioned the following team to provide specialist environmental and cultural advice and support for social surroundings consultations with the Banjima people for the Proposal. The consultant team for this work was as follows:

- Fiona Sutherland\* (ACHM) Anthropologist
- Paul Dottin (ACHM) Anthropologist
- Ron Colman Pentium Water Hydrogeologist
- Paul Connolly Dingo Consulting Environmental adviser
- Clive Taylor (ACHM) Videographer/photographer

\* Person was not present for the whole consultation.

### 6.4 HanRoy representatives

HanRoy people who participated in the consultation were as follows:

- Damien McAlinden - General Manager, Land Access, Environment, Approvals and Government Relations
- Karen Frehill\* - Manager Environmental Approvals
- Savita Goldsworthy - Environmental and Approvals Advisor
- Paige Fairweather - Heritage Adviser
- Kobi Bradshaw-Chen - Heritage Manager
- Bobak Willis-Jones - Hydrogeology Manager
- Yohanes Suryaputradinata\*- Process Engineer
- Kent Lee\* - Mine Planning Engineer
- Mark Forward - Rail Engineer

- Robbie Thomas - Heritage Field Officer
- Emma Bolton AQ2 - Hydrogeology Consultant
- Phil Scott Preston Consulting - Social Surroundings Consultant

\* Person was not present for the whole consultation



## 7 Consultation Outline

An outline of the consultation is provided below:

Date	Place	Purpose
6/5/24	Auski Roadhouse	Travel day
7/5/24	Auski Roadhouse	AM <ul style="list-style-type: none"> <li>• Introductions</li> <li>• Proposal overview</li> </ul> PM <ul style="list-style-type: none"> <li>• Bea Bea Creek rest stop – review and discussion of rail alignment in vicinity of site</li> </ul>
8/5/24	Auski Roadhouse	AM <ul style="list-style-type: none"> <li>• Helicopter flights over the Proposal area (male elders only)</li> <li>• Meeting at old Mulga Downs fly camp location - discussed proposed permanent camp location</li> </ul> PM <ul style="list-style-type: none"> <li>• Mulga Downs Exploration Camp - discussed proposed tailings storage facility</li> <li>• Drove past the Mulga Downs landfill</li> <li>• Visited proposed airport location to the west of the Mulga Downs homestead</li> <li>• Returned to camp</li> <li>• Helicopter flights over the proposal area (mine only) for Banjima representatives</li> </ul>
9/5/24	Auski Roadhouse	AM <ul style="list-style-type: none"> <li>• Meeting at proposed stockyard and processing plant location – discussed infrastructure</li> <li>• Unscheduled stop in proposed borrow pit area where culturally important plant species were located.</li> </ul> PM <ul style="list-style-type: none"> <li>• Meeting at a proposed reinjection bore location within the Banjima Fortescue Valley ethnographic site.</li> <li>• Demobilisation of some participants</li> </ul>
10/5/24	Various	Travel day

## 8 Locations Visited

Locations visited and routes taken in reference to the Proposal are shown in Figure 8–1.

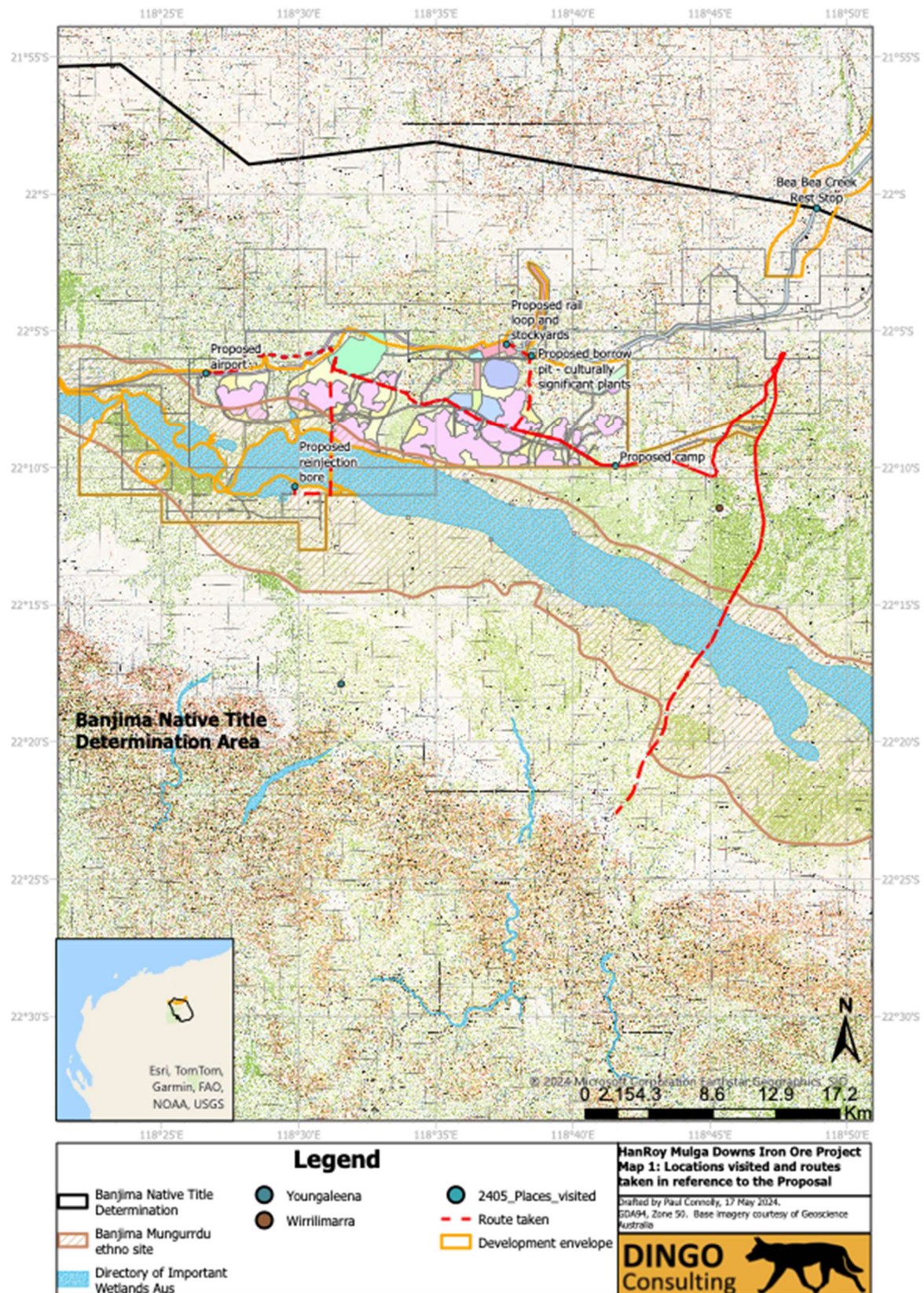


Figure 8–1: Map showing locations visited during the consultation from 7 to 9 May 2024 (excluding helicopter flights).

## 9 Banjima's environmental concerns relevant to the Social Surroundings Environmental Factor

During the consultation, the Banjima representatives raised several concerns about likely and possible impacts on the physical and biological surroundings from the Proposal and the related potential harm to social surroundings.

### 9.1 Overarching concerns

The Proposal is in the Fortescue Valley on Mulga Downs Station near the communities of Wirrilimarra and Youngaleena, within the Banjima Native Title Determination Area. If the Proposal proceeds to development as currently designed, it will result in significant permanent and irreversible impacts on Banjima Country and the nearby communities. Examples of permanent and irreversible impacts include:

- Pit voids
- Artificial waste rock landforms
- Changes to the valley's surface water regime due to permanent diversion structures being left in place at closure
- Changes to the groundwater regimes due to dewatering, reinjection and mixing of water qualities caused by those actions. It is unknown how long these impacts will persist in the groundwater environment before returning to a pre-disturbance state but is likely to be in the order of several generations.
- Loss of access to Country (pit voids blocked off with abandonment bunds, tailing storage facilities, waste rock landforms, and other infrastructure left in situ at closure (such as the rail spur, which may be handed over to the state upon closure in accordance with State Agreement conditions)
- Loss of visual and general amenity.

In addition, there are additional risks the Proposal presents to Banjima People and Country should the impacts not be appropriately managed during construction and operations. Such impacts include:

- Changes to groundwater levels (drawdown and mounding) and quality (contamination and mixing) and subsequent impacts on subterranean fauna
- Changes to surface water quality and quantities entering the Fortescue Valley and subsequent impacts on all biota reliant on surface water quality and quantity
- Disturbance/displacement of culturally important plants and animals
- Loss of access due to the mine, rail and placement of associated linear non-process infrastructure (e.g. pipelines)
- Dust
- Noise and vibration
- Light.

### 9.2 Water

Water was the environmental element of most concern to the Banjima representatives during the consultation.

#### 9.2.1 Surface water

The Proposal involves the construction of mine pits, waste rock landforms, and a railway that will significantly alter the natural surface water regime by diversion of surface water around and through these areas.

Potential impacts on the quality and quantity of surface water entering the Fortescue Valley due to the mine are of significant concern to the Banjima representatives, as valley ecosystems rely on rainfall and surface water runoff. The Proposal presents risks to the valley from the proposed alteration of the surface water regime and the risk of surface water contamination from sedimentation and chemical contamination (e.g. hydrocarbons and ammonium nitrate fuel oil (ANFO) used in pit blasting). Similar concerns were raised by the Banjima representatives with respect to the construction and operation of the rail spur.



## 9.2.2 Groundwater

The Proposal will require substantial volumes of water for construction, mineral processing, dust suppression, and potable supply purposes. It will also require the advanced dewatering of the mine pits and the reinjection of surplus water via a managed aquifer recharge (MAR) scheme. The MAR scheme is currently concentrated in a relatively small area on the south side of the valley near Malay Well. The capacity of the receiving aquifer to absorb the volumes of brackish to saline mine dewater that require disposal is limited and will require very close and vigilant management to ensure that groundwater levels do not rise above predetermined threshold levels and impact vegetation in the valley area.

Banjima representatives expressed significant concern about the impacts on vegetation health and subterranean fauna due to changes in groundwater quality caused by the Proposal.

## 9.2.3 Consultation with Banjima on permits and licences sought under the *Rights in Water and Irrigation Act 1914 (WA)* and associated operating strategies and monitoring reports

Banjima representatives questioned if they get consulted on permits and licences applied for under the *Rights in Water and Irrigation Act 1914 (WA)* (RiWI Act). Such licences/permits include:

- Section 5C licence to take water
- Section 17 permit to obstruct, destroy or interfere with the waters, bed or banks of a watercourse
- Section 26D licence to construct a water bore.

Banjima representatives requested HanRoy consult with Banjima via the Heritage and Environment Reference Committee on any authorisations being sought under the RiWI Act before they are submitted for consideration to the Department of Water and Environmental Regulation (DWER). They also requested consultation on and provision of all associated documentation, such as groundwater operating strategies and monitoring reports that are required to be submitted to DWER.

## 9.3 Fortescue Valley and Claypans

The Proposal crosses and skirts the edges of the regionally environmentally significant Fortescue Valley area. Fortescue Marsh and downstream valley is listed in the Directory of Important Wetlands Australia and is also declared an “environmentally sensitive area” under the EP Act. Two environmentally and culturally significant claypans are located directly adjacent to the Development Envelope to the south and west of the mine area and form part of the Priority Ecological Community (PEC) “Freshwater Claypans of the Fortescue Valley - Priority 1”. The claypans in this PEC contain a high diversity of invertebrates and most of the elements of the Pilbara riparian flora (DBCA 2023<sup>8</sup>). The claypans are important for waterbirds, invertebrates and some poorly known plant species such as *Eriachne spp.* and *Eragrostis spp.* grasslands. Recognised threats to this PEC include grazing, weed invasion, infrastructure corridors, altered hydrological regimes and uncontrolled fire (DBCA 2023). The state and commonwealth governments are considering nominating the Fortescue Marsh and downstream valley area adjacent to the mine as a wetland of international importance under the Ramsar Convention.

## 9.4 Flora and vegetation

As outlined above, the Proposal is located adjacent to the Priority Ecological Community (PEC) “Freshwater Claypans of the Fortescue Valley - Priority 1” which includes some poorly known plant species such as *Eriachne spp.* and *Eragrostis spp.* grasslands.

The Proposal will also impact culturally significant plants. During the consultation, an area earmarked for a borrow pit near the rail loop was found to have a high concentration of *Gajawari* (*Capparis umbonata* - Wild orange) and *Jilbulgarri* (*Capparis lasiantha* – Split jack or Wild passionfruit (?)) (common and scientific names obtained from Taylor and van Leeuwen 2011<sup>9</sup>).

<sup>8</sup> Department of Biodiversity, Conservation and Attractions 2023, Priority Ecological Communities for Western Australia Version 35, Species and Communities Program, DBCA 19 June 2023. accessed on the Department of Biodiversity, Conservation and Attractions website on 17 May 2024 (<https://www.dbca.wa.gov.au/wildlife-and-ecosystems/threatened-ecological-communities>).

<sup>9</sup> D Taylor and S van Leeuwen 2011, Aboriginal names for Pilbara plants (including traditional usages), compiled May 2011, accessed on the Department of Biodiversity, Conservation and Attractions website on 17 May 2024 (<https://library.dbca.wa.gov.au/static/FullTextFiles/148780.pdf>).

It was recommended by the Banjima representatives that ethnobiological surveys be undertaken with the Banjima People to document culturally important species across the Proposal area. In relation to the *Gajawari* and *Jilbulgari* plants that are at risk from the Proposal, Banjima representatives suggested that the borrow pit be moved, or if moving the borrow pit is not an option, to relocate the plants to an area that will not be impacted by the Proposal.

It was also suggested that the results of any ethnobotanical surveys be incorporated into determining the rehabilitation seed mix for the Proposal, in consultation with Banjima.

## 9.5 Terrestrial fauna

Environmental impact assessment processes focus on species that are threatened or in need of special protection (listed species). Proponents focus monitoring resources on compliance requirements relating to these species and have no obligation to conduct work to evaluate and assess other non-listed species. Whilst all plants and animals are important to the Banjima People, unlisted species that are culturally important and may be impacted by a proposal are not required to be considered in any environmental impact assessment or monitoring program. These unlisted species form part of Banjima People's social surroundings, and as such, culturally important species should be included in assessments with other listed species in environmental impact assessments. Examples of such species are the Hill kangaroo or Euro (*Osphranter robustus*), goanna (*Varanus spp.*), Emu (*Dromaius novaehollandiae*), Bush turkey or Australian bustard (*Ardeotis australis*) and native honey bee (*Trigona* and *Austroplebeia spp.*).

## 9.6 Waste management

### 9.6.1 Landfill

Banjima representatives expressed that they do not support the establishment of (an additional) class 2 (unlined) landfill for burying putrescible and inert wastes. Banjima representatives strongly stated that if HanRoy can bring materials onto Banjima Country, they can also remove waste materials for disposal to an appropriate facility off Banjima Country. Concerns about the potential seepage of contaminants from unlined landfills into the local groundwater system and possible downstream impacts to neighbouring traditional owner groups were cited as reasons for not supporting such facilities.

### 9.6.2 Tailings and potentially acid-forming materials

HanRoy representatives could not guarantee that any third-party ore received at the proposed hub would not be processed through its wet processing plant and produce waste tailings. This could result in ore mined outside of Banjima Country being processed on Banjima Country, with Banjima inheriting the waste.

HanRoy representatives did state that no potentially acid-forming materials will be mined at Mulga Downs or accepted from third parties at the mine.

## 9.7 Mine closure - regulatory standards versus Banjima expectations

Banjima representatives made it clear that their expectations around mine closure exceed the minimum regulatory requirements set by the state government. Banjima representatives said they expect all waste rock to be placed into pit voids rather than constructing artificial waste rock landforms. If waste rock landforms are unavoidable, the design of the landforms should incorporate geomorphic design principles (avoidance of straight lines) and be designed so that they are lower than and blend in with surrounding natural landforms.

As suggested by HanRoy's social surroundings consultant, Banjima also expects the bases of any pit voids remaining at closure to be rehabilitated by backfilling with waste material to prevent the formation of pit lakes, topping off with topsoil, and managed and rehabilitated as per other landforms undergoing rehabilitation such as waste rock landforms and tailings storage facilities (i.e. subject to monitoring and management, and agreed completion criteria requirements).

## 9.8 Cumulative impacts

The Banjima representatives raised concerns over the quality and reliability of cumulative impact assessments conducted by proponents, correctly stating that they need to adequately consider cumulative impacts to Country and Culture. While cumulative impact assessments for flora and vegetation are reasonably robust, the same cannot be said for all other environmental factors, particularly the social surroundings environmental factor.

Since the 1990s, the Banjima People, their Country, and their Culture have been subject to intense and extensive disruption from iron ore mining in the Pilbara. The Banjima Native Title Determination Area, along with the Nyiyaparli Native Title Determination Area, experiences the highest intensity of iron ore mining on the planet. The area has undergone huge and intense change in the last 35 years, with extensive clearing of native vegetation across the area, displacement of macrofauna traditionally hunted for food by the Banjima People and unfathomable interference and impacts to surface and groundwater systems due to mining above and below the water table.

Areas of extreme cultural importance, such as Weeli Wolli, Marillana and Jugari Creeks and the Fortescue Marsh, have been altered forever by mining, predominantly due to the mine dewatering and excess water disposal requirements to facilitate below-water table mining. This has resulted in broadscale changes to important waterways, both deaths of groundwater-dependent vegetation along vast stretches of culturally important creek systems, and the artificial creation of new mine dewater discharge-dependent ecosystems that responded to the availability of large volumes of mine dewater being disposed into what were previously ephemeral creek systems. Water is the lifeblood of Country and everything within it. Hence, the cumulative impact on the Banjima People, their Country and their Culture just from a water perspective is highly significant.

Nevertheless, the Banjima People are constantly asked by multinational mining companies to destroy more of their ever diminishing and impacted land, air, and waters to enable the extraction of more iron ore. Most of the remaining iron ore in the Pilbara is below the water table, requiring extensive dewatering and surplus water disposal, further exacerbating these issues and impacts.

No iron ore mining company in the Pilbara has committed to backfilling mine pits (placing waste rock landforms back into pit voids). This means that the Banjima People and their future generations will inherit a pock-marked country full of holes, pit lakes that turn increasingly saline and unstable, and possibly polluting waste rock landforms, along with access-restricting railways zigzagging all over their Country.

If the Banjima People say that the impact on them, their Country, and their Culture is significant, then it must be.

## 9.9 Other matters

### 9.9.1 Uncertainty of Proposal elements

Several elements of the Proposal remain uncertain, making it difficult for the Banjima representatives to develop a clear position on the Proposal as a whole. For example, the following elements have some associated uncertainty:

- Location of rail alignment (option 8B or 1B).
- Construction of a haul road from the mine to the Roy Hill mainline if a rail spur is not constructed.
- The exact location/route of the haul road where it does not follow the proposed rail spur alignment.
- The locations of the borrow pits, laydowns, water bores, turkeys' nests and other infrastructure associated with the rail construction.
- The exact locations of the MAR infrastructure (injection bores, monitoring bores, pipeline routes, associated tracks, etc.) design specifications and disturbance requirements within the Banjima Mungurdu ethnographic site.
- The location of the proposed airport.

While it is understood that the Proposal elements above are still conceptual in nature at this point in time, information on them is critical for Banjima to develop an informed view of the Proposal.

### 9.9.2 Rehabilitation of old exploration drill lines, pads and holes

Banjima representatives (again) questioned HanRoy why exploration drill lines, pads, and holes had not been rehabilitated in accordance with the standard conditions associated with a program of works issued under the *Mining Act 1978* (WA). HanRoy could not provide an acceptable explanation to the Banjima participants at the time but committed to providing a response at the next consultation.

### 9.9.3 Burial of MAR infrastructure

During the consultation, HanRoy committed to burying all pipelines within the Banjima Mungurdu ethnographic site. The pros and cons of burying pipelines within Mungurdu requires further careful consideration by Banjima before agreeing to it. While the commitment to bury was made by HanRoy, no information was provided on whether access to the area would be restricted during operations, and no commitment was made to remove the buried pipelines at closure, nor was any explanation provided by HanRoy regarding the trenching method (width

and depth), machinery used or difference in levels of disturbance between the two options. If there will be no access to the area by Banjima People during operations, then burial of the pipelines may be considered unnecessary. If the pipelines were left post-closure, the plastic would eventually break down, and the pipe would eventually collapse. This could cause permanent damage to Mungurdu.

Banjima request further details on this commitment to understand each option and make a fully informed decision.

## 10 Concerns with the Consultation

There were several other concerns relating to the consultation, which are outlined below.

### 10.1 Use of presumptuous language

HanRoy presenters referred to the Proposal using language that suggested it was already approved, such as “We are going to be mining from west to east” instead of “We propose to mine west to east.” While most likely unintentional, it was noted by some of the participants.

### 10.2 Accuracy of information and integrity of commitments provided

At times, HanRoy presenters contradicted themselves. For example, at one point, a HanRoy representative gave a commitment that the mine access road would be sealed/bituminised, only to be corrected by another senior HanRoy representative who said the access road would not be sealed. While this is only one example, it begs the question if there are other instances of commitments that have been made when the person making those commitments may not have the full or correct information or authority to make those commitments or statements.



# 11 Social Surroundings EPA Factors

All impacts to the environment are of concern to the Banjima people.

Table 11–1: EPA Social Surroundings Aspects

Aspect	EPA Definitions <sup>10</sup>	Banjima Position	Risk Level
Impact to Aboriginal Heritage and Culture	<p>Western Australia has numerous Aboriginal heritage sites which provide an important link for Aboriginal people to their past and their culture.</p> <p>The Aboriginal Heritage Act 1972 provides for the preservation of Aboriginal heritage sites. The Act requires the reporting of Aboriginal sites to the Registrar, and it is an offence to interfere with a registered site unless otherwise authorised under the Act.</p> <p>It is also an offence to interfere with any Aboriginal site knowingly or where it would be reasonable to know, regardless of whether or not it is registered.</p> <p>The EP Act can, in some instances, complement the AH Act, for example, in cases where actual physical protection of the environment is required to protect sites of heritage significance. In addition to Aboriginal heritage, matters of Aboriginal cultural associations, including traditional Aboriginal customs, directly linked to the physical or biological aspects of the environment, may also be considered significant. This may include, for example, traditional hunting and gathering activities for native fauna and flora as bush tucker.</p>	<p>The Proposal has the potential to catastrophically impact the Fortescue Marsh and a considerable number of other Aboriginal heritage sites are slated to be impacted by the Proposal (n=107 as of April 2024)</p> <p>There will be ongoing impacts to the culturally significant waterways both within and outside (downstream) of the activity area for this application.</p> <p>The Fortescue Marsh (Mungurdu) is a site of the highest order cultural significance to the Banjima people. Any impact to Mungurdu is a direct threat to Banjima heritage, lore and culture and is <u>NOT SUPPORTED</u> by the Banjima people in any way.</p> <p>Water is a key cultural heritage issue, and any impact to the quality and availability of water (or the waterways which carry the water) is seen as highly detrimental by the Banjima people.</p> <p>The Banjima people do not support the mining of any part of the DPLH site boundary (ID 40484) of Mungurdu, nor do they support the installation of infrastructure or any form of dewatering activities (i.e. below water table mining is not supported).</p> <p>The Banjima people view any harm to the Fortescue March and its supporting ecosystem as unacceptable, and severely damaging to their lore and culture.</p>	Extreme
Natural and Historic Heritage	<p>In addition to Aboriginal heritage, Western Australia has sites of natural and historic heritage. Many of these are acknowledged on heritage lists such as the State Register of Heritage Places, the National Heritage List and the World Heritage List.</p> <p>Natural and historical heritage sites are important because they help us to understand our past, enrich our understanding of our society, and contribute to community and individual wellbeing.</p> <p>For the purposes of EIA, natural or historic heritage sites listed on these lists and registers may have significant environmental values.</p>	<p>The impact on the wider natural environment throughout the course of mining on Banjima country has been nothing short of catastrophic.</p> <p>The proposal will result in the disturbance of many thousands of hectares of native vegetation (including mature trees). These impacts are viewed as being negative by the Banjima people.</p> <p>The Banjima people's position is that damage caused by mining should be rehabilitated effectively, but more importantly, unacceptable levels of damage to the natural environment should not occur in the first place.</p>	High
Amenity	<p>Amenity is a broad term that generally means the qualities, attributes and characteristics of a place that make a positive contribution to quality of life. For the purpose of EIA, amenity values include both visual amenities, and the ability for people to live and recreate within their surroundings without any</p>	<p>The Fortescue marsh and environs has supported Banjima people for countless generations, and still supports the traditional rights of those people.</p> <p>Banjima people still use significant portions of the Proposal area for hunting year-round (mainly kangaroo, goanna and bush turkeys).</p>	High

<sup>10</sup> Environmental Protection Authority 2016, Environmental Factor Guideline: Social Surroundings, EPA, Western Australia.

	<p>unreasonable interference with their health, welfare, convenience and comfort.</p> <p>Noise, odour and dust all have the potential to unreasonably interfere with the health, welfare, convenience and comfort of people. Natural landscapes and views often contribute to visual amenity, such as areas of high heritage, cultural or social significance due to their natural features or scenic quality.</p> <p>Amenity values can be highly subjective. What may have amenity value for one person, may not be valued by another. Similarly, people have different levels of perception or tolerance for things that may impact amenity, such as noise, odour and dust.</p>	<p>Any impact or interruption to hunting activities is a considerable risk to the Banjima people and their ability to sustain their cultural practices. These activities will be impacted by any additional activity, particularly near or on the Fortescue Marsh.</p> <p>The wider region is already heavily impacted by mining activities, creating increased dust loads in the atmosphere, as well as additional noise and light pollution from mine (i.e. Cloudbreak and Gudai Darri).</p> <p>Any additional noise, light and dust created by the Proposal through mining and associated activities (i.e. aircraft, trains, trucks) also poses significant additional threats to the Banjima people, and particularly those Banjima people who are resident at Youngaleena and Wirrilimarra communities.</p>	
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## 12 Recommendations

The Banjima representatives developed the following draft recommendations (in no particular order):

1. HanRoy to provide logistical support to Banjima should Banjima wish to meet with the Kariyarra and Palyku Peoples regarding the alignment of the Proposal's rail spur through the culturally significant Bea Bea Creek area.
2. All access tracks from the Great Northern Highway to the Proposal area to be sealed to prevent dust generation from transport activities.
3. No establishment of a landfill as part of the Proposal. All waste is to be disposed of at an appropriate waste disposal facility off Banjima Country.
4. HanRoy to provide further detail on the locations and extent of all Proposal infrastructure and related disturbances (e.g. borrow pit numbers, locations and areas along rail spur corridor; culvert locations, haul road alignment where it deviates from the proposed rail spur alignment, etc.).
5. HanRoy to provide information on the detailed design specifications for the proposed MAR bore field, including clear requirements for each reinjection bore head and all associated pipelines and supporting infrastructure.
6. HanRoy to provide further details on the commitment to bury MAR pipelines within the Mungurdu ethnographic site, including methodology, machinery involved, depth and width of trenches, backfill, intent to remove pipelines and rehabilitate trenches at closure, disposal method of used pipelines., etc.
7. HanRoy to consult with Banjima on all water licensing and permitting matters before submitting to DWER for assessment.
8. HanRoy to provide Banjima with all compliance and reporting documentation associated with licences and permits under the RiWI Act, such as operating strategies and monitoring reports, at the same time they are submitted to DWER.
9. HanRoy to present all water monitoring data relating to the Proposal and related studies and programs at Heritage and Environment Reference Committee meetings.
10. HanRoy to commission ethnobiological surveys with the Banjima People to record values in the Proposal area. The information gathered should be used to refine the Proposal and protect values identified during the surveys (e.g. development of seed mixes for use in rehabilitation).
11. HanRoy to ensure Banjima retains access to Mulga Downs Station west of the homestead (or airport if the western option is implemented). There are also other areas for which access is requested but are yet to be fully defined by Banjima.
12. HanRoy will consult with Banjima about areas containing culturally significant plant species and co-develop options to preserve such plants via avoidance, relocation or other agreed strategies.
13. HanRoy to avoid creating permanent waste rock landforms and pit lakes by placing all waste rock into pit voids and rehabilitating all pit bases at closure.
14. HanRoy to provide a response to the question about the status of exploration drill line, pad and hole rehabilitation and why it does not appear to be occurring in compliance with the standard program of works (POW) conditions.
15. Commitments made by HanRoy, and requirements set by Banjima in relation to the Proposal should be enshrined within the relevant agreements struck between Banjima and HanRoy, particularly where they are not relevant to the social surroundings factor or appropriate to be included in a Social, Cultural and Heritage Management Plan.

### Non-environmental recommendations

1. HanRoy personnel to use appropriate language when describing the Proposal.
2. HanRoy personnel should not intentionally or unintentionally mislead Banjima representatives by making commitments about matters only if they know them to be true and are supported by the broader business.
3. HanRoy should not rush Banjima participants during social surroundings consultations and should factor in reasonable windows of time to allow Banjima participants to meet alone and to visit areas that Banjima wish to visit that are relevant to the Proposal's social surroundings.

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