

# 20.0 Cultural heritage

## 20.1 Introduction

This chapter outlines issues associated with cultural heritage of the Project Site of the Ensham Life of Mine Extension Project (the proposed project, hereafter referred to as 'the Project'). The main topics addressed are Indigenous heritage, including ethnohistory, and historical heritage.

### Environmental objectives and outcomes

The Project seeks to protect environmental values in the Project Site relating to heritage established under the *Queensland Heritage Act 1992* (Qld) (QH Act) and the *Aboriginal Cultural Heritage Act 2003* (Qld) (ACH Act). The cultural heritage values within and surrounding the Project Site are supported by the ACH Act through recognising Aboriginal ownership and protecting and conserving Aboriginal cultural heritage.

The partners of the Ensham Resources Joint Venture (Ensham JV) currently manage impacts to cultural heritage values for the Ensham Mine in accordance with existing cultural heritage management plans (CLH000419, one signed in 2006 with the Garingbal and Kara Kara People and one signed in 2007 with the Kangoulu People) and a cultural heritage management agreement (between Ensham and Western Kangoulu for Mineral Development Licence (MDL) 217 and MDL 218). As the Project is an extension of the current underground operation at Ensham Mine, using existing surface infrastructure located on the existing approved mining leases, impacts to heritage are not significant and are not considered a critical matter in the environmental impact statement (EIS).

### 20.1.1 Scope of assessment

This chapter includes an overview of the Aboriginal (Indigenous) and historical (non-Indigenous) values of the Project Site, the potential implications of the Project and identifies, where necessary, mitigation measures proposed to avoid or minimise impacts.

This cultural heritage assessment seeks to:

- identify known and potential Aboriginal or historical cultural heritage values of the Project Site
- assess the significance of these values
- assess the Project's potential impacts on these values
- recommend measures to manage or mitigate impacts on cultural heritage values.

## 20.2 Legislation and policy

### 20.2.1 Commonwealth legislation

#### 20.2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is the key national heritage legislation and is administered by the Commonwealth Department of Agriculture, Water and the Environment (DAWE). The EPBC Act defines ‘environment’ as both natural and cultural environments, and therefore includes Indigenous and non-Indigenous historical cultural heritage items. Under the EPBC Act, protected heritage items can be listed on the World Heritage List (WHL), National Heritage List (NHL) (items of heritage significance to the nation) or the Commonwealth Heritage List (CHL) (items with heritage value belonging to the Commonwealth or its agencies). These three lists replaced the Register of the National Estate (RNE). The RNE has been suspended and is no longer a statutory list; however, it remains as an archive.

There are no places listed on the WHL, CHL or NHL within, or adjacent to, the Project Site.

#### 20.2.1.2 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) (ATSIHP Act) provides for the preservation and protection of places, areas and objects of particular significance to Indigenous Australians. The stated purpose of the ATSIHP Act is the “preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters, being areas and objects that are of particular significance to Aboriginals in accordance with Aboriginal tradition”.

For the purposes of the ATSIHP Act, an area or object is considered to have been injured or desecrated if:

In the case of an area:

- it is used or treated in a manner inconsistent with Aboriginal tradition
  - by reason of anything done in, on or near the area, the use or significance of the area in accordance with Aboriginal tradition is adversely affected; and
  - passage through, or over, or entry upon, the area by any person occurs in a manner inconsistent with Aboriginal tradition.

Or, in the case of an object:

- it is used or treated in a manner inconsistent with Aboriginal tradition.

The ATSIHP Act can override state and territory laws in situations where a state or territory has approved an activity, but the Commonwealth Minister prevents the activity from occurring by making a declaration to protect an area or object. However, the Commonwealth Minister can only make a decision after receiving a legally valid application under the ATSIHP Act and, in the case of long term protection, after considering a report on the matter. Before making a declaration to protect an area or object in a state or territory, the Commonwealth Minister must consult the appropriate Minister of that state or territory (Part 2, Section 13).

In the case of the Project, this legislation would only be invoked if an indigenous person made an application to the Commonwealth Minister on the grounds that the heritage values of the Project Site were insufficiently protected under the state legislation. This is considered unlikely given ongoing compliance with the terms of the existing cultural heritage management agreement (CHMA) for Zone 1 of the Project Site and the steps which will be taken by Ensham JV in negotiation with the Aboriginal Party to obtain a native title agreement (as defined under the ACH Act) prior to operations under Mining Lease 700061 commencing, as well as ongoing compliance with the existing CHMPs for the Ensham Mine which includes Zone 2 and Zone 3 of the Project Site.

## 20.2.2 State legislation

### 20.2.2.1 Aboriginal Cultural Heritage Act 2003

Section 4 of the *Aboriginal Cultural Heritage Act 2003* (Qld) (ACH Act) defines the main purpose of the Act as providing effective recognition, protection and conservation of Aboriginal cultural heritage. The ACH Act defines Aboriginal cultural heritage as anything that is either:

- a significant Aboriginal area in Queensland
- a significant Aboriginal object
- significant archaeological or historical evidence of Aboriginal occupation of an area of Queensland.

A significant Aboriginal area or object under the ACH Act is considered to be any area or object that is of particular significance to Aboriginal people because of Aboriginal tradition and/or the history, including contemporary history, of any Aboriginal party(s) for the area.

#### ***Duty of care guidelines***

Section 23 of the ACH Act states that “a person who carries out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage (the cultural heritage duty of care)”. The duty of care guidelines (Department of Aboriginal and Torres Strait Islander Partnerships 2004), gazetted under Section 28 of the ACH Act, identify reasonable and practicable measures for managing activities in order to avoid or minimise harm to Aboriginal cultural heritage. The duty of care guidelines require a land user to make an assessment of their particular land use activity and the likelihood that it will cause harm to Aboriginal cultural heritage.

#### ***Cultural heritage database***

Part 5 of the ACH Act establishes a cultural heritage register and database, both of which are currently administered by the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP). While the register contains publicly available information such as Aboriginal Party boundaries or cultural heritage studies, the database also contains confidential information related to specific cultural heritage sites. It should be noted, however, that the database is intended to be a planning and research tool only, and does not guarantee that the entered information is up-to-date, comprehensive or otherwise accurate.

There are no previously registered DATSIP heritage sites recorded within the Project Site. It should be noted, however, that sites have been recently identified as part of clearance work within the Project Site (see **Sections 20.5.3** and **20.5.4**).

#### ***Cultural heritage management plans***

Part 7 of the ACH Act provides for the management of Aboriginal cultural heritage. A CHMP is a State-approved agreement between a land user and the Aboriginal Party(s) of an area that outlines how project activities may be managed to avoid harm to Aboriginal cultural heritage, or to minimise harm where avoidance is not reasonably practicable. A formal CHMP establishes a statutory process for addressing Aboriginal cultural heritage with certainty. The CHMP process involves a statutory notification period during which the land user must notify the Cultural Heritage Body(s) and/or Aboriginal Party(s) of their intention to develop a CHMP. Notification recipients are given 30 days in which to respond to the notification, followed by an 84-day consultation and negotiation period.

There are two existing CHMPs for the Ensham Mine (CLH number CLH000419) between Ensham Resources Pty Ltd (Ensham) and the relevant Aboriginal Parties at the time: Garingbal and Kara Kara People (QUD6233/1998) signed in 2006 with a variation on the southern section of the CHMP on 6 September 2016, and Kangoulu People (QUD6195/1998) signed in 2007. Following this, a CHMA (*another agreement* as per Part 3, Division 1, s.23(3)(a)(iii) of the ACH Act) was developed with the current Aboriginal Party, the Western Kangoulu (QUD17/2019) for activities under Mineral Development Licence (MDL) 217 and MDL 218 (Ensham Resources Pty Ltd and Western Kangoulu People, 2018). Cultural heritage for the Project will be managed under the existing CHMPs for Zone 2 and Zone 3 and a native title agreement (as defined under the ACH Act) for Zone 1.

#### **20.2.2.2 Queensland Heritage Act 1992**

The *Queensland Heritage Act 1992* (Qld) (QH Act) provides the framework for assessing the significance of items and places of historical cultural heritage value in Queensland. It is administered by the Department of Environment and Science (DES), with advice from the Queensland Heritage Council (QHC). The QH Act provides for the conservation of Queensland's cultural heritage by protecting all places and areas listed on the State Heritage Register (SHR).

Part 9, Division 1 of the QH Act also provides protection for places that have potential archaeological significance. Section 89 of the QH Act requires a person to notify the DES chief executive of an archaeological artefact that is an important source of information about an aspect of Queensland's history. This notice must be given as soon as practicable after the person discovers the item. Section 90 of the QH Act stipulates that it is an offence to interfere with an archaeological artefact once notice has been given of the artefact to the chief executive.

There are no listed SHR places within, or adjacent to, the Project Site.

#### **20.2.3 Local legislation**

Local heritage places are managed under Part 11 of the QH Act, local planning schemes and the Planning Act 2016. The QH Act provides a process for establishing a local heritage register and nominating places to be included on a local heritage register. As defined by the Department of Environment and Heritage Protection (DEHP, 2013), a place is considered to be of local (rather than state) significance if "its heritage values do not contribute significantly to our understanding of the wider pattern and evolution of Queensland's history and heritage".

The Project Site is within the Central Highlands Regional Council area, and is covered by the Central Highlands Regional Council Planning Scheme 2016. The planning scheme aims to identify and protect places of cultural heritage significance.

There are no places of local heritage significance within, or adjacent to, the Project Site.

## 20.3 Methodology

### 20.3.1 Aboriginal heritage

The requirements of the terms of reference (ToR) for the Project – “to identify, assess and manage Aboriginal cultural heritage within the Project Site” – are proposed to be met as follows:

- Zone 1 - will be met under a native title agreement (as defined under the ACH Act) with the Western Kangoulu People.
- Zone 2 and Zone 3 – will be met under existing approved CHMPs with the Western Kangoulu and Garingbal and Kara Kara People (referred to by DATSIP as the ‘Public notice endorsed parties’).

A review of publicly available information on heritage registers and in previous reports was undertaken to assess the Aboriginal cultural heritage values of the Project Site. It is noted, however, that very few previous reports are readily accessible under current DATSIP policy (S. Nichols 2019 pers. comm.), which includes those completed for areas outside of the current Ensham Mine lease area.

Given these constraints, the following desktop cultural heritage assessment was undertaken for the Project:

- A search of the DATSIP Aboriginal and Torres Strait Islander Cultural Heritage Database and Register to identify:
  - Aboriginal Party(s) and/or Cultural Heritage Bodies for the Project Site
  - registered Aboriginal cultural heritage within the Project Site.
- A review of available historical and archaeological research in the area to identify:
  - any additional places of cultural heritage significance
  - previous land use and levels of ground disturbance
  - identification of high sensitivity land forms.

### 20.3.2 Historical heritage

The desktop historical heritage assessment was informed by legislative requirements, as well as the guideline ‘*Assessing cultural heritage significance: Using the cultural heritage criteria*’ (Department of Environment and Heritage Protection 2013), which provides a framework for identifying and managing historical significance under the QH Act. In keeping with this framework, the key elements of the assessment were:

- Heritage register searches, including:
  - World, National and Commonwealth Heritage Registers
  - Queensland Heritage Register
  - Local Heritage Register.
- A review of historical studies, historical documents and previous historical cultural heritage assessments of the Project Site and the surrounding region.
- An assessment of potential Project impacts, and identification of management and mitigation measures.

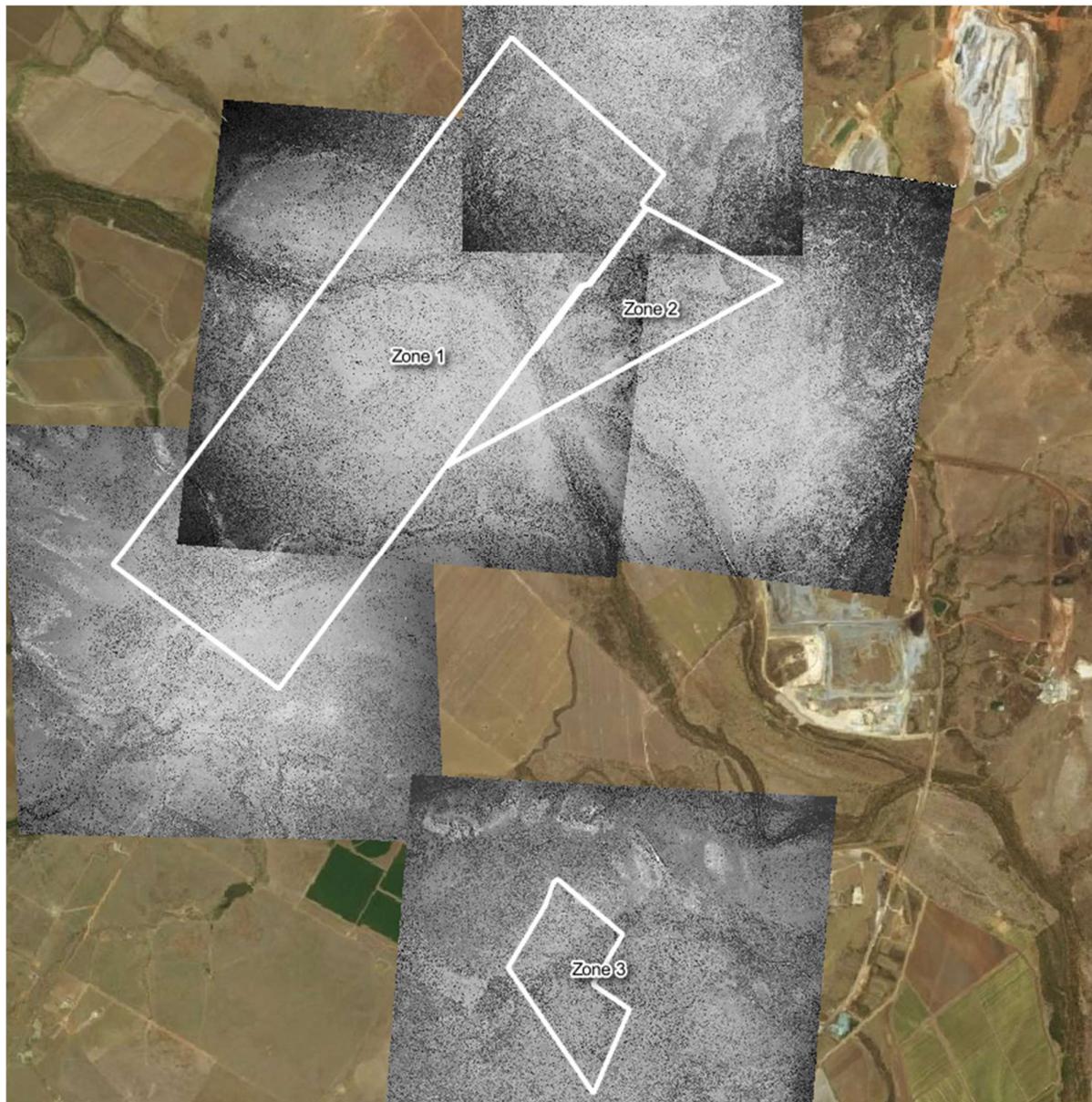
## 20.4 Description of environmental values

Environmental variables such as topography, geology, hydrology and vegetation inevitably influence how a landscape is used. The following summary of the environmental setting is provided to contextualise the history and potential heritage values of the Project Site (**Section 20.5** and **Section 20.6**). For further detail, refer to **Chapter 8** (Land resources), **Chapter 13** (Terrestrial ecology), and **Chapter 10** (Surface water resources).

**Table 20-1 Summary of the environmental setting**

Environmental element	Description
<b>Topography</b>	A review of contour data (Department of Natural Resources and Mines 2016) indicates that the majority of the Project Site is flat, with elevations ranging from 154 metres (m) Australian height datum (AHD) to 162 m AHD. This changes abruptly at the north-eastern corner of the Project Site, where elevations range from 60 m AHD to 191 m AHD.
<b>Hydrology</b>	<p>The Project Site is part of the Fitzroy Basin catchment area (Department of Natural Resources and Mines 2015). The principal watercourse is the Nogoia River which bisects the Project Site. Mosquito Creek and a number of intermittent drainage lines drain into the Nogoia River from the north. An unnamed drainage line bisects the southern third of the Project Site.</p> <p>Topographic maps from the 1940s indicate that areas to the immediate east of the Project had permanent water holes on the banks of the Nogoia River which would potentially have provided living and resource extraction sites for Aboriginal people. In the case of the smaller streams, this use would likely have been seasonally based, limited to those periods in which water was available. Any more permanent or intensive occupation was situated around Nogoia River.</p>
<b>Geology and soils</b>	The geology of the south and centre of the Project Site is dominated by Quaternary alluvium (Qa) associated with the floodplain of the Nogoia River (Department of Natural Resources and Mines 2017). In the north of the Project Site is the Emerald Formation (Te), which is typified by deeply fluvial and lacustrine claystone and siltstone, quartzose sandstone, pebbly sandstone, gravel, lignite, oil shale, and interbedded basalt. A small portion in the east of the Project Site (north of the Nogoia River) is the Rewan Group (Rr), which is typified by lithic sandstone, mudstone, and minor volcanilithic pebble conglomerate.
<b>Flora and fauna</b>	<p>The Project Site is located in the Isaac-Comet Downs subregion of the Brigalow Belt North Bioregion as mapped in the Interim Biogeographic Regionalisation for Australia (IBRA 7) (Commonwealth of Australia 2012). The Project Site has been mostly cleared of vegetation. Prior to land clearance, a number of plants and animals of use to Aboriginal people likely occurred in the Project Site.</p> <p>Key floral species include:</p> <ul style="list-style-type: none"> <li>• Kurrajong (<i>Brachychiton rupestris</i>) used for shield and fibre</li> <li>• <i>Acacia</i> spp. (<i>Acacia harpophylla</i> (brigalow), <i>A. longispicata</i> and <i>A. shirleyi</i> (lancewood) which had a variety of uses including medicinal, food, and production of tools</li> <li>• <i>Dodonaea viscosa</i> (hop-bush) for medicinal purposes.</li> </ul> <p>Key faunal species, used predominantly as food sources, include:</p> <ul style="list-style-type: none"> <li>• Marsupials of various species – including the dingo (<i>Canis familiaris</i>) and the eastern grey kangaroo (<i>Macropus giganteus</i>)</li> <li>• Birds of various species - including the grey duck (<i>Anas superciliosa</i>), maned duck (<i>Chenonetta jubata</i>), sulphur-crested cockatoo (<i>Cacatua galerita</i>), and the red-tailed black cockatoo (<i>Calyptorhynchus banksii</i>)</li> <li>• Various reptiles - including the Murray turtle (<i>Emydura macquarii</i>), and the Fitzroy river turtle (<i>Rheodytes leukops</i>)</li> </ul>

Environmental element	Description
	<ul style="list-style-type: none"> <li data-bbox="472 352 808 380">Freshwater mussels (various).</li> </ul> <p data-bbox="1089 390 1411 417">(Atlas of Living Australia 2019)</p>
<b>Past disturbance</b>	<p data-bbox="467 426 1411 531">Known past land use activities include vegetation clearance and pastoral grazing. Analysis of historical imagery suggests that the area was minimally disturbed in the early 1950s with some land clearance across zones 1, 2 and 3 within the Project Site, however most of this was limited to thinning of existing forest (<b>Figure 20-1</b>).</p> <p data-bbox="467 543 1411 621">By the mid-1960s, regrowth of this thinned forest has occurred over much of the Project Site with the exception of Zone 3 where most of the vegetation has been removed. The original Ensham Road can also be seen in Zone 1 and Zone 2 (<b>Figure 20-2</b>).</p> <p data-bbox="467 634 1411 714">Land clearance accelerated in the 1970s with much of Zone 1 south of the Nogoia River, a section of Zone 2 north of the river and almost all of Zone 3 cleared of vegetation (<b>Figure 20-3</b>).</p> <p data-bbox="467 726 1411 783">Piecemeal clearance continued during the 1990s before accelerating in the in early 2000s, when the land north of the Nogoia River was cleared (<b>Figure 20-4</b>).</p> <p data-bbox="467 795 1411 873">The level of tree clearance has led to significant ground disturbance through erosion along each drainage line. Little of the original vegetation remains within the Project Site with most limited to the Nogoia River and the banks of the adjoining tributaries (<b>Figure 20-5</b>).</p> <p data-bbox="467 886 1411 966">Land clearance would have resulted in potential impacts to the presence of culturally modified trees. In addition to this, the increased erosion from land clearance, may have exposed subsurface archaeological deposits.</p>



**Figure 20-1** Historical aerial of Project Site – 1 October 1952 (Queensland Government n.d., Images: QAP0351123 and QAP0351072)



**Figure 20-2** Historical aerial of Project Site – 1 January 1966 (Queensland Government n.d., Images: QAP1695074 and QAP1695067)



Figure 20-3 Historical aerial of Project Site – 1 November 1977 (Queensland Government n.d., Images: QAP2496026)



Figure 20-4 Historical aerial of Project Site – 21 October 1994 (Queensland Government n.d., Images: QAP5322135)



Figure 20-5 Current aerial 2020 (Queensland Government n.d.)

## 20.5 Aboriginal heritage context

### 20.5.1 Ethnohistory

There are few ethnohistorical accounts of Aboriginal life in and around the Project Site. For the most part, they are limited to the observations from January 1845 of the explorer Leichhardt and his party (1847). Leichhardt's route took him directly past the Project Site, starting from Comet and following the Mackenzie River to the east of the Project Site. As Leichhardt's party made their way north along the Mackenzie River, there were numerous interactions with the local Aboriginal people. Leichhardt did not identify how the Aboriginal people of the Comet River area referred to themselves, but anthropologist Tindale later identified this as the eastern country of the Kairi (or Gayiri) speaking peoples (Tindale 1974) (**Figure 20-6**). This attribution is mostly replicated in Horton's 1996 synthesis of Australian Aboriginal languages (Horton 1996), but shows the Project Site at the boundaries of the Gayiri and Gabalbara Peoples with the Nogo/Mackenzie River acting as a boundary between the two cultural groups (**Figure 20-7**).

The information recorded by Leichhardt provides some useful insights into Aboriginal life in the region during the early colonial period with the following observations to be made:

- Numerous 'villages' were present in areas of scrub associated with riverbanks. These villages consisted of bark huts with numerous fireplaces as well as potential corroboree areas (possible bora grounds).
- Cultural material utilised by the local Aboriginal people would have included spears, waddies and beads.
- Extensive tracts of land were burnt during the month of January, potentially to take advantage of the wetter conditions in late January and February.
- Freshwater mussel was a key protein resource for local Aboriginal people, and there is an expectation that middens relating to this exploitation may still be found along the banks of the Mackenzie and Nogo Rivers today.
- Other foods include an edible root (possibly pencil yam (*Dioscorea transversa*) and Nelumbium or lotus seeds (*Nelumbo nucifera*) which would have been found around the plentiful waterholes.

Curr (1887) provides further insight into the area through the use of informants on the Nogo River. One such informant, Thomas Middleton Esq., describes the local Aboriginal people twenty five miles north of Springsure (approximately near the modern town of Emerald). Key observations made include:

- This group wore a fringe which hung from a girdle around their waists as well as possessing possum skin rugs for use at night.
- Other ornaments included necklaces made from shell (possibly freshwater mussel shell) as well as raptor (eagle) claws.
- While the woomera was not thought to have been used by this group, the boomerang was.
- Notable foods included the bulbs of a lily as well as a grass called jaboola which was ground to flour and baked as damper in ground ovens (Curr 1887:90).

The other principal ethnographic resource is the work undertaken by Donovan (1976) characterising the material culture and traditions of the people of the Nogo Basin. While much of this work was done using Aboriginal informants from the Springsure area, it too can be used as an analogue. However care must be taken in its use as a main resource, as much of the information was captured through oral interviews with the grandchildren of people who would have led primarily traditional lives. Morwood (1982) summarised Donovan's finding in his review of the ethnographies of Central Queensland Aboriginal groups:

- Spears – typically made from brigalow or the core of the wattle
- Clubs – made from hard wood such as rosewood, blackbutt, brigalow
- Throwing sticks, clubs and digging sticks made more durable by rubbing with goanna oil heating over low heat of sandalwood fire
- Boomerangs - returning and non-returning - roots and trunk of brigalow or lancewood
- Shields - light soft wood such as kurrajong (*Brachychiton rupestre*) or corkwood (*Erythrina vespertilio*). Shields were typically 45-60 centimetres (cm)
- Axes – typically a hard metamorphic or volcanic rock was used for the hatchet head. These were then edge ground with sandstone and placed into green timber split which was bound with kangaroo tail sinew. Spinifex or box gum was then applied to bindings.
- Bags, baskets and container - made for a variety of material depending of purpose - bags and baskets. made from twisting plant fibre such as that from the kurrajong, grasses, reeds. Baskets were round bottom and straight sides and used by women in hunting trips.
- Shallow dishes for carrying food and liquids carved from softwood kurrajong/corkwood. A handle would sometimes be made of kangaroo tail sinew or kurrajong bark fibres.
- Infant carrying baskets made from kangaroo skin rubbed with wood ash would then be tied at each end with sinew or fibre. Containers made from goanna skin were also observed.
- Possum skin wallet with stone tools, ball of yellow ochre
- Nets - kurrajong tree bark fibres (Leichhardt, 1847:91)
- Stone tools included the unique tula adze and Juan knife (thought to be restricted to central Queensland highlands).

By the end of the 1870s, the frontier violence was almost at an end. Aboriginal groups had been greatly reduced by the predations of the Native Police and introduced diseases, and the remaining population moved to settle in 'fringe camps' around large stations and townships. Such fringe camps offered protection from the police and other colonists, and saw Aboriginal labour increasingly appropriated for stock and domestic work. By the turn of the 20<sup>th</sup> century, these camps began to empty as Aboriginal people across the state were again moved on, this time taken to missions and reserves (Morwood and Godwin, 1982).



Figure 20-6 Approximate location of Project Site against language mapping by Tindale (1974)



Figure 20-7 Approximate location of Project Site against language mapping by Horton (1996)

### 20.5.2 Previous reports

Although a number of Aboriginal cultural heritage assessments have been conducted in and around the Project Site, very few of these are publicly available. However, a review of the recent reports undertaken for the Project Site for seismic lines (Cultural Heritage Management Australia, 2019) and explorative boreholes (Cultural Heritage Management Australia, 2018) suggests the following:

- The most common Aboriginal heritage site types are artefact scatters or isolated artefacts, the vast majority of which are:
  - located within 100 m of a watercourse
  - generally located in disturbed, eroding environments, but still retain some archaeological context.
- Scarred trees are the second most common site type:
  - recorded on eucalypts likely poplar box (*Eucalyptus populnea*), blackbutt (*Eucalyptus pilularis*) and coolabah (*Eucalyptus microtheca*)
  - most likely in areas of remnant vegetation associated with drainage lines.

Like in the ethnohistorical context (**Section 20.5.1**) presented previously, these findings emphasise the importance of water in Aboriginal landscape use, and determining subsequent cultural heritage sensitivity.

### 20.5.3 DATSIP database search

A search of the DATSIP Cultural Heritage Database and Register on 10 July 2019 and updated on 4 March 2020 (search ID 56539 and 67031) returned the following details of the Aboriginal Party, cultural heritage body, and pre-existing CHMPs with Ensham for the Project Site (see **Table 20-2**, **Table 20-3** and **Table 20-4**). There are currently two approved CHMPs (CLH000419) registered with DATSIP for the Ensham Mine (Ensham Resources Pty Ltd, 2007). The CHMPs were developed with the relevant Aboriginal Parties at the time:

- Garingbal and Kara Kara People (referred to by DATSIP as the ‘Public notice endorsed parties’) – for areas of the mine south of the Nogoia River, including Zone 2 and Zone 3 of the Project Site
- Western Kangoulu (as part of the Kangoulu People QUD6195/1998) – for areas of the mine north of the Nogoia River, including Zone 2 of the Project Site. Western Kangoulu (QUD17/2019) is now the current Aboriginal Party for the Project Site.

In relation to Zone 1, a CHMA exists between Ensham and the Western Kangoulu People for activities under MDL 217 and MDL 218 (Ensham and Western Kangoulu People, 2018). The ACH Act provides that a CHMP is required for projects for which an EIS is required under other another Act (ACH Act Part 7, Division 2, s.87). This requirement does not apply if cultural heritage is addressed in a native title agreement, as defined under the ACH Act (ACH Act Part 7, Division 2, s.86). The requirements of the ACH Act will be met for the Project by compliance with the existing CHMPs for Zone 2 and Zone 3 and a native title agreement for Zone 1.

**Table 20-2 Aboriginal Party for the Project Site**

QC ref number	QUD ref number	Name	Contact details
QC2013/002	QUD17/2019	Western Kangoulu People	Queensland South Native Title Services Ltd Level 10, 307 Queen Street BRISBANE QLD 4000 PO Box 10832, Adelaide Street BRISBANE QLD 4000 Phone: (07) 3224 1200 Freecall: 1800 663 693 Fax: (07) 3229 9880 Email: reception@qsnts.com.au

**Table 20-3 Cultural Heritage Body for the Project Site**

Name	Contact details
Lumburra Bimbi Pty Ltd	Mr Jonathon Malone Contact Officer PO Box 3126 Red Hill Centre, North Rockhampton QLD 4701 Phone: 0408 834 430 Email: jonathon@lumburrabimbi.com.au

**Table 20-4 Cultural Heritage Management Plans with Ensham**

CLH #	Sponsor	Aboriginal Party	Approved
CLH000419	Ensham Resources Pty Ltd	<b>Public notice endorsed parties. CHMP variation date 06 September 2016.</b> <u>Signatories:</u> <ul style="list-style-type: none"> <li>Mr Lindsay Black (replaced by Darryl Black in variation to CHMP)</li> <li>Mr Kevin Albury (replaced by Dorothy Albury in variation to CHMP)</li> <li>Mr Frederick J Conway</li> <li>Mrs Margaret Lawton</li> <li>Mr Adrian Williams</li> <li>Mr Les Tilley (replaced by Barbara Broome in variation to CHMP)</li> </ul>	4 April 2006
CLH000419	Ensham Resources Pty Ltd	<b>Kangoulu People QC98/25</b> <u>Signatories</u> <ul style="list-style-type: none"> <li>Western Kangoulu</li> </ul>	7 August 2007

The DATSIP search also indicates there are six previously registered Aboriginal cultural heritage sites within Zone 2 of the Project Site. These six sites include six culturally modified trees, five of which are clustered within 50 m of each other. This patterning, and the fact that the nearest 17 sites are also culturally modified trees, suggests that there is a high potential for culturally modified trees to be present along the Nogoa River and its tributaries where remnant vegetation exists. A search of the wider area (with a 20 km buffer around the Project Site), identified 81 sites in total, the majority of which are artefact scatters (see **Table 20-5**).

**Table 20-5 DATSIP sites within 5 km of the Project Site**

Site type	Count	Total (%)
Artefact scatter	53	65.43
Scarred/carved tree	23	28.40
Shell midden(s)	1	1.23
Isolated find	1	1.23
Stone arrangement(s)	1	1.23
Landscape feature	1	1.23
Quarry(s)	1	1.23
<b>Total</b>	<b>81</b>	<b>100.00</b>

#### 20.5.4 Additional sites

Although only Zone 2 had previously registered DATSIP sites, a number of clearances have occurred across the wider mining lease area including the Project Site. A number of cultural heritage sites were identified during recent works in Zone 1 (Cultural Heritage Management Australia, 2018, 2019). In total, 208 cultural heritage sites have previously been identified in the Project Site during exploration activities (**Table 20-6**). Nearly all of these sites are stone artefact concentrations with the vast majority within 100 m of a drainage line. It is understood that while some sites may have been relocated this has occurred within the Project Site (**Table 20-6**). While the number of 'sites' recorded in Zone 1 could be considered to be quite high for the size of the Project Site, many of the sites that were recorded are in close proximity to one another (some as close as 2 m). Instead of referring to these as sites, it is more appropriate to consider these as stone artefact concentrations (SACs).

**Table 20-6 Cultural heritage sites previously identified in the Project Site**

Site type	Total number of sites	Total (%)
Artefact scatter	140	67.31
Isolated artefact	66	31.73
Scarred tree	2	0.96
<b>Total</b>	<b>208</b>	<b>100.00</b>

#### 20.5.5 Aboriginal cultural heritage sensitivity

A review of historical and archaeological information suggests that Aboriginal cultural heritage sensitivity is highest in areas within 100 m of a watercourse. As discussed in the previous sections, watercourse margins were prime living and working locations, and may retain cultural heritage sites including hearths, artefact

scatters, middens and grinding grooves. The largest and most complex sites are likely to be found along the banks of the Nogoia River, which bisects the Project Site, but there is the potential for smaller, more temporary sites across the Project Site. This potential will be highest in areas of well-drained soil (north of the Nogoia River) as opposed to cracking black soils to the south. It should be noted that some potential remains even in previously disturbed areas, however the finds in these location will not be *in situ* and may hint at a subsurface archaeological deposit.

A second area of cultural heritage sensitivity exists around the currently recorded sites. There is the potential that these sites are a part of wider site complexes, or are associated with other sites that have not yet been identified. As noted above, many of the SACs are located in proximity and were identified in areas of opportunistic ground exposures linked to heavy erosion (**Plate 1** and **Plate 2**). Subsurface deposit may be present that link these SACs, potentially indicating a larger occupation site than what is demonstrated by surface finds.



**Plate 1** Example of erosion in the north of MDL 217 where archaeology was observed (Cultural Heritage Management Australia 2019)



**Plate 2** Eroded creek crossing (Cultural Heritage Management Australia 2018)

## 20.6 Historical heritage context

### 20.6.1 Historical background

Historical accounts of the Project Site commence with the Leichhardt expedition in 1845 (Leichhardt 1847). Seeking a route from Moreton Bay, Queensland, to Port Essington in what is now the Northern Territory, Leichhardt travelled directly adjacent to the Project Site, following the Mackenzie River north from the future townsite of Comet. The party made camp at four locations to the east of the current Ensham Mine, all on the Mackenzie River (**Section 20.5.1**). While settlement developed quickly in the Nogoa Basin following the Leichhardt expedition, primarily around town centres such as Emerald and Springsure, limited development appears to have been undertaken for the Project Site. Mapping from the mid-20<sup>th</sup> century shows the Project Site being comprised of three different lots summarised in **Table 20-7** and shown in **Figure 20-8**.

**Table 20-7 Summary history of lots within Project Site**

Lot / plan	Property (current name)	Location	Comment
2/CP911010	Athelfia (now Chelbrook)	North of the Nogoa River	This lot appears to have been a “back paddock”, with limited infrastructure or vegetation clearance occurring for much of the 20 <sup>th</sup> century, despite similar exercises in neighbouring properties.
8/TT345	Lochless (now Braylands)	South of the Nogoa	Although much of this land is located on rich black soils, this area was not cleared until the late-20 <sup>th</sup> century, whereby the majority of the property was cleared for cropping purposes apart from the immediate banks of the River and a drainage line in the south.
6/TT309	Reserve for Camping and Water	South of the Nogoa	Situated on a stock route, this area would have been used by drovers moving stock from pastoral properties to market or transportation hubs (such as rail) to market. Due to their status as reserves, culturally modified trees can be commonly found in these areas owing to the fact that trees were typically not cleared on these lots. However, by the mid-1990s, this lot too had been extensively cleared.

### 20.6.2 Historical heritage register searches

A search of relevant Commonwealth, State and local heritage registers was conducted on 28 February 2020. These searches indicated that there are no registered historical heritage places within or adjacent to the Project Site.



### 20.6.3 Historical archaeological sensitivity

Reviews of historical heritage registers and historical mapping and aerials suggests that there are likely no areas of historical archaeological sensitivity within the Project Site.

## 20.7 Potential impacts

Potential impacts to heritage sites can be divided into two main types: direct and indirect. Direct impacts occur if a heritage place or site is located directly in a development area and/or would be physically impacted by development. Such impacts include the demolition or substantial alteration of a building, or the disturbance of an archaeological site. Indirect impacts are those that alter the surrounding physical environment in such a way that a heritage place or site is affected. Indirect impacts might include additional water runoff or sediment deposition.

### 20.7.1 Project activity

The Project proposes to extend the existing underground bord and pillar mine into an area identified as the Project Site commencing from within Mining Lease (ML) 7459, ML 70326, ML 70365, and ML 70366 to an area west of ML 70365 within part of MDL 217. The Project proposes to utilise the existing mine infrastructure area (MIA) facilities which includes a coal handling plant and four continuously operating flares to allow seam gas pre-drainage and reduce greenhouse gas emissions.

A subsidence assessment has been completed and peer reviewed by Mine Advice (Mine Advice, 2020). The assessment has identified that subsidence, if it were to occur, is predicted to be typically less than 40 mm in the Project Site. Predicted subsidence is less than the DAWE estimated seasonal variation in surface levels as a result of changes in moisture content (IESC, 2015).

The subsidence assessment for the Project has also considered observations from the existing bord and pillar mining operations at Ensham Mine which have similar mining depth of cover, and mine design. The current underground operations have not observed any surface cracking or ponding, or, any subsidence, which is consistent with operational experience at comparable bord and pillar mining areas in both Queensland and New South Wales.

### 20.7.2 Impacts to known heritage

There are 208 recorded Aboriginal cultural heritage sites in the Project Site identified during exploration works (140 artefact scatters, 66 isolated finds and two scarred trees) (**Section 20.5.4**). A number of these artefact scatters and isolated finds have been relocated or salvaged. It is understood that the place to which artefacts were relocated is also within the Project Site.

The proposed underground operations are unlikely to impact on surface water within the Project Site and unlikely to impact on known heritage sites. The cultural heritage assessment notes the potential to impact identified Aboriginal heritage sites. These impacts will be managed under the existing CHMPs for Zone 2 and Zone 3 and a native title agreement with the Aboriginal Party for Zone 1. Other impacts on heritage sites were assessed as unlikely. The baseline assessment did not consider the impact of flaring infrastructure.

### 20.7.3 Impacts to unknown heritage

There is high potential for additional unidentified Aboriginal heritage places to be present within the Project Site. Any such unidentified places are most likely to be located on watercourse margins, or near previously identified places, and to consist of artefact scatters associated with small camps. Despite this, all of these sites will be surface finds that will not be subject to impacts from subsurface mining. Ancillary works, such as surface erosion controls, may impact on such sites, but as previously discussed these will be managed under the

existing CHMP framework for Zones 2 and Zone 3 and a native title agreement (as defined under the ACH Act) for Zone 1.

There is some limited potential for impact on unidentified historical heritage places. Given the history of the Project Site (**Section 20.6**), any such places are most likely to relate to the early pastoral industry.

## 20.8 Mitigation measures

### 20.8.1 Aboriginal cultural heritage

This assessment assumes that any Project impacts to Aboriginal cultural heritage will be identified and managed under the existing CHMPs for the Ensham Mine (CLH000419) which includes Zone 2 and Zone 3 and a native title agreement (as defined under the ACH Act) for Zone 1. Ensham will not carry out operations under ML 700061 in Zone 1 until a native title agreement (as defined under the ACH Act) is in place.

### 20.8.2 Historical cultural heritage

The Project will not impact on any known historical cultural heritage values and is unlikely to impact on unknown historical heritage values based on the predicted subsidence within the Project Site. Regardless, the risk of impact will continue to be managed under the existing CHMPs for the Ensham Mine and a native title agreement for Zone 1 by:

- undertaking cultural heritage inductions for all Project personnel engaged in ground breaking works
- implementation of procedures in the case of unexpected finds, including:
  - cease all works in the vicinity of the find
  - inform supervisor or cultural heritage coordinator who will then inform the Ensham Mine Environmental Superintendent
  - a qualified archaeologist will make an assessment and recommend management measures.

## 20.9 Residual impacts

With the implementation of measures outlined in **Section 20.8**, it is anticipated that any residual impacts to cultural heritage will be minimal.

## 20.10 Summary and conclusions

A review of historical, archaeological and register information indicates that there are least 208 Aboriginal heritage sites within the Project Site and the potential for additional sites within areas of cultural heritage sensitivity, principally around the margins of watercourses. The impacts on these known Aboriginal heritage sites (if impacts even occur), as well as the identification of any additional sites, will be managed under the existing CHMPs for the Ensham Mine (CLH000419) and a native title agreement between Ensham and the Western Kangoulu People for Zone 1.

Likewise, there are no historical heritage sites within the Project Site. There is thus limited potential that the Project Site retains evidence of early pastoral activities. Any potential impacts to such places will be managed under a chance finds procedure and inductions for staff and contractors.