Appendix D
Cultural mapping report

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ABORIGINAL CULTURAL VALUES MAPPING REPORT FOR THE COWAL GOLD OPERATION OPEN PIT CONTINUATION PROJECT, LAKE COWAL

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Executive Summary

The primary purpose of this cultural values mapping report is to consider and assess the tangible and intangible cultural heritage significance of the Cowal Gold Operation Open Pit Continuation Project at Lake Cowal. This included results from fieldwork with contemporary Aboriginal people and supported by the available written materials. The Study Region is an approximate 8000 km^2 square delineated by Condobolin to the northwest, Parkes to the northeast, West Wyalong to the southwest, Grenfell to the southeast, with Lake Cowal roughly in the centre (see Fig.1).

A key finding is that within a 30 km radius of Lake Cowal, contemporary Wiradjuri people hold six places as having major importance for their cultural heritage.[1] These places are as follows:

- Billys Lookout;
- Booberoi Hills;
- Lake Cowal, southeast bank;
- Manna Mountain;
- Marsden;
- Wamboyne Mountain.

Of these places and areas listed above (see Table 2), none would be directly impacted by the Project.[2] The contemporary Wiradjuri people, who live in 'the Country of the three rivers',[3] care for all its watercourses and water bodies. Wiradjuri representatives have stated that the flow into Lake Cowal should not be impeded by the Project, so as not to interrupt Dreaming Tracks. Of concern are any indirect impacts upon the environment, which the Wiradjuri see as linked to their own spiritual and psychological health.

A key finding from the analysis of the early ethnography and the historical record in terms of cultural values is that:

- There is no threat of injury to or desecration to significant cultural heritage posed by the Project.

The above finding is based upon the following evidence:

[1] For site details, refer to Table 2 in Section 2.2.
[2] For a Project description, refer to Section 1.1.
[3] Macdonald (2017, p.64).

- When Europeans first arrived, the Study Region was occupied by people known collectively as the Wiradjuri,[4] who all spoke a related language and shared many cultural attributes, and their descendants today are still based in central New South Wales.
- At the time of European settlement, Lake Cowal would have been part of one or more estates associated with clans as landowning groups within the 'Levels tribe' of the Wiradjuri, although there is no information available on their clan identity.
- Upon the breakdown of the clan system in the late-19th century, due to the negative impact of European settlement, Aboriginal people in the Lachlan to Murrumbidgee Rivers region chiefly lived in settlements and large pastoral properties, where they maintained an identity as Wiradjuri people.
- The main mythologies documented for the Wiradjuri at the time of European settlement were dominated by supreme beings, such as Baiame, Daramulan and Muni Burrebean, with totemic ancestors being also of some importance.
- The Wiradjuri people of central New South Wales were centrally involved in what has been termed the 'Frontier Wars' of the 1820s, and, while recorded events occurred nearby, none are directly associated with Lake Cowal itself.
- The ethnographic and historical records relating to the Wiradjuri people are extensive, and, while they are incomplete, it can reasonably be expected that any highly significant cultural heritage concerning the Study Region would have been recorded in them if it had existed.

Recommendation

The Project continues to involve representatives of the Registered Aboriginal Parties as it proceeds.

[4] Note that some Aboriginal people, who live towards the east at Bathurst, write their group name as 'Wiradyuri' (https://www.facebook.com/WTOCWAC/, accessed 13th December 2022). See also Gapps (2021).

Section 1: Introduction

The primary purpose of this cultural values mapping report is to contribute to a broader study investigating the Aboriginal cultural heritage values of the Study Region for the propose Cowal Gold Operation Open Pit Continuation Project by Evolution Mining Pty Limited at Lake Cowal.[5]

The broader study's aims are twofold:

- an identification and impact assessment of how the Project will affect intangible Aboriginal cultural heritage values, including sites, places, tracks and stories; and
- development of management recommendations based on the results of the assessment and input from Wiradjuri representatives during the consultation process and for inclusion in the broader Aboriginal heritage documentation for the project.

1.1 Overview

This report concerns the Aboriginal heritage of the Cowal Gold Operations Open Pit Continuation Project (hereafter the 'Project'). The proponent, Evolution Mining (Cowal) Pty Limited, is considering its next phase of operations, to secure its future in the region beyond the next decade. To do this, Evolution are planning to seek development consent for the Project, which will involve the development of additional open pits and associated infrastructure to enhance opportunities associated with the underground mine currently under development. If approved, the Project will extend the total life of the mine by two years to 2042. The proposed Project is in an area approximately 38 kms northeast of West Wyalong, and within the Bland Shire Local Government Area (see Fig.1).

The Project is identified as a State Significant Development (SSD) under the provisions of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Each SSD Project application requires approval from the NSW Minister for Planning or the Independent Planning Commission (IPC) and must be accompanied by an environmental impact statement (EIS). The assessment of Aboriginal cultural heritage will be one of several investigations included in the EIS. However, it should be noted that SSD Projects do not require separate approvals under the *National Parks and Wildlife Act 1974* (e.g., Aboriginal heritage impact permits, also known as AHIPs), rather any subsequent requirements for heritage are managed in accordance with the conditions of approval, provided by the Minister.

[5] Note that in the historical literature, Lake Cowal is sometimes written as 'Lake Cowall'.

This report concerns the cultural values mapping part of the heritage study, and as such it is based upon fieldwork with the RAPs as stakeholders and the findings from desktop research. For the writing of this report, the author was engaged for the following activities:

- Undertaking an on-site (and surrounds) investigation with key Aboriginal stakeholders to capture oral history and to highlight areas or geographical features of traditional/contemporary heritage value.
- Providing a review of existing anthropological, spiritual, and ethnobotanical literature in the region to provide context and to allow the assessment of oral history; and where possible identify who within the Aboriginal community speaks for country.
- Developing a report that presents the methods for the tasks above and their findings, provides maps and descriptions of cultural values, and the listing of any flora and fauna requiring further consideration.

1.2 Cultural Mapping Methods

In this report, the cultural values mapping exercise I have utilised is broadly the same as that employed by consultant anthropologists working in the arenas of native title and land rights, and it includes a strong emphasis on the use of historical materials to show continuity with the present. Cultural values mapping, often just written as 'cultural mapping', is described more fully as cultural resource mapping or cultural landscape mapping, and it refers to an eclectic range of research techniques and scholarly tools that are employed to 'map' the tangible and intangible cultural assets of people within the local landscape. In this context, for the scholar the term 'map' broadly means using a combination of written text and visual maps to construct a narrative that explains the cultural landscape and highlights the places of significant cultural heritage value within it.

UNESCO recognises that cultural mapping is a crucial tool and technique for developing the management practices that preserve the world's intangible and tangible cultural assets, and it is frequently used to fulfil their brief to safeguard cultural diversity in a rapidly transforming global economy.[6] Cultural values mapping involves the application of a wide variety of techniques and activities, from community-based participatory data collection and management to the use of sophisticated mapping based on Geographic Information Systems, in order to document the cultural resources for communities and places. Professional proponents of cultural mapping as cultural inquiry have claimed that:

> From this perspective, cultural mapping is regarded as a systematic tool to involve communities in the identification and recording of local cultural assets, with the implication that this knowledge will then be used to inform collective strategies, planning processes, or other initiatives. These assets are both tangible, or quantitative (e.g., physical spaces, cultural organizations, public forms of promotion and self-representation, public art, cultural industries, natural and

[6] Poole (2003). Also refer to https://bangkok.unesco.org/content/cultural-mapping (accessed 8th November 2022).

> cultural heritage, architecture, people, artifacts, and other material resources) and intangible, or qualitative (e.g., values and norms, beliefs and philosophies, language, community narratives, histories and memories, relationships, rituals, traditions, identities, and shared sense of place). Together, these assets help define communities (and help communities define themselves) in terms of cultural identity, vitality, sense of place, and quality of life.[7]

As with all heritage work in Aboriginal Australia, the sites that are typically discovered through cultural values mapping are comprised of places, such as archaeological sites and historical buildings, that scholars would emphasise as being regionally important, but also of sites that Aboriginal people consider are particularly important for their own local cultural identity, such as those primarily associated with spirit beings and ceremonial beliefs. For many of the mapped sites, there are both tangible and intangible aspects that contribute to their overall heritage significance. In the case of the sites that are chiefly associated with Aboriginal mythological traditions, these have mainly intangible heritage qualities.

The method undertaken in the current cultural values mapping exercise has placed an emphasis on fieldwork with representatives of the RAPs. The analysis of historical and ethnographic material derived from desktop-based research is used to provide context rather than validation. In the current cultural mapping exercise, all places that the Aboriginal participants have declared to have major significance to them within the vicinity of Lake Cowal were recorded. The site data obtained is compared with the model of Aboriginal relationships with Country, described in Sections 3 and 4 of this report, and then summarised in Section 5. The overall conclusions of the cultural mapping exercise are provided in the Executive Summary section.

1.3 Disclaimer

The opinions expressed here are wholly or substantially based on my specialised knowledge as a consultant anthropologist, arising from my training, study and experience in the fields of social anthropology and cultural geography. The methodological skills I utilised are related to the generation and processing of data about the relationships human societies and cultures have with country. The methods of consultant anthropologist are basically those of social science in general and concern the application of reason and evidence in the understanding of society and culture.

[7] Duxbury *et al.* (2015, p.2).

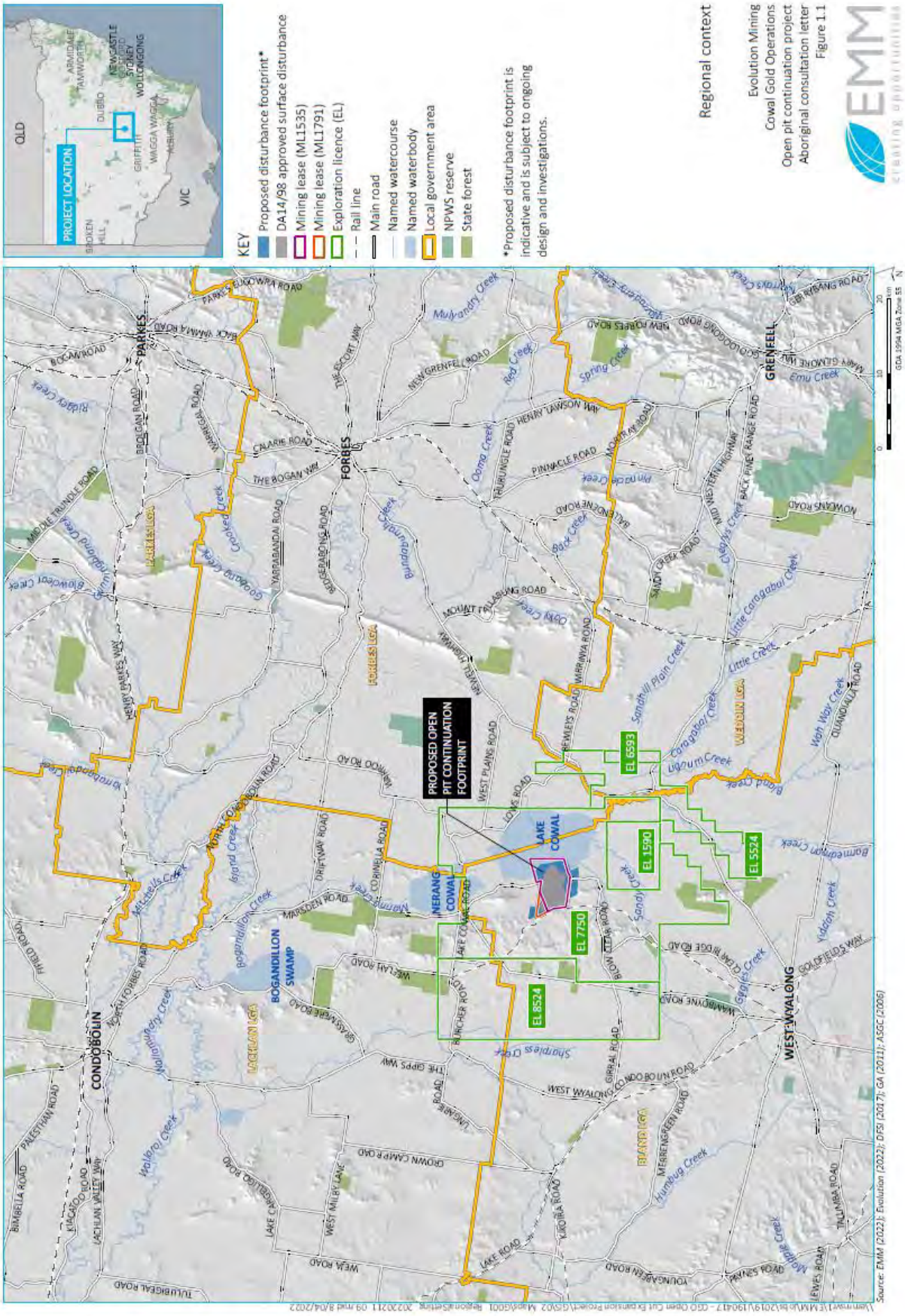

Fig.1. The Study Region (EMM, 2022).

Section 2: The Contemporary Cultural Heritage Significance of Lake Cowal

This section outlines the results of recent fieldwork with contemporary Wiradjuri people concerning the heritage of the Study Region, with a particular reference to Lake Cowal. The representative groups approached were the West Wyalong Local Aboriginal Land Council (hereafter the 'WWLALC') and the Wiradjuri Condobolin Corporation (hereafter the 'WCC'). It provides an account of what community representatives who were interviewed said about their cultural heritage. It includes a list of the places and areas which, from a contemporary Wiradjuri community perspective, require continued protection.

The Aboriginal heritage sites within the Study Region exist on a continuum between those with tangible (e.g., with an archaeological or architectural presence) and intangible cultural significance (e.g., linked to oral history or a cultural tradition). They can all be broadly classified as cultural sites that contemporary Wiradjuri believe were in existence when Europeans first arrived in the region, or at least shortly afterwards when Aboriginal people were still living in a traditional foraging lifestyle. These places were predominately classified as ceremonial grounds, camping and tool-making places, carved trees and scarred trees.

2.1 Main Contemporary Heritage Themes

The heritage of the contemporary Wiradjuri people is heavily influenced and shaped by the strained history of their engagement with the Aboriginal welfare authorities (see Section 4.2). Aspects of early Wiradjuri culture is being explored through heritage programs run by the WWLALC[8] and the WCC.[9]

2.1.1 Wiradjuri Language

Contemporary Wiradjuri people have expressed sadness at the loss of fluency with their own language. During fieldwork, Linton Howarth referred to the Wiradjuri Dictionary application on his mobile phone, which has words pronounced by Wiradjuri Elders, Dr Stan Grant, Elizabeth Grant and Midnight Brydon.[10] This is based upon the book, 'A New Wiradjuri Dictionary'.[11] Linton has studied the local Aboriginal placenames and by using Wiradjuri dictionaries has determined some of their possible original meanings (see Table 5, Appendix

[8] NSW Aboriginal Land Council website (https://alc.org.au/land_council/west-wyalong/, accessed 13th December 2022).
[9] WCC website (https://wiradjuricc.com/, accessed 13th December 2022).
[10] Refer to the 'Wiradjuri Dictionary' website, organised by Stan Grant Senior and Flo Grant (https://wiradjuri.wcclp.com.au/, accessed 12th December 2022).
[11] Grant & Rudder (2014).

A). He warns that Wiradjuri Country is a large region, so there would have been at least several dialects spoken in earlier times, making placename derivations more difficult.[12]

2.1.2 Food, Medicine and Artefacts

The main Wiradjuri uses of plants mentioned during recent fieldwork are summarised below in Table 1. These are just the main species, with these and many other Wiradjuri plant uses being more fully documented in a handbook.[13] During recent fieldwork, it was apparent that the area around Lake Cowal has a large population of grey kangaroos and emus. Linton Howarth said that apart from hunting these animals, the Wiradjuri people in the mallee country around Ungarie collected mallee fowl eggs to eat.[14] He has said that certain Wiradjuri people had close totemic connections to these particular birds. At Condobolin, Wiradjuri man Richard Coe said that the sand goanna was a local totem species, and for this reason had been carved into the boardroom table, made by Wiradjuri artist Max Reid from river red gum timber, in the WCC.

The quandong (*Santalum acuminatum*) is particularly important to the Wiradjuri people. Richard Coe remarked that they were a major food source for the Wiradjuri people and are mainly found in the Lake Cowal area, and not at Condobolin on the Lachlan River. Linton Howarth explained that as they have a hard nut, a special stone, which he called a 'cobble', was used to crack the shell. (Specialised artefacts of this technique have recently been published by Dr Colin Pardoe). In a video documentary he said:

> The town Wyalong its name comes from the word which is hard shell nut. The nut that it refers to is actually the quandong. Now that seed was what Wiradjuri would use to make flour. It's quite prolific, there's a lot of seeds on it and the seeds underneath can remain viable for up to two years and they're quite easy to collect. If you place the quandong seed in the cobble [squarish stone with an indentation in the centre] you can see that it is just the right depth to crack the shell of the nut without crushing the seed inside. Often on the reverse side you'll get the grinding surface where the flour will be ground from the seed in the nut. So we've had people in this area making flour from quandong seeds for approximately six thousand years.[15]

[12] Note that some Aboriginal people, who live towards the east at Bathurst, write their group name as 'Wiradyuri' (https://www.facebook.com/WTOCWAC/, accessed 13th December 2022).
[13] The *Wiradjuri Plant Guide in the Murrumbidgee Catchment*, compiled by Alec Williams & Tim Sides (https://issuu.com/magzarian/docs/wiradjuri_plant_guide, accessed 2th December 2022).
[14] Linton Howarth, 2021, YouTube website (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW, accessed 12th December 2022).
[15] Linton Howarth, 2021, YouTube website (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW, accessed 12th December 2022).

Linton Howarth described the Wiradjuri use of *yadhandha* or the long-leaved emubush (*Eremophila longifolia*) to make a powerful medicine (see Fig.2). He sometimes uses the foliage of this species for smoking rituals and he believes that it is possible that this species could be developed commercially in the future.[16] Linton remarked that many Wiradjuri people also know about *budhaay* or sneezeweed (*Centipeda cunninghamii*) and its use in traditional Aboriginal healing, but believes the *yadhandha* is stronger.

Table 1: Wiradjuri plants use data obtained during recent fieldwork.

Common/Wiradjuri name[17]	**Species**	**Notes**
Austral indigo / *barrinan*	*Indigofera australis*	Fish poison.
Belah / *biilaa, ngany*	*Casuarina cristata*	Wood for artefacts.
Butterbush or wild apricot / *dhingarang*	*Pittosporum angustifolium*	A 'birthing medicine'.
Grey box / *murrung*	*Eucalyptus microcarpa*	Wood and bark for artefacts.
Kangaroo grass / *gaymaan*	*Themeda triandra*	Edible seed for grinding.
Kurrajong / *dhin*	*Brachychiton populneus*	Seeds are edible after irritating hairs removed; the 'yam' of young saplings are eaten.
Long-leaved emubush or berrigan or / *yadhandha*	*Eremophila longifolia*	Edible fruit; foliage for medicine.
Native cherry / *mambarra*	*Exocarpos cupressiformis*	Edible fruit.
Quandong / *guwandang*	*Santalum acuminatum*	Edible fruit flesh & kernel ground to make flour.
Ruby saltbush / *barrinan*	*Enchylaena tomentosa*	Edible fruit.
Sneezeweed / *budhaay*	*Centipeda cunninghamii*	Foliage used medicinally as a panacea.
Snotty gobbles or mistletoe	*Amyema* species	Edible fruit.

[16] For possible commercial applications as a medicine refer to Sadgrove & Jones (2013).

[17] Note that the Wiradjuri name is that listed in the W*iradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/, accessed 12th December 2022) and the *Wiradjuri Plant Guide in the Murrumbidgee Catchment*, compiled by Alec Williams & Tim Sides (https://issuu.com/magzarian/docs/wiradjuri_plant_guide, accessed 2th December 2022).

White cypress pine / *burradhaa, garraa*	*Callitris glaucophylla*	Wood for artefacts.
Windmill grass / *bugaru, bunguwiny, gungil* (all grasses)	*Chloris truncata*	Edible seed.
Wyalong Wattle	*Acacia cardiophylla*	Dry seeds ground on stone for making into an edible paste.

Fig.2. Linton Howarth demonstrating the Wiradjuri use of a medicinal plant, y*adhandah* (long-leaved emubush, *Eremophila longifolia*) at West Wyalong (P.A. Clarke, 8th December 2022).

In the museum space within the WWLALC office building, there are examples of stone artefacts, such as flakes, microliths, cores and grindstone fragments, that Linton Howarth uses to demonstrate aspects of Wiradjuri culture. According to Linton, the Murrumbidgee people mainly use river red gum (*Eucalyptus camaldulensis*) wood to make their artefacts, while the Lachlan River people use mainly grey box (*E. microcarpa*), although both species are found across the whole region. This is because of cultural preferences. For holding a ritual smoking, Linton chooses an appropriate plant species, such as foliage from a species traditionally used for making tools, like grey box, if cleansing a new building where people are working with their hands.

Fig.3. Scarred tree on public display in the courtyard of the Wiradjuri Study Centre (P.A. Clarke, 8th December 2022). On top is Maliyan, the wedge-tailed eagle ancestor.

Wiradjuri people know that their ancestors once removed bark slabs from the lower trunks of large trees, such as the grey box (*Eucalyptus microcarpa*) and river red gum (*Eucalyptus camaldulensis*), in order to make artefacts such as containers, shelters and canoes. Linton Howarth considers that a scar at the bottom of a section of belah (*Casuarina cristata*), held at the WWLALC, was possibly made for the purpose of seasonally accessing the native bee hive inside the hollow tree. The scarred tree in the centre of the Wiradjuri Study Centre run by the WCC came from Lake Cowal (see Fig.3). Concerning this last-mentioned tree, an online account suggests:

> The scarred tree at the Wiradjuri Study Centre is an 800 kilogram, culturally significant Aboriginal scarred tree. It has been installed at the Study Centre in the centre of the complex. The scarred tree was initially at the Lake Cowal Gold Mine

and was then relocated under a permit from the Department of Environment, Climate Change and Water.[18]

A number of cultural modified trees within the vicinity of Lake Cowal have already been documented by Evolution Mining,[19] although according to the Wiradjuri representatives interviewed during fieldwork, none of them are threatened by the Project. During recent fieldwork, Richard Coe of the WCC explained that he had been part of the Wiradjuri team employed for the survey work at Lake Cowal and that a dead scarred tree was removed from near a track and placed, along with stone artefacts, in shipping containers at the mine site. EMM Consulting Pty Limited are working with the Wiradjuri Traditional Owners undertook this careful removal in 2021.

2.1.3 Spirit Beings and Creation Stories

When asked about the colonial sightings of 'bunyips' at Lake Cowal (see Section 3.2.1.2), Linton Howarth suggested that, to strangers, maybe particular large and old fish, of species like the Murray Cod, would look frightening when rising in the water. Since Lake Cowal is dry eight years out of ten, such fish would have to be washed in during flooding events. Wiradjuri woman Marlene Collins remembers that as a child she once saw 'mim-mim lights' at night from the car when travelling with her family along the main road to West Wyalong.[20] On this occasion she was told to keep her head down, but sneaked a look any way.

According to Linton Howarth, Wiradjuri people talk about 'hairy men' or 'yowie' living in the forests, which they protect.[21] He remarked that 'When a person goes to a place not supposed to, the hair goes up on the back of the neck – like being cold on a sunny day'. Marlene Collins said that the willie wagtail is a 'messenger bird' that delivers unwanted messages about the deaths of relatives and friends, with the kind of feeling 'you sense in your gut'. As children they were told 'Don't get near them', and 'Follow them and get into trouble'.[22]

Linton Howarth stated that Gugabul the Murray Cod who 'made the rivers' and Maliyan the Wedge-tailed Eagle (Eaglehawk) who 'taught about fire' are 'powerful ancestors' in Wiradjuri Country. He knows that for ceremony, Baiame is an important male supreme ancestor. According to Linton, Baiame transformed two brothers, who had fought all day, into Ivy Rock located far to the east between Dunedoo and Singleton. He believes that myths about giant

[18] The Travel Guide website (https://www.travelguide.net.au/listing/scarred-tree-at-wiradjuri-study-centre/13927, accessed 11th December 2022).
[19] Refer to the Evolution Mining website (https://evolutionmining.com.au/wp-content/uploads/2022/04/Appendix-I-AHDD.pdf, accessed 13th December 2022).
[20] Ramson (1988, p.396) described the 'mysterious dancing lights', with 'min-min' possibly being a Queensland Aboriginal term.
[21] Clarke (2018b, p.27). Ramson (1988, p.761) described the 'yowie' as a 'Yuwaalaraay *yuwi* dream spirit'.
[22] Clarke (2018b, pp.23-24,33) described the widespread Aboriginal beliefs concerning the willie wagtail omen.

kangaroos relate to the extinct megafauna, such as the *Procoptodon* species as described by palaeontologists.

2.1.4 Ceremonial Life

Wiradjuri people speak of women's and men's sites within Study Region, and their approximate location is known to most community members in order for them to observe cultural protocols in relation to access. Wiradjuri representatives have requested that such places be only described as 'ceremonial places' in this report. In the past, carved trees have been removed from sacred sites, such as Bora grounds and burial places (see Fig.4). More recently, a mature tree was freshly carved at the Kiacatoo burial ground/Bora ground, where ancestral remains of a Wiradjuri person were excavated and then reburied.[23]

Fig.4. Carved tree, removed from Lake Cowal, c.1930s, on display at the WWLALC (P.A. Clarke, 8th December 2022).

[23] Kemp *et al.* (2014).

2.1.5 Memories of Frontier Conflict and Missions

The Aboriginal killings at Bland Creek are part of contemporary Wiradjuri oral history (see Section 4.1). A child is said to have survived, being rescued by a European named John Siggs, and according local folklore he became known as William Joseph Punch.[24] On the 31st of December 1915, as a 31-year-old Aboriginal labourer from Pejar, William enlisted in the Australian Imperial Force at Goulburn in New South Wales to fight in WW1.[25] He was wounded several times in Belgium and then died on the 29th of August 1917 in the Mont Dore Military Hospital, Bournemouth, Hampshire in England.

Linton Howarth remarked that across New South Wales the Aboriginal missions were generally not established in mining towns, such as West Wyalong, but rather at places such as Murrin Bridge near Lake Cargelligo and Willow Bend at Condobolin.

2.1.6 Access to Lake Cowal and Cultural Flows

Linton Howarth acknowledges the 'Wiradjuri Country of three rivers: Lachlan, Macquarie and Murrumbidgee'. When asked about the significance of Lake Cowal for the contemporary Wiradjuri community, Leeanne Hampton stated that it is the 'Lifeline for this area. Trade – travelling people coming through Lake Cowal. Different mobs [of Wiradjuri] coming together'. Similarly, Richard Coe sees Lake Cowal as an important former hunting and foraging place, and as evidence of their 'food, water and livelihood'. Leanne believes that the water flows into the system feeding into Lake Cowal are worse now than what they were at the time of European settlement, due to a combination of historic European land and water management practices and climate change. For her, symbolically the 'water is our blood'. Linton queried the wisdom of local farmers sowing crops on the bed of Lake Cowal. In terms of aesthetics, from the point of view of both Linton and Leeanne, who have been involved with Lake Cowal archaeological surveys, the proposed development of additional or extended open pits within the Project area does not dramatically alter the landscape as currently experienced by Wiradjuri people.

WWLALC hope to secure funding for the establishment of an Aboriginal ranger group for West Wyalong, and to perhaps work more closely with the Lake Cowal Conservation Centre.[26] Richard Coe said he would like to see more young Wiradjuri people involved in the cultural monitoring of Wiradjuri sites around Lake Cowal. Members of the contemporary Wiradjuri

[24] Note that the frontier killings took place in the 1820s, whereas from his enlistment papers William Joseph Punch would have been born c.1884.

[25] See account written by Cathy Sedgwick on the Virtual War Memorial Australian website (https://vwma.org.au/explore/people/278684, accessed 13th December 2022) and the WW1 Australian Soldiers & Nurses Who Rest in the United Kingdom website (https://ww1austburialsuk.weebly.com/uploads/4/9/7/8/4978039/punch_william_joseph.pdf, accessed 13th December 2022).

[26] For more information of the Lake Cowal Conservation Centre, refer to the Bland Shire Council website (https://www.blandshire.nsw.gov.au/Visitor-Information/Things-to-See-and-Do/Lake-Cowal-Conservation-Centre, accessed 13th December 2022).

community see a close relationship existing between the environmental health of Country and their own physical, emotional and cultural wellbeing.

Fig.5. Lake Cowal, as seen from the southwest bank (P.A. Clarke, 8th December 2022).

Fig.6. Nerang Cowal in flood, as seen from the west bank (P.A. Clarke, 8th December 2022).

2.2 Contemporary Knowledge of Heritage Places

From recent fieldwork with representatives of the Wiradjuri people, there were six main sites identified as being of significance and requiring long term protection, although none of them are within the footprint of the Project. Table 2 below lists the heritage places in the vicinity of Lake Cowal that Wiradjuri representatives described as culturally important during recent fieldwork, and most of these are places that are visible from the edge of Lake Cowal. It is contemporary Wiradjuri belief that all six sites of these sites were part of their cultural landscape at the time of first European settlement, and five of them relate to their ceremonial life. Two of the sites (Booberoi Hills and Manna Mountain) also have significant Aboriginal heritage in the form of surface archaeological material. The ceremonial site on southeast bank of Lake Cowal was identified for protection during an earlier phase of the mine's development. The Project will not threaten any of the connections between these sites.

It is planned that most of the artefacts and a scarred tree removed during the surveys at Lake Cowal will be returned to Country at the conclusion of the Project.

Table 2: Heritage places in the vicinity of Lake Cowal that Wiradjuri representatives described as culturally important during recent fieldwork.

Place	Description	Notes
Billys Lookout	Large hill, ~ 10 kms southwest of Lake Cowal. Blow Clear Road cuts through the northern flank of the hill, which as a prominent hill surrounded by flat country is clearly visible from places such as Lake Cowal to the northeast and Marsden to the southeast.	Lookout place for 360 degrees, possibly named from a prominent Aboriginal man alive in the early colonial period.
Booberoi Hills	Two large hills in the middle of a north-south ridge that is largely still vegetated and runs for about 13 kms, the hills are surrounded by flat areas, making them appear prominent in the area ~ 15 kms southwest of Lake Cowal	Ceremonial place. The placename represents 'women drumming', using possum skin cloaks (see Table 5, Appendix A). Archaeological surveys have established the presence of former camps at the bottom of the hills, possibly made by participants in a ceremony.
Lake Cowal	Site near the southeast bank of the lake, but not within the Project area as planned, about 100 ms^2	Ceremonial place, involving a tree and concerning women, discovered earlier during the mine development. It was identified for protection by the Evolution Mine. Information regarding this site is considered to be culturally sensitive.
Manna Mountain	Large hill, covering about 4 kms^2 and still vegetated, appears prominent on the north side of	Ceremonial place. In addition, it is a declared an archaeological reserve, with good examples of grinding

	Nerang Cowal ~ 14 kms northwest of Lake Cowal	grooves (see Fig.7), enlarged gnamma hole and stone tools. The area was a Wiradjuri place for collecting manna from eucalypts, leading to its European placename (see 'Manna Mountain' entry in Table 5, Appendix A).
Marsden	Site on Bland Creek, about 100 ms^2 and lined with river red gums, ~ 9 kms southeast of Lake Cowal	Ceremonial place, used today for Wiradjuri cultural training. Information regarding this site is considered to be culturally sensitive.
Wamboyne Mountain	Large hill, in the middle of a north-south ridgeline running about 4 kms, still vegetated and is surrounded by flat areas that make it appear prominent in the area ~ 3 kms southeast of Lake Cowal	Ceremonial place, with lookout for 360 degrees.

Fig.7. Linton Howarth explaining the axehead grinding site at the Manna Mountain Archaeological Reserve (P.A. Clarke, 8th December 2022).

Fig.8. Waterhole at the axehead grinding site used during the during grinding process (P.A. Clarke, 8th December 2022).

Section 3: Early Ethnography of the Lake Cowal Region

This section provides an overview of the early ethnographic sources as a means for mapping Aboriginal culture across central New South Wales. It maintains a particular focus on the Wiradjuri group of Aboriginal people, who were documented as being present in the Lake Cowal region when European settlers first arrived.

3.1 Aboriginal 'Tribes', Clans and Language Groups

As scholars often discover today, when the accounts from the various early ethnographers who compiled the records are compared, it is apparent that they use different spellings for many of the Aboriginal group names. While this can be confusing in some instances, a greater problem when using these ethnographic sources is that the group terms, such as 'clan', 'tribe' and 'nation', are inconsistently used.[27] At least some of the early ethnographers were aware of the need to define their use of group terminology. For instance, in 1885 one of the main ethnographers for central New South Wales was A.L.P. Cameron, who wrote:

> It may be well here to give a definition of what I mean by "tribe." When the word is used in this paper it refers to a whole community of people, whose language, laws, institutions, ceremonies, and customs are the same, and who call themselves by a certain name. The word "nation" will be applied to a group of kindred tribes, who are on friendly terms, and whose language and laws are somewhat but not altogether similar. The word "clan" will be used in reference to subdivisions of a tribe having the same language, laws, &c.
>
> I think it probable that there were not more than five or six nations in New South Wales, each nation consisting of from five to twenty tribes, and in some parts of the colony these tribes were again subdivided into clans.[28]

The focus area for this report is part of the riverine country of central New South Wales, which the early ethnographers described as being occupied by the Wiradjuri people. At the time of European settlement, members this group were described as a 'nation' of Aboriginal people.[29] The term, 'nation', is a description for a broad group of similar peoples, encapsulating a range of smaller groups, and it is therefore not a landowning group. In some instances, the 'nations' are akin to what anthropologists would later classify as cultural regions,[30] since, as Cameron noted, not all of them had distinguishing Aboriginal names.[31] Cameron also remarked that there was a lack of a clear distinction between groups. In the case of the Wiradjuri and the neighbouring 'tribes', he observed that:

[27] For a discussion of Aboriginal group structure, refer to Sutton (2003, Chapters 2-4).
[28] Cameron (1885, p.345).
[29] Howitt (1904, pp.82,108) and Tindale (1974, p.156).
[30] Sutton (2003, pp.91-94).
[31] Cameron (1885, p.346).

> As far as I can make out there are no very clearly defined boundaries between these tribes or their greater aggregates, the nations. The tribes seem to melt into each other. For instance, A, B, and C being tribes, B is on intimate terms with both A and C, understanding and talking the language of each. But A rarely holds intercourse with C, merely understanding some of the language, but not speaking it.[32]

In native title anthropology, the landowning groups would typically be the relatively smaller descent groups that ethnographers have generally called 'clans' or sometimes referred to as 'small tribes'.[33] In the vocabulary from Henry Withers, that Robert Brough Smyth published in 1878, there is an entry for 'A tribe' as *Eunonyhareenyah*,[34] which was taken for the name of a colonial pastoral station established by Charles Tompson on the northeast side of Wagga Wagga in the southern part of Wiradjuri country.[35] This particular 'tribe' name may have related to a descent group or perhaps to people associated with a distinct area through either direct descent from a locally-based clan or through affinal ties to people who did. That there were smaller groups of people, within other much larger groups in central New South Wales, can be determined from the account of former colonist J. [John] McGuire at Junee, who said that:

> About 40 years ago [i.e., c.1861], when I was on the Murrumbidgee, I remember a number of aborigines, belonging to the Bundaburra portion of the Wiraiari [Wirraayaraay] tribe, making a raid on the Murrumbidgee portion of that tribe for the purpose of obtaining wives for themselves'.[36]

It is apparent that some of the Wiradjuri 'sections' that early ethnographer Alfred W. Howitt recorded between Hay and Yass were actually descent groups. Howitt described them as 'hordes, descent being in the female line',[37] although if related to land then descent from the father would have been more expected. It is possible that early ethnographers have conflated land ownership (generally favouring the father's line) with totemic membership (which was matrilineal in central New South Wales). Howitt listed the 'principal of these divisions', as he understood it for the Wiradjuri, being:

(1) Narrandera (prickly lizard) about Narrandera.

(2) Kuta-mundra (river turtle [*kutamun*]) about Cootamundra.

(3) Murring-bulla (two bark canoes [*maring-bula*]) about Murranburra.[38]

[32] Cameron (1885, p.347).
[33] Sutton (2003, Chapter 2).
[34] Smyth (1878, vol.2, p.218).
[35] Montgomery (2011, p.9).
[36] McGuire (1901, p.210). See also 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 26th October 1906, p.9).
[37] Howitt (1904, p.56).
[38] Howitt (1904, p.56). Cited by Tindale (1974, p.201), who provided the additional Wiradjeri terms.

From the mid-19th century, linguists mapped the extent of the country where Wiradjuri-speakers lived. In 1846, explorer Horatio Hale published a small comparative word list from Australia that he had obtained during the United States Exploring Expedition (1838-1842), under the command of Charles Wilkes.[39] This included terms compiled by the missionary Rev. William Watson at Wellington Valley in New South Wales, which were described as from the 'Mudgee dialect' and identified as part of the Wiradjuri (Wira-durei or Wiraturai) language. The Wellington Valley Convict Station and Mission Site, now known as Maynggu Ganai, is located about 180 kms northeast of Lake Cowal.[40] After describing the Kamilaroi (Kamilarai) language, Hale wrote:

> The other dialect is that spoken at the place last-mentioned, - Wellington Valley, - situated beyond the Blue Ridge, about two hundred miles [322 kms] west of Lake Macquarie, - indeed on the interior boundary line of the colony. At this place a mission of the Church of England had been established about eight years before our arrival. We have to acknowledge the extreme kindness of the Rev. William Watson, who, during a fortnight passed at his house, not only gave every assistance in obtaining a vocabulary from the natives, but did us the unexpected favor of drawing up an account of the most important peculiarities of the language, modelled as nearly as possible on the grammar of Mr. Threlkeld, for the purpose of comparison. This is here given, with only some slight change of form, and must be considered as constituting a most valuable contribution on the part of Mr. Watson, to the stores of philological science. The language is known to the natives who speak it by the name of Wira-durei or Wiraturai.[41]

In 1873, Rev. William Ridley published a comparative table of Aboriginal words across Australian, including Wiradjuri (Wirradhurri) and Kamilaroi.[42] In 1875, Ridley described the Wiradhuri (Wiradjuri) as being spoken 'lower down the Castlereagh, and over the Wellington District',[43] and stated that 'Wiradhuri and Kamilaroi are very similar, and both are widely spread'.[44] The Wiradjuri terms he listed came from Rev. William Watson and from the manuscript of Rev. James Günther of Mudgee,[45] the last mentioned person 'who was for many years engaged on a mission to the Aborigines of the Wellington District'.[46] According to Ridley, the name of languages in central New South Wales were given in relation to each other,[47] and he stated in the case of the Kamilaroi that:

> The names of this and the neighbouring languages are derived from the negative adverb; thus "kamilaroi" from "Kami!" (no); "wolaroi" from "wol" (no);

[39] Hale (1846, pp.479-481).
[40] Refer to the *Maynggu Ganai Historic Site Draft Conservation Management Plan* (https://www.environment.nsw.gov.au/research-and-publications/publications-search/maynggu-ganai-historic-site-draft-conservation-management-plan, accessed 11th November 2022).
[41] Hale (1846, p.482).
[42] Ridley (1873, pp.284-288).
[43] Ridley (1875, p.119).
[44] Ridley (1875, p.132).
[45] Ridley (1873, p.276; 1875, pp.120,122-132).
[46] Ridley (1875, p.135).
[47] Ridley (1873, p.275).

> "wailwun" [Wailwan] from "wail" (no); both "wiraiarai" [Wirraayaraay] and "Wiradhuri" [Wiradjuri] are from "wira" (no).[48]

In 1878, scholar/former colonist Robert Brough Smyth published *The Aborigines of Victoria*, which included much material relevant to the whole of southern and eastern Australia. This included a short Aboriginal vocabulary from Wagga Wagga at the southern end of what is generally seen as Wiradjuri country, which had been obtained from his correspondent, Henry Withers.[49] In 1886-87, another scholar/former colonist, Edward M. Curr, published *The Australian Race* in four volumes, which was a survey of Aboriginal groups across Australia. Curr compiled data from many correspondents, including Günther, who were mainly former settlers and colonial officials who had particular knowledge of local Aboriginal customs. Much of the information is contained in words lists of variable orthography.[50] Curr himself had lived in the country of the 'Lachlan Blacks', who spoke 'Wirratheri [Wiradjuri] language'.[51] He remarked that the 'Wiiratheri tribe … were a people who numbered several thousand souls, had a common language, and inhabited a country 450 miles [724 kms] in length by 300 [483 kms] in breadth, throughout which communication was easy'.[52] Curr noted that:

> The word *Wiiratheri* [Wiradjuri] is derived from *wiirai*, the negative adverb, and it is worthy of notice that in almost every tribe throughout this series [Book Sixteen] the equivalents of *no* and *the Blacks* are, though differently spelt by my contributors, in reality the same, a state of things which rarely exists in connection with tribes occupying so large an extent of country. We also find in these dialects *dagu*, *duggan*, *dagga*, &c., common equivalents for excrement, and related terms such as *dagun*, *duggan*, and *daggon* signifying ground; in fact in two instances the two objects are expressed by the same word.[53]

In 1892, missionary Lancelot E. Threlkeld published the 'Grammar and Vocabulary of the Aboriginal Dialect Called the Wirradhuri [Wiradjuri]', with his chief source acknowledged as Günther, who in about 1838 wrote a grammar of Wiradjuri and compiled a vocabulary (see Fig.9).[54] Threlkeld observed that the Wiradjuri and Kamalarai (Kamilaroi) languages were related, so that 'a Kamalarai black, who says mu-ga [means 'blind'], would soon know the Wiradhari mu-pai [means 'dumb']'.[55]

Threlkeld mapped the 'tribes' of New South Wales, and remarked that 'The boundaries of the Wiradhari tribe have long been known. Probably they did not extend quite to the Murray

[48] Ridley (1875, p.15).
[49] H. Withers, cited Smyth (1878, vol.1, pp.lxviii-lxix; vol.2, pp.218-220).
[50] Bayles (1887), Bench of Magistrates, Bathurst (1887), Bench of Magistrates, Dubbo (1887), Byrne (1887), Cameron (1887), Foley (1887), Günther (1887), Keightly (1887), Pearce (1887) and Suttor (1887).
[51] E.M. Curr in Curr (1886-87, vol.3, p.363).
[52] E.M. Curr in Curr (1886-87, vol.3, p.364).
[53] E.M. Curr in Curr (1886-87, vol.3, p.363).
[54] Threlkeld (1892, pp.xii,56-120).
[55] Threlkeld (1892, p.xxxi).

[River], but that river is their natural limit on the south'.[56] Threlkeld was aware that the recording of Aboriginal 'tribe' names in New South Wales was dominated by the perceived similarity of the languages. He remarked that:

> Of these tribes, the Kamalarai [Kamilaroi], Walarai [Wirraayaraay], Ngaiamba [Ngiyampaa], Bakanji [Paakantyi], Wiradhari [Wiradjuri], the Associated Tribes, the Ngarego [Ngarigu], the Kuringgai [Guringai], are names already established and in use; and most of them are formed from the local word for 'no,' and thus describe more the speech than the people.[57]

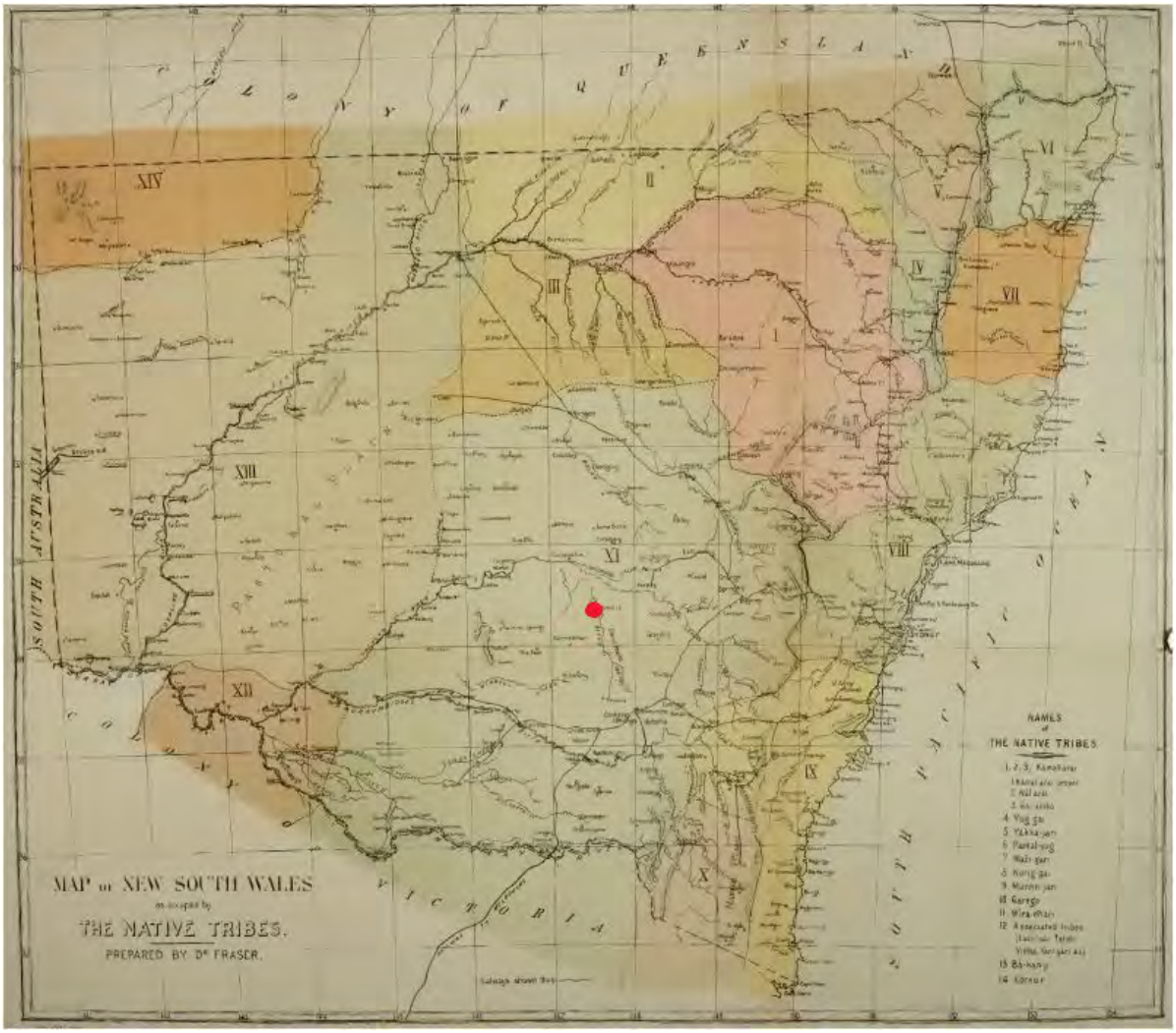

Fig.9. 'MAP of NEW SOUTH WALES as occupied by THE NATIVE TRIBES. PREPARED BY Dr FRASER' (Threlkeld, 1892, front piece). Note that the red dot has been superimposed to show the location of Lake Cowal, which is well inside the Wiradjuri ('Wira-dhari') area, which is marked as 'XI'.

[56] Threlkeld (1892, p.ix).
[57] Threlkeld (1892, p.x).

For the Wiradjuri people, an exact definition of who they were was somewhat elusive, as similar languages were spoken by neighbouring peoples. For instance, in 1899 Cameron observed that 'The Tribes about here [in Murrumbong] are called Wongibone [Wangaaypuwan], but are merely an offshoot of the Waradgery (sometimes called Wiradhuri [Wiradjuri]), with whom they married and had customs in common though the Class arrangements and Totemic divisions were slightly different'.[58] He had noted in 1885 that:

> It seems to me probable that the Wonghi or Wonghibon [Wangaaypuwan] tribe, concerning which I shall give some information in these notes, was in fact a branch of the Wiradjeri [Wiradjuri] nation. In speaking of a Wonghi black to one of the Wathi-wathi tribe, who had referred to him as a Wiradjeri, I said, "He is not Wiradjeri, he is Wonghi," and my friend replied," It is all the same, only they talk a little different; Wiradjeri blackfellows say 'Wira' for No! and Wonghi black fellows say 'Wonghi,' but they are all friends." This Wonghi tribe occupied a tract of country lying along the Lachlan River from Whealbah about eighty miles [129 kms] up stream, and back from the river for a distance of about one hundred miles [161 kms].[59]

Due to the increasing amount of Aboriginal language data available to scholars by the late-19th century, linguists were able to commence mapping the distribution of language clusters in terms of subgroupings and families. In 1897, Joseph Lauterer mapped out the relationship between the languages of eastern Australia, and in relation to central New South Wales he remarked:

> The Wirri dialects which include Ridley's Wiraduri, are the most widely spread dialects of Eastern Australia. They are and have been spoken with very little difference south of the Namoi and Barwon rivers, as far as Bourke, then in the plains and along the rivers Castlereagh, Macquarie, and Bogan, and over all the immense tracts of land westward to the line from Bathurst to Albury. In the Forbes district, "widdi," in the Bathurst district, "wirrai," is the negative.[60]

In 1899, anthropological correspondent T.L. Richardson published a note in the *Science of Man* anthropological journal that stated of the four distinct dialects spoken by Aboriginal people living between Bathurst in the east and Bourke in the west, 'Wirrajerry [Wiradjuri] … has the widest range extending from Bathurst to the lower Lachlan, to the head of the Bogan and to the Mole (or marshes of the Macquarie) is from "wirri" – no', with the other groups being Wongi-bone [Wangaaypuwan] in the Bogan River area, Waal-won along the Mole to the lower Naomi, and the Kamilaroi along the Naomi and lower Barwon.[61] In 1901, a published 'Wirradgerry (Wiradjuri) wordlist from John McGuire at Junee was compared via a table with

[58] Cameron (1899, p.195).
[59] Cameron (1885, pp.345-346). Cited by Howitt (1904, p.108).
[60] Lauterer (1897, pp.15-16).
[61] Richardson (1899a, p.164). See also Donaldson (2009, p.213), who discussed language names in the region based on 'No'.

those from languages in southeast Queensland.[62] These accounts, and those made earlier as outlined above, clearly place the Study Region in country where Wiradjeri-speakers had lived.

A detailed study of 'Wirra' languages, including Wiradjuri (Wirra' jerree'), was published by C. Richards in serialised form within the *Science of Man* through 1902 and the first part of 1903.[63] The author had collected about 5000 words, many of which are associated with detailed descriptions of the subject.[64] The recorded terms cover such things as the biota, cultural customs and artefacts. Richards observed that 'Most aborigines speak the tongues of their neighbours to some extent, and it follows that they are not always able to say which of several names for a thing is of the mother tongue, and which is foreign'.[65] The name for the language varied, with Richards having recorded that *Wir-rach'-a-ree'* was 'A foreign tribe's way of pronouncing wir-ra'-jee-ree' [i.e., Wiradjuri].[66]

A former colonist, John Francis Huon Mitchell, was the source of a series of Wiradjuri (Woradgery) word lists published in various newspapers from 1902.[67] The work was also published by the *Science of Man* journal in 1906, without an author being cited.[68] In Mitchell's biographies it was reported that as a child, he and his brothers were brought up by their father on Thurgoona Station along the Murray River, on part of which lies the present town of Albury.[69] It was claimed that he was 'in these parts in 1842, and [he] probably possesses a greater knowledge of the particular tribe of aboriginals which lived here than any other man living'.[70] On the southern edge of Wiradjuri country, Mitchell and his brothers:

> … learned to speak the Woradgery [Wiradjuri] tongue with all the expression of the natives, and were even admitted to the ceremonies connected with some of the most sacred of the tribe's rites and customs. … The administration of the "sacrament" of "nurmung" [tooth evulsion] was once witnessed by one of the Mitchells from under cover of the opossum cloak of the then head of the tribe, King George.[71]

[62] McGuire (1901, pp.208-210).
[63] Richards (1902a, 1902b, 1902c, 1902d, 1902e, 1902f, 1902g, 1903).
[64] Richards (1902a, p.81).
[65] Richards (1902a, p.81).
[66] Richards (1902c, p.119).
[67] 'A New Dictionary of Aboriginal Words' (*Corowa Free Press* newspaper, 23rd September 1902, p.3); 'A Vocabulary of Aboriginal Terms. (Woradgery Tongue.) for Birds, Beasts, Fishes, Weapons, Trees, &c. Compiled by J.F.H. Mitchell, One of the Pioneers of the Albury District' (*Albury Banner & Wodonga Express* newspaper, 27th May 1904, p.34). Unattributed published word lists, which from the contents are most likely derived from Mitchell, were provided in 'Native Names' (*Land* newspaper, 27th July 1923, p.13) and 'Aboriginal Words. A Few Suitable for House Names' (*Land* newspaper, 29th August 1930, p.2).
[68] Anonymous [Mitchell, J.F.H.] (1906).
[69] 'A New Dictionary of Aboriginal Words' (*Corowa Free Press* newspaper, 23rd September 1902, p.3); 'The Sketcher. Aboriginal Names', by W.M. Sherrie (*Sydney Mail & New South Wales Advertiser* newspaper, 1st March 1911, p.2); 'Personal' (*Land* newspaper, 9th September 1921, p.15); 'Riverina Pioneers', by W.M. Sherrie (*Sydney Morning Herald* newspaper, 3rd April 1923, p.4).
[70] 'Notes on Current Events' (*Albury Banner & Wodonga Express* newspaper, 6th April 1906, p.22).
[71] '"Neddy" Wheeler' (*Wodonga & Towong Sentinel* newspaper, 8th May 1908, p.4).

Austrian linguist P.W. Schmidt used Threlkeld's data when mapping the language groups of New South Wales, which was based upon desktop research and published in 1919 (see Fig.10).[72] From this body of work, it can be determined that the Study Region is where people spoke Wiradjuri. The extent of Wiradjuri country was mapped differently by some later researchers, although the eastern boundary near the Study Region varied little from Threlkeld's original mapping.

Fig.10. Aboriginal language groups as mapped by linguist P. Schmidt (1919). Note that the red dot has been superimposed to show the location of Lake Cowal.

In 1938, American anthropologist Daniel S. Davidson compiled a catalogue and drew an associated map of Australian Aboriginal groups as a desktop research exercise.[73] His description of Wir-Dhari (Wira-shuri, Wiradjuri) highlighted a large area associated with the group, based on what he considered to be an inconsistent ethnography. He wrote:

> WORADJERA, WORADJERG (Bet. Howland and Dora Dora), WEROGERY (Albany Dist.), WIRATHERI, WIRRAIDYURI. Large area along C. Murrumbidgee R. Authorities inconsistent. S. to Murray. N. to heads of Lachlan, Bogan, Castlereagh and Macquarie Rs. E. of Ivanhoe, Clare, Osley. Moulamein.[74]

[72] Schmidt (1919).
[73] Davidson (1938a, 1938b).
[74] Davidson (1938a, p.16).

Fig.11. Map of Aboriginal groups mapped by D.S. Davidson (1938b, section of the Ethnic Map). Note that the red dot has been superimposed to show the location of Lake Cowal.

In 1940, ethnographer Norman B. Tindale published a map and catalogue of Australian Aboriginal 'tribes', which by focussing on this theoretic unit of cultural identity differed from Davidson's list of groups of various sizes and compositions.[75] Tindale's study was chiefly based upon desktop research, supplemented from data collected on the 1938-39 fieldtrip across Australia visiting Aboriginal settlements. In Tindale's magnum opus, *The Aboriginal Tribes of Australia* published in 1974, he later somewhat modified his views on the Wiradjuri 'tribe' boundaries. By using a relatively large number of early ethnographic sources, in 1974 Tindale described the Wiradjuri 'tribe' as follows:

> **Wiradjuri** **'Wiradjuri (Wi'raduri)**
>
> Loc.: On the Lachlan River and south from Condobolin to Booligal; at Carrathool, Wagga-Wagga, Cootamundra, Cowra, Parkes, Trundle; east to Gundagai, Boorowa, and Rylstone; at Wellington, Mudgee, Bathurst, and Carcoar; west along Billabong Creek to beyond Mossgiel; southwest to near Hay and Narrandera; south to Howlong on upper Murray; at Albury and east to about Tumbarumba. They visited Yass for ceremonies with the Ngunawal tribe. The northwestern boundary was incorrectly drawn on the 1940 map. Brough Smyth

[75] Tindale (1940, p.195).

shows that members of the tribe were on the Murray River at Albury, and Howitt (1884) mentions them as on the lower Tumut River but they were usurpers there in earliest white settlement times. Wiradjuri was one of the largest tribal groupings in Australia, with many hordes. Howitt mentions several of these local groups of the tribe, for example - Narrandera (prickly lizard), Cootamundra (Kutamundra) from kutamun turtle, Murranbulla or Murringbulle (maring-bula, two bark canoes), and there were many others. Differences in dialect were evident in some areas, notably around Bathurst and near Albury. Maintenance of a cycle of ceremonies that moved in a ring around the whole tribal area tended to assist tribal coherence despite the large occupied area.

Coord.: 147°30'E x 33°50'S.

Area: 48,900 sq. m. (97,100 sq. km.).

Alt.: Wiradyuri, Wiradhuri, Wiraduri, Wiradjeri, Wirra'jerre', Wiradhari, Wirra-dhari, Wirradhurri, Wirra-dthoorree, Wirraidyuri, Wirraddury, Wiraijuri, Wirraijuri, Wiiratheri, Wirrathuri, Wiradthuri, Wiradthery, Wirathere, Wiratheri, Wiragere, Wuradjeri, Wira-durei, Wira-shurri, Wirradgerry, Weradgerie, Woradgery, Waradgeri, Wiraturai, Wiradurei, Wirrajerry, Weorgery, Woradjera, Wooradgery, Woorajuri, Woradjerg, Weerarthery (said to be Kamilaroi name), Wirotheree, Wiratheri, Wooratheri, Wooratherie, Wiiradurei, Wirra-dthooree, Warradjerrie, Waradgery, Wayradgee, Wirrajeree, Wirradjery, Wir-ra' jer-ree, Wirrai-yarrai, Wirrach-arree, Wiradjwri (typographical error), Warrai Durhai, Wirraidyuri, Kunamildan (of the Thaua, means "come by night," i.e., night raiders), Wagga tribe (a horde).

Ref.: Taylor, 1844 [sic.?]; Hale, 1845; Watson in Hale, 1845; Robinson, 1846; Brass plate of King Billy Griffith [Billy Griffih' [sic.], 'King of Waradgery], 1866; Barlow, 1873 [sic., Queensland]; Günther in Ridley, 1873; Ridley, 1873, 1874, 1875; Watson in Ridley, 1873; Lane in Smyth, 1878 [sic. Warrnambool area]; Smyth, 1878; Withers in Smyth, 1878; Howitt, 1882, 1884, 1904; Mueller, 1882; Fraser, 1882, 1892; Cameron, 1885, 1899, 1900, 1902; Archer in Curr, 1887; Bathurst Magistrates in Curr, 1887; Bayles in Curr, 1887; Byrne in Curr, 1887; Cameron in Curr, 1887; Curr, 1887; Foley in Curr, 1887; Günther in Curr, 1887; Keightly in Curr, 1887; Pearce in Curr, 1887; Sutton [sic. Suttor] in Curr, 1887; Fraser in Threlkeld, 1892; Günther in Threlkeld, 1892; Mathews, 1895 (Gr. 6471, 6475), 1896 (Gr. 6416, 6428, 6471), 1897 (Gr. 6433, 6434, 6567), 1900 (Gr. 6524), 1901 (Gr. 6432, 6473), 1902 (Gr.6563), 1904 (Gr. 6574, 6451), 1907 (Gr. 6580, 6423, 6520), 1908 (Gr. 6460), 1909 (Gr. 6441); Maiden, 1896, N------.,G.C., 1896; Lauterer, 1897; Bootle, 1899; Richardson, 1899, 1910; Dulhunty, 1900; Sharpe, 1901 [sic. Yandra Wandra]; McGuire, 1901; Richards, 1902; Walker, 1904; Parker, 1905; Anonymous, 1906; Mitchell, 1904, 1906; Giglioli, 1911; Bucknell, 1912; Brown, 1918 [sic.]; Gribble, 1922 [sic.?]; Radcliffe-Brown, 1930; Tindale, 1940; Berndt, 1947; Capell, 1963.[76]

[76] Tindale (1974, p.201).

Fig.12. Map of 'tribes' according to N.B. Tindale (1974, Southeast Sheet section). According to this map, the Study Region is entirely within the Wiradjuri area. Note that the red dot has been superimposed to show the location of Lake Cowal.

There is evidence to suggest that the Wiradjuri group was expanding its range soon after British settlement. Tindale described the Jeithi people as having country to the southwest of the Wiradjuri, but 'Originally they extended farther east but were being displaced by Wiradjuri during the earliest days of white settlement'.[77] Similarly, he claimed that to the southeast the 'Wiradjuri people came to Yass after white settlement began', which had earlier been occupied by the Ngunnawal (Ngunawal) people.[78] Members of the Wiradjuri people were probably familiar with this latter area, as they had 'visited Yass for ceremonies with the Ngunawal tribe'.[79] Similarly, Tindale observed that ethnographer 'Brough Smyth shows that members of the tribe were on the Murray River at Albury, and Howitt (1884) mentions them as on the lower Tumut River but they were usurpers there in earliest white settlement times'.[80]

The term, Wiradjuri, refers to a large group of people who shared many cultural similarities and broadly similar forms of speech. Tindale wrote:

> W.S. Parkes reported to me an interesting conversation he had had with an aged Wiradjuri living at Brungle Reserve in 1948. This man said that the Wiradjuri

[77] Tindale (1974, p.193).
[78] Tindale (1974, p.198).
[79] Tindale (1974, p.201).
[80] Tindale (1974, p.201).

> spoke of their country as a "line" rather than as an enclosed area. Parkes, quoting from memory, detailed the "line" as passing through Brungle, Gobarlong, Jugiong, Harden, Cowra, Orange, Dubbo, Condobolin, Hillston, Hay, Darling Point (south of Griffith), Wagga Wagga, Tarcutta, Adelong, and returning to Brungle. Tumut was on the "line" of an adjoining tribe for which he gave the name Gurmal. Gurmal as ['Guramal] is the Wiradjuri name for the Ngarigo; it is based on their term ['gurai], meaning "hostile people." Parkes also indicated that the area south of Wagga Wagga was not Wiradjuri country. Other information has confirmed this and the tribal name Jeithi is shown as belonging to the region north of the Murray River and south and southwest of the Wagga Wagga area.[81]

Other Aboriginal groups also shared characteristics with the Wiradjuri. Tindale noted for the Kawambarai people that the ethnographer 'Richardson [1910] says they are closely related to the Wiradjuri'.[82] From the perspective of the Wiradjuri, some neighbouring groups were enemies. Tindale wrote that 'The Wiradjuri considered the Ngarigo and Walgalu [south of Wiradjuri country] as one people using the name Guramal which has the basic meaning of ['gurai] or "hostile people."'.[83]

The historical mapping of Aboriginal connections to country within the Wiradjuri area reflects changing anthropological views about the nature of Aboriginal group structure. The early ethnographers in New South Wales, such as Howitt, mapped local landowning groups as 'tribes' or 'clans' that were generally restricted to particular watersheds. In the mid-20th century, Tindale combined many of these smaller groups into larger units, also termed 'tribes', which he claimed each spoke a single language and also generally married within and otherwise acted more or less independently of others.[84] By the 1970s, the anthropology discipline had largely abandoned Tindale's particular 'tribe' model, and since then several decades of native title research in Australia has instead shown that the landowning groups have more complex relationships with the broader regional cultures whose members recognise many shared traditional laws and customs.[85]

As would be expected for speakers who ranged over such a vast area, the pronunciation of Wiradjuri differed across the central New South Wales region. Tindale noted that 'Differences in dialect were evident in some areas, notably around Bathurst and near Albury'.[86] Added to this possible source of confusion, some scholars used they own orthographic system when writing Aboriginal words. Tindale observed that:

> No fewer than twenty-six observers between 1846 and the present time [1974] have heard the tribal term Wiradjuri with the first vowel as an *i*, yet R.M. Berndt (1947) proposed Wuradjeri, or in his system, Wuradzari. He retains the *u* in his later

[81] Tindale (1974, p.129).
[82] Tindale (1974, p.195). See Richardson (1910).
[83] Tindale (1974, p.198; see also p.199).
[84] Sutton (2015) and Tindale (1940, 1953, 1974, 1976, 1978).
[85] Palmer (2018) and Sutton (1995, 1998, 2001, 2002, 2003).
[86] Tindale (1974, p.201).

writings. I have myself heard the tribal term from the lips of several aborigines. The more frequent pronunciation is [‘Wiradjuri] and less frequently a displacement of the stress with an interdental as [Wi’raduri].[87]

Since the publication of Tindale’s, *Aboriginal Tribes of Australia* (1974), most depictions of Wiradjuri country have conformed his mapping of a large territory. For instance, the map showing the Riverine cultural region in *The Encyclopaedia of Aboriginal Australia* shows a more extensive area for the Wiradjuri than had some of the early ethnographic sources, but it is largely the same along its eastern border, which is relevant to the Study Region (see Fig.13). Although the Wiradjuri language has not been spoken fluently for many decades, today language resources have been compiled for use in Wiradjuri language revitalisation projects.[88]

Fig.13. Aboriginal groups of southeastern Australia as mapped using the AIATSIS cultural areas (Horton, 1994). The Wiradjuri group is part of the Riverine cultural area. Note that the red dot has been superimposed to show the location of Lake Cowal.

[87] Tindale (1974, p.129).

[88] Grant & Rudder (2005, 2014). See also the ‘Wiradjuri Dictionary’ website, organised by Stan Grant Senior and Flo Grant (https://wiradjuri.wcclp.com.au/, accessed 12th December 2022).

3.2 Laws and Customs

In Aboriginal Australia, the structure of Aboriginal life was considered to have been laid down by the ancestors during the Creation, with the recognised laws and customs of the community being ultimately referenced to their actions.[89] For each individual, the rights and interests to land were determined by such things as totemic affiliations and the acquisition of religious knowledge.[90]

3.2.1 Ancestors and Spirit Beings

Central New South Wales is part of southeastern Australia, which in terms of Aboriginal culture was distinctive for the dominance of male ancestors in the Creation mythology, upon which ceremonial life was based. Relevant to Wiradjuri traditions were the ancestors named as Baiame and Daramulun, as explained below, although recorded in a variety of spellings. Ridley, who quoted Günther, wrote:

> There is no doubt in my mind that the name Baia-mai (so it is pronounced in Wiradhuri) refers to the Supreme Being; and the ideas held concerning Him by some of the more thoughtful Aborigines are a remnant of original traditions prevalent among the ancients about the Deity." Mr. Günther states that he has found in what the Aborigines said to him about Baia-mai "traces of three attributes of the God of the … Bible, viz.: - eternity, omnipotence and goodness." He also says "the idea of a future state of existence is not quite extinct among the aborigines." Some of the more thoughtful expressed to him their belief that "good natives will go to Baia-mai when they die."[91]

In the late-19th century, British anthropologists and religion historians became involved in the 'High God' controversy, which was essentially a debate over whether or not the belief in a supreme being was universal in the world's culture, or just a concept introduced by missionaries.[92] Ethnographic evidence involving Baiame and Daramulan was heavily cited.[93] More recently, it has been argued by historian Tony Swain that Baiame, as the focus of a High God cult, was an innovation grafted onto the pre-European mythology brought on by the devastation caused by the arrival of British colonists on the east coast of New South Wales in 1788.[94] While it is now impossible to fully test such a proposition, anthropologist Ronald M. Berndt wrote that Howitt noted that south-east Australia was unusual in its All-Father belief based upon a Supreme Being concept. Berndt explained that:

> Howitt provides an assortment of evidence beginning with Ngurunderi [in the Lower Murray of South Australia], and including Baiamban (or Baiami), Nurelli

[89] Sutton (1998).
[90] Sutton (2001).
[91] Ridley (1875, p.135).
[92] Hiatt (1996).
[93] Hartland (1898) and Lang (1899, pp.9-11,21-22,25,247-248).
[94] Swain (1990, p.231-232).

> (the Narinyeri Nepele), Bunyil, Daramulun and Munganngaua, among others. All of the mythic beings eventually went into the sky. Some were closely linked with others and all, presumably, had special myths associated with them. Many were spoken of as 'father', and were conceived of as being in human form even when they had names of natural species attached to them. Most had creative qualities. Rituals, usually initiatory, were held in their honour or stimulated by them: and they were said to be present at these.[95]

The name of the 'Supreme Being' Baia-mai, which is more generally written as Baiame or Baiami, appears in many of the early ethnographic accounts of Aboriginal mythology from central and eastern New South Wales.[96] For instance, Ridley recorded that:

> God Baia-me *or* B-haia-me.
>
> In Wiradhuri the word is pronounced Baiamai. This name of Deity is known among many tribes on the Narran, the Darling and its tributaries. It is evidently derived, as Rev. C.C. Greenway has pointed out, from "baia," to make or build. In the ancient and still preserved creed of the Murri [Aboriginal person] – "He who built all things is Baia-me."
>
> The Kamilaroi blacks say that Baia-me made all things; that he is resting away in the far west. They never saw him, but regard thunder as his voice.[97]

Berndt stated that 'Baiami [Baiame] was especially significant to the Wuradjeri [Wiradjuri]',[98] as a source of spiritual knowledge. Similarly, Elkin remarked for the Wiradjuri and other groups that 'there is no doubt that in south-east Australia also, medicine-men acted the role of the sky-hero (Baiame, for example)'.[99] The Wiradjuri therefore shared with neighbouring groups a common belief in the central importance of Baiame as a supreme creator.[100] There are detailed accounts of Baiame from northeastern New South Wales,[101] and it was an Aboriginal tradition, held by groups such as the Gamilaraay located to the northeast of the Wiradjuri, that during the Creation (Dreamtime) a god-like male Ancestor, Baiame, created the rivers, mountains and forests on Earth.[102] He also gave Aboriginal people their traditional laws and practices. Baiame made the first initiation site, known as a *Bora*, where teenage boys were made into men. During Bora ceremonies held in honour of the ancestors

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[95] Berndt (1974, p.27).
[96] Summarised by Ridley (1873, pp.276-277; 1875, pp.135-137) and Swain (1990, pp.209-211,214,221-223,228-230,232; 1993, pp.127,130-131, 137-140,144-146,277).
[97] Ridley (1875, p.17).
[98] Berndt (1974, p.27).
[99] Elkin (1977, pp.25-26; see also p.93).
[100] Baiame is also spelled as Baiamai, Bayme and other related versions. According to Richards (1902b, p.102), *Bai'ya-yoo* [Baiame] was 'The God of the Wirra' Jerree'.
[101] Thomas (1900, p.166) and Wyndam (1889, pp.36-37).
[102] Greenway (1878, pp.242-244), Howitt (1904, pp.405,407-408,494,499,502-503,507,585,593) and Ridley (1875, pp.135-136,153-156).

and for initiating male youths, the images of Baiame and his wife Gooberangalnga were drawn on bark sheets and tree trunks, or in some areas drawn on, or dug into, the ground.[103]

Baiame and Daramulun were important to most Aboriginal groups based in central and eastern New South Wales. For instance, in coastal areas of New South Wales, east of Wiradjuri country, the *kuringal* ceremonies were held in honour of the supreme creator Daramulun, who by some accounts was considered to be Baiame's son, and in others he is actually a group of sons, or even just another name for Baiame.[104] For the Wiradjuri people, emus were significant through their shared identity with Kurikuta, the wife of Daramulun, and consequently the eating of its meat was prohibited for those who had not been through the appropriate rites.[105] The careless burning of emu fat on the cooking fire was said to cause Kurikuta to descend from the Skyworld as a quartz crystal, resulting in lightning and thunder.[106]

Cultural astronomers Trevor M. Leaman and Duane W. Hamacher have investigated the ethnographic records of the Burbung male initiation ceremony, which had been recorded by the Australian anthropologist R.H. Mathews in 1896, and they concluded that the associated:

> … Dreaming most likely relates to the annual movements of the constellations in the Wiradjuri night sky, with Baiami represented by the stars in the Greek constellation of Orion, and the terrestrial emu featured in the Dreaming represented by the Wiradjuri 'dark' constellation of Gugurmin the Celestial Emu, formed from the dust bands of the Milky Way. The Celestial Emu may also represent Daramulun, another important ancestral figure associated with the Burbung, whose spirit descends from the Milky Way in emu form to take part in the male initiation ceremony.[107]

In Aboriginal Australia, the ancestors and spirits of deceased Aboriginal people were widely believed to live in the Skyworld, which was country with ample food and was generally described as Utopian.[108] Berndt said that 'In Wuradjeri [Wiradjuri] belief, all 'totemic' beings went to a place named Wantanggangura, 'beyond the clouds and sky'.'[109] Here, the ancestors still had influence over earthly events. For instance, Richards recorded the Wiradjuri belief of 'the "Waa'gon" (the crow) which "drags" the ground or horizon in the diurnal rotation'.[110] Across New South Wales, it was a general Aboriginal tradition that the spirits of deceased people went up to the heavens for a better existence. Bucknell recorded that the deceased spirits enter Woroombool (the Milky Way in the Skyworld), where 'Baiame there welcomes

[103] Howitt (1904, pp.587,593) and Mathews (1907, pp.8,10).
[104] Berndt (1974, pp.27-29,31), Hartland (1898, p.297), Howitt (1904, pp.494-495) and Swain (1990, p.210).
[105] Berndt (1974, p.28).
[106] Berndt (1974, p.28).
[107] Leaman & Hamacher (2019, p.225).
[108] Clarke (2014, 2015).
[109] Berndt (1974, p.28).
[110] Richards (1902d, p.134).

to a happy existence all whom Dthooramoolin [Daramulan] has permitted to enter; they are supposed to pass a happy time in the enjoyment of peace and plenty'.[111] Ridley explained that:

> The milky way, as King Rory told me, is a worrumbul, or grove with a watercourse running through it, abounding in all pleasant things, where Baiame welcomes the good to a happy life, where they walk up and down in the enjoyment of peace and plenty. It is "the inside," he said, that goes up to the sky - not the bones and flesh. Sometimes the good come down again to visit the earth. Colonists who have for many years observed the Aborigines, say that it is a common thing for these people, in the prospect of death, to express a cheerful hope of being better off hereafter.[112]

It was recorded by early ethnographer Robert Hamilton Mathews that for the Wiradjuri people 'The Wawi is a serpent-like creature which lives in deep waterholes, and burrows into the bank, where he makes his den', which can be found beneath the end of a rainbow.[113] Only a 'doctor' or 'clever man', after covering himself with red ochre, can safely visit the Wawi, who was seen as the source of new songs and ceremonies. As with many spirit beings, the Wawi were seen as having homes on both Earth and in the Skyworld. The Wiradjuri believed that 'The black streak in the Milky Way, towards the Southern Cross, is one of the ancestors of the Wawi. He encourages snakes and adders to bite the black people'.[114]

Yeo Yeo Creek, which runs out from the northern end of Lake Cowal, derives its name from Aboriginal beliefs in spirit beings. In 1902, the following newspaper article appeared:

> A LOCAL METEOR. - Mr. Russell exhibited to our representative (says the *Evening News*) several large meteorites, one of which, composed of solid iron, and polished on the surface, was found in Yeo Yeo Creek, near Temora. This meteorite, which weighs 40lb. [18 kgs], was discovered by some aboriginals, who christened the creek "Yeo, Yeo," or "Devil, Devil."[115]

The same meteorite strewn field, associated by Aboriginal people with the 'Devil Devil' spirit beings from the Skyworld, was discussed in the reminisces published by settler John Gale in 1924. In this account, Mr Russell of the Meteorological Observatory in Sydney had drawn Gale's attention to what he believed was a large aerolite, which is meteorite made of stone. Russell had explained that the:

> … aerolite, according to aboriginal lore, descended on earth and half buried itself there at the head of the Bland Creek, which has its principal source in the vicinity of Stockinbingal. It is a huge block of stone, of possibly 2cwt. [102k] or 3cwt. [152k]. In shape it resembles the head of some monstrosity. The blacks were terribly afraid of it, believing it to be possessed of some supernatural powers. So

[111] Bucknell (1912, p.166).
[112] Ridley (1875, p.141).
[113] Mathews (1904b, p.364).
[114] Mathews (1904b, p.364).
[115] 'Local and General News' (*Temora Star* newspaper, 11th January 1902, p.2).

> they called the strange visitor "Yeo Yeo," a synonym for the pidgin-English "Debbil-debbil." And Yeo Yeo Creek it remains to this day. It receives but few tributaries, and ultimately empties itself into Lake Cowal.[116]

After the creation, it was believed by groups, such as the Wiradjuri people, that Aboriginal 'doctors', while still alive, could visit the Skyworld where the spirits of the deceased would later go.[117] The existence of features in the night sky were explained in the creation mythology.[118] For instance, Howitt recorded that 'The Wiradjuri account is that long ago a piece of kangaroo was given to a boy to eat, and he threw a piece of the bone up to the sky, where it stuck fast. This is the moon, who is now a man who walks round by the south in the daytime'.[119] He also wrote that 'The Wiradjuri called the Milky Way *Gular*, by which name they also call the Lachlan River. The Corona Australis is *Kukuburra*, the Laughing Jackass [kookaburra]; and a small star in Argus is the *Bidjerigang*, the Shell Parakeet [budgerigar]'.[120]

3.2.1.1 Humanoid Spirit Beings

The early ethnographic literature of southeastern Australia has many accounts of humanoid creatures who were seen as existing separately from both Aboriginal people and their Ancestors, but who also occupied the landscape.[121] For instance, across central New South Wales there was a widely held Aboriginal tradition of the Bukumurri beings, who, according to Cameron, 'were supposed to have been birds, animals, etc., endowed with marvellous powers, far exceeding those enjoyed by the present human race'.[122] In the Wiradjuri group of languages, Richards listed *Boo'boo* as 'A bogey man, evil spirit; the wind'.[123]

Some spirit beings had a mixture of human and animal traits, or could move between the human and animal forms. Scholars consider that the Australian English word, 'yowie', was derived from a northern New South Wales Yuwaalaraay word, *yuwi*, meaning a 'dream spirit'.[124] In the popular literature, the term is generally associated with the 'Hairy Men in the Hills'.[125] In northern New South Wales, Ridley claimed that among the Wailwan (Wailwun) people of the Barwan River, below the junction with the Namoi River, it is a belief that the '"Yo-wi" is a spirit that roams over the earth at night'.[126] In Wiradjuri tradition there was a

[116] 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 21st January 1924, p.4).
[117] Cameron (1885, p.364) and Elkin (1977, p.88).
[118] Ridley (1875, pp.141-142).
[119] Howitt (1904, p.429).
[120] Howitt (1904, p.432).
[121] Clarke (1999, 2018b, 2018c), Healy & Cropper (2006) and Smith (1996, Chapter 6).
[122] Cameron (1903, p.46). See also Cameron (1885, pp.368-369).
[123] Richards (1902b, p.99; see also p.100).
[124] Dixon *et al.* (1992, p.111).
[125] Holden & Holden (2001, pp.53-62).
[126] Ridley (1875, p.138).

class of sorcerers, or *bugin*, who could take various forms, such as the red kangaroo, and were considered:

> … to be the medicine-men of neighbouring tribes lower down the Murray and the Murrumbidgee Rivers. These are called *Dulu-durrai*, from *Dulu*, the great jag-spear, and are said to carry the pointed bone, and the long end of plaited sinew, called by the Wiradjuri *Gungur*.[127]

In more recent times, the descendants of the early Wiradjuri people can demonstrate that they have retained much of their rich spirit being folklore. In 1978, Kevin Gilbert, a man of mixed Wiradjuri and Kamilaroi descent who was born at Condobolin, stated that when living with his family at Fibro Swamp near Leeton 'we had the legendary bunyip, the giant water snake, the little people and the hairy youree – the huge shaggy man-like creature that the whites call 'yowie''.[128] In my experience across Australia, the knowledge and relevance of such spirits persists as part of the living Aboriginal folklore long after the ceremonial life has ceased.[129]

3.2.1.2 Water Spirit Beings

In Wiradjuri culture there were beliefs in water spirits, equivalent to the widely recorded 'bunyip', which were widely associated with wetlands, and in particular Lake Cowal.[130] For instance, a newspaper reported in 1873 stated that:

> The 'Bunyip' has again been seen twice within the last three months in the waters of Cowal Lake in March last, by a party of surveyors, whose account can be relied upon, who were out in a boat and saw the animal about 160 yards [146 ms] off. They describe it to have a head something resembling a human being, or in their words, "like an old man blackfellow with long dark coloured hair." When seem it appeared to be going in a straight direction rising out of the water so that they could see its shoulders, and then diving as if in the chase of fish, and rising again at intervals of about six or eight yards [6.4 or 7.3 ms], and rising again. They tried to get closer to it but could not for the pace it was going, consequently could give no description of it lower than the shoulders. They say the animal did not appear to be afraid of them. But in my opinion it must have been so intent upon its occupation that it never notices them. Another, a blackfellow and a white man, who were out in a canoe, say they saw it about a fortnight since. They agree in giving the same

[127] Howitt (1904, pp.373-374). Richards (1902b, p.100) listed *Boo-geen* (= Howitt's *bugin*) as 'An evil-working octord [sic. doctor] or a useless medicine man; evil spirit; a wizard; a witch'.
[128] Gilbert (1978, p.241).
[129] Clarke (1999, 2007b).
[130] Smith (1996, pp.16,20) and Healy & Cropper (2006, p.208).

> description of the head and hair as that given by the surveyors. The animal was swimming straight towards them, and when it saw them, dived and disappeared.[131]

In 1920, the naturalist/explorer Archibald Meston remarked that 'bunyips', as a class of Aboriginal spirit being beliefs, were found across much of Australia, and he wrote in the newspaper that:

> The bunyip story, runs through all Australian history. Back in the convict period of New South Wales some remarkable and mysterious animal was reported in various deep lagoons, and in 1834 a strange animal like a seal was seen in Lake Cowal and Lake George. …
>
> The bunyip was a well-known animal in the great Kamilroi [Kamilaroi], Wiradjerie [Wiradjuri], and Awabbakal [Awabakal] dialects of New South Wales. Ridley in 1852 reported a doglike monster called "Murricola" in a lagoon between the Narran and the Barwon Rivers. The blacks called the Barwon "Bahwoon." In the Kamilroi dialect there was a big lagoon called "Maianbarr," in which lived two mysterious animals, or water spirits, called "Yohwee" and "Wahwee," that rambled about on the land at night and had terrible voices that scared the blacks temporarily, out of their senses. In my young days "Wahwee" inhabited the "Wahwarann" lagoon near Port Macquarie, and occasionally killed the blacks.[132]

In 1924, there was another newspaper account of the Lake Cowall 'bunyip' given, although in this case it was 1873, not 1834, when the beast was alleged to have been seen. It was claimed that:

> In the early days of the Commonwealth the bunyip was taken seriously. "The Wagga Express" of 1873 published an account of how a party of surveyors on Lake Cowal, N.S.W., actually saw a bunyip. It was described as resembling an old man blackfellow with long, streaming hair, and it rose out of the water and then dived, as if in the pursuit of fish. Whether this spectre was the outcome of over-indulgence in alcoholic beverages, imagination, or a grim reality has never been satisfactorily explained. The "bunyip" was never captured.[133]

In the early literature, Aboriginal beliefs in the 'bunyip' were linked to a range of animals, some of them extinct.[134] In 1929, it was written that:

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[131] 'Lower Lachlan', from our Correspondent (*Wagga Wagga Express & Murrumbidgee District Advertiser* newspaper, 2nd July 1873, p.2). This account is quoted by Smyth (1878, vol.1, p.438). Note that Healy & Cropper (2006, p.208) have given the wrong date of 1872 for this newspaper report.

[132] 'The Bunyip. Strange Reports. Incidents Near Brisbane' (*Beaudesert Times* newspaper, 30th July 1920, p.3). The 1834 date given for the Lake Cowal sighting appears to be an error. A 'devil' resembling a seal was said to dwell in Lake George, c.1831-33 (Breton, 1833, p.62).

[133] 'Prehistoric Times in South Australia. Marsupial Monsters Roamed the Plains' (*Mail* newspaper, 1st March 1924, p.1).

[134] Holden & Holden (2001, pp.84-99).

From the days of Cook, that animal, known to aborigines as the bunyip, has turned up, usually in inland-lakes. It was first seen by some early explorers in Lake Bathurst. Then, in 1872, the animal appeared in Midgeon Lagoon, Riverina, being described as having a jet black body covered with long hair. The following year, some surveyors saw a bunyip in Lake Cowal, and described it as resembling an "old-man blackfellow, with long dark-coloured hair." It has been held that the bunyip legend is but a reminiscence of the great extinct animal known as diprotodon, which in pre-historic days inhabited the marshes and lagoons of Australia, as also crocodiles, usually styled erroneously alligators. Other observers ascribed to the animal the head and body of a seal.[135]

Fig.14. Artist's impression of 'White Men "See" the Bunyip' (*Sun* newspaper, 29th April 1934, p.46). Recorded accounts of the 'bunyip' range from emu-like spirits to those that are more like a seal, such as with this drawing.

[135] 'The Bunyip' (*Dubbo Liberal & Macquarie Advocate* newspaper, 19th April 1929, p.1).

Many of the 'bunyip' accounts appear to stress how much the 'bunyip' looked like a seal or sealion, and it remains a strong possibility that such beasts had regularly entered the inland waterways from the coast prior to European-made structures blocked their path. In 1932, in article in the newspaper stated that:

> In 1873 a party of surveyors caused great interest by their account of an alleged bunyip seen by them on Cowal Lake. They described it as an animal having a rather human-like head, "with long, dark-colored hair." They could see only its head and shoulders, and for a long time watched it as it swam fast and dived repeatedly. Lake Cowal is about 200 miles [322 kms] inland from Sydney.[136]

Bunyips, apart from possessing a form resembling seals, were also described in some other accounts as being feathered and having a body like that of an emu, particularly the head and neck area.[137] The perceived call of the 'bunyip' was apparently that of a bird, as early naturalists proposed that the eerie booming call of the Australasian bittern was behind the numerous bunyip 'sightings' in southern and eastern Australia.[138] This bittern's secretive behaviour added to its identification with the bunyip, as geographer/writer Charles Fenner wrote, 'The mysterious booming sound made by the bittern (*Botaurus poiciloptilus*), a very shy bird, has become associated with the bunyip, but actual observers have usually described the sound of the latter as a roar or a bellow'.[139] Concerning the bittern, a settler remarked that 'I think to this bird, more than any other cause, we can attribute the longevity of the "bunyip" myth'.[140] The Australasian bittern is found throughout Wiradjuri country.[141]

A reading of the available early ethnographic literature suggests that Wiradjuri country, crisscrossed by numerous watercourses with deep billabongs that hold water during the droughts, is prime 'bunyip' country. In his Wiradjuri word list W.H. Suttor listed *mirreeulla* as an 'Imaginary animal said to live in waterholes'.[142] Richards recorded *Waa'wei* as 'The "bunyip" (an imaginary water monster). Drag (and) sink', and *Waa'wing* as the 'Caverns where "bunyip" was supposed to lie. Wherein is "bunyip".'[143] Similarly, former settler J.F.H.

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[136] 'The Bunyip. Firmly Believed in by Abos.' (*Don Dorrigo Gazette & Guy Fawkes Advocate* newspaper, 1st July 1932, p.4). See also 'White Men "See" the Bunyip', by Mopoke (*Sun* newspaper, 29th April 1934, p.46).

[137] Clarke (1999, pp.157-159; 2018c, pp.37-42), Holden & Holden (2001, pp.175-178), Mulvaney (1994, p.36), Smyth (1878, vol.1, pp.435-444) and Worsnop (1897, p.167, Plate 83). See also 'Aboriginal Legends and the Bunyip', by J. Norman (*The Advertiser* newspaper, 24th February 1951, p.6).

[138] 'The Bushlover', by Fabian (*The Brisbane Courier* newspaper, 9th May 1931, p.19); 'Brown Bittern Our Real "Bunyip"', by D. Fleay (*The Australasian* newspaper, 18th May 1940, p.36); 'Bittern Maybe Bunyip' (*Advertiser* newspaper, 4th August 1944, p.7); 'Booming Bitterns and Bunyips', by Meadow Argus (*Examiner* newspaper, 12th April 1947, p.6); 'The Bunyip', by C.V. Fields (*Western Mail*, newspaper, 9th August 1951, p.13).

[139] Fenner (1946, p.107).

[140] 'How Names of Places Came to be Bestowed' (*Dandenong Advertiser & Cranbourne Berwick & Oakleigh Advocate* newspaper, 8th January 1914, p.3).

[141] Refer to the Australasian bittern (*Botaurus poiciloptilus*) entry of the 'Atlas of Living Australia' website (https://bie.ala.org.au/species/https://biodiversity.org.au/afd/taxa/dba78701-cae9-4afb-a41a-6697c52c5e34, accessed 18th November 2022).

[142] W.H. Suttor in Curr (1886-87, vol.3, p.366).

[143] Richards (1902c, p.119).

Mitchell wrote that Wahwee, Waughwee was a 'Water-spirit, like Undine, a myth, nymph of the wave'.[144] To the southwest of Wiradjuri country at the Murrumbidgee River, the equivalent bunyip was referred to *katenpai*, sometimes written as *kajanprati*, *kayan-prati*, *kiampratee*, *kine pratia* and *kinepraty*.[145] In 1847, a newspaper report claimed that the Bunyip or 'Kine Pratie' of the Murrumbidgee River had:

> … a head and neck like an Emu, with a long and flowing mane – feeding on crayfish (with which the river abounds) and occasionally on a stray blackfellow; that it inhabits the darkest and deepest parts of the river, and in some of the lakes and lagoons that longest retain water.[146]

3.2.1.3 Ghosts

Ghosts are also prominent in the Australian Aboriginal folklore. In central New South Wales, Aboriginal people, such as the Wiradjuri, believed that each person had two parts to their spiritual identity. Cameron elicited an explanation from his Aboriginal informant Makogo, and wrote that 'The Wathi-wathi made, according to him, a distinction between the ghost and the spirit, as we might do between our soul and spirit. The moment it leaves the body it is called Bo-oki, but afterwards the ghost of a dead man is called Boongarnitchie'.[147] Cameron recorded that Yandembah was 'The home of ghosts',[148] which is possibly a reference to the Skyworld. Former settler John McGuire, who lived along the Lachlan River from about 1841, claimed that 'If there was anything the blacks dreaded it was the "buggeen" (the devil – the only spirit they believed in)'.[149]

Curr's correspondents recorded words relevant to ghosts or deceased human spirits. At Condobolin, north of Lake Cowal, an Aboriginal word recorded by W.H. Suttor for 'Ghosts' was *gooindthar*,[150] while Günther for Castlereagh River, Talbragar and Mudgee listed it as *dullubung*.[151] F. Foley at Bathurst recorded 'ghosts' as *woolawoonda*,[152] which is similar to *wonda* as recorded at Hill End to the east of Lake Cowal by the Bench of Magistrates at Bathurst.[153] At Dubbo, to the northeast of Lake Cowal, the Bench of Magistrates at Dubbo listed 'Ghosts' as *wondong*.[154] Later, Richardson recorded that Wandi-wandong was a place,

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[144] 'A New Dictionary of Aboriginal Words' (*Corowa Free Press* newspaper, 23rd September 1902, p.3); 'A Vocabulary of Aboriginal Terms. (Woradgery Tongue.) for Birds, Beasts, Fishes, Weapons, Trees, &c. Compiled by J.F.H. Mitchell, One of the Pioneers of the Albury District' (*Albury Banner & Wodonga Express* newspaper, 27th May 1904, p.34).
[145] Clarke (2018c, p.36).
[146] 'The bunyip' (*Geelong Advertiser and Squatters' Advocate* newspaper, 12th January 1847, p.2).
[147] Cameron (1885, p.364).
[148] Cameron (1899, p.195).
[149] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[150] Suttor (1887, p.389).
[151] Günther (1887, p.369).
[152] Foley (1887, p.379).
[153] Bench of Magistrates, Bathurst (1887, p.377).
[154] Bench of Magistrates, Dubbo (1887, p.373).

somewhere on the Bogan River or Macquarie River, which had a name that referred to 'many devils or evil spirits'.[155] In the Wiradjuri language, Dulhunty listed *Wondong* as 'An evil spirit', and *Walwei* as 'Evil spirit'.[156] Richards recorded *Won'dthang* as 'A ghost. Wherein to be going away'.[157]

In keeping with the ethnographic recordings of 'ghosts' as listed above, Ridley recorded that 'The Aborigines believe in many spirits. "Wunda" [probably the *wonda* mentioned above] is the common name for these among the Kamilaroi and neighbouring tribes. Anything mysterious or supernatural is called "wunda."'.[158] He also explained that *wunda* is 'Spirit, ghost, or subordinate deity'.[159] Ridley wrote that '"Tohi" is the name for the spirit of man; "bunna" is that part of him which dies. "When the bunna returns to dust the "tohi," may become a wunda. The wunda may enter some other body'.[160]

It can be concluded from the above records, that the ancestral component of a person's spirit was referred to in the Wiradjuri language as *wunda*. This conclusion is supported by Bucknell, who explained that 'Wooroombool [Milky Way in the Skyworld] signifies the paths or ways, glends [sic. glens] or glades, groves and watercourses, abounding in all good things, and this is where Wunda, the Spirit of the Good, are supposed to reside after they leave the body'.[161] He also stated that:

> The Spirit, or Wunda, is supposed to be met at Woorrawilboora, the dark space between the two branches of Boorabian or Borabian, the Milky Way, and if the tooth belonging to the mouth of the deceased has not been sent up to Dthooramoolin [Daramulan], although the deceased has during his life carried out the laws, etc., of his tribe, he is not permitted to enter Wooroombool, the Milky Way. Wooroombool is supposed by the Kamilari [Kamilaroi] and Weraiari tribes to be a grove with a water-course running through it, all good things being plentiful.[162]

Richards recorded that in the Wiradjuri language, *Jeerr* was 'Ghost. Spirit'.[163] This appears to relate to Howitt's record that in Wiradjuri tradition a part of a person's identity remained on earth, and that:

> The Wiradjuri believed that the ghost (*Jir*) still haunted the place where it had lived, and took up its abode in some large tree. It might be seen sitting at the grave, by those who possessed the faculty of seeing such things, that is medicine-men, or by a boy who, having the power, would in time grow up to be one of them. A ghost

[155] Richardson (1889b, p.212).
[156] Dulhunty (1900, p.32).
[157] Richards (1902c, p.118).
[158] Ridley (1875, p.137).
[159] Ridley (1875, p.17).
[160] Ridley (1875, p.138).
[161] Bucknell (1912, p.166).
[162] Bucknell (1912, p.166).
[163] Richards (1902f, p.165).

> which took up its abode at a grave was believed to be able to injure strangers who incautiously came near to it.[164]

The existence of different terminology for 'ghosts' within the one language may be explained by such things as dialectal variation, the ethnographer's confusion with spirit beings, and by the Aboriginal concept concerning the fragmentation of spirits after death. In relation to the last-mentioned explanation, I have written that across Australia 'It was an Aboriginal belief that the human soul fragments after death, leaving a 'ghost' spirit that may linger on Earth, while the ancestral component merges with the spirit ancestor, often via a sacred place, and then ascends to an existence within the Skyworld'.[165]

3.2.2 Ceremonies and Places

In Australian English spoken in eastern Australia, the Aboriginal initiation ceremony has been generally referred to as a 'Bora', and all such associated spaces as 'bora grounds' or 'bora rings', derived from the original Gamilaraay (Kamilaroi) term, *buuru*.[166] For Aboriginal people, the 'Bora' ceremonies were culturally important for the whole community, although they were specifically directed at the education of young men and for maintaining the authority of the senior men or 'doctors'.[167] Honouring the supreme ancestors, such as Baiame and Daramulan, was an essential aspect of them too. Ridley noted that 'The ground on which the bora is celebrated is Baiame's ground'.[168]

Early ethnographers in New South Wales generally used the term, Bora, as a description of all Aboriginal ceremonies held chiefly for initiations. For instance, Cameron stated:

> By far the most important among the ceremonies practised by the aborigines of New South Wales is the Bora, at which youths are initiated to manhood, and among almost all tribes of New South Wales, and many of those of the other colonies, the knocking out of one of the front teeth, and sometimes two, from the upper jaw, is the visible sign that the initiation has taken place.
>
> The ceremony is, I think, much the same in all parts of the colony. There are a few variations in the mode of assembling the tribe, and in the actual initiation, but there is, so far as I know, no very essential difference, judging by the descriptions I have had from members of different tribes.[169]

[164] Howitt (1904, p.439).
[165] Clarke (2014, p.313).
[166] Cameron (1885, p.357), Dixon *et al.* (1992, p.150) and Ramson (1988, p.82). Other written versions of bora include boorah, borah, boree and borer.
[167] Greenway (1901), Mathews (1895) and Ridley (1873, p.281; 1875, pp.153-156).
[168] Ridley (1875, p.141; see also p.153).
[169] Cameron (1885, p.357).

Robert H. Mathews mapped the initiations ceremonies practiced across eastern New South Wales, and in the case of the Wiradjuri people, they were placed within his area 'No.1', which means that they shared many rituals with inland Aboriginal groups, but less so with coastal groups round Sydney (see Fig.15). Mathews recorded that:

> No. 1 on the map represents a wide zone of country stretching from near the Murray river almost to the Barwon, occupied chiefly by the Wiradjuri-speaking people. This includes the Wonghibons [Wongaibon or Wangaaypuwan], a branch of the Wiradjuri, who are spread over the country from Mossgiel to Nyngan. On the Lower Murrumbidgee and extending up the Murray from about Euston are several small tribes speaking the following dialects: The Eetha-eetha, Watthi-watthi, Kianigani, Yuppila, Yota Yota, Boorabirraba and some others on the upper Murray whose initiation ceremonies are the same as the Wiradjuri.[170]

The joint participation of Aboriginal groups in the Burbung ceremony established relationships between people spread throughout central New South Wales, and generally involved tooth evulsion and sometimes body scarring (cicatrisation).[171] This particular ceremony was the equivalent to the Bora of the Gamilaraay people to the northeast, and it reportedly closely resembled the Kuringal ceremony held by coastal groups, like the Yuin of the south coast of New South Wales.[172] Mathews stated that:

> The tribes who attended the Būrbŭng described in this paper were some of those belonging to the Wiradthuri community, which in former times was both numerous and important, occupying a wide tract of country in the interior of New South Wales, extending from somewhere about the Murray River northerly nearly to the Barwan river, where they were joined by the great Kamilaroi tribes.[173]

In central New South Wales, male initiation ceremonies emphasised the rebirth of the novices into men. Among the Wiradjuri people, novices were trained and accompanied by 'Elders', known as *Mood'jee-gaang*, for about six months before the ceremony, and afterwards as initiated men they were called *Mein*.[174] Richards explained that male novices going through the Burbung (Boorr'bong) initiation ceremony 'are placed on the ground in the position in which their dead were buried'.[175] Richards wrote, with a biblical reference, that:

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[170] Mathews (1898, p.68).

[171] Berndt (1974, pp.28-30), Howitt (1904, pp.519,556,578,583-588,593,637-638,687,693) and Mathews (1896, 1897a). Richards (1902d, p.135; 1902g, p.182) described tooth evulsion and body scarring among the Wiradjuri people. Ridley (1875, p.155) described tooth evulsion in a 'Bora' ceremony, and see also 'Aborigines' Rites and Superstitions. The Woradgery Tribe', by W.M. Sherrie (*Sydney Mail* newspaper, 21st August 1912, p.46). See also the account of male initiations from central New South Wales in 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).

[172] Berndt (1974, pp.28-29) and Mathews (1896, p.295).

[173] Mathews (1896, p.295).

[174] Richards (1902d, pp.133-134).

[175] Richards (1902g, p.181; see also 1902b, p.101).

> Adam evidently was born like the children of the aborigines, upon the soil. Symbolic of this birth, and which may be called a second birth, is (or was) the ceremony of Boorr'bong [Burbung], where the youth emerges from the "Boorr'bin" (a large crater-ring with an entrance, made on the ground), and is thus "made" or "created" a man (as Knights are created by our King).[176]

In the ethnographic records, there are many accounts of the Baiame ancestor that document his primary role in the male initiation ceremonies of central New South Wales. For instance, in 1899 an anthropological correspondent wrote to a journal concerning Biammah (Baiame), and it was published that:

> Mr L. Shropshire informs the society that the name given to the Good Spirit or Great Teacher by the Woorajuri [Wiradjuri] Tribe is Biammah [Baiame], that he was on the earth a very long time ago, that he taught the tribes the Boolbung [Burbung] (Bora) Rites the name of the circle (there was only one) was Boolbung; in these rites the name given to the sun was "heerey," the moon, "geewong," the great fire that was kept burning during the progress of the Boolbung was "wean moonan." Anything connected with these rites are treated with secrecy, and on no account will the aborigines reveal them. Only notches, not hair, leaves or feathers were in this "tribe" added to the message sticks. Some of the markings on the trees represent Corroborees, those on their bodies are meant for Adornment, while those on their weapons and rug mark the Ownership.[177]

For the Wiradjuri, rites within the Burbung ceremony were signalled in a series of stages, under the control of the 'doctors' or 'clever men'.[178] Performances occurring alongside various representations, such as a spiral strip of bark that represented the pathway between the Skyworld and the earth, and a figure of Daramulun cut into the ground, along with his axe, emu tracks and the emu ancestor itself.[179] Women were present at various stages of the ceremony, sometimes as dancers, but were covered up when the bullroarer was swung – its 'voice' being that of Baiami (Baiamai).[180] As ceremonial paraphernalia, the bullroarer was treated as spiritually powerful, and Richards explained that it 'was looked upon as generative, or as a symbol of generation, for which reason the women were not allowed to see it'.[181] The main sacred rites were held in a *bulpa* ceremonial ring, but this was connected by a pathway to a *wilkandja*, or sacred 'play ground', which represented the Skyworld where 'nests' of the Wedge-tailed Eagle ancestor had been constructed.

The Burbung [Būrbŭng] ceremony of the Wiradjuri that Mathews described in detail was held at Bulgeraga Creek at the northern end of the Macquarie River, and commenced with the

[176] Richards (1902b, p.98; see also p.101).
[177] Shropshire (1899, p.164). Richards (1902a, p.83; 1902c, p.116) listed *Gee'wong* as 'The moon; also phosphorescent fungi'. Richards (1902f, p.166) explained the Wiradjuri use of message-sticks.
[178] Berndt (1974, p.28).
[179] Berndt (1974, p.28) and Howitt (1904, pp.585-586).
[180] Berndt (1974, p.28). In the Kuringal ceremony of the Yuin, the bullroarer was the 'voice' of Daramulan.
[181] Richards (1902f, p.166).

assembling of participants from several groups in March 1893, with those from more distant areas arriving in May, and the ceremony was completed in early July.[182] Although the ceremony was held about 275 kms to the north of Lake Cowal, it would have been structurally the same as other Burbung ceremonies held in the southern parts of Wiradjuri Country. The Bulgeraga Creek ceremony would have been one of the last of its kind ever held.

For the Wiradjuri, Mathews gained the following account of the mythology associated with the Burbung ceremony from an elderly *wooringimba* ('doctor' or 'wizard'), who explained that:

> A long time ago there was a gigantic and powerful being, something between a blackfellow and a spirit, called Dhuramoolan [Daramulun], who was one of Baiamai's people. His voice was awe-inspiring and resembled the rumbling of distant thunder. At a certain age the boys of the tribes were handed over to Dhuramoolan, in order that he might take them away into the bush, and instruct them in all the laws, traditions and customs of the community, to qualify them to sit in the councils, and discharge all the duties and obligations devolving upon them as tribesmen. When he brought them back to the camp, it was always observed that each boy had lost one of his upper incisor teeth, as a visible sign that they had been initiated by Dhuramoolan. He pretended to Baiamai that he always killed the boys, cut them up, and burnt them to ashes, that then he formed the ashes into human shape, and restored them to life, new beings, but each with a tooth missing. On each occasion when Dhuramoolan brought back the boys who had been handed over to him for the purpose of initiation, it was found that some of them were missing, and he always reported that they had died from some ordinary disease. After a time Baiamai became very uneasy at the loss of so many of his young men, and suspecting that something was wrong, he questioned those brought back, but they were too much afraid of Dhuramoolan to tell upon him. On Baiamai compelling them to speak the truth, they told him that Dhuramoolan had feasted on their fellows. They also stated that it was not true about Dhuramoolan burning them and restoring them to life, and that the extraction of their teeth was performed by his inserting his own lower incisors under the tooth to be extracted, and wrenching it out. At this part of the performance he sometimes bit the entire face off the boy and devoured him. Upon hearing this Baiamai became very angry and destroyed Dhuramoolan, but put his voice into all the trees of the forest and told it to remain in these trees for ever. He then split one of the trees, and made a bull-roarer (*mudthega*) which he fastened to a string and swung round, and it had Dhuramoolan's voice. It could be made out of any tree, because the voice of Dhuramoolan had been put into them all. Baiamai then told his chief men that for the future they must themselves initiate the youths of the tribes, using the *mudthega* … to represent the voice of Dhuramoolan to which they had all been accustomed. Baiamai thought it would be better not to communicate Dhuramoolan's imposition to the women and uninitiated, but to continue to make them believe that he came and took the boys away and burnt and resurrected them as heretofore. He then instituted the ceremonies of the Burbung as it is at present practised, and

[182] Mathews (1896, pp.295-296,303).

commanded them to teach it to their sons in order that it might be perpetuated among all the tribes.[183]

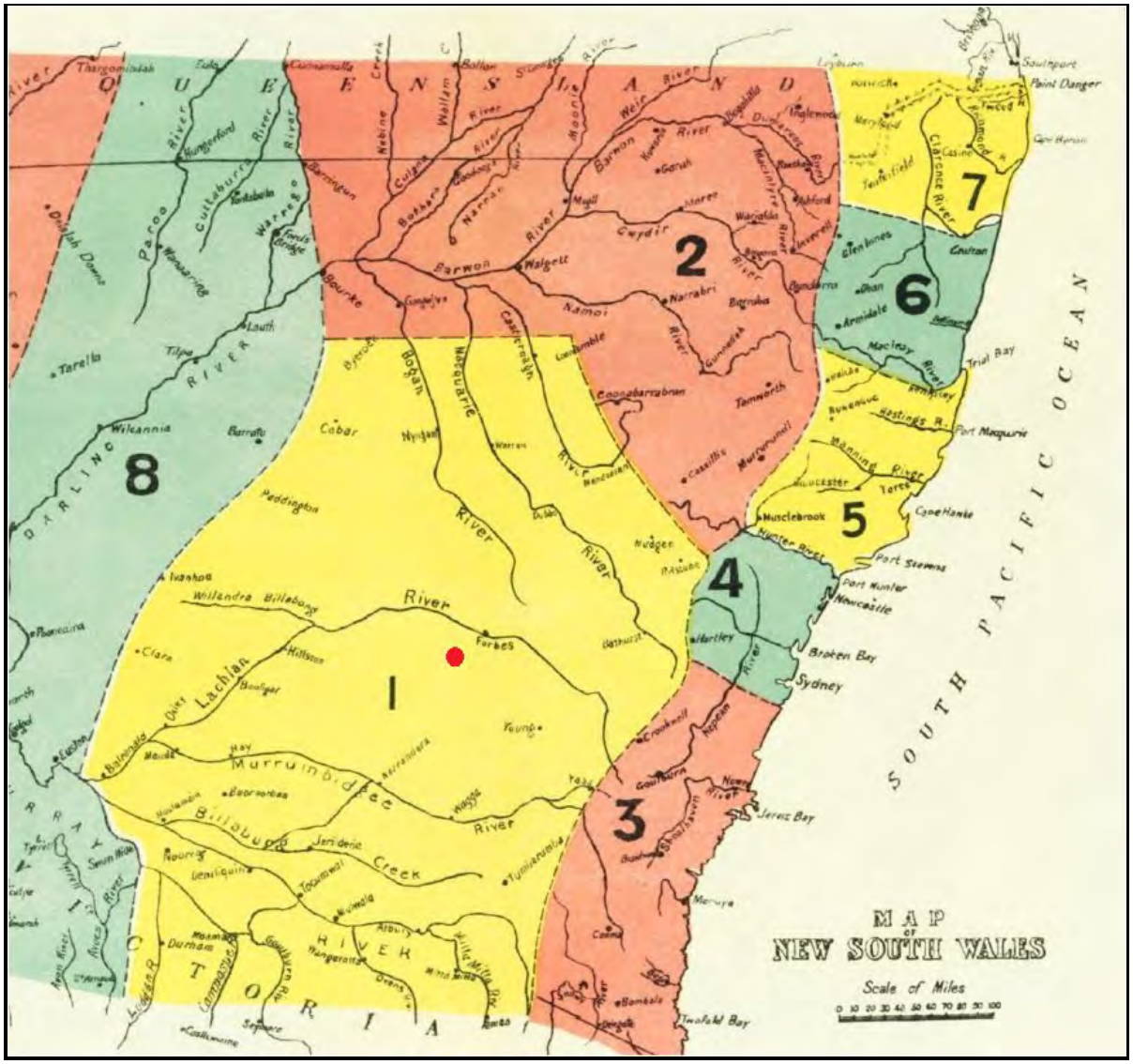

Fig.15. Section of a map showing initiation areas (Mathews, 1898). In the accompanying text, the Wiradjuri are listed in the northeastern part of area No.1. Note that the red dot has been superimposed to show the location of Lake Cowal.

In Aboriginal mythology, the ancestors Baiame (Byamee, Byamai) and Dhuramoolan (Daramulan, Dthooramoolin, Turramulan, Tharamulan, Thuremlin) were significant over much of central and eastern New South Wales. For instance, apart from their presence in Wiradjuri mythology, they were recorded in the Gamilaraay mythology used to structure the Bora (Buuru)

[183] Mathews (1896, pp.297-298).

ceremony.[184] For Wiradjuri people, Tindale stated that 'Maintenance of a cycle of ceremonies that moved in a ring around the whole tribal area tended to assist tribal coherence despite the large occupied area'.[185] Among the participants of the Burbung ceremony held at Bulgeraga Creek in 1893, Mathews recorded that:

> Three dialects were spoken by the natives who attended this gathering, but were mutually understood by all. The people from the Castlereagh, the Mole and the Barwan spoke Wailwan, those from the Bogan and Cobar spoke Wonghibon [Wongaibon or Wangaaypuwan], and those from the upper Macquarie, the Wiradthuri [Wiradjuri] dialect. All of these tribes have the same class system and all belong to the Wiradthuri community, one of the branches of the great Kamilaroi [Gamilaraay] organisation.[186]

Former settler, John McGuire, gave a detailed account of the burial customs of the Aboriginal people living in central New South Wales, which includes Wiradjuri Country, which is given below in full. He wrote:

> The burial ceremony of the blacks is a peculiar custom. Immediately a black fellow dies, and before he has time to get cold and stiff, they force his body into a sitting posture, with both hands resting on his cheeks. The hands are bound into that position, and cords are passed round the body to lash it into the posture required. His possum rug is then rolled round him, and tied up. The cords used to be made out of the kurrajong [*Brachychiton populneus*] bark, which the gins would chew and plait. In fact, the gins were quite experts at making lots of things out of this bark.
>
> When these preparations are complete, two sticks are brought into use, with which to make a sort of hand-barrow. Across them the body is placed, and carried to the nearest sandhill. If a sandhill be not handy, a soft piece of ground is looked for. Then a grave is dug, to a depth of say 18 inches [46 cms] by 3 feet [91 cms] square. Sometimes a hole is made circular. A wooden shovel is used for digging purposes.
>
> The departed member of the tribe is then placed in the hole, in his squatting posture. All round, to a radius of about 20 feet [6.1 ms], the ground is loosened, and the soil thrown over the grave till there is a mound about two feet [61 cms] above his head. The heap is gradually sloped off. Sticks and dead wood are then gathered up and placed on top to prevent the native dogs from getting at the carcase and dragging it out.
>
> When that part of the ceremony is disposed of, three or four trees in the vicinity are selected. The bark is stripped off to a length of about four feet [1.2 ms], and on the bare parts of the tree marks are made to correspond with the marks on the dead

[184] Bootle (1899, pp.4-5), Howitt (1904, pp.493-495), Mathews (1895, pp.415-419) and Ridley (1875, pp.153-156). See also Bucknell (1912, p.166) and Cameron (1885, p.357), who wrote about the role of Daramulan (Dthooramoolin, Thuremlin) in tooth evulsion.
[185] Tindale (1974, p.201).
[186] Mathews (1896, p.312).

> man's possum rug or cloak – for I might say that each mans rug is peculiarly marked in order to signify its respective ownership.[187]

With the Study Region, Aboriginal Bora or ceremonial grounds were probably, in many cases, located next to waterholes that maintained water throughout the drier times. For instance, one such place was on the Bland River, where it runs through Morangarell Station before entering the southern end of Lake Cowal. A permanent spring near the Bland Creek had the Aboriginal name Thooroong-galee.[188] It is recorded that:

> The Morangarell Station … is one of the oldest homesteads in the district, having been occupied by its present owner for thirty-five years. But from time immemorial the place seems to have been a favourite rendezvous of the blacks. Morangarell is a native name, and was originally applied to one of the waterholes in the creek. Hither the sable children of the soil were accustomed to assemble for their corroborees, and - to compare great things with small - no doubt regarded Morangarell as the capital of their kingdom. Mr. Macgregor [station owner] deposes to having seen as many as 400 of these blacks gathered together from various parts of the Bland, and their whole number is estimated to have been about 600 when the first white man set his foot upon their soil. Of this large aboriginal population, there remains but one survivor, old black Peggy, who clings to her ancestral home with a tenacity which nothing but death will sever. Since black husbands failed her, she has taken kindly to the white variety, and has been successful twice over. The first she tenderly nursed through his last illness, and decently buried him when all was over, and to her present lord she is said to show a degree of kindness which some wives of a different colour might do well to imitate.[189]

3.2.2.1 Ceremonial Life of Women

It is now not possible to describe in detail the ceremonial and ritual knowledge once held by Wiradjuri women, due in part to the male dominated environment of the colonial frontier when the ethnographic accounts of early Aboriginal life were made. It is apparent, however, that there was a male realm of sacred knowledge that women could not be associated with, publicly at least. For instance, C. Rouse recorded the word, *Ena-wena*, as the 'Place where the women stop when separated from the men in times of *bora* or war'.[190] It is possible that Wiradjuri women had rituals specific to them that were associated with Daramulan's wife, who Ridley recorded as Muni Burrebean and noted that in terms of ancestor spirits:

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[187] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[188] Woolrych (1890, p.67).
[189] 'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).
[190] C. Rouse (cited Curr, 1886-87, vol.3, p.365).

> One of the chief of these is Turramulan [Daramulan], who acts as the agent of Baiame. In some places, however, Turramulan is spoken of as an evil being, or an enemy of man. His name signifies "leg-only-on-one-side" or lame. He has a wife called "Muni Burrebean" (egg-like, nourishing-with-milk.) She has the duty of instructing women; for they may not see Turramulan on pain of death. And even when mention is made of Turramulan, or of the Bora at which he presides, the women slink away, knowing that it it [sic. is] unlawful for them so much as to hear anything about such matters.[191]

Other early ethnographic sources confirmed the importance of a female spirit ancestor. In Burbung mythology, women were acknowledged as having a role in the associated ceremony. Mathews recorded that:

> Dhuramoolan had a wife named Moonibear [i.e., Muni Burrebean] who watched over all matters relating to the women of the tribes. At the ceremony of the Burbung, a small bull-roarer, bearing her name, is used in the sacred ground, and is heard at night by the women in the camp, who know its peculiar sound. It has a short string and is fastened to a handle.[192]

Senior Aboriginal women in central New South Wales were heavily involved in mourning ceremonies, which in the case of the body of an important man being buried involved the production of mourning caps made from clays.[193] Richards explained that *Dthog-goon*(*y*)' referred in the Wiradjuri language to a 'widow; also her mourning cap of clay or soil', and recorded that:

> This cap was renewed from time to time during the period of mourning - several months - and consisted of various kinds of soil made moist with water, and smeared on the hair on top of the head to a depth of several inches [maybe 6 or 7 cms], in some cases weighing as much as six or ten pounds [2.7 or 4.5 kgs]. The broken fragments were placed upon the dead husband's grave. The writer has found as many as five distinct casts on one grave, showing that the mourning was not of a transient nature, but more enduring than that of other ancient peoples, who merely cast dust or ashes upon their head, or wore sack-cloth for a short time. In the southern districts of this tribe ordinary river mud was used; over the central and north red or yellow clay; and towards west and north-west calcined gypsum (pure white). The colour had nothing to do with mourning. Whatever suitable material was furnished by the locality used.[194]

[191] Ridley (1875, p.137). It is possible that there was a typo in the case of Muni Burrebean, and that it was actually Muni Burrebear, which would be more consistent with Moonibear, as recorded by Mathews (1896, p.298).
[192] Mathews (1896, p.298).
[193] Richards (1902d, p.135; 1903, p.199).
[194] Richards (1902f, p.166). The 'widow' was referred to as *Mor'ra - gon-gan* (Richards, 1902d, p.136), while the 'widow's hut' was *Gwaal* (*Goo'al*) (Richards, 1903, p.199).

From central New South Wales, McGuire described the mothers carrying between camps the bodies of deceased children, who had died under the age of six months and were wrapped in possum skins put into a net.[195] He also provided an account of the wives of a deceased man performing rituals after the burial of his body, and explained that:

> As a rule the blacks do not tarry in a camp one moment longer than they can possibly help after a death has taken place. The gins never attend the burial, but make all preparations for departure; so that when the men return from the funeral all is about ready for an exodus.
>
> Another peculiar custom in connection with a death is that a blackfellow's gin jobs [strikes] her head with a sharp instrument till the blood flows. She then gets either white mud or pipe clay [kaolin], and daubs her face and hair with it, also her body, down to her waist, and her arms. This is their mourning. The blacks whiten; the whites blacken! The gins keep up this mourning apparel for about twelve months, which means that it is necessary to keep applying fresh daubs now and then as the old stuff shakes off.
>
> The gin also, before leaving the camp, fires a bush, and drags it all around, for the purpose of keeping away the 'buggeen' (the devil). It is then twelve months before she can come anywhere near that camp again. And if she, or any relative of the deceased, comes along after that period, it is necessary, to again drag a lighted bush around.[196]

The senior Aboriginal women within the Wiradjuri community had crucial roles in the male initiation ceremonies. This is demonstrated by the word, recorded by Richards, as *Ya'nee-waa* the 'God-mother' or 'sponsor', in reference to a novice's:

> … aunt or some old woman of his mother's relation … [who] sits behind him on the "boorr' bong" [Burbung] ring … holding him round the waist as if to try and keep him, but when the men come to take him away she unties his apron or girdle (Dthol'la-bol'ga) which she is to retain in safe keeping till his return.[197]

3.2.2.2 Aboriginal Placenames

Evidence from historical sources show that certain places on Wiradjuri country were named according to geographical features, such as river courses, foraging areas, and mythological places.[198] For instance, Curr's correspondent, C. Rouse, recorded the placename, Billa-bulla, as 'The two rivers', and Gillendoon as 'A place of crayfish'.[199] Anthropological correspondent T.L. Richardson from Bathurst provided a list of Aboriginal places names from on the Bogan

[195] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[196] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[197] Richards (1902g, p.183).
[198] Donaldson (2009, pp.217,220,224-225,227).
[199] C. Rouse (cited Curr, 1886-87, vol.3, p.365).

River and Macquarie River, which has examples dominated by birds and plants, such as Cobba-cor as 'The brush turkey egg', and Belarbigal as 'A water hole among the Belar oak [*Casuarina*] trees'.[200] Mrs A. Dulhunty at Bathurst listed Wiradjuri (Wirrathuri) placenames, and included examples such as 'Thullugnethgie. Place for making spears', 'Dubbo (Thubbo). A head covering', and 'Dundullimal (Thunthullimal). The work of a hailstone'.[201] In terms of the mythology, Cameron gave the example of the place 'Keewong' as 'Where the moon camped',[202] which is most likely a reference to a creation myth. Similarly, he recorded 'Mun Mun' as 'Where aborigine died and came to life again'.[203] The extent to which other names may also refer to Aboriginal mythological events is unknown.

Due to the fact that European settlers usually placed their homesteads alongside the main waterholes in the Lake Cowal region, which all had Wiradjuri names since they were camping places, the pastoral stations also often took on the same placename.[204] The derivations of these placenames, as recorded by early ethnographers from the source languages, are sometimes contradictory, which suggests that many of the translations are highly speculative. For example, Narrandera is by one source derived from the 'native word, "Gnarandra," which means a hungry place. "Gnaran," hunger'.[205] By other recordings, it variously means 'Home of Narran',[206] 'lizards',[207] 'Jew-lizard' [*Pogona barbata*],[208] and 'frilled-neck lizard'.[209] It is possible, though, that all explanations are somehow relevant to the unrecorded mythology behind the placename. The placename is evidently from the local Aboriginal language, as linguist David Nash has noted that many Wiradjeri placenames have similar endings, such as *-dra*, *-drie* and *-dgery*, with the suffix meaning 'with', 'having' and 'accompanied by'.[210]

For the toponomy of the Study Region, there are placenames relating to the physical environment. For instance, it was recorded that the junction of the Bland Creek and Sandy Creek at the southern bank of the 'Great Cowal' (Lake Cowal) was called *Terra-galonga*, from *ter'ra*, meaning 'like two arms', and *ga'long*, 'where they meet'.[211] Near Forbes, which is about 54 kms northeast of Lake Cowal, was a property known as Moora Moora, which, according to a newspaper account, 'the owner, Mr Thos McCormack, interpreted as aboriginal

[200] Richardson (1899b, p.212).
[201] Dulhunty (1900, p.32).
[202] Cameron (1899, p.195). Refer to the discussion by Donaldson (2009, pp.220,227).
[203] Cameron (1899, p.195).
[204] Woolrych (1890, p.63).
[205] 'Aboriginal Names' (*Berrigan Advocate* newspaper, 20th November 1924, p.3).
[206] 'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6)
[207] 'Aboriginal Names. What They Mean' (*Gundagai Independent* newspaper, 31st May 1934, p.7)' 'Meaning of Willimbong. Interesting Aboriginal Names. Some Contradictory Meanings' (*Murrumbidgee Irrigator* newspaper, 18th May 1937, p.4).
[208] Woolrych (1890, p.68).
[209] S. Grant & J. Rudder (cited Nash, 2014, pp.11,23).
[210] Nash (2014, p.11; see also p.14; Maps 1 & 3; Tables 1 & 2).
[211] Woolrych (1890, p.67).

for "fat," thereby indicating the natives' opinion as to the quality of the land about there'.[212] In 1950, it was reported in the newspaper:

> CONDOBOLIN'S ABORIGINAL MEANING It is understood that this name originated from the aboriginal word "Cundabullen," which signifies "shallow crossing." At the foot of what is now Denison street, is a shallow part of the Lachlan River and this spot was always used in the early pioneering days for the crossing of cattle. It was about here too, that one found the early houses of Condobolin. There were various spellings for Condobolin: Early authentic records show the following: Condooublin, which, was until quite recently the official spelling for the railway, post, office, school, etc.; and earlier records show such spellings as Condooblin, Condoblin, Condabalin and Condonblin.[213]

According to recorded oral history, Lake Cowal was named after a well-known Aboriginal man in the colonial period. In published newspaper reminiscences, relating to about 1864, a former settler related that:

> On the same station [Parkes] a few months afterwards [in 1864] the stockman and I were killing a fat bullock when up came a blackfellow, known as Tommy Cowal, after whom Lake Cowal was called.
>
> Tommy always had a number of dogs. The aboriginal as a rule, is very fond of dogs, and he would sooner have you hit him than hurt his dog.
>
> Well, as I said, Tommy was at the killing-yard with all his dogs, and you may guess they were a bit of a nuisance. I kicked one of the crew, whereupon Tommy's wrath rose, and I can tell you I had to do some fast laps round the yard with him after me brandishing his nullah nullah [club]. A stockman - a big fellow named Yorkie - bluffed the black by threatening to kill him with an axe, and only for Yorkie, I'd have been a gone coon that time. As an additional inducement to cool him down we gave Tommy the paunch and head of the bullock, and he went quietly away to his camp.
>
> But Tommy was a terrible fellow. He was always having a row somewhere and had already killed two or three whites. Both black and whites stood in awe of him. One day the blacks tackled him in numbers, and ended the outlaw. He got so many spears into him that he could not fall to the ground the spears propped him up. I witnessed the fight myself. We tried in vain to save Tommy, but perhaps it is as well we failed, for after his death the atmosphere smelt a bit safer.[214]

From the above account it would appear that Lake Cowal was named after the Aboriginal man, Tommy Cowal, although it is also possible that his personal name had other meanings in

[212] 'Between Condobolin and Wyalong' (*Lachlander & Condobolin & Western Districts Recorder* newspaper, 28th September 1910, p.1).
[213] 'Condobolin' Aboriginal Meaning' (*Lachlander & Condobolin & Western Districts Recorder* newspaper, 16th October 1950, p.1).
[214] 'Some Ugly Customers' (*Hillston Spectator & Lachlan River Advertiser* newspaper, 7th December 1906, p.3).

the Wiradjuri language. In 1923, S. Wilson, who was a member of the family of farmers who had owned Lake Cowal station since 1880, gave an account of the Indigenous origin of the placenames in the surrounding area and wrote that 'The name, Cowal means "lake" in Aboriginal language'.[215] In the early-20th century, there was a movement to introduce more Aboriginal words into Australian English. Famous writer Mary Gilmore suggested in 1927 that Lake Cowal derived its name from an Aboriginal term related to water, and opined that:

> Every issue of the "School Magazine" should have at least a dozen native words - names of flowers, birds, beasts, implements, natural features, and so on. The pupil should know the difference, for instance, between a gilgai ['waterhole'], a coolamon hole [maybe a 'gnamma hole'], and a cowal [probably 'swampy depression']. How many do? And yet they are all common, and familiar words. Lake Cowal for instance, did not come by its name by accident.[216]

Some of the more recent work by linguists and etymologists has supported Gilmore's above assertion. The Australian English term, 'cowal', is believed by some linguists to have been derived from a term, possibly from the Kamilaroi language of northeast New South Wales or even from a Queensland language, *guwal*, for 'gully' or possibly a 'swampy depression'.[217] The true derivation of the Lake Cowal placename may never be known for certain, as researcher Jan Tent explained that while a Wiradjuri language origin for 'Cowal' is favoured, there is also a possible non-Aboriginal origin for the word to consider. She explained:

> Our colleague [linguist] David Nash previously considered the origin of *cowal*, presenting a paper entitled 'Examining the name element/feature type *cowal*' to an ANPS workshop in 2008. David concluded the word was of Aboriginal origin (from the Wiradjuri language); however, he also explored the notion that it was derived from Scottish *kyle* 'narrow strait, sound channel between two islands or an island and the mainland' (Gaelic *caol*). This view has had some currency: the Queensland Department of Environment and Resource Management notes on its placename website that Cowal Creek in Cape York is named after Cowal Creek in NSW and that *cowal* 'is of Scottish origin and is not Aboriginal'.[218]

When determining the origin of placenames, it is necessary for the scholar to make a distinction between the placenames that European settlers gained directly from Aboriginal inhabitants, with Cowal being an example, from those placenames that were constructed and imposed much later for administrative reasons.[219] In the case of the latter, dubiously recorded terms were often used, rather than directly acquiring words from surviving Aboriginal speakers

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[215] Wilson (1923, p.373).

[216] 'Our Lost Field', by Mary Gilmore (*Sydney Morning Herald* newspaper, 29th October 1927, p.11). For derivations of the Australian English terms, 'gilgai', 'coolamon' and 'cowal', refer to Dixon *et al.* (1992, pp.184,192-193) and Ramson (1988, pp.167-168,176,272).

[217] Dixon *et al.* (1992, p.192) and Ramson (1988, p.176).

[218] Tent (2012, p.1). See also Nash (2016, pp.120,123,125) and refer to the 'Queensland place names' website (https://www.qld.gov.au/environment/land/title/place-names/queensland-place-names-search, accessed 18th November 2022).

[219] Koch & Hercus (2009, p.1) and Windsor (2009, p.72).

of the local language. For example, southeast of Lake Cowal is a small town known as Wirrinya, which was originally known as Coolamon, but due to a similarity of placenames in the region which caused problems for the post office, with Coolamon being confused with the town Coolana, it was decided in 1919 to have the former renamed as Wirrinya. It was stated in the *Forbes Advocate* newspaper that 'Wirrinya is the aboriginal name for large lagoon, and the new name has been applied through the comparative promixity [sic., proximity] of Lake Cowal'.[220] This is confusing from a toponomy point of view, given that Cowal was also said to mean something similar. Examples of other placenames and their derivations are given in Table 5, Appendix A.

3.2.3 Social Structure

In Aboriginal Australia, the structure of the social organisation dictated who could marry, and this varied across the continent.[221] The social structure was also apparent in determining totemic identity and ceremonial roles within the broader society. Among the Wiradjuri people, the main totem for each individual was inherited matrilineally (along the mother's line).[222] The study of Aboriginal totemism demonstrates how the Wiradjuri people integrated their beliefs about the plants and animals of their Country into their religious life.

Anthropologist Ronald M. Berndt claimed that for the Wiradjuri their 'magic was integrated with religion', and as examples, 'myths about Wild Turkey [bustard] and Eaglehawk [wedge-tailed eagle], Crow and Robin Red Breast, and Red Kangaroo substantiated various forms of magic, and at the same time sponsored the initiation of native doctors'.[223] Children being trained to be 'doctors' were said to have been taken to the 'camp of Baiami' in the Skyworld (heavens), where Daramulun also resided.[224] Former colonist W.H. Suttor noted that at Condobolin (his Candoblin), which is north of Lake Cowal, 'Families in this neighbourhood have totems or *yoolo* with which they mark trees around the graves of their dead and also their opossum-rugs. One of them is the carpet snake'.[225]

In 1887, Curr published an ethnographic account from his correspondent F. Foley at Bathurst, about 195 kms east of Lake Cowal, which described the social organisation of the local Aboriginal people as having four 'classes' ('sub-classes' or sections), which were *Ippe*, *Cumbo*, *Murri* and *Cubbi*.[226] These names had earlier been found in use over much of central New South Wales, particularly by the Kamilaroi people, albeit recorded with some different

[220] 'Change of Name' (*Forbes Advocate* newspaper, 17th October 1919, p.6).
[221] Elkin (1929), Radcliffe-Brown (1931), Mathews (1897b), Scheffler (1978, Chapter 12) and Thomas (1906).
[222] Berndt (1974, p.27).
[223] Berndt (1974, p.27).
[224] Berndt (1974, p.27).
[225] Suttor (1887, p.388). Benham (1942), Black (1941) and Richards (1902f, p.166) described Wiradjuri burial practices relating to carved trees.
[226] Foley (1887, p.378).

spellings.[227] Then, in 1904 Howitt documented the same 'class' terms for the 'Wiradjuri nation', which he claimed 'occupied the greater part of Riverina.[228] In relation to the Wiradjuri 'tribes' of the Lachlan River, Howitt based his findings on information from former colonist A.L.P. Cameron,[229] which is summarised in Table 3.

Table 3: Wiradjuri social organisation (Howitt, 1904, p.107).[230]

Classes [Moieties].	Sub-Classes [Sections].	Totems.
Mukula A	Ipai (a) [= Foley's Ippe]	Yunghai mallee hen Gunarr padi-melon Willi opossum
	Kumbo (b) [= Foley's Cumbo]	Yunghai mallee hen Uroaine emu Willi opossum
Budthurung B	Murri (c) [= Foley's Murri]	Murri red kangaroo Gurung bandicoot Budthurung black duck Thurungai snake Dihulin lace lizard
	Kubbi (d) [= Foley's Cubbi]	Murri red kangaroo Budthurung black duck Dihulin lace lizard Gurung bandicoot

In 1943, Berndt worked with Wiradjuri (Wuradjeri) people during a fieldtrip to the Menindee Government Aboriginal Station on the Darling River, and here he recorded some variations for Howitt's names of moieties, sections and totems,[231] although his account was structurally consistent with that of Howitt. Put briefly, individuals belonging to one class (moiety) must marry a person from the opposite class, and their children take on the class and

[227] Fison & Howitt (1880, Table B, p.36) and Howitt (1882, pp.452-453; 1884a, pp.436-437; 1884b, p.335). Note that for the Kamilaroi and Wiradjuri, there are different but related forms of 'sub-class' (section) and totem names for women (Richards, 1903, p.200).

[228] Howitt (1904, p.105).

[229] Cameron (1885, pp.350-351; 1902).

[230] In another version of Wiradjuri social organisation described by Howitt (1904, p.106), based on data from J.B. Gribble, the section Ipai was Yibai, and Kumbo was Wumba. In comparison with the Lachlan River data, there was also much variation among the placement and identification of totems.

[231] Berndt (1947, pp.327-328) recorded Howitt's Mukula moiety as Ngilpungara, and Badthurung as Makunngara. The Kumbo section was recorded by Berndt as Puta, while the Murri section was Ma:ta and the Kubbi section was Kapi – the Ipai section was the same for both Howitt and Berndt. The Murri totem was recorded as Maruwai, and the Yunghai totem was written as Jungkai, which for the latter was the same word when allowing for orthographic differences. See also Macdonald (2011, pp.69-71).

totemic identity of their mother.[232] The general application of this matrilineal system across much of inland New South Wales led to anthropologist Alfred R. Radcliffe-Brown in 1931 describing the Wiradjuri social organisation as 'Kamilaroi Type'.[233]

In addition to the matrilineal system that determined an individual's totem, the Wiradjuri also possessed a 'patrilineal assistant totem' used in certain rituals that involved a male child and his father.[234] It is therefore likely, in my opinion, that links to Country (i.e., a clan estate) were passed down from the father in this way, although this has been disputed.[235] In an explanation of Wiradjuri totems, termed *budjan*, Howitt explained that the main totem was passed down via the mother:

> But there is another totem which is not inherited, but which is given to a youth at his initiation, as for instance at the Burbung of the Wiradjuri. The case of Murri-kangaroo, mentioned elsewhere, is in point. His group *budjan* was Kangaroo, inherited from his mother; his personal *budjan* was Tiger-snake, which he received during the apparently hypnotic suggestions to which his father, a noted medicine man of that tribe, subjected him.[236]

After European settlement, the Wiradjuri system of gaining connection to a Country changed, and anthropologist Gaynor Macdonald stated that the records 'indicate bifiliation (a choice to claim one's primary social and/or spatial identity through either a father or mother) and that rights in Wiradjuri country stemmed from bilateral filiation and probably also from birthplace'.[237] In my native title experience, the move towards a cognatic system is common across Aboriginal Australia. This is in part because the increasing number of out marriages creates a need to draw connect with Country via the mother, since the non-Aboriginal father does not have a Country. The consistent part of the altered system is that rights and interests to land are derived be descent. In my experience from elsewhere in Aboriginal Australia, the persistence of knowledge among contemporary people of the former totemic family links to Country provides a sense of close connection to the physical environment.[238]

3.2.4 Material Culture

The study of material culture concerns the sum of beliefs and traditions that produce the tangible belongings of a people.[239] Examples of Aboriginal material culture include artefacts such as stone tools, nets, bags, digging sticks, clubs, boomerangs, spears, ornaments and ceremonial paraphernalia, as well as rock paintings, modified trees and stone arrangements.

[232] Berndt (1947, p.327) and Howitt (1904, pp.208-213).
[233] Radcliffe-Brown (1931, p.57-60).
[234] Berndt (1974, pp.27-28) and Howitt (1904, pp.405-410).
[235] Macdonald (2011, p.72).
[236] Howitt (1904, p.144).
[237] Macdonald (2011, p.72).
[238] Clarke (1994, Chapter 8).
[239] Barfield (1997, p.311), Clarke (2012, Chapter 1) and Hicks & Beaudry (2010).

Archaeological material, such as stone tools and food remains found during surveys, is not discussed here.[240]

3.2.4.1 Ethnographic Artefacts

A full description of the ethnographic artefacts is beyond the scope of the report. Should an overview concerning the material culture of the Wiradjuri people at the time of first European settlement ever be required, then the wordlists are a good source of data. For instance, Table 4 below has a list of 'Weapons' provided by R.H. Mathews. There is an extensive vocabulary compiled by Richards that has numerous references to a wide range of Wiradjuri artefacts, which are well described.[241]

Table 4: Wiradjuri 'Weapons' as listed by R.H. Mathews (1904a, p.301).

Artefact	**Recorded Wiradjuri Term**
Tomahawk	*dhauain*
Koolamin [coolamon, wooden container]	*marin*
Yamstick [digging-stick]	*kunnai*
Spear, wood	*thulu*
Spear, reed	*dyirril*
Spear-thrower [woomera]	*wommar*
Spear, shield	*girran-girran*
Waddy shield	*ngummal*
Fighting club	*bundi*
Hunting club	*birrang*
Boomerang	*burgan* or *bulgang*
Net bag	*kalbon*
Fish net	*mia*
Nose-peg	*bun-gal*

Certain objects documented in use by Wiradjuri people concern rituals, and for this reason they are listed here as an adjunct to the discussion of Aboriginal ceremonies (see Section 3.2.2). Crystals were important as medicinal charms used by Wiradjuri 'doctors' when treating a sick patient.[242] According to Richards, *Boo'boo-Wol'long* was a 'Charm or magic stone',[243] and

[240] A detailed discussion of the archaeological component of Aboriginal tools relevant to the Study Region is provided by EMM as part of the Cowal Gold Operations Open Pit Expansion project.
[241] Richards (1902a, 1902b, 1902c, 1902d, 1902e, 1902g, 1903).
[242] Elkin (1977, pp.20-21).
[243] Richards (1902b, p.99).

Weer-ral'gon was a 'Magic stone, one who did something, to lie down'.[244] Sacred stones, called *Gib'baa* or *Gee'baa*, included white rock crystals, 'volcanic bomb' crystals and australites - the button-shape examples of the latter were sometimes referred to as 'emu stones'.[245]

3.2.4.2 Ochre

Records of the Wiradjuri language have terms related to pigment and colour. For instance, Richards recorded *Goo'barr* as 'Red ochre; red paint' and *Goo'barr - goo-barr* as 'Bright or red-coloured'.[246] Goo-reen' was 'Charcoal'.[247] Mirr'rool referred to 'Pipeclay. Paint. Coloured clays'.[248] In keeping with what is known about Aboriginal use of ochre in other parts of Australia, various pigments were used to decorate objects, the bodies of performer, rock shelter paintings and ritually as medicine and a source of power.[249]

In keeping with the rest of Aboriginal Australia, it can reasonably be assumed that Wiradjuri people would have used a wide variety of ochre, some extracted from local outcrops and others gained through trade.[250] A place called Mirrool Creek, downstream on the Murrumbidgee River, was said to have a name derived from *me-rool*, meaning 'pipe clay, either red or white, used by the blacks to paint themselves with, or plaster themselves over'.[251] When explorers first arrived in central New South Wales, the Aboriginal people along the Lachlan and Murrumbidgee Rivers reportedly were in the practice of visiting each other for trade.[252] The more ceremonially powerful ochres would generally have been those that were associated with mines that had mythological significance, such as being where an ancestor in the creation had bled out into the ground.[253] In relation to the Study Region, I have not been able to locate any reference to local ochre mines in the early ethnographic records.

3.2.4.3 Culturally Modified Trees

Today, living and dead trees are often found with scars, caused by either human activity or natural causes.[254] The scars which are the result of an early Aboriginal modification to the tree can only be found in areas where there are old specimens of various long-lived species. In

[244] Richards (1902c, p.118).
[245] Richards (1902c, p.115; 1902e, p.147). See Clarke (2019, pp.159,162,165,172).
[246] Richards (1902a, p.82).
[247] Richards (1902a, p.83).
[248] Richards (1902d, p.135).
[249] Clarke (2003a, pp.46,61,64,92-94,101,108-110,199-200) and Jones (2007, Chapter 9).
[250] McCarthy (1939, pp.406-410).
[251] Woolrych (1890, p.67).
[252] C. Sturt (cited McCarthy, 1939, p.409 & Map 1).
[253] Clarke (2003a, p.93) and Jones (2007, pp.344-353).
[254] Jordan (2021) and Long (2005).

earlier times, trees were deeply scarred when Aboriginal people extracted green wood from living trees to make artefacts, and when they removed bark sheets for a variety of purposes.[255]

The Aboriginal practice of carving directly from the living tree, when making a range of artefacts, was common across Australia.[256] The green wood was seasoned over the fire during the manufacturing process. The 'dendroglyphs', which are decoratively carved trees, were a distinctive feature of the Aboriginal material culture for New South Wales.[257] Along the north coast of New South Wales the designs were incised into the bark, but to the west of the Great Dividing Range they were made by the removal of bark in order to expose the inner wood for deeper decorative carving. The carved trees were typically located near the Bora or ceremonial grounds in the forests of central and eastern New South Wales and southeast Queensland.[258]

In central New South Wales, carved trees were also created around burials, particularly for memorialising important Aboriginal people (see also Section 3.2.2).[259] Richards explained that in central New South Wales the term, *Moo' ya-lanng*, referred to 'Carvings on trees at graves. Wherein is something done to inform (of their deeds). (Only clever men had carvings done to their memory)'.[260] Here, the Aboriginal word, *Gou-gon*, meant the 'place of the dead' and 'north', the latter being the direction from where spirits of the deceased came and went, and 'For this reason, also, the "north" [carved] tree had the most important inscription, when several were carved around a grave (so the blacks told me)'.[261] Lindsay Black published a photograph of a dry box tree (*Eucalyptus albens*) with a carving on one side, taken at Moonbucca Station, about 4 kms from Morangarell and about 9 ms from the edge of Bland Creek.[262] As discussed earlier (Section 2.1.4), there is an excellent example of a carved tree that was removed from Lake Cowal in the 1930s, which is now housed in the West Wyalong Local Aboriginal Land Council office (see Fig.4). Since European settlement, Aboriginal ancestral remains, in the form of skeletal material, have sometimes been uncovered within the Study Region.[263]

In eastern New South Wales, tree bark was cut for making artefacts, burial containers, canoes and for shelters.[264] Here, sheets of bark, probably taken from eucalypts, had images of spiritual ancestors painted on them for display at Bora initiation rituals.[265] When the bark sheeting was removed from long-lived species, like the river red gum (*Eucalyptus*

[255] Clarke (2012, Chapter 7).
[256] Clarke (2012, Chapter 5).
[257] Briggs & Jackson (2011), Etheridge (1918), McCarthy (1940) and Rhodes (2018, Chapter 6).
[258] Bootle (1899, pp.4-5), Mathews (1907, pp.8-11) and McCarthy (1940, pp.163-164).
[259] Benham (1942), Black (1941), McCarthy (1940, p.161) and Richards (1902g, p.182). See also 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[260] Richards (1902d, p.134; see also 1902g, p.182).
[261] Richards (1902c, p.117; see also 1902a, p.82 & 1902f, p.166).
[262] Black (1941, Plate XI, p.21).
[263] For instance, refer to 'Skeleton Unearthed' (*Grenfell Record & Lachlan District Advertiser* newspaper, 8th May 1924, p.2); 'Aboriginal's Skull' (*West Wyalong Advocate* newspaper, 21st November 1930, p.4); and 'Skeleton Found, Thought to be Abo.' (*Forbes Advocate* newspaper, 9th July 1948, p.10).
[264] Clarke (2012, Chapter 7) and Edwards (1972).
[265] Edwards (1978, p.37) and McCarthy (1978, p.27).

camaldulensis), the resulting scar could persist over a hundred years. When the scar was relatively small, such when removed to make a bark dish, the scar would heal over in a matter of a few decades. In rare cases, when the trees have died soon after the bark was cut, the dead trunks have remained much longer with their evidence of the bark removed being apparent. The above ethnography confirms the CMTs were produced within the Study Region.

3.3 Bush Food and Medicine

In relation to the Aboriginal use and perception of animals, plants and minerals in New South Wales, there is a considerable body of literature.[266] From this it can be determined that the natural resources of central New South Wales would have provided Aboriginal foragers with the essential sources of food, medicine and materials for making artefacts. Wiradjuri-speaking people occupied a large region, with rivers passing through areas that were much drier than country to the east. Accordingly, the food sources they drew upon included both riverine and semi-arid resources.

In some parts of Wiradjuri country, water would be scarce during the drier periods. On the Lachlan River, Curr recorded the term, *gigul-mil*, literally 'wood eye', as 'A hole in a tree in which water collects, sometimes to the extent of fifty gallons [227 litres]'.[267] Similarly, he listed *wollong-mil*, 'stone eye', as 'A hole in a stone in which water collects',[268] in other words a gnamma hole. Watercourses were also important for fishing, even during the drier seasons. Historian Mary Gilmore remarked that in Wiradjeri (Waradjerie) country, 'Wherever there was a native fish-trap, that was the one best possible place for the bank of a dam'.[269] Former settler John Gale stated that in the Lake Cowal region, the Yeo Yeo Creek:

> … receives but few tributaries, and ultimately empties itself into Lake Cowal. In those days [1857-59], throughout its entire course, it abounded in black bream (the Australian bass [*Percalates novemaculeata*]) varying from 2 lb. [.9 kg] to 7 lb. [3.1 kg] in weight. But to-day, their numbers have greatly diminished and their place is taken by that pest of all or most, of our inland waters, the Asiatic carp [*Cyprinus carpio*], degenerate offspring of the beautiful goldfish, which in their glass globes adorn many a home the world-over. One peculiarity about the bream in the waters named is that in times of prolonged drought the creek, from its source to its estuary at Lake Cowal, is, with the exception of a few of its deepest holes (where what little water is in them is mudstained and covered with vegetable growth), absolutely dry mud crisscrosses with gaping cracks, and all signs of fish life have disappeared; yet as soon as ever the drought has broken and the water again flows, the bream make their appearance - not young fry, but fish of the weight already named. This can be accounted for only on the hypothesis that as the waters dry up the fish instinctively

[266] Ash *et al.* (2003), Brouwer *et al.* (2005), Clarke (2003a, 2003b, 2007a, 2012), Low (2003), Maiden (1889), MacPherson (1925, 1931, 1934, 1939), Packer *et al.* (2012) and Stewart & Percival (1997).
[267] E.M. Curr in Curr (1886-87, vol.3, p.366).
[268] E.M. Curr in Curr (1886-87, vol.3, p.366).
[269] Gilmore (1934 [1986, p.175]).

> burrow into the mud and these hybernate [sic. hibernate] till their natural element is replenished.[270]

In his account of Aboriginal foraging in central New South Wales, former settler John McGuire said that

> For fishing, a net is used. The mesh is made up from the inside of the kurrajong bark, and is attached to a bent stick. The gins take part in the fishing. Some handle the nets, whilst others go round and hunt the fish out from amongst the logs and snags. The nets are dragged along the bottom, and the fish scooped out on to the bank. At Gunning Gap lagoon, near Forbes [northeast of Lake Cowal], I have seen enough fish caught in this way to fill a dray.[271]

Snakes were an abundant food source within the Study Region. In 1879, a pastoral station near Lake Cowal was described as 'the metropolis of snakedom, for an encounter with one of these reptiles is a very ordinary occurrence'.[272] At Lake Cowal, snakes were so numerous that special fences were constructed in order to keep them out of the homestead.[273] According to McGuire, Aboriginal people in central New South Wales snakes ate snakes, and:

> As soon as a snake is killed, his head is instantly chopped off, before he can get a chance to bite himself. For this reason a black will not eat a snake killed by a white. The reptile is rolled up, skin and all, and covered up in the red hot coals to cook.[274]

Lake Cowal is seasonally rich in birdlife, particularly waterfowl such as pelicans, white ibis and straw-necked ibis that go there to nest.[275] Birdlife in the surrounding region would have been a major source of game for the Wiradjuri people. Former settler John Gale reminisced and wrote:

> While on the subject of the fauna of these parts, I may state that at time I speak of [1857-59], it was a very paradise of the sportsman. Game of all sorts, from the stately emu and kangaroo, pelican, black duck, teal, and tree-goose (the wood-duck of the early settlers), bronzewing and other kinds of pigeons; and the most inexperienced shot could at all time rely on a good bag for his day's sport. As for the bustard or plains turkey, they were to be seen in flocks, and though unapproachable by a man on foot, were easily shot from a vehicle or from behind

[270] 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 21st January 1924, p.4).
[271] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[272] 'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).
[273] 'Wayside Jottings' (*Armidale Chronicle* newspaper, 3rd November 1900, p.1).
[274] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[275] 'Bush Notes', by Donald Macdonald (*Australasian* newspaper, 27th April 1929, p.51).

> a horse. They were fine birds, too. I brought down one which, when trussed for the oven, weighed 18 lbs [8.2 kgs].[276]

The emu was a prized as a gamebird, but there were strict religious-based prohibitions concerning the eating of its flesh (see Section 3.2.1). Other foods were also probably subjected to prohibition. McGuire said in central New South Wales that:

> Emus are regarded as a special luxury. So much so that the old blacks play on the superstition of the young fellows in order to monopolise the emus for themselves. They tell the young'uns that the flesh of these birds would make them grey. Consequently the latter would not touch them for the world.
>
> The young blacks don't mind catching the emus and handing them over to the old warriors. The way the birds are caught is this: Early in the morning - the time the emus come out to feed – three or four huntsmen go out; and when they sight the game in the distance, they cut a bush each, which they carry in the left hand, with a spear in the right hand, and a couple of boomerangs in the belt. They walk along the plain with the bush in front of them, till they get within a hundred yards [91 ms] of the emus. The pace is then slackened, and they approach so slowly that the movement is hardly perceptible. The emus think it a growing bush. They are deceived when, within a few yards, the bush suddenly drops and the spears are hurled. The boomerangs are also brought into use. The legs of the captured game are then corded together, a long stick is procured, and the huntsmen carry the birds between them with the poll [sic., pole] on their shoulders.
>
> The kangaroos are captured in a similar manner.[277]

In central New South Wales, the eating of swan meat by Aboriginal people appears to have attracted less prohibitions. McGuire wrote:

> Catching swans was a different process. If they found a swan on a lake three or four men would conceal themselves at one end, whilst others would sneak round to the opposite end and make a noise. The swans would fly low down towards the concealed blacks, when a shower of boomerangs would fetch four or five out of the mob. There was no superstition attached to the swans; all ate them!
>
> For cockatoos there was another system again. These birds, as a rule, roost at night on the trees along a creek. Trees are picked out, up which some of the blacks climb. Other members of the party start a mile up or down the creek; and drive the cockatoos along from tree to tree; and as they alight in the before-mentioned trees

[276] 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 22nd January 1924, p.4).

[277] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).

> the concealed blacks belt them down, I have seen as many as fifty cockatoos brought back to the camp at once.[278]

The wide range of Wiradjuri food sources, such as game animals, fishes and plants, is suggested by the words collected by the early ethnographers. For instance, 'Bee (native)' was associated with the Wiradjuri term *dthurroongarong* by W.H. Suttor.[279] Also, the 'opossum-cloak' was listed as *boothong* by Charles Byrne, and as *buthong* by G.R.H. Stuckey.[280] J. Cameron's wordlist contained 'Codfish' as *kooroolong* and 'Bream' as *koobeer*.[281] E.M. Curr described the 'Sow-thistle' (*Sonchus* species), which is a major source of greens elsewhere in southeastern Australia,[282] as *tool-oo-man.*[283] C. Richards listed *Ngar'dthoo* as the 'so-called "Nardoo" or "Ngardu" seeds [sporocarps of *Marsilea* species], which were ground into me for cake or porridge'.[284] According to N.B. Tindale, the Wiradjuri people lived within a semi-arid belt of Australia where grindstones were utilised in the preparation of food sources, like nardoo sporocarps and grass seed, that were largely ignored by Aboriginal foragers in better watered regions.[285]

Insects were also an important food source in central New South Wales. According to John McGuire, native bees were caught and a feather stuck on them, before they were released to be tracked back to their nest of edible honey, wax and grubs.[286] He wrote that grubs were chopped from tree trunks, while other extracted from their burrows in the ground, using a hooked stick, and moths were eaten raw with their wings removed. As with many parts of arid and semi-arid Australia,[287] for Aboriginal foragers on Wiradjuri Country a major source of sweet food was the sugar lerp, which produces the sweet white flakes on eucalypt leaves during the drier times of the year. Robert Brough Smyth wrote that:

> Lieut. Col. Mundy gathered it near Bathurst, in New South Wales. He says: - "It sounds strange to English ears—a party of ladies and gentlemen strolling out in a summer's afternoon to gather manna in the wilderness; yet more than once I was so employed in Australia. The substance is found in small pieces, on the ground under the trees, at certain seasons, or in hardened drops on the surface of the leaves. It is snowy white when fresh, but turns brown when kept, like the chemists' drug so called; is sweeter than the sweetest sugar, and softer than Gunter's softest ice-cream. The manna is seldom plentiful; for birds, beasts, and human beings devour

[278] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[279] W.H. Suttor in Curr (1886-87, vol.3, p.366).
[280] C. Byrne and G.R.H. Stuckey in Curr (1886-87, vol.3, p.367).
[281] J. Cameron in Curr (1886-87, vol.3, p.365).
[282] Clarke (2018a, pp.64-65).
[283] E.M. Curr in Curr (1886-87, vol.3, p.366).
[284] Richards (1902e, p.146).
[285] Tindale (1977, p.347). See also 'Abo. Relics. Forbes Man's Finds' (*Forbes Advocate* newspaper, 17th November 1933, p.1).
[286] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[287] Faast *et al.* (2020).

> it, and the slightest rain or even dew dissolves its delicate compounds. Hundreds of quails were to be found within a few paces of the manna-fields."[288]

The quandong (*Santalum acuminatum*) is an Australian species of fruit that has become the backbone of the emerging bushfood industry.[289] The common name in Australian English is believed to have been a borrowing from the Wiradjuri language, with its original form being *guwandhaang*.[290] According to former settler John Gale, the region surrounding Lake Cowal was where the quandong (*Santalum acuminatum*), as an Aboriginal food, was found in abundance, and he claimed that:

> I have but little to say as regards the flora of "The Levels," the name by which Bland Plains and the neighboring country was known to the early settlers, beyond reference to some of its timbers and an indigenous fruit known as the quandong, pear shaped and depending from the branches of a small tree whose foliage was closely allied to the eucalypts. When in full fruit in the stage approaching ripeness, and in size that of a small pear, the quandong tree was an object of picturesqueness difficult to describe. The fruit was of scarlet and canary hues, and depended from a branch whence it grow by a stem some two or three inches [5.1 or 7.6 cms] in length, and the lightest breath of wind caused it to sway to and fro like the pendulum of a clock. The fruit itself was not thicker than orange peel, and the stone within was absolutely detached from it when perfectly ripe, and was corrugated like the stones of the peach family, of the size of a marble and was in great demand for ladies necklets and wristlets. Its fruit was juicy and of a pleasant acidity. It was the custom of the blackfellows of those days, rather than take the trouble of climbing and gathering the fruit from the growing trees, to fell it with their tomahawks, and thus by the easier method enjoy the fruit of their destructive and improvident act. It was an apt illustration of "killing the goose that laid the golden egg".[291]

Aboriginal foragers stored surplus food to extend their season of use. McGuire recorded that in central New South Wales:

> Before the summer is over the blacks gather enough gum from the myall [*Acacia pendula*] trees to last them through the winter. The gum is gathered into kangaroo-skin bags, taken to the camp, placed in a large coolamon [wooden container], and stirred and worked up till it is of the consistency of thick hominy [nixtamalized kernels]. It is rolled up into one lump, and carried from camp to camp.

[288] Smyth (1878, vol.1, p.212).
[289] Clarke (2008a, pp.34-35, 54, 91), Jones & Clarke (2018, pp.42) and Matthews (1997).
[290] Clarke (2008a, pp.35, 54, 76), Dixon *et al.* (1992, pp.121-2), Maiden (1889, p.31), McNicol & Hosking (1994, p.92) and Ramson (1966, pp.113, 115; 1988, pp.511-2). Sometimes written as 'quondong', 'quandang' and 'quantong'. Maiden used the earlier name *Fusanus acuminatus*.
[291] 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 22nd January 1924, p.4).

> For bread the blacks use the seed of the kangaro [sic.] grass [*Themeda triandra*], which is gathered in large quantities, ground between flat stones, and baked in hot coals.[292]

It is likely that Aboriginal people in the Riverina of New South Wales, as with other parts of Australia, possessed a rich body of knowledge concerning local bush medicines. For instance, Cameron remarked that 'I have seen very ugly wounds received in fighting cured by an application of clay, put on sufficiently thick to entirely exclude the air'.[293] Mathews recorded the application of cobwebs and possum fur to wounds to stop bleeding.[294] Gilmore described early British colonists, through 'native teaching', adopting the use of *Eucalyptus* leaves to produce 'vapour in pits, or in bed, for chills and pains'.[295] In his Wiradjuri (Woradgery) wordlist, Mitchell listed *Jan,jamber* as 'Medicine from the cone of the tea tree'.[296] From central New South Wales along the Lachlan River, John McGuire reported that:

> If a black gets sick, or gets hurt by, say, a fall from a tree, he bleeds himself in order to extract the bad blood. Eucalyptus leaves are then placed over the cut, and it is bandaged up. He is generally all right in a few days.[297]

Across Aboriginal Australia, the use of herbal remedies was structured by beliefs concerning the fundamental causes of sickness.[298] John MacPherson has provided an account of Aboriginal medicine as practiced by specially trained 'doctors', who had been initiated at the 'Bull-bah', or 'Bora Initiation ceremonies',[299] and their treatments involved much 'blowing, manipulating and sucking'.[300] Some of their treatments used plant medicines. Alfred W. Howitt described the *koradji* (i.e., *kadaitja*), who was a 'medicine-man and doctor', and explained how they utilised sucking as a treatment, but he also said:

> I have learned that these Koradjis also applied herbs as remedies, and treated snakebite by sucking and then rinsing out their mouths with water. They also used the "earth bath" as a cure for colds, which was effective, unless the patient were weak and died.[301]

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[292] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[293] Cameron (1885, p.362).
[294] Mathews (1897c, p.30).
[295] Gilmore (1934 [1986, p.43]).
[296] 'A New Dictionary of Aboriginal Words' (*Corowa Free Press* newspaper, 23rd September 1902, p.3); 'A Vocabulary of Aboriginal Terms. (Woradgery Tongue.) for Birds, Beasts, Fishes, Weapons, Trees, &c. Compiled by J.F.H. Mitchell, One of the Pioneers of the Albury District' (*Albury Banner & Wodonga Express* newspaper, 27th May 1904, p.34).
[297] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[298] Clarke (2008b).
[299] MacPherson (1902, pp.637).
[300] MacPherson (1902, pp.638). See also Richards (1902c, p.116).
[301] Howitt (1904, p.384).

3.4 Summary of the Early Ethnography

From the early ethnography it can be determined that the Study Region has historically been described as Wiradjuri country. The details of the male initiation ceremonies, generally simply referred to as Bora, that were held across the region are well documented. There is also a good description of Wiradjuri social organisation available, including the totemic system. What is missing from the ethnography is a detailed explanation of the land-based mythology. The available accounts of Wiradjuri law and custom give prominence to the 'supreme' male ancestors Baiame and Daramulan, although it is more likely than not that the mythology would have also connected specific sites with totemic ancestors, such as the mallee hen, red kangaroo and many others. Rights and interests in land among the Wiradjuri would have been determined by membership to descent groups, sometimes referred to as 'clans', rather than by an association to a language group. The ethnography does not include a detailed description of these landowning groups, although there is evidence to suggest these groups existed. In common with other matrilineal societies in Aboriginal Australia, we can reasonably assume that while the totemic identity of an individual came from the mother, connection to country would have been chiefly, but perhaps not exclusively, derived from the father.

The last Bora ceremonies held with Wiradjuri participants would have occurred in the late-19th century, although some knowledge of associated customs and practices persisted in the memories of the elderly Aboriginal informants who Berndt interviewed during his fieldwork at Menindee in the 1943. In the absence of a ceremonial life, the persistence of the land-based mythology in its entirety as a living body of knowledge until the present would seem unlikely. In this situation, only fragments of this mythology, such as stories concerning spirit beings and ghosts, may remain as part of a continuous oral tradition. Beliefs in the existence of spirit beings in the local folklore is one of the enduring aspects of Aboriginal culture across Australia, with Lake Cowal being a place associated with 'bunyip' water spirits since at least early colonial times.

From the records of Wiradjuri material culture, we would expect that the archaeology as determined by site surveys conducted in recent times would include a range of stone tools, including grindstones. Only a few of the culturally modified trees, originally produced during activities such as the removal of bark to make containers and canoes, are likely to have survived to the present. It is apparent from the early literature that decoratively scarred trees were generally associated with burial places and ceremonial grounds, the latter often termed 'Bora rings'.

Section 4: Historical Account of the Lake Cowal region

In this section an overview is provided of the history of the region occupied by Wiradjuri people as a means for understanding the process of the Aboriginal population crash which occurred soon after European colonisation, with survivors forced into a harsh regime of government regulation on reserves, from which eventually developed the contemporary Aboriginal community.

4.1 Frontier Conflict and Pastoralism

Detailed accounts of the involvement of Wiradjuri people in the 'Frontier Wars' of the 1820s are provided by historians John Connor and Stephen Gapps.[302] Much of this occurred in the Bathurst district, about a 190 kms to the east of Lake Cowall. The Study Region remained as relatively isolated pastoral country for several decades later. A former settler, John McGuire, remembered that sometime in the 1840s at Carrawobbudy (Carrawabbity), which was a station to the east of Lake Cowal near Forbes, he and the station managers were visited by three Aboriginal men who were on their way to camp at Lake Cowal, and they feared an attack by them.[303] According to McGuire, the four stations located to the near south of Lake Cowal had huts built in the adjacent corners of the runs, in order to provide some protection from anticipated Aboriginal attacks.[304] Across Australia, the killings of Aboriginal people by early European settlers were notoriously under reported,[305] so it cannot be assumed that there were none occurring in the vicinity of Lake Cowal, even if there is no record of it.

In 1923, former Lake Cowal farmer, S. Wilson, provided an account of the European settlement at Lake Cowal. He wrote:

> The date of the arrival of the earliest settler at Lake Cowal is unknown, but would probably be prior to 1830.
>
> James Marsden "took up" this station [Lake Cowal], also Billabong station, joining the village of Marsden, called after him, and which for over forty years was called Marsden's. Lake Cowal station was sold by Marsden to Clarence and Kennedy, and they sold it to Ricketson and Shinn about 1876, and the latter sold it to Samuel Wilson, of Lima Station, Benalla, in 1880, since which it has been held by our family.
>
> Caragabal station, surrounding Marsden, was taken up by Gibson about seventy years ago, and Fred Faithful Gibson held it till his death, and his still hold it. Morangerell [Morangarell] station, on the Bland [Creek], was taken up by Donald McGregor prior to 1850. He sent a load of hay to Forbes gold-rush [1860s], getting forty pounds per ton for it.

[302] Connor (2005, Chapter 4), Elder (2003, Chapter 4) and Gapps (2021).
[303] 'Storyteller. Early Colonial Days. The Biography of a Reliable Old Native, John McGuire', by W.H. Pinkerton (*Albury Banner & Wodonga Express* newspaper, 23rd November 1906, p.9).
[304] J. McGuire (cited Main, 2011; 2015, pp.66-67).
[305] Reynolds (1995, pp.75-77,79).

Marsden established a dairy on the Bland Creek, and sent butter to the Forbes rush, getting up to three shillings per pound for it.[306]

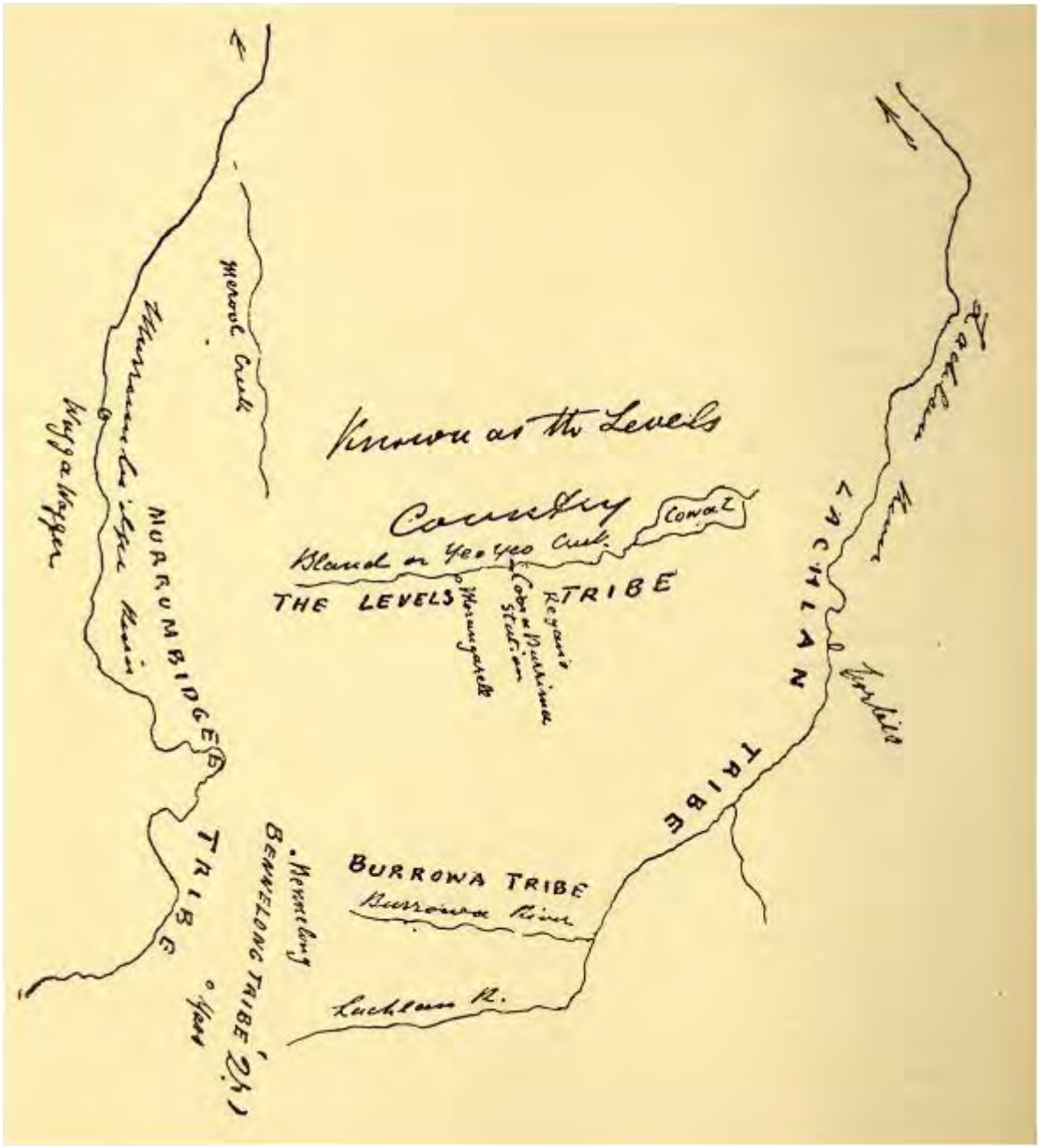

Fig.16. Map of the Levels Country (Woolrych, 1890, p.70). Note that the Aboriginal people in the vicinity of Lake Cowal are referred to as 'THE LEVELS TRIBE'.

A former settler, John Gale, estimated that in the late-1850s the European 'population was correspondingly sparse, that from Wallendbeen to Lake Cowal not amounting to 200 souls. The aboriginal tribes were however somewhat more numerous'.[307] In late-19th century, the Aboriginal people living round Lake Cowal, between the Lachlan and Murrumbidgee Rivers,

[306] Wilson (1923, p.373).
[307] 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 21st January 1924, p.4).

were referred to simply as the 'Levels tribe' (see Fig.16).[308] Former farmer at Lake Cowal, S. Wilson, wrote that in the 1880s, 'The Aborigines had large camps on the site of the present Lake Cowal Station Homestead'.[309] He claimed that:

> Rabbits were first seen here [at Lake Cowal] in 1886, and within ten years there were hundreds of thousands of them. … Grey kangaroos were exceedingly numerous in 1880-84, and over fifteen thousand were yarded and killed here. There are probably not twenty alive now [in 1923]. There were no red or blue kangaroos on this western side of the lake [Cowal], though on the eastern side they were numerous, and still are. There were a few wallaroos here once, and probably some scrub wallaby. Paddymelons were plentiful, but now extinct. Bulbys [bilbies] were once numerous. Emus were numerous and still are plentiful. There were a lot of dingoes, but they are now extinct.[310]

Apart from conflict with European settlers, Aboriginal people in the region surrounding Lake Cowal were also embroiled in violence between their own groups. A former settler gave an account of a fierce 'battle' at Boyd Creek, to the east of Lake Cowal, that took place between the 'Lachlan blacks' from Merriyabba and the 'Lake Cowal blacks' in about 1852.[311] In the early days of European settlement, Aboriginal groups would also meet in the vicinity of Lake Cowal for fighting as a means of resolving disputes. Former settler M.C. Butchart remembered that:

> Many tribal fights took place on the Bland Creek where the Lachlan and Murrumbidgee blacks would meet and settle their quarrels. One settler of the early days at Morangorell [sic., Morangarell Station, on Bland River south of Lake Cowal] told me of these clashes. On one occasion after a set to he had occasion to visit his dairy, an underground one, and while there felt that there was someone else present. He realised that an aboriginal in full war paint was hiding in a corner. He asked no questions but left, considering that the dairy for the time being belonged to the dusky warrior. He admitted having got a start and retired with all alacrity.[312]

The Study Region experienced a catastrophic collapse in the Aboriginal population during the late-19th century, due to factors arising from European colonisation.[313] In 1879, it was recorded that:

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[308] Cameron (1887) and Woolrych (1890, pp.63,70).
[309] Wilson (1923, p.374).
[310] Wilson (1923, p.374).
[311] 'The Lachlan Blacks. Some Old-time Stories. Weird Aboriginal customs' (*Forbes Advocate* newspaper, 16th August 1912, p.2). See also 'Days of Ben Hall. Outlaw of the Sixties. A Red Page of History' (*Sun* newspaper, 30th July 1912, p.10).
[312] 'A Retrospect. Pioneers and Women of the West' (*Grenfell Record & Lachlan District Advertiser* newspaper, 31st July 1930, p.6).
[313] For models of Aboriginal population collapse during the 19th century, refer to Butlin (1993, Part V) and Campbell (2016).

> Mr. Macgregor [owner of Morangarell Station] deposes to having seen as many as 400 of these blacks gathered together from various parts of the Bland, and their whole number is estimated to have been about 600 when the first white man set his foot upon their soil. Of this large aboriginal population, there remains but one survivor, old black Peggy, who clings to her ancestral home with a tenacity which nothing but death will sever. Since black husbands failed her, she has taken kindly to the white variety, and has been successful twice over. The first she tenderly nursed through his last illness, and decently buried him when all was over, and to her present lord she is said to show a degree of kindness which some wives of a different colour might do well to imitate.[314]

It is apparent that Wiradjuri people travelled widely across inland New South Wales during the late-19th century after European settlement, but prior to the restrictive Aboriginal welfare regime beginning after Federation. This is demonstrated in reminiscences of colonists about an Aboriginal albino woman in the 1870s, who had been variously seen in the Coonamble district, at Gulgong and at Lake Cowall, with the first-mentioned place being about 300 kms northeast of the last-mentioned place. According to one account of her, J.M. Perry and Peter McIntyre were goldminers who decided to become shearers, and with this objective they:

> They went down the Castlereagh [River]. McIntyre had seen an albino gin in the Coonamble district some time before, and they heard that she was with her tribe at Lake Cowall. They proceeded to Lake Cowall and met the tribe there. The gin was sitting by the camp fire, covered with an opposum [sic., opossum] skin rug. Her eyes were clearly red and her skin was a dirty white, but in all other respects she appeared to be true to aboroginal [sic., aboriginal] type. Her hair was a tawny color. A queer eruption on her skin did not add to her appearance. She was not very communicative, and after answering a few questions retired into her minmia [sic., mia-mia, 'shelter']. Her husband and her son were pure aboriginals. She appeared to be held in great veneration by the members of the tribe, who treated her with great respect, and did not appreciate visits by inquisitive whites. She was between 40 and 50 years of age, and appeared to be fairly healthy. Mr. Perry states that there appears to be considerable doubt among many people who have had experience with the aboriginals about the authenticity of the reports concerning the existence of an aboriginal albino, but his experience clearly proved that one existed at Lake Cowall.[315]

4.1.1 Aboriginal Breastplates

The historical sources for eastern Australia, and including the Study Region, refer to prominent Aboriginal people being recognised with royal descriptions.[316] From the mid-19th century,

[314] 'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).

[315] 'An Aboriginal Albino' (*Glen Innes Examiner* newspaper, 23rd July 1932, p.7). See also 'An Aboriginal Albino' (*Newcastle Morning Herald & Miners' Advocate* newspaper, 9th July 1932, p.6).

[316] Cleary (1993) and McCarthy (1952). See also https://www.nma.gov.au/explore/features/aboriginal-breastplates/military-gorgets (accessed 11th November 2022).

Aboriginal people who distinguished themselves in the eyes of the colonial authorities, including prominent pastoralists, were honoured with the gift of an inscribed metal plaque, which they were to hang round their necks. These plaques have been called by various names, but in earlier times were most often called 'breastplates', 'king plates', or 'brass plates', while museum researchers today refer to them as 'gorgets'. As artefacts, they are a blend of colonial and Aboriginal historical heritage.

The Indigenous people who were given a breastplate were those who Europeans considered important, but it is also likely that they were all individuals who had gained some prominence within their own community, albeit through connections to European authorities. It is also probable that in many cases the plates were given to people who were living on their own traditional country. McCarthy explained:

> The issue of many of these plates carried with it the fictitious title of chief, duke, prince, king or queen. There are, of course, no hereditary chiefs in aboriginal society, nor does an aristocracy or a kingship exist among them. There are individuals, both in undisturbed aboriginal groups and those in contact with the whites, who assert themselves as natural leaders because of their age and wisdom, strength of character, their knowledge of medicine and magic, or by their great fighting qualities, but their position is not inherited generation after generation.[317]

In 1912, newspaper correspondent, W.M. Sherrie, wrote an account of the Wiradjuri (Woradgery) who 'inhabited the country lying between the Upper Murray and the Murrumbidgee, and part of the north-eastern district of Victoria'.[318] He stated that the 'last of the 'pure-breds of this once mighty tribe was King Neddy [died 1912], who to the end of his days was sufficient of a barbarian to feel proud to display the brass plate which proclaimed the fact that he was still a monarch, though without a single subject or a kingdom'.[319] King Neddy was closely associated with the family of the settler John Francis Huon Mitchell, who as a collector of Wiradjuri words and the main source of Sherrie's information.

Tracking down the reasons behind the issuing of each breastplate is today difficult, as there is not a single concise official record for all those issued across eastern Australia, which until Australian Federation in 1901 was a large region administered as separate colonies. In a national catalogue of breastplates, there are comparatively many breastplates that are designated by the researcher as possibly being for Wiradjuri people.[320] Locating many of these

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[317] McCarthy (1952, p.327).

[318] 'Aborigines' Rites and Superstitions. The Woradgery Tribe', by W.M. Sherrie (*Sydney Mail* newspaper, 21st August 1912, p.46).

[319] 'Aborigines' Rites and Superstitions. The Woradgery Tribe', by W.M. Sherrie (*Sydney Mail* newspaper, 21st August 1912, p.46).

[320] These Wiradjuri breastplates include those assigned to 'Billy', 'King of Nanima'; 'Billy Dolly', 'Chief of Carriwong Creek; 'Billy Griffih' [sic.], 'King of Waradgery'; 'Brungal Tommy', 'King of Brungal'; 'Charley', 'Chief of Merri Merri'; 'Dennis', 'Chief of Morbringer'; 'Frederick', 'King of Gouboulion'; 'Henry Bates', 'King of Dundullamall; 'Jacob', 'King of Bathurst'; 'King Billy Lambert of Holwood', 'Kings Plains'; 'King Witti of Mudgee'; 'Oombejang Watson', 'Missionary Stockman', 'Wellington Valley'; 'Thommy Weavers', 'King of Curvy Kangaroo Swamp'; 'Toby', 'Given by Lieut Smart', 'Mudgee Policeman'; 'Tommy',

Aboriginal recipients in the landscape is difficult because of the use of station names that are no longer remembered. Due to the brevity of the names, it is also not possible to determine for most of them which families they belong to and how many may have living descendants. Of the breast plates catalogued in known collections, there are four breastplates that are relevant for Study Region, and these are:

> 'Dawalla', 'King of Wgga [sic.] Wagga' (south of Lake Cowal);[321]
>
> 'Jemmy Curraburma', Yeo Yeo Creek (north of Lake Cowal);[322]
>
> 'John', 'Chief of Burrooa' (Boorowa, southeast of Lake Cowal);[323] and
>
> 'King Joe', 'Presented by T Icely Bangaroo Station' (southeast of Lake Cowal).[324]

4.2 Missions, Reserves and Towns

The government of New South Wales became more active in the management of Aboriginal welfare after Federation.[325] Contemporary Aboriginal people who identify as Wiradjuri are widely spread across New South Wales. They are descendants of people who were relocated to mission reserves such as Brungle south of Gundagai, Erambie at Cowra, Nanima at Wellington and Mudgee, and the Wellington Common.[326] In 1939, Lake Cowal was one of the places that the Aboriginal welfare authorities inspected as a new site for the Menindee Aborigines camp, probably due to its remoteness from towns.[327] The site was not eventually chosen. The Aboriginal reserve at Condobolin remained large. In 1945, a report in a newspaper stated that:

> Manager, Aboriginal Station, Condobolin, advising it is proposed to connect the above reserve to the Municipal Water Supply. It is desired that the [P.P.] Board grant permission for the pipe line to be laid through section of land east and adjacent to the Goobang Creek under the Board's control.[328]

In 1938-39, Norman B. Tindale from the South Australian Museum visited Aboriginal settlements at Brewarrina, Boggabilla, Kempsey, Pilliga Station and Wallaga Lake in New South Wales, in order to compile genealogical and 'tribal' data.[329] In 1943, Berndt encountered

'Constable Wellington'; 'Wongamar', 'King of Merriganoury, Back Creek – Konimbla Creek – Lachlan River' (Cleary, 1993, pp.43,46,54,60,85,88-89,92,95,120-121,128-129)

[321] Cleary (1993, p.95).
[322] Cleary (1993, p.129).
[323] Cleary (1993, p.36).
[324] Cleary (1993, pp.60,129).
[325] Rowley (1972).
[326] Hale (1846, p.482), Rowley (1972, pp.196,203-207,212,306), Thinee & Bradford (1988, pp.41,76,362,370) and Tindale (1974, p.129).
[327] 'Aborigines' Camp' (*Forbes Advocate* newspaper, 4th August 1939, p.3).
[328] 'P.P. Board. Ordinary Monthly Meeting' (*Lachlander & Condobolin & Western Districts Recorder* newspaper, 22nd February 1945, p.4).
[329] Tindale (1938-39a, 1938-39b).

Wiradjuri people during his field trip to the Menindee Government Aboriginal Station on the Darling River in western New South Wales, where he met his two main informants, Jack King and Fred Biggs, who 'both belonged to the now dismembered Wuradjeri [Wiradjuri] tribe'.[330]

Apart from the missions, there were three Aboriginal reserves located in the Parish of Condobolin, to the north of Lake Cowal, consisting of the following: AR 80173/4, which was located on Boona Road on about 15 hectares, which operated from 29/11/1957; AR 84827, which was located on Gordon and Station Streets on about 6.5 hectares and operated from 3/4/1964; and AR 322512 (originally registered as AR 5988), which was located on the Lachlan River in the Parish of South Condobolin, and it operated from 13/4/1901.[331] These Condobolin sites are about 60 kms north of Lake Cowal. At Wagga Wagga, about 160 kms to the south of Lake Cowal, Aboriginal children were also placed in the Bungarimbil Boys'/Children's Home, which operated from 1957 to 1983,[332] and in the Gumleigh children's home, operated by the United Protestant Association from 1956 to 1983.[333] Since the late-1960s, more progressive legislation by the Commonwealth and the State has given more rights to Aboriginal people in New South Wales for managing their own communities, and with residential restrictions lifted the population became more widely dispersed.[334]

Through the 20th century and up to the present, Aboriginal identity for the Wiradjuri people in central New South Wales has been dominated by references to both family and local area. Anthropologist Gaynor Macdonald explained:

> Practices of introduction signify more than protocol for the Wiradjuri people of the central west of New South Wales: they point to an identity embedded in both country and networks of kin relations. Their style of introduction with questions of the newcomer such as 'Where are you from?', 'What's your country?', and 'Who's your mob?' is common throughout Aboriginal Australia and quickly becomes familiar. In such meetings, the Wiradjuri employ both spatial and social (kin-oriented) referents: 'Kate's from Narrandera, she's my cousin through the Browns'. Many of the 'grassroots' Wiradjuri people among whom I have worked over three decades will comment that a Koori [southeastern Aboriginal person] without country and relations (kin) is 'nothing'. They remain wary, even cynical, about those they call 'tick-a-box blacks' — people who have only recently asserted their Aboriginal, or more specifically Wiradjuri, identity in the apparent belief that there is something to be gained in doing so. 'Grassroots' Wiradjuri do not see such people as having kin and country. While they may warmly include them in social events, they do not accept them as having the culturally-acquired rights of 'way

[330] Berndt (1947, p.327).
[331] Thinee & Bradford (1998, p.349).
[332] Thinee & Bradford (1998, pp.110-111). See also the 'Find & Connect' webpage (https://www.findandconnect.gov.au/guide/nsw/NE00089, accessed 14th November 2022).
[333] Thinee & Bradford (1998, p.287). See also the 'Find & Connect' webpage (https://www.findandconnect.gov.au/guide/nsw/NE00390, accessed 14th November 2022).
[334] Kamien (1978, Chapter 2) and Rowley (1972, Sections 3-4).

> back' Wiradjuri, people who have lived all their lives 'being Wiradjuri' and who know their immediate and distant ancestors to also have done so.[335]

4.3 Cultural Flows

Aboriginal people of southeastern Australia believed that the health of the river system was maintained by the Creation ancestors, whose actions in shaping the land and making the waters were later celebrated in ceremonial dance, ritual and song.[336] It was a belief that after the Creation was over, these ancestors collectively either took the form of animals or people, but still maintaining a link to both. Across Aboriginal Australia, the spirits of the dead were generally seen as going to the Skyworld to join with the ancestors, who still maintained control over the Earth below.[337] For Wiradjuri people living on the Lachlan River, the river on Earth and the Milky Way in the heavens and were both known by the same name, Gular,[338] which indicates that they were probably seen as connected somewhere beyond the horizon. As stated above, Baiame had his camp in the Milky Way (see Section 3.2.1). In this way, the physical and cultural dimensions of looking after Country were closely intertwined.

Prior to the beginning of the intensive European management of the Murray-Darling Basin system, the region surrounding Lake Cowal regularly experienced severe floods, with the local Wiradjuri people in the practice of moving away from the major rivers when they saw the early signs of it coming.[339] A newspaper correspondent in 1879 explained:

> The backbone of the district is the Yeo Yeo or Bland Creek - for by these names it is known respectively in its upper and lower courses which, taking its rise near Combaning, flows in a tortuous course for about 150 miles [241 kms] in a northerly direction, and empties itself into Lake Cowal. Usually it is nothing else but a chain of waterholes, but these are often large and deep, retaining an abundant supply of water in all seasons. As it drains a large area of plain country, it is subject in wet seasons to high and dangerous floods, to the great inconvenience of that portion of the inhabitants who have made their homes in too close proximity to its banks.[340]

The amount of water contained in Lake Cowal varies widely throughout the year, due to rainfall in the catchments of the creeks feeding into it.[341] As such, ecologically it would have been a rich area for Aboriginal foragers. The newspaper correspondent in 1879 remarked that:

> After traversing a region so unvarying in its features, the appearance of Lake Cowal is truly refreshing to the eye of the traveller. In most seasons it is a very large

[335] Macdonald (2011, p.62).
[336] Clarke (2018b, 2018c).
[337] Clarke (2014, 2015, 2018d).
[338] Howitt (1904, p.432).
[339] Macdonald (2017, pp.63-64).
[340] 'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).
[341] Driver *et al.* (2013, p.27).

> expanse of water, many miles in circumference, but it would be of little purpose to give any definite measurement as it is continually contracting or expanding according to the rainfall. The oldest inhabitant testifies to its having been so low that he once drove a dray through the middle of it. One hardly thinks this is likely to happen again within the memory of man. In very wet weather it overflows at the further end, and the surplus water finds its way to the Lachlan River. At present it is truly a magnificent sheet of water. The eye strives in vain to catch its opposite banks, and one imagines himself standing on the shore of an inland sea. Its one detracting feature is the profusion of reeds which run for a long distance into its shallow water, as if the land and the lake, like some of the squatters, had also a "boundary dispute." Cowal abounds with animal life both on and under its waters. As a breeding-place for fish it could not easily be surpassed. After a flood they make a rush up the creek in myriads, to the great delight of the residents, who catch them in great numbers. But the attraction of the lake to the traveller consists chiefly in the endless variety of its waterfowl. Birds seldom met with elsewhere and only in widely different localities, are seen congregated here in great profusion. The ducks which, in small numbers, are to be found anywhere, are to be seen here in such multitudes as to cover large portions of the lake. The grotesque-looking pelicans have made this retreat their home. If there are any persons who still believe with the ancients that there are no black swans to be found anywhere in the wide world, they had better come here, and in one morning they will probably see more of those *rarae aves* [i.e., rare birds] than they have seen of their white congeners during the whole course of their past life. It would be hard indeed for the sportsman to find scene so much to his heart's wish as Lake Cowal. Its one disadvantage is its distant and secluded position. But it is evidently this very circumstance which makes it the favourite home of the waterfowl. The sportsman's gun drives away more than it shoots, and when its report becomes familiar here, Lake Cowal will be a silent sheet of water and nothing more.[342]

When Lake Cowal became very dry, it is likely that Aboriginal fishers used fishtraps to isolate their catch. European settlers are known to have used this technique at Lake Cowal. In 1882, it was reported in the newspaper that:

> For a long time (says the Forbes Times) Lake Cowal has been almost dry, the water on an average not being more than fifteen inches [38 cms]. When there was no moat to be had, owing to the scarcity of grass, the lake residents used to depend to a considerable extent on a fish diet. Stakes were driven in certain localities, and when nothing better was to be got on the station an order was given to "yard some fish." Shoals of cod and bream were thus driven into the enclosures, and those, not required for immediate use were salted and dried. A gentleman who has frequently engaged in this sort of piscatorial plunder informs us that some of the "big fellows" were often quite sunburnt on the back, owing to the shallowness of the water.[343]

[342] 'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).
[343] 'Running-in Codfish' (*Goulburn Herald* newspaper, 5th October 1882, p.6).

Lake Cowal transforms in flood time and has an impact on the surrounding region. For instance, on the 17th of April 1950 it was revealed that the town of Euabalong near Condobolin had become isolated by floods, caused by water said to have come from Lake Cowal.[344] Then on the 13th of June 1950, the local police had to use trucks to evacuate about 100 Aboriginal people from the government-run reserve, about 3 kilometres across the flat from Condobolin, to higher ground.[345] Three days later, it was estimated that 200 Aboriginal people had been removed from land threatened by floods.[346] On the 26th of June 1952, it was reported that 'A great inland sea, 60 miles [97 kms] long by 40 miles [64 kms] wide, has been created by flood waters at Lake Cowal, 40 miles [64 kms] south-west of Forbes. The rising of the "sea" has marooned 1,000 head of cattle and sheep on high ground and has isolated almost 30 homes'.[347]

Anthropologist Gaynor Macdonald has documented the contemporary desire by Wiradjuri people to have their country ecologically restored, after the severe damage to parts of the ecosystem through European mismanagement of the water resources.[348] The rivers and their numerous tributaries have immense cultural value to the contemporary Wiradjuri, who see themselves as occupying a Country dominated by watercourses.[349] Macdonald had worked with Wiradjuri people since 1981 and up until her recent passing away, and she had remarked:

> Wiradjuri people told me theirs was 'the Country of the three rivers': the Macquarie, Lachlan and Murrumbidgee; the major tributaries in the centre of the arc formed by the Barwon-Darling before it meets the Murray River. People on the Bogan were at pains to tell me that, really, there were four rivers. Scientists understand the Macquarie-Bogan as one catchment: presumably Wiradjuri ancestors also knew it as a single system.[350]

Today, Aboriginal people in southeastern Australia perceive that the wellbeing of their community is dependent upon the 'cultural flows' in the rivers and creeks of their country.[351] Leaving enough water to flow through the water courses serves to maintain or improve the cultural value of the whole river system.[352] Aboriginal people have asserted that the adequate allocations of water for cultural flow supports the continuation of their cultural activities, such as fishing, hunting, artefact-making, ritual and the maintenance of their knowledge on the tracks of the ancestors.[353]

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[344] 'Danger Passes' (*Newcastle Morning Herald & Miners' Advocate* newspaper, 17th April 1950, p.1).
[345] 'Floods Cover 600 Miles of Land in Sheep Area' (*Newcastle Sun* newspaper, 13th June 1950, p.1).
[346] 'Condobolin Waits for Lachlan Flood. Aborigines' Reserve Evacuated' (*Forbes Advocate* newspaper, 16th June 1950, p.1).
[347] 'Flood Forms Inland Sea' (*Brisbane Telegraph* newspaper, 26th June 1952, p.2).
[348] Macdonald (2017, pp.86-88).
[349] Macdonald (2011, p.66).
[350] Macdonald (2017, p.64).
[351] Birckhead *et al.* (2011, p.3), Jackson *et al.* (2021, pp.13,15-16), Morgan (2012) and Weir (2006).
[352] Maclean *et al.* (2012, pp.28,44-45).
[353] Jackson & Nias (2019) and Mooney & Cullen (2019).

4.4 Highlights of the Historical Accounts

The Study Region emerges as historically significant through the analysis of the available records. It has some history of frontier conflict, particularly between Aboriginal groups from the Lachlan and Murrumbidgee Rivers. The first European settlers referred to the local segment of the Wiradjuri people as the ‘the Levels tribe’. The heavy involvement of Wiradjuri people in the pastoral industry based within the country surrounding Lake Cowal led to English colonists using many of the local Aboriginal placenames, and some of these are still officially in use today.

Section 5: Summary of Cultural Mapping

This report has considered and assessed the intangible cultural heritage significance of places with the Study Region. The findings discussed below were chiefly drawn from the analysis of information gained from fieldwork with contemporary Wiradjuri representatives living in West Wyalong and Condobolin (Section 2). The description of the range and extent of contemporary Wiradjuri relationships with the Lake Cowal area is supported by background information from the overview of ethnographic and historical records (Sections 3 & 4 respectively). This section summarises the relationships that the present-day Wiradjuri people have with the lands and waters, as documented in the recent interviews during fieldwork and by the ethnographic analysis of their history. The recording of Wiradjuri views and perceptions of their Country, which is shaped by their understand of their cultural and historic heritage, has informed the conclusions and recommendations of this report (see Executive Summary).

5.1 The Nature of Contemporary Wiradjuri Heritage

The mapping of Wiradjuri Country from the point of view of contemporary Wiradjuri community members and their representatives has highlighted the places that they consider to be of primary importance in preserving their heritage. Six key places are listed (Section 2.2), and all of these are considered to have high heritage significance. These include those sites where Bora ceremonies and other rituals were held and where archaeological evidence of past Aboriginal land use practices has been located. Of the key heritage places and areas listed in this report, none will be directly impacted by the Project. The ceremonial site of the southeast bank of Lake Cowal is not within the Project area, so the impact here will only be indirect in terms of potentially being visible from the site. It is unlikely that the Project will further interfere with the view from the other sites.

Today, Wiradjuri people are living within a cultural landscape that is rich with tangible and intangible cultural heritage. The contemporary Wiradjuri people consider the maintenance of river and creek flows in the Lake Cowal area to be crucial for their cultural and physical wellbeing.

5.2 Wiradjuri Heritage as Reflected in the Historical Records

The discussion of Wiradjuri culture, as recorded by the ethnographic sources from the late-19th century, provides a background to the contemporary Wiradjuri views of the heritage places in their landscape. Based on the available evidence, it can be concluded that the carved tree taken from Lake Cowal in the 1930s (Fig.4), and which is now housed in the West Wyalong Local Aboriginal Land Council office, was originally associated with either a ceremonial ground or a burial ground (Section 3.2.4.3). While the exact location where the tree was removed is not documented, its existence, along with the trees near the lake that were scarred by bark removal (Section 2.1.2**)**, contributes to the archaeological evidence for the Wiradjuri presence at Lake Cowal.

The historical record for the Lake Cowal area provides only glimpses of frontier conflict between European settlers and the Wiradjuri people in the 1840s, but due to the generally poor reporting of Aboriginal killings as they were happening, it remains a possibility that something of this nature occurred at Bland Creek, as per contemporary Wiradjuri oral history (Section 2.1.5). The historical records do confirm that Aboriginal people would seasonally visit Lake Cowal, whether to camp or to organise fights with neighbouring groups (Section 4.1). The European settlers' use of Aboriginal placenames across the region demonstrates the early involvement of local Wiradjuri people in the pastoral industry, as well as provides a tantalising insight into the mythological traditions that would have explained the Country (Section 3.2.2.2 & Appendix A). In 1939, the Aboriginal welfare authorities were considering whether Lake Cowal was a suitable place to establish an Aboriginal reserve, although ultimately the maintaining of facilities at Condobolin was seen as a better option (Section 4.2).

5.3 Recommendations

Members of the contemporary Wiradjuri community require assurance that within the Lake Cowal area the Project will not affect animal and plant species, which are a key element to their local identity. As with any development in the region, assurance is required concerning the maintenance of water flows in the creek systems that ultimately drain into Lake Cowal.

It is recommended that the present close working relationship between Evolution Mining and the RAPs is maintained to ensure that Wiradjuri people continue to have access to Country, which is required for managing their cultural heritage. Linton Howarth has much knowledge concerning the Wiradjuri language and local placenames, and so should there be a need to integrate placenames into the Project, his involvement would be essential.

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Appendix A: Aboriginal Placenames

Table 5: Examples of official placenames with an Aboriginal origin in the vicinity of the Study Region.

Placename - Area	**Meaning**	**Reference**[354]
Belabala Creek – tributary of the Bland Creek, somewhere near Lake Cowal	*Boolla-boolla*, for 'the junction of two creeks'	Woolrych (1890, p.65). L. Hinton (pers. comm., 8th December 2022) remarked that there is at least one other creek junction on Wiradjuri Country referred to with this name. The place, Billa-bulla, is described as 'The two rivers'.[355]
Bir-bera (Bob-bera) – hills near the Moon-booka run, Bland Creek, ~ 15 kms southwest of Lake Cowal	*Boorri*, for 'a boy'; *boolla*, for 'two'; 'corruption of 'Boorri-boolla'; 'There are two rocks on the top of the hill which bear a fanciful resemblance to a couple of children, hence the name' *Burbirra*, for 'Aboriginal women drumming'	Woolrych (1890, p.65). Note that L. Howarth (pers. comm., 8th December 2022) doubted that there were two such rocks on top of the Booberoi Hills. L. Howarth for 'Booberoi Hills (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW). Refer to *burrbirra*, 'sound the drum by beating to drum' (W*iradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/84507).
Birran-birran – head station on a tributary of Bland Creek, somewhere near Lake Cowal	*Birrian*, for 'a kind of wood like colonial hickory'; 'Birrian-birrian or the camp where the 'birran' wood abounds'	Woolrych (1890, p.64).
Caragabal – town ~ 29 kms southeast of Lake Cowal	'Karagbilliko', possibly 'to spit'	'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6). Note that L. Hinton (pers. comm., 8th December 2022) thought this derivation is unlikely based on his knowledge of the Wiradjuri language.

[354] Note that all the website sites listed in this column were accessed on the 12th of December 2022.
[355] C. Rouse (cited Curr, 1886-87, vol.3, p.365).

Condobolin – town ~ 56 kms north of Lake Cowal	'Condobolin', for 'Hop bush' 'Cundabullen', for 'shallow crossing'	'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6). 'Condobolin' Aboriginal Meaning' (*Lachlander & Condobolin & Western Districts Recorder* newspaper, 16th October 1950, p.1).
Cooroo Boorrima – head station on Bland Creek, somewhere near Lake Cowal	*Cooroo*, for 'a kind of red kangaroo-rat'; *burima*, 'got him or catch him'; 'Here the name recalls to mind in association with the camp some remarkable chase after this kangaroo-rat'	Woolrych (1890, p.64).
Ganmian – town ~ 128 kms southwest of Lake Cowal	Gaymaan, for 'kangaroo grass'	L. Howarth (citing *Wiradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/89400).
Garema – town ~ 40 kms east of Lake Cowal	'Garema', for 'camp'	'Some Western Towns. How They Came by Their Names' (*Forbes Advocate* newspaper, 2nd July 1948, p.10).
Kooruggin – station on Bland Creek, somewhere near Lake Cowal	*Kooruggin*, for 'a bullock feeding'; 'This was probably the first place where they saw a bullock feeding'	Woolrych (1890, p.67). See also *gurruganbalang* for 'bullock and cow' (W*iradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/87728).
Kurra-wamby (Kaura-wamby) – head station on Bland Creek, somewhere near Lake Cowal	*Kurra*, for 'a pine tree [*Callitris* species]'; *wamby*, for 'carrying anything', 'The locality was associated with some scene or event in which a blackfellow carrying a pine log was the chief object'	Woolrych (1890, p.64). See also *garraa* for 'white cypress', 'Callitris glaucophylla' (W*iradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/83187).
Lake Cowal – large seasonal lake; Project area	'Cowal', 'a large water, lake, or swamp at the end of a creek'; 'Thus the Bland Creek empties during floods into a basin or 'Cowal''	Woolrych (1890, p.65).

	Named after Aboriginal man, Tommy Cowal 'Cowal', for 'lake' *Guwal*, for 'gully' or possibly a 'swampy depression' *Cowal'*, from 'Scottish *kyle'* - 'narrow strait, sound channel between two islands or an island and the mainland' (Gaelic *caol*)' *Gawuwal*, for 'lake, lagoon'	'Some Ugly Customers' (*Hillston Spectator & Lachlan River Advertiser* newspaper, 7th December 1906, p.3). Wilson (1923, p.373). Dixon *et al.* (1992, p.192); Ramson (1988, p.176). D. Nash (2008, cited Tent, 2012, p.1); see also Queensland Department of Environment & Resource Management (cited Tent, 2012, p.1). L. Howarth (citing *Wiradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/88354).
Manna Mountain ~ 14 kms northwest of Lake Cowal	*Munya*, for 'manna'; 'This is the highest hill and finest landmark in this part of the district, the Manna lagoon is at its base on the east. The native name is Munya signifying manna, which is plentiful there'	Woolrych (1890, p.66), who remarked 'This word appears to me remarkably like the Hebrew for manna – i.e. Man hu as given in the Imperial Dictionary'. Presumably 'manna' refers to the edible exudate from the foliage of *Eucalyptus* trees.
Moonbooka (Moonbukka) – head station on Bland Creek, somewhere near Lake Cowal	*Mooeen*, for 'a spider'; *booka*, for 'any good-for-nothing thing, or a thing decayed away'; 'Probably in this case the name refers to a venomous spider found in the locality'	Woolrych (1890, p.64). See *muwin* for 'one kind of ground spider' (*Wiradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/88781)
Moora Moora – station ~ 50 kms northeast of Lake Cowal	'Moora Moora' for 'fat'	'Between Condobolin and Wyalong' (*Lachlander & Condobolin & Western Districts Recorder* newspaper, 28th September 1910, p.1).
Morangarell – station ~ 59 kms southeast of Lake Cowall	'Morangarell', for 'one of the waterholes in the creek'	'Notes of a Tour Through the Pastoral District of the Bland' (*Australian Town & Country Journal* newspaper, 4th January 1879, p.18).

	Morang, for 'a cockatoo'; *gareel*, 'a little reed spear'; 'Picture a cockatoo killed by a little reed spear' 'Morangerell', means 'white cockatoo' Murungal, for 'River red gum'	Woolrych (1890, p.65). Refer to *muraay* for 'Cockatoo white' (*Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/87966). Wilson (1923, p.373). L. Howarth (citing *Wiradjuri Dictionary*, https://wiradjuri.wcclp.com.au/search/items/89495).
Mooyung-boyal – a place on Bland run, somewhere near Lake Cowal	*Mooyung-boyal*, 'the name signifies an owl coming out of a hole'	Woolrych (1890, p.65).
Nerang Cowal – station ~ 10 kms north of Lake Cowall	'Nerang', for 'small' *Ngaragarra*, for 'pointed' For 'Cowal' see entry for 'Lake Cowal'	Wilson (1923, p.373). L. Howarth, citing *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/87505).
Ootha – town ~ 52 kms north of Lake Cowal	'Ootha', for 'The ear'	'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6). Refer to *wudha* for 'ear' (*Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/88578).
Quandialla – town ~ 46 kms southeast of Lake Cowal	'Quandialla', for 'The porcupine [echidna]'	'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6). Refer to *guwandilala* for 'echidna' (*Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/87718).
Tallimba – town ~ 63 kms southwest of Lake Cowal	*Dhaaymbang*, for 'sharp, as a tomahawk'	L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/86273). L. Howarth said for axeheads 'This sort of stone is found around places like Tallimba where Aboriginal people would have taken that rock' (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW).

Terra-galonga – station on the Great Cowal at the junction of two creeks	*Ter'ra*, for 'like two arms'; *ga'long*, for 'where they meet'	Woolrych (1890, p.67).
Thooroong-galee – station near the Bland Creek, somewhere near Lake Cowal	*Thooroon*, for 'snake'; *galee*, for 'pleasant, convenient'; 'the blackfellow's tradition related that a monstrous snake came out of the ground here and the water immediately gushed from the hole made by it' *Durrumang*, for 'young snake'	Woolrych (1890, p.67). Refer to *gadhay* for 'pleasant' (*Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/85350). L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/89762).
Tullibigeal – town ~ 67 kms northwest of Lake Cowal	*Dhalibigiyal*, from *dhulu* ('spear') and *bigeal* ('wood')	L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/8929).
Wagga Wagga – large town ~ 159 kms south on the Murrumbidgee River, south of Lake Cowal	Warga Warga, for 'many crows' Waga, for 'dance', i.e., dance place	'Crow Name for Wagga Defended' (*Daily Advertiser* newspaper, 1st November 1946, p.2). L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/87340).
Wamboyne Mountain – topographic feature ~ 3 kms west of northern Lake Cowal	'Wamboyne', for 'kangaroo' *Wambuwuny*, for 'Grey kangaroo'	Wilson (1923, p.373). L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/87789).
Wirrinya – town ~ 20 kms east of Lake Cowal	'Wirrinya', for 'large lagoon' (a reference to Lake Cowal)	'Change of Name' (*Forbes Advocate* newspaper, 17th October 1919, p.6).

Wyalong	Waylang, for 'hard fruits'	L. Howarth, citing the *Wiradjuri Dictionary* (https://wiradjuri.wcclp.com.au/search/items/86331). L. Howarth said 'The town Wyalong its name comes from the word which is hard shell nut. The nut that it refers to is actually the quandong' (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW).
Ungarie – town ~ 38 kms west of Lake Cowal	'Ungarie', for 'The thigh' From *Yunggaay*, for 'mallee fowl'	'What They Mean to Aboriginals' (*Grenfell Record & Lachlan District Advertiser* newspaper, 3rd October 1929, p.6). L. Howarth said 'The town Ungarie comes from the word Yunggaay which was Wiradjuri for Mallee Fowl. The area around Ungarie was predominantly Mallee country' (https://www.youtube.com/watch?v=y9cbYgmYuHI&ab_channel=LocalLandServicesNSW).
Yeo Yeo Creek – watercourse ~ 31 kms northwest of Lake Cowall	Yeo-Yeo, for 'Devil-devil'; 'original name of a waterhole on the Bland Creek' 'Yeo, Yeo', for 'Devil, Devil' 'Yeo Yeo', for pidgin-English 'Debbil-debbil'	Woolrych (1890, p.67). 'Local and General News' (*Temora Star* newspaper, 11th January 1902, p.2). 'Then and Now. Young and Its Surrounding Country. As It Was A.D. 1857-59 – As it Is A.D. 1924', by John Gale (*Daily Witness* newspaper, 21st January 1924, p.4).

Appendix B: CV of Dr Philip A. Clarke

Dr Philip A. Clarke BSc, BA, MA Qual., PhD
Consultant Anthropologist, Writer & Adjunct Senior Research Fellow at Griffith University 17 Duke Street, Beulah Park, South Australia 5067
Mobile: 0448812494
Phone: 08 83332595
Email: Philip@anthropac.com.au
http://www.anthropac.com.au/index.html

Employment History:

Philip Clarke held several positions at the South Australian Museum since arriving there as a **Volunteer** in March 1982. His first employment was as an hourly-paid **Interviewer** in a market research team that established the public perceptions of the Museum's front of house operation. The first contract jobs Clarke held were grant- funded positions. In May 1982, he was employed as a **Research Officer** on a grant from the Ian Potter Foundation to document Aboriginal ethnographic material from the Darwin area that was housed at the South Australian Museum. In January 1983, Clarke was employed as a **Research Officer** on a Commonwealth Department of Aboriginal Affairs grant to document the restricted Aboriginal men's objects held at the Museum. He left this research position in January 1984 to take up permanent employment as **Museum Assistant** in Anthropology, with the chief duties of collection management and assisting the Curator of Australian Ethnology.

From May 1986 to July 1992, Clarke concentrated on collection management functions of the Anthropology Division at the Museum, being first classified as **Registrar** and then **Senior Collection Manager**. His roles during this period included the development of culturally and scientifically appropriate computer systems for anthropological data and physically organising a collection of about 30,000 artefacts, which had never been properly curated. He was also able to do fieldwork and commence research in topics relevant to the collections.

In July 1992, Clarke became a **Curator of Anthropology**, and in October 1994 the **Senior Curator of Aboriginal Collections**. With his knowledge of the anthropological and archival collections, along with his university studies and fieldwork, Clarke was able to fill an interpretative role within the Museum. This involved being a state expert for dissemination of knowledge through answering inquiries, media contact, conference participation, giving public lectures and university seminars, organising exhibitions and publications. As a senior anthropologist employed by the state, Clarke was frequently asked to assess the cultural and historical significance of Aboriginal objects and sites under federal and state heritage legislation. As part of his duties as a state employee, he had to formally give evidence as an anthropologist in a royal commission, a federal inquiry and to the federal court. Since becoming a curator, Clarke did a number of consultancies through the South Australian Museum. These included working on ethnographic clearances for Aboriginal land councils and being a Visiting Curator at the National Museum of Australia for development of the Murray-Darling Basin travelling exhibition.

From 1993 to 1994, Clarke was **Project Manager** for the Extension Project grant to the South Australian Museum, which was funded $100,000 over two years through the Aboriginal and Torres Strait Islander Commission. This involved coordinating research leading to the production of reports and displays for Aboriginal communities who required assistance in compiling material for incorporation into local displays and museums under their control. The research in these projects combined historical data and contemporary fieldwork with museum collection objects and images.

Clarke was also involved in the provision of professional advice to Aboriginal communities wishing to set up ecotourism ventures and regional museums.

Clarke was employed as **Chief Investigator** from late 1995 to late 1997 on a project to document all Aboriginal men's secret sacred objects held in government funded institutions across Australia. This was funded a total of $228,000 over 2 years through Museums Australia, from a grant obtained from the Australian Cultural Development Office (later part of the Department of the Environment, Water, Heritage & the Arts). The project was successful in determining the scope of the repatriation issue for Australian collecting institutions in relation to Secret Sacred Objects.

With museum restructuring in late 1996, Clarke was given the additional position of **Coordinator of Anthropology** while remaining a senior curator in that department. His role was providing senior management with high level advice on anthropological issues, as well as disseminating information and providing leadership to the clerical and collections staff. As a senior anthropologist, Clarke was also able to mentor junior professional officers in the Anthropology Department, which then included the Aboriginal Family History and Indigenous community liaison sections. Clarke's employment in the Museum gave him extensive experience in managing grants, supervising permanent and contract staff and liaising with professionals in other institutions.

In November 1998, Clarke became **Principal Curator** for the Australian Aboriginal Cultures Gallery project (AACG) at the South Australian Museum. His primary role was to supervise the provision of ethnographic data to the project team and give direction to development of the content. A major function was ensuring that the stakeholders, who included members of the Museum Board, Government Steering Committee, Aboriginal Advisory Group and representatives of peak Aboriginal organisations, were kept informed of the team's progress. This gallery, which opened in March 2000, contains an Australian-wide survey of Aboriginal material culture, spread over two floors of the main Museum building. It is a unique display with an international reputation.

In March 2000, Clarke began working in a newly created position at the Museum, as **Head of Science**. Due to a museum restructure, in April 2001 he became **Head of Anthropology/Manager of Sciences**. He supervised about 40 scientists, collection managers and support staff. Concurrent with this position, Clarke ran the South Australian Museum's Return of Indigenous Cultural Property (RICP) program, which involved returning Secret Sacred Objects and Ancestral Remains to Indigenous communities. In this capacity, he also worked with the Northern Land Council on plans for the establishment of a keeping place/cultural centre at Warruwi on South Goulburn Island, western Arnhem Land. Clarke occasionally took leave without pay to work on consultancy projects for Aboriginal land councils and mining companies. He was successful in gaining research funding from the Christensen Fund for Dr Valerie Boll to conduct research between 2001 and 2005 on the impact of the cane toad upon the Yolngu culture of northeast Arnhem Land. In 2005, he worked with UNESCO in Timor-Leste on a museum heritage project. From 2005 until leaving the public service in late 2011, Clarke represented the Board of the South Australian Museum as a **Board Member** on 1979 Act Committee for Aboriginal Heritage at Olympic Dam.

Clarke left the South Australian Museum permanently in October 2011 to work as an **Anthropologist Consultant** and **Writer**. This allowed him to concentrate more on short-term consultancy projects, which has included native title, ethnographic clearances for mining companies, advising Aboriginal land council and interstate museums, establishing a traditional ecological knowledge seminar for the South Australian Government, and writing for commercial publications.

In February 2012 Clarke accepted a one-year half time position as **Senior Research Fellow** at Griffith University to study the potential impact of climate change on Indigenous communities in

southeastern Australia. This project received an award, *Planning Excellence Commendation. Cutting Edge Research & Teaching*, from the Planning Institute Australia. Upon the conclusion of this project in February 2013, he became an **Adjunct Senior Research Fellow** at the same institution.

Since April 2013, Clarke has participated as a **Senior Researcher** with the Indigenous Bio-cultural Knowledge (http://aibk.info/) working group within The Australian Centre for Ecological Analysis and Synthesis (ACEAS). In November 2014, the Banksia Foundation awarded the *2014 Indigenous Leadership for Sustainability Award* to the Indigenous Biocultural Knowledge (IBK) Working Group (http://banksiafdn.com/the- awards/42/252.html#aceas). There are several major publications coming out of this research.

In April 2015, Clarke was appointed **Adjunct Senior Research Fellow** at Federation University to pursue research into the ethnosciences and Indigenous Bio-cultural Knowledge (IBCK). In December 2015, he was appointed **Honorary Research Associate** (Anthropology) at the South Australian Museum. In February 2016, Clarke was re-registered as an individual **Expert Examiner** under *Part 1- Objects of Australian Aboriginal and Torres Strait Islander Heritage of the National Cultural Heritage Control List*.

In late 2017, Clarke started working as a **Senior Researcher** on a project funded by the Orana Foundation that is studying Indigenous food sources and their possible commercialisation. From early-2018, he has been engaged in research funded by the Australian Research Council investigating the early Indigenous relocation of plant species in eastern Australia. Clarke still takes on consultancy work in native title and cultural heritage, while actively writing. In early 2021 he was listed as a **Reporter** for the *Aboriginal and Torres Strait Islander Heritage Protection Act* (ATSIHPA).

University Degrees:

1979-82	Bachelor of Science, University of Adelaide. Majoring in Botany & Zoology
1984-87	Bachelor of Arts, University of Adelaide. Majoring in Anthropology
1989	Master's Qualifier, University of Adelaide. Geography
1990-95	Doctor of Philosophy, University of Adelaide. Social Anthropology & Human Geography

Professional Society Membership:

Fellow, Australian Anthropological Society
Fellow, Society of Ethnobiology
Fellow, Royal Society of South Australia
Fellow, International Society for Archaeoastronomy & Astronomy in Culture
Consulting Member, Anthropological Society of Western Australia
Member, Anthropological Society of South Australia
Member, Australian Institute of Aboriginal & Torres Strait Islanders Studies
Member, Genealogical Society of South Australia

Writing Record:

Doctoral Thesis

Clarke, P.A. 1994. *Contact, Conflict and Regeneration. Aboriginal Cultural Geography of the Lower Murray, South Australia*. Ph.D. thesis. Social Anthropology & Human Geography. University of Adelaide, Adelaide.

Native Title and Land Rights Reports

Clarke, P.A. 2022. *Anthropological Report on the Finniss River Region Land Claim No. 237 (Beds & Banks)*. Prepared for the Northern Land Council, Darwin, 3rd November 2022.

Clarke, P.A. 2022. *Supplementary Anthropological Report for the Wulna (NT Portion 2001) Land Claim No. 155*. Prepared for the Northern Land Council, Darwin, 17th October 2022.

Clarke, P.A. 2021. *Anthropological Report for the Wirangu Sea Claim.* Prepared for South Australian Native Title Services, Adelaide, 11th June 2021.

Clarke, P.A., Stead, J. & Coad, L. 2021. *Re: Wirangu #2 Part B SAD6019/1998. Anthropologists' Reply to Dr Kingsley Palmer's Anthropologist's Responsive Report 2021*. Prepared for South Australian Native Title Services, Adelaide, 22nd March 2021.

Clarke, P.A. 2020. *Anthropological Connection Report for the Jangga People #3 Native Title Determination Application.* Prepared for the Jangga People on instruction from Dillon Bowers Lawyers, Townsville, 24th November 2020.

Clarke, P.A. 2020. *Anthropological Memorandum of Advice on the Responsive Native Title Claims: ML 32327 and ML 32328.* Prepared for the Northern Land Council, Darwin, 6th November 2020.

Clarke, P.A. 2020. *Preliminary Anthropological Connection Report for the Registration Test of the Jangga People #3 Native Title Determination Application*. Prepared for the Jangga People on instruction from Dillon Bowers Lawyers, Townsville, 30th October 2020.

Clarke, P.A., Stead, J. & Coad, L. 2020. *Anthropological Report for the Wirangu #2 Native Title Claim Part B (SAD6019/1998)*. Prepared for South Australian Native Title Services, Adelaide, 7th September 2020.

Cane, S., **Clarke, P.A.**, Coad, L., Liebelt, B. & Stead, J. 2020. *Rights and Interests in Relation to the Wirangu No 2 - Part B Native Title Claim (SAD6019/1998) and the Nauo No 3 Native Title Claim (SAD63/2018). Response to Propositions Report from a Conference of Experts*. Prepared for South Australian Native Title Services, Adelaide, 24th February 2020.

Clarke, P.A., Stead, J. & Coad, L. 2020. *Wirangu Rights and Interests in the Wirangu #2 Part B Area SAD6019/1998.* Prepared for South Australian Native Title Services, Adelaide, 5th February 2020.

Clarke, P.A. 2019. *Anthropological Report. Rocklands Pastoral Lease*. Prepared for the Northern Land Council, Darwin, 1st November 2019.

Powell, F. & **Clarke, P.A.** 2019. *Notes for Responding to the State's Submission to the NNTT Review*. Prepared for the Gimuy Walubara Yidinji People on instruction from P&E Law, Cairns, 28th September 2019.

Clarke, P.A., Stead, J. & Coad, L. 2019. *Wirangu No 2 Part A SAD 6019/1998. Response to the Report of the Conference of Experts. Report Provided by Federal Court Registrars Colbran and Parkyn on 19 August 2019 Following the Conference of Experts convened on 14 and 15 August 2019 involving Dr Philip Clarke and Ms Lyn Coad (Applicant), Dr Kingsley Palmer and Mr Tom Gara (State).* Prepared for South Australian Native Title Services, Adelaide, 6th September 2019.

Powell, F. & **Clarke, P.A.** 2019. *Gimuy Walubara Yidinji People QUD23/2019 Anthropological Report for the Cairns Regional Inquiry*. Prepared for the Gimuy Walubara Yidinji People on instruction from P&E Law, Cairns, 22nd July 2019.

Clarke, P.A. 2019. *Preliminary Anthropological Report for the Jangga People #2 Application.* Prepared for the Jangga People on instruction from Dillon Bowers, Townsville, 20th June 2019.

Clarke, P.A. & Stead, J.J. 2019. *Anthropological Report for the Wirangu No 2 Native Title Claim Part A SAD 6019/98*. Prepared for South Australian Native Title Services, Adelaide, 27th May 2019.

Clarke, P.A. 2019. *Anthropological Report on the Existence of Native Title Rights and Interests for Section 2900 in The Hundred of Strangways*. Prepared for the Northern Land Council, Darwin, 3rd May 2019.

Clarke, P.A. 2019. *Preliminary Anthropological Report on Aboriginal Groups Who Might Hold Interests Under the Native Title Act 1993 in Relation to the Lands of the Anangu Pitjantjatjara Yankunytjatjara Lands Rights Act 1981*. Prepared for Adelta Legal, Adelaide, 11th April 2019.

Clarke, P.A. 2019. *A Report on a Northern Land Council Meeting with Uwynmil Claimants for the Woolner – Mary River Beds & Banks Land Claim No.192, Held at the Mary River Resort on the 25th February 2019*. Prepared for the Northern Land Council, Darwin, 8th March 2019.

Clarke, P.A. 2019. *Supplementary Report Addressing Anthropological Issues from the NT Government in the Woolner - Mary River Beds & Banks Land Claim (No. 192).* Prepared for the Northern Land Council, 8th March 2019.

Clarke, P.A. 2018. *Anthropological Report for the Proposed Wirangu Sea Claim*. Prepared for South Australian Native Title Services, Adelaide, 30th May 2018.

Clarke, P.A. 2018. *Supplementary Anthropological Report for the Wirangu #2 Native Title Claim SG 6019/98*. Prepared for South Australian Native Title Services, Adelaide, 2nd February 2018.

Clarke, P.A. 2018. *Anthropological Report for the Apple Tree Creek Area*. 1st February 2018. Report prepared for Queensland South Native Title Services, Brisbane.

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Appendix E
Archaeological background

EMM
creating opportunities

E.1 Summary of archaeological investigations in the Project area

Sections 5.1 to 5.3 provide an overall summary of the regional and local archaeological context of the Project area based on information obtained from previous investigations and approvals as outlined in Table 5.1.

Given the large amount of work completed, the detailed summaries of these investigations/approvals have been provided below.

E.1.1 Archaeological assessments completed from 1989–2011 (prior to the 2003 IACHMP)

The following sections are summaries of the archaeological investigations conducted during the environmental assessment process associated with the planning of the development of the CGO. These investigations were completed to assess both the heritage values of the Project area in preparation for the Development Application (DA 14/98) for the CGO which was later approved in 1999, as well as to fulfill the requirements of the Development Consent (DA 14/98) prior to the development of the 2003 Indigenous Archaeology and Cultural Heritage Management Plan (IACHMP) (Barrick 2003). Below is a summary of the previous archaeological assessments conducted between 1989–2002.

i Paton (1989) Preliminary Archaeological Inspection of Lake Cowal Mining Exploration Lease

Following the discovery of gold in the Lake Cowal area in 1988, Rob Paton (1989) was engaged to conduct preliminary archaeological inspections at Lake Cowal including the proposed mine lease area. Paton was the first archaeologist to conduct works in the locality on behalf of the (proposed) CGO. Prior to his investigation, only three previously identified Aboriginal sites had been recorded in the region; two carved trees (AHIMS #43-4-0005), which are distinct from scarred trees, and an open campsite containing an axe and several scrapers on the southern shore of the lake (AHIMS #43-4-0003). The two carved trees, which are generally associated with burials, were recorded in the early 20th century as being located 'on the Bland, or Yeo Yeo Creek, north-west of Marsdens' which Etheridge marked on the Bland south of Lake Cowal (AHIMS numbers unknown but estimated to be AHIMS #43-4-0005) (Etheridge 1918, p. 37). The site records for the two trees associates them with a reported carved tree on Bogies Island on the northern shore of Lake Cowal, to the south-east of Nerang Cowal (not recorded on the AHIMS database). The locations of the trees remained unconfirmed by local landowners, though a 'Mr Duffy of Lake Cowal' was told that a burial ground existed somewhere on his property, though its precise location was unknown (Cane 1995, p. 10). While these previously documented sites are not located within the Project area, their identification in the locality indicates that burials have the potential to exist where deep sand bodies exist, and scarred or carved trees have the potential to occur within the landscape where remnant vegetation remains.

The aim of Paton's assessment was to investigate potential regional archaeological patterns in comparison with other lakes in Wiradjuri Country. As such, the report made several generalised predictions about the archaeological potential around the lake. The southern sandy shore of the lake was identified as a highly archaeologically sensitive area that may contain human burials due to the proximity of the lake and deep sandy deposits. Similarly, the clayey soils of the eastern and western shores were assessed as retaining moderate to high archaeological sensitivity, due to the proximity of the lake as well as potential lunette landform in the east. It's notable that his prediction for archaeological density is quite low (~1 artefact/25m^2) when compared to modern standards (e.g. 30+ artefacts/m^2). The lake floor and floodplains to the north of the lake were identified as having low archaeological sensitivity/potential as they would be subject to periodic inundation from the lake. Paton also suggested that the raw materials used for manufacturing stone tools were likely sourced locally, 'perhaps in the hills to the west' (Paton 1989, p.4). He did not identify any previously undocumented Aboriginal sites during his inspection.

ii Cane (1995) Campsites at Lake Cowal

Subsequent to the approval of project feasibility studies, a range of archaeological investigations were undertaken between 1994–1998 by Doctor Scott Cane, with the assistance of Roley Williams from the Wiradjuri Regional Lands Council, around Lake Cowal and North Limited's proposed Mine Lease Area. These reports (Cane 1995, 1996) detail the outcomes of surveys undertaken at the pit area, tailings dams, the lake shore, and the back plains. The purpose of the surveys was to determine the archaeological resource of the mine pit area that would be impacted by the proposed works, as well as develop an understanding of past Aboriginal land-use associated with the lake and back plains.

The survey efforts resulted in the identification of ten previously undocumented Aboriginal sites, comprising one culturally modified (scarred) tree and nine stone artefact surface scatters, shown on Plate E.1 and detailed in Table E.1. As shown in Plate E.1, there is a general background scatter of cultural materials west of Lake Cowal. Cane identified localised areas with high artefact densities as 'sites' to differentiate these lithic concentrations from the surrounding background scatter of artefacts. Following analysis of the stone artefact assemblages, Cane confirmed the archaeological patterning reflected the broader archaeology of the region. However, there were patterns evident in the raw materials and tool typologies that he determined to be unique to the Lake Cowal area, enabling him to make detailed interpretations of past Aboriginal land-use of the lake and the back plain landforms (Cane 1995, p. 49). Subsequent archaeological surveys conducted for the CGO and the corresponding analysis of the artefact assemblages supported these findings. As such, though a summary is provided below, it is recommended that Cane's 1995 report be consulted for a detailed analysis of his findings and interpretations.

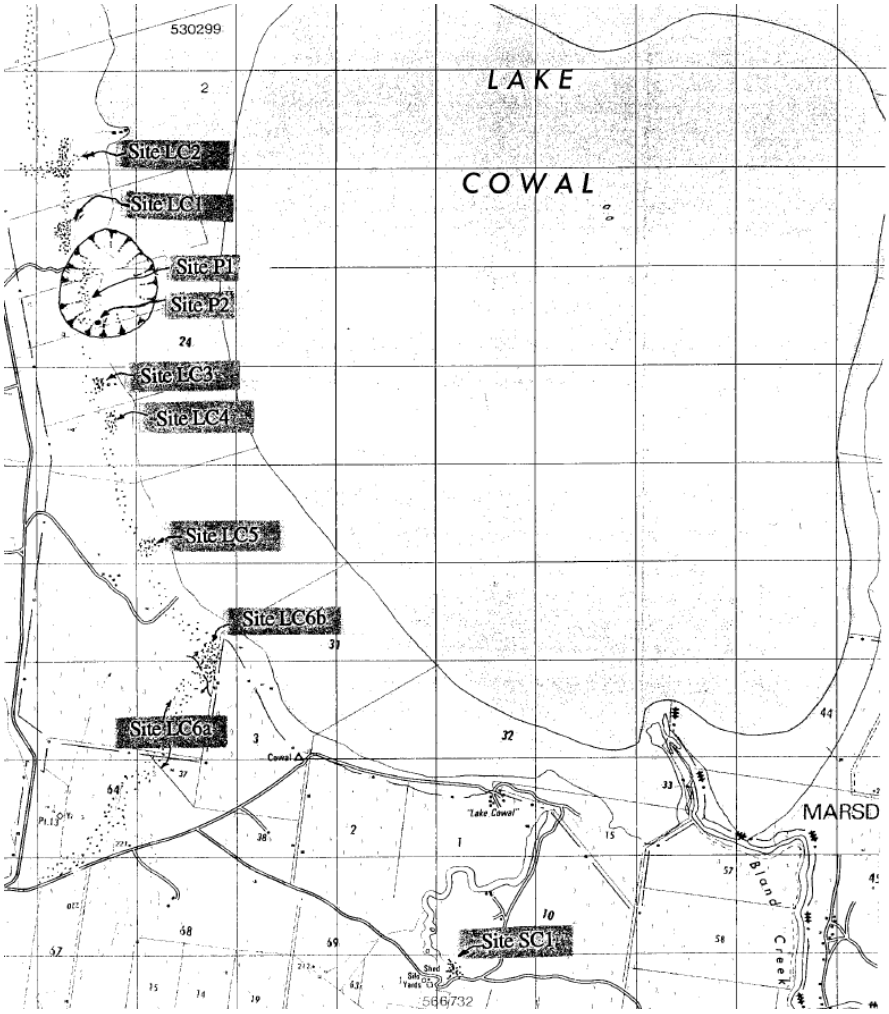


Plate E.1 **Aboriginal sites identified by the survey efforts. The dots represent artefact densities (Cane 1995, p. 25–26, Figure 4)**

A summary of Cane's interpretations is provided below (North Limited 1998, p. 15):

- There is considerably less archaeological material in the vicinity of Lake Cowal than might be expected from the environmental context of the Lake and the ethnographic information available for the lake. Where evident, the settlement patterns are reflective of some locations used for artefact manufacture, base camps and hunting. Occupation was at peak in the early spring of years when the lake was full, and the population of migratory and breeding birds was greatest. People and raw materials, particularly chert, likely moved into the area from the north.

- Sites near the shores of Lake Cowal display a comparative abundance of backed blades, when compared to other locales in the CGO project area, and a relative absence of other typological pieces associated with food processing (e.g. modified flakes, scrapers, adze slugs and seed grinding implements). This was interpreted as reflective of hunting activities along the lake shore, driven by the exploitation of the significant bird habitats and breeding zones in this area. The relative absence of a diverse toolset (i.e. artefacts to support seed processing and consumption, or the construction, use and maintenance of woodworking tools) suggest that long term occupation of the lake was not the main function of the site. Conversely, the findings suggest that site occupation patterns are more reflective of short-term visits, largely associated with hunting, when the environmental conditions of the lake were optimal.

- The sites on the back plains west of Lake Cowal are comparatively sparse, and the artefact assemblages are characterised by higher proportions of quartz. Sites are small and low density, centring on Gilgai (small waterholes) and are reflective of ephemeral, nomadic use of the landscape. Sites closer to the lake shore are more consolidated and contained increased amounts of chert in the artefact assemblages. The quartz material recorded in the area reflects nomadic life in the hinterland of Lake Cowal, whereas the chert material reflects more complicated cultural processes and behaviour (trade, ritual, migration, technology and economic specialisation).

Table E.1 list the sites recorded during Cane's survey.

Table E.1 Summary of the archaeological sites recorded during Cane's survey (Cane 1995; North Limited 1998: Appendix E, 7-11)

Site name	AHIMS number	Description
Site P1	43-4-0007	Site P1 contains a continuous background scatter of artefacts concentrated in a band 50–100 metres from the lake shore (on the back plains). This concentration had a fairly low density of artefacts (generally less than 1 artefact/40 m²) with the highest concentrations in the order of one1 artefact/20 m².
Site P2	43-4-0008	Site P2 is a scarred tree on the south- west margin of the proposed mining pit. The tree, an older Red Gum, is located on the edge of the lake floor. The scar is 35 cm wide and 1.2 m long – broadly oval in shape. Regrowth has extended 10 cm in from the original scar outline onto the inner wood.
Site LC1	43-5-0021	Site LC1 is a comparatively rich site. It contains one1 artefact/2-3 m², 20 times higher than in the pit area just to the south. The site also contains a range of artefacts characteristic of a number of men's activities (adze flakes, burins, cores, and backed blades). Other tools such as seed grinding implements and modified artefacts are notably absent. Three hearths with heat retainers were located. The site is located ~150 m west of the lakeshore. It is thought to be a men's activity area (Cane 1995).

Table E.1 Summary of the archaeological sites recorded during Cane's survey (Cane 1995; North Limited 1998: Appendix E, 7-11)

Site name	AHIMS number	Description
Site LC2	43-4-0022	Site LC2 is more typical of a 'base camp' with flaked material scattered along both sides of a stream running into Lake Cowal. Artefact densities are as high as 4–5 artefacts/m²2 over the larger site area. The raw materials present were typical of the other sites with about 60% of the assemblage composed of fine black chert. The artefacts found at this site include flakes, flaked pieces, cores, modified flakes, backed blades, blades, hand axes, hammerstones, adze flakes, and ground artefacts.
Site LC3	43-4-0023	Site LC3 is relatively sparse and contains 28 artefacts in a sampled area of 400 m2.
Site LC4	43-4-0024	Site LC4 is a sparse, small artefact scatter adjacent to a small creek. Forty-four artefacts were recorded in an area of 360 m^2 (a density of ~1 artefact/10 m^2). Site LC4 is broadly similar to site LC3 with a high proportion of flaked pieces, blades, backed blades, adze flakes and burins. The artefacts are highly reduced and this may be associated with hunting and woodworking or be the result of artefact breakage through disturbance.
Site LC5	43-3-0025	This site contains artefacts scattered at a density of 1 artefact/60 m². Only 18 artefacts were noted and these included flakes, cores with a few hammers, grindstone fragments and an axe.
Site LC6 (a and b)	43-3-0026	Site LC6 has been divided into two parts: LC6a and LC6b. Site LC6a represents the accumulation of artefacts along the upper reaches of a creek, at least two kilometres west of Lake Cowal. It consists of a continuous scatter of materials along the creek and has an artefact density of between 1–5 artefacts/15 m². The density of material increases closer to the lake shore. The site has a comparatively high proportion of quartz artefacts (39%). Chert constituted 54% of the sample. The artefactual assemblage is dominated by unmodified flakes, cores, flaked pieces, and blades. Site LC6b is represented by an extensive scatter of artefacts within 100 metres of the shore of Lake Cowal. The artefacts were exposed in open hard pan areas at densities as high as 4 artefacts/m²2, with more general densities of at least 2 artefacts/m²2. Site LC6b was also dominated by black chert (68%), with little quartz (16%). The artefacts at LC6b include flakes, backed blades, cores and adzing tools. Only two small pieces of ground sandstone were noted, once of which has been used to sharpen ground edge axes. The assemblage at LC6b has been greatly reduced, with long thin flakes indicating precision flaking, economic use of available material and the production of microlithic preforms.
Site SC1	43-3-0027	Site SC1 is located on the southern end of Lake Cowal, well outside of the proposed development area.

In summary, Cane's observations suggested that the artefact sites within the proposed mine lease area reflected a settlement pattern which incorporates locations for artefact manufacture, base camps, and hunting. The abundance of backed blades along the lake shore is thought to reflect the exploitation of the rich bird population of Lake Cowal, which may have influenced the development of this characteristic microlith technology, as well as for use in warfare and ritual. The Australian Small Tool Tradition, notably backed blades, appears in the Australian archaeological record ~4,000 years ago and disappears ~2,000–1,500 years ago. Cane tentatively uses the presence of these backed blades to relatively date the sites as existing from at least 2,000 years old to the present but notes that some sites may present different chronologies outside of the Small Tool Tradition timeframe. He also interprets the presence of black chert (later accurately identified as a highly fine-grained volcanic (Pardoe 2009a)) as reflecting the movement of people and chert into the area from the north where known chert sources have been recorded at Manna and Wamboyne Mountain.

iii Cane (1996) Campsites at Lake Cowal – A Supplementary Report

Following the refusal of North Limited's original Development Application in 1995 on environmental grounds, as well as several queries by the National Parks and Wildlife Service (NPWS), additional archaeological surveys of the CGO were undertaken in early 1996 formulating a supplementary report to address these queries (Cane 1996). The survey results targeted the remaining proposed project area consisting of the back plains (also referred to as the Gilgai plains) to the west of the proposed pit location where the tailings dams and other infrastructure were proposed.

The survey resulted in the identification of eight previously undocumented stone artefact sites (Exposure A – Exposure H), which Cane more accurately describes as artefact exposures (Cane 1996). In general, the sites recorded on the back plain were dominated by quartz artefacts (77% of the total assemblage) and less amounts of chert (13% of the total assemblage) than the sites found in proximity to the lake. The distribution of cultural materials on the back plains represents a continuous, low-density background scatter similar to site P1 (AHIMS #43-4-007) with densities of around 1 artefact/20 m^2. As such, the sites were recorded where exposures in the landscape facilitated the identification of cultural materials, influencing the naming scheme. The sites, or artefact exposures, were predominantly located next to Gilgais rather than creeklines. It was observed that at the time of survey, the Gilgais held more reliable water than the creeklines, which may have been a contributing factor to preferred campsites in the past. Several sites contained site features in addition to stone artefacts, such as hearths (Lake Cowal back plains site D, AHIMS #43-4-0023) and heat retainers (E, AHIMS #43-4-0024). Lake Cowal back plains site G (AHIMS #43-4-0026) included a wider range of raw stone materials then observed at the other exposures, comprising quartz, chert, ground sandstone, volcanic and quartzite. This exposure also contained three heat retainers. A notable site is site H (AHIMS #43-4-0027), which comprises 30 artefacts recorded within a 40 m x 40 m area along a creekline, primarily comprised of quartz and chert, and a sandstone slab with two grinding grooves.

Cane's interpretation of the artefact assemblages recorded on the back plains suggested that the quartz exposures likely reflected routine domestic activities and nomadic campsites, while the dominance of chert sites around the lake edge may reflect more specialised activities such as hunting, ritual activity, or technological exchange (Cane 1995, 1996, p. 10). Based on his earlier findings of site LC6 (AHIMS #43-3-0026), he surmised that people with a quartz-based tool tradition travelled from the back plains along creeklines similar to the one associated with LC6 (AHIMS #43-3-0026), to the lake where they would possibly obtain chert tools through trade (Cane 1996, p.10).

Cane's management recommendations for the proposed mine note that a low-density, continuous scatter of artefacts are likely to be present across the project area, and that the recorded artefact exposures should be integrated into the management plan, but the focus should be the more specialised sites in proximity to the lake that would be impacted by the mine (i.e. P1 (#43-4-0007), P2 (#43-4-0008), LC1 (#43-3-0021), and LC2 (#43-3-0022)). He recommends that further documentation occur to better understand the archaeological landscape at Lake Cowal.

iv North Limited (1998) Cowal Gold Project Environmental Impact Statement, Appendix E – Archaeology and Ethnography

Cane and Nicholson (1998) were engaged by NSR/North Limited to provide an archaeological assessment of the Aboriginal cultural heritage values at Lake Cowal and assess impacts associated with the proposed project, as part of an Environmental Impact Statement (EIS) for the original proposed CGO. This report synthesised five archaeological reports (Paton 1989; Cane 1995, 1996; Huys and Johnston 1995; Nicholson 1997), which were all commissioned during various stages of the environmental assessment process associated with the planning of the Cowal Gold Mine. The report summarises the archaeological investigations and their results, and provides management recommendations to mitigate the proposed project's impacts on Aboriginal cultural heritage. Notably, the report included information from additional archaeological surveys that were undertaken for the new locations proposed for the tailings dams, part of the water pipeline, a small road realignment, and new electricity transmission line route to the south of the lake (Nicholson 1997).

The report documented an additional 10 previously undocumented Aboriginal sites which were recorded during the various survey efforts: sites Lake Cowal back plains site I (#43-4-0028) to Lake Cowal back plains site N (#43-4-0033), and site FAS3 to site FAS6 (AHIMS numbers unknown). These comprised generally low-density stone artefact scatters largely situated within the back plains landform.

The findings supported Cane's earlier 1995 and 1996 interpretations with the additional observation that sites to the north of the lake between Nerang Cowal and Lake Cowal were located on raised ground as they are situated within a floodplain (North Limited 1998, p.15).

The management recommendations involved collection of surface artefacts, open area excavation of site LC1 (AHIMS #43-3-0021) (the 'Men's site'), removal of the scarred tree site P2 (#43-4-0008) for display at the West Wyalong Land Council, and demarcation of the densest concentration of artefacts associated with site LC2 (AHIMS #43-3-0022) (basecamp) and avoid impacts if possible.

E.1.2 Archaeological assessments completed post-approval under AHIP 1468 and AHIP 1681 and prior to the 2018 Processing Rate Modification 14 (2002–2018)

The following sections describe the archaeological assessments undertaken following approval of the Development Consent (DA 14/98) for the Cowal Gold Project area, subsequent approval of Aboriginal Heritage Impact Permits (AHIP) Permit 1468/Consent 1467 and Permit 1681/Consent 1680, and development of the Indigenous Archaeology and Cultural Heritage Management Plan (IACHMP).

i Barrick Australia Limited (2003) Indigenous Archaeology and Cultural Heritage Management Plan

In order to conduct the archaeological works presented in the IACHMP, the CGP was required to obtain Aboriginal Heritage Impact Permits (AHIPs) and consents under s87 and s90 of the *NSW National Parks and Wildlife Act 1974* (the NPW Act). The permit and consent boundaries are shown on Figure 5.2 in Section 5.3 and are described below (Barrick 2003, p. 1):

- Permit 1468 authorising certain archaeological works to occur in the ML Area [ML 1535], water pipeline area and borefield area.
- Consent 1467 authorising the destruction of Aboriginal objects (in certain circumstances) in the ML Area, water pipeline area and borefield area.
- Permit 1681 authorising certain archaeological works in the relocated travelling stock reserve area and road upgrade area.
- Consent 1680 authorising the destruction of Aboriginal objects (in certain circumstances) in the relocated travelling stock reserve area and road upgrade area.

Following approval of the CGP, additional exploration activities continued, and several archaeological surveys were subsequently conducted (Barrick 2003, p. 7). Areas of the CGO subjected to further archaeological survey included the following:

- the Mining Lease area ML 1535
- the area of the four proposed bores west of ML 1535
- the area of the proposed water pipeline from ML 1535 to the borefield
- the area of the proposed relocated travelling stock reserve (around ML 1535)
- the road upgrade area (Wamboyne Road to ML 1535).

An additional 16 previously undocumented Aboriginal sites (LCB1 – AHIMS #43-5-0065 to LCB16 – AHMIS #43-5-0078) were identified by Pardoe in 2002, which were located within the borefield area north-east of Lake Cowal within the back plains landform (Pardoe 2002). The identified sites comprised 12 isolated stone artefacts and four stone artefact scatters, consisting of predominantly black chert flakes (recorded as black indurated mudstone) including a backed blade and three microliths. Other stone materials present included a grey fine-grained volcanic and quartz. These sites were interpreted as being the product of stone tool manufacture and unspecified tool use (Barrick 2003, p.15).

In 2002 the CGP's consultant archaeologist Dr Colin Pardoe developed a Research Design and Study Plan (the Plan) describing the required archaeological works to mitigate impacts to Aboriginal sites during construction and development of the CGO (provided in Appendix E.2). The IACHMP was appended to Barrick's applications for Permit 1468 and Permit 1681, (provided in Appendix E.2), which were approved in 2003. The IACHMP divided the project area into five zones of management identified as the lake bed zone, the beach zone, the slope zone, the lake edge ridge zone, and the back plain. These zones were identified based on their landforms, soils, potential erosion impact, recorded Aboriginal sites and archaeological potential. These zones are discussed in detail in Table 3.2 in Section 3.3.2i of this report. These landscape management zones have become instrumental in identifying landscape features and applying appropriate management measures.

Section 5.2 of the IACHMP provides a summary of the major approved management measures for each of the registered sites within the CGO project area, with detailed management measures contained in the Research Design and Study Plan as amended by Permit 1468 and Permit 1681 (Barrick 2003, p. 17–19). In general, the approved management measures for surface artefact sites involve the collection and documentation of a representative sample of artefacts, and storage for safekeeping within an onsite 'Keeping Place' until works in the locality are completed and the artefacts can be replaced. The remaining artefacts were to be collected with the soil during soil stripping operations and temporarily stored in soil stockpiles before being replaced during rehabilitation activities (Pardoe 2009, p. 27). Site P2 (#43-4-0008), the scarred tree, was to have the scarred section removed and conserved or put on display at an onsite 'Keeping Place'. Conservation works were applied to five sites (Lake Cowal back plains site B (#43-4-0021), C (#43-4-0022), D (#43-4-0023), E (#43-4-0024) and H (#43-4-27)), requiring the sites to be covered with geofabric and a sign posting to protect the site. In the event the site locations were proposed to be utilised, the CGO would be required to notify the DEC and consult with the Aboriginal community in order to proceed with the surface collection activities and eventual project works.

Consent 1467/Permit 1468 and Consent 1680/Permit 1681 were not restricted to previously recorded Aboriginal sites and authorise a range of management measures for both previously registered and previously undocumented Aboriginal sites that might be encountered within the CGO area where the Consents and Permits apply. Aside from the lake bed zone which has no declared management measures, a representative sample of artefacts associated with the site are to be collected, documented, and stored in the Keeping Place to be eventually replaced.

ii Pardoe (2009a, b) Archaeological investigations at Lake Cowal; Archaeological excavations at Lake Cowal

This report compiles the results of all the previous investigations undertaken as part of the environmental planning process associated with the development of the CGO since 1989. Pursuant to Permit 1468 a final report must detail the cumulative results of the works undertaken and their findings, including the spatial distribution of sites, technological and chronological considerations, and an interpretation of past Aboriginal land-use of the paleo-environments (Pardoe 2009). To fulfill this requirement, Pardoe analysed the results of all previous archaeological investigations as well as undertook extensive archaeological surveys across the entirety of the ML 1535 area and conducted several test excavations of key areas. In lieu of the proposed project impacts, a sample of artefacts was collected within ML 1535 where construction was proposed, though more intensive survey and collection was undertaken in the area proposed to be impacted by drilling. This is represented further in the summary in Plate E.6.

Pardoe describes in detail the various activities conducted for the CGO in accordance with the IACHMP and Permit 1468 and Permit 1681, providing a detailed analysis of the results of the surface collection and salvage excavation activities. The following activities were undertaken between 2003–2009 in accordance with IACHMP (Niche 2018, p. 26):

- monitoring topsoil removal
- collection of surface artefacts
- archaeological excavations of ovens (hearths) and stone artefact sites LC1 (AHIMS #43-3-0021), P1 (#43-4-0007), and LCE-1 – LCE-4 (north of site P2 (#43-4-0008), not recorded on the AHIMS database)
- additional archaeological inspections and surveys
- covering previously documented sites with geo-fabric and placing soil over the sites
- additional assessment of potential culturally modified trees
- relocation of culturally modified trees P2 (#43-4-0008), 73, 74 and 76 (AHIMS numbers unknown)
- archaeological analysis of the results of the above activities.

Salvage works were conducted at 14 sites being LC1 (#43-3-0021) – LC4 (#43-3-0024), Lake Cowal back plains site A (#43-4-0020), F (#43-4-0025), G (#43-4-0026), and I (#43-4-0028) – N (#43-4-0033). A representative sample was collected from each site, their positions recorded with GPS, and were bagged and temporarily stored in the Keeping Place located on site at the CGO. The remaining Aboriginal objects were to be collected with the soil during soil stripping operations and temporarily stored in soil stockpiles before being replaced during rehabilitation activities (Pardoe 2009a, p. 27). Conservation works were applied to four sites Lake Cowal back plains site B (#43-4-0021) – E (#43-4-0024) and H (#43-4-0027), which involved coverage of the exposures with geofabric and soil placed over top. The locations were to be sign posted to define the area as a cultural zone and to prevent inadvertent impacts. Systematic surface collections using 100 m^2 test areas across the back plains occurred before and after topsoil removal, allowing the opportunity to examine large areas of ground cleared of vegetation and gravel, which resulted in many ovens and lithics to be recovered across the project area (Pardoe 2009a, p. 29). These were recorded with a GPS, bagged, and stored in the temporary Keeping Place on site to allow further analysis to occur. A map of the sampling areas and corresponding artefact densities are shown in Plate E.2.

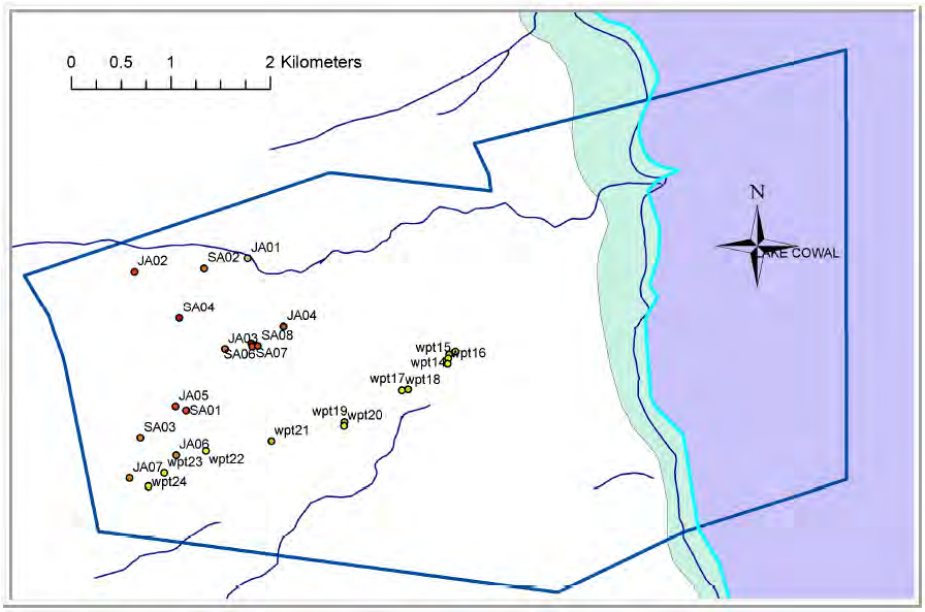


Plate E.2 **A map of the sampling areas on the Cowal Gold Project Mine Lease 45 [ML 1535]. Areas of greater density are shown in red and lower density are shown in yellow (Pardoe 2009a, Figure 14, p. 31)**

The results of the survey largely conformed to the findings of previous investigations. AHIP activities that produced informative results regarding the archaeological landscape at Lake Cowal included the monitoring works, test excavations, and radiocarbon dating of several deposits and ovens.

The locations proposed for test excavation shown on Plate E.2. and Plate E.3, were chosen based on surface distribution of lithic items [back plains; LC-1] and geomorphological features that indicated the potential for subsurface artefacts such as the alluvial fans created by the local drainage lines [beach zone; P1, LCE-1 – LCE-4] (Pardoe 2009a. p. 29). The test pits were excavated in 1 m x 1 m units by hand in stratigraphically determined units. The details of the excavations and their results are provided in a separate report (Pardoe 2009b).

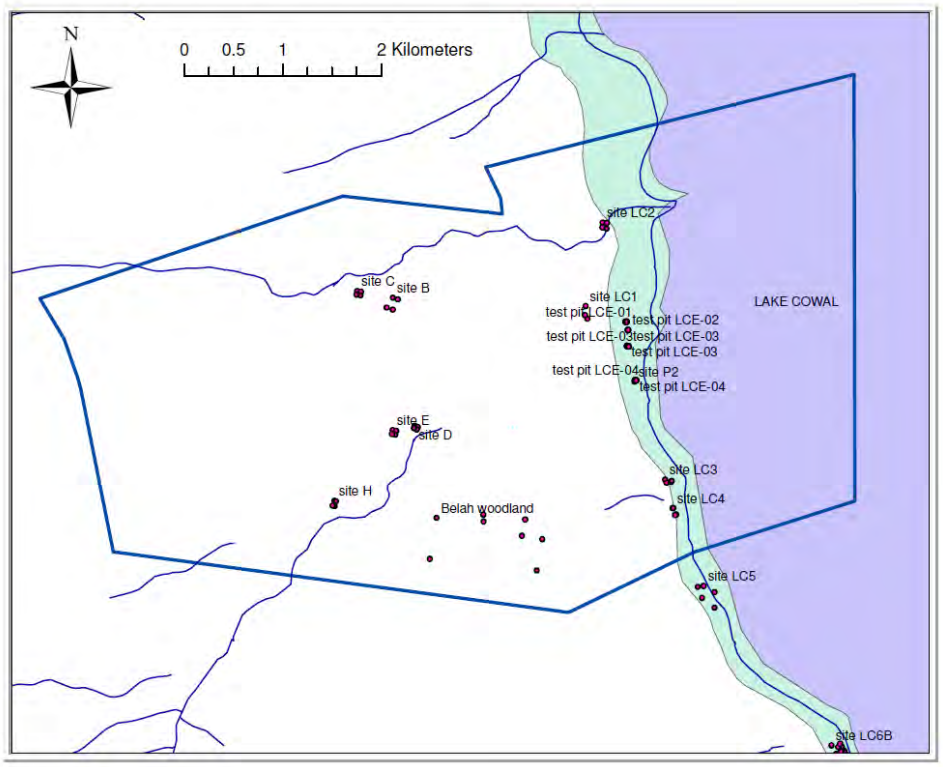


Plate E.3 **Showing the test excavation locations at Lake Cowal conducted by Pardoe in 2003 under Permit 1468 and Permit 1681 (ref. Figure 2, Pardoe 2009b, p. 2)**

The results of the excavation at LC1, which is situated on the back plain in proximity to the lake edge ridge, confirmed that the soils were not *in situ* as previously anticipated, and that the topsoils were windblown and subject to high levels of previous ground disturbance from past land use (Pardoe 2009b, p. 3). The test pit was excavated to a depth of 20 cm before reaching the eroded 'B horizon', as shown in Plate E.4 (Pardoe 2009b, p. 3–4). The excavation results also indicated that the three hearths were remnants of ground ovens (as identified by baked clay heat retainers) and that the oven remnants were not *in situ* but had been deflated by wind erosion causing the original soil profile to disappear, leaving behind the heat retainers sitting on the B horizon surface which was subsequently covered with disturbed, wind-blown sediments (Pardoe 2009b, p. 5). A sample of a heat retainer from an eroded oven associated with the site was collected for radiocarbon dating, refer to Table E.2, and yielded a date of 2,845 +/- 41 years BP (Before Present) (~895 BC) (Pardoe 2009b, p. 5). Pardoe notes that the original survey findings and subsequent surface collection of a representative sample was sufficient to inform the nature of the lithic items and therefore the activities that were occurring at the site (Pardoe 2009b, p. 3).

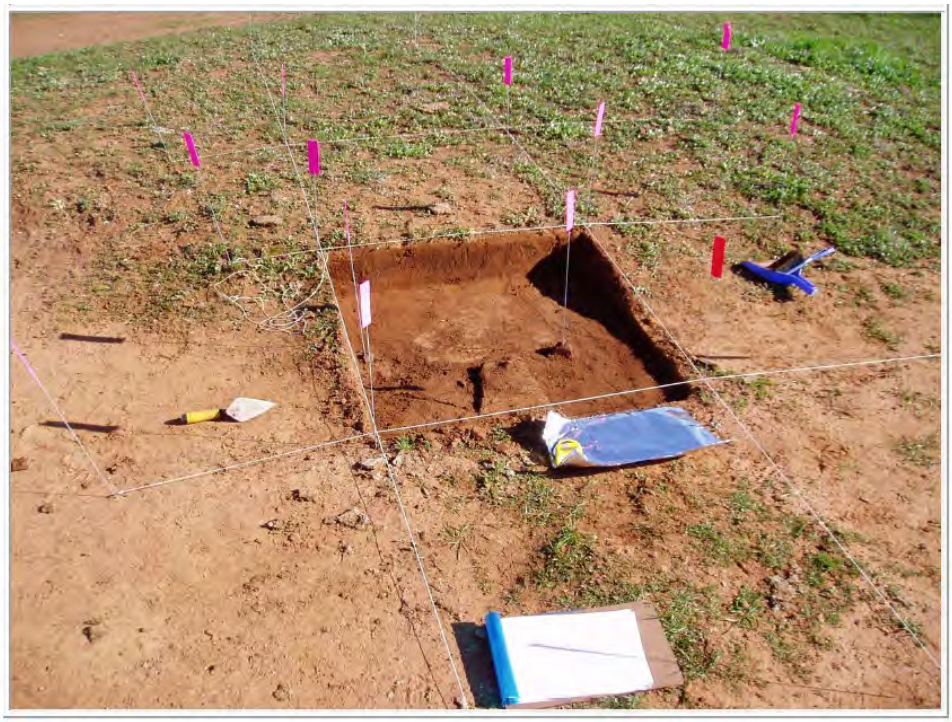


Plate E.4 **LC1 – Showing the scalds surrounding the hummock (raised soils) at LC-1. Test pit at side of hummock demonstrates reworked upper sediment (Pardoe 2009b, Figure 2, p. 4)**

The test excavations conducted at site P1 and LCE-1 – LCE-4, all of which are located on the beach landform at the foot of the slope, demonstrated that the soil profiles had been subject to far less previous ground disturbance.

The excavations on the beach landform reached considerable depths (<70 cm) in comparison with the excavation of LC1 (#43-3-0021). An example of the soil profile of LCE-1 (Fred) is shown in Plate E.5. Although the profile was deep only one waterworn mudstone flake weighing 5.0 g was recovered from unit 2 (10–20 cm), which likely eroded downslope onto the beach from the lake edge ridge (Pardoe 2009b, p.8). This gives the 10 m x 1 m trench an artefact density of 0.1 artefacts/m^2.

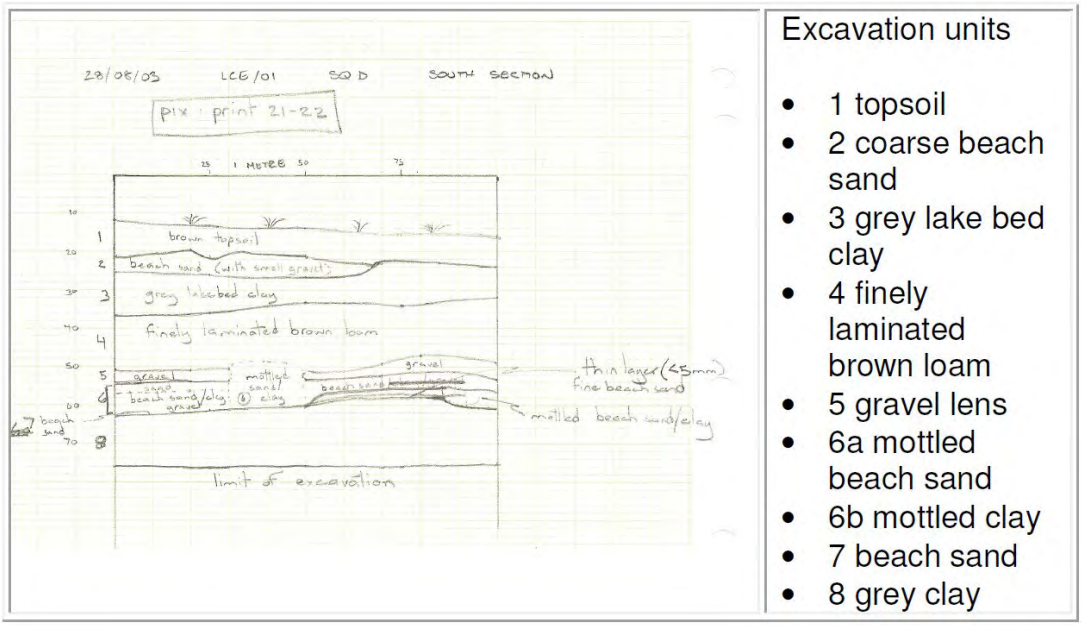


Plate E.5 **Test excavation pit LCE-1 (Fred), south wall section of square D, showing soil profiles and an excavation depth of 80 cm (Pardoe 2009b, Figure 6, p. 7)**

Test pit LCE-2 (Eagle) was the only excavation to result in the recovery of stone artefacts, cultural deposits, ovens, and materials suitable for radiocarbon dating. Five 1 m x 1 m square test pits were excavated to basal clays which were encountered between 40 cm and 80 cm depth. The excavations at LCE-2 demonstrated clear soil profiles indicating slope washed sediments (dark brown and black soils) overlying lacustrine deposits (mixture of coarse beach sands and fine grey lake clays that potentially contain significant organics) (Pardoe 2009b, p.9). The third unit (20 cm – 30 cm deep) was the thickest soil unit, composed of brown sand, and one that produced the most artefacts, though artefacts were recovered up to depths of 40 cm in other pits. An in situ oven was located in Unit (spit) 3 and samples were recovered for radiocarbon analysis, which yielded dates of 457 +/- 31 years BP. The salvage excavation of site LCE-2 resulted in the identification of several ovens and the collected samples yielded 10 radiocarbon dates for the cultural materials, which are summarised in Table E.2. Pardoe notes that the statistical errors associated with the dates are notably small, indicating they are reliable (Pardoe 2009a, p. 68).

Table E.2 Summary of radiocarbon dates obtained by Pardoe (2009a, p. 68)

Site name	Description	Depth of sample (cm)	Date (BP)
CGP09	Oven	Not recorded	1,197 +/- 36
CGP01	LC-1, Oven	Surface (0–5 cm)*	2,845 +/- 41
CGP08	Oven	Not recorded	3,498 +/- 55
CGP10	Oven	Not recorded	3,856 +/- 40
CGP07	LCE-2	10	200 +/- 31
CGP05	LCE-2	15	180 +/- 31
CGP06	LCE-2	20	457 +/- 31
CGP04	LCE-2	45	6,054 +/- 40
CGP03	LCE-3	20	2,934 +/- 33
CGP02	Base of occupation near lake	Not recorded	3,730 +/- 34

Note *Depth of sample has been interpreted from Figure 3, Pardoe 2009b, p. 5.

The results of the test excavations confirmed the potential for subsurface cultural materials to be present in the landscape, notably the beach landform, where previous ground surface impacts are minimal and the natural soil profile has been retained (Niche 2018, p. 27). Plate E.6 shows the distribution of ovens and hearths in the landscape identified during various surveys and surface collections, while Plate E.7 shows the location of the test pits, as well as edge-ground axes and grinding dish fragments collected during the salvage activities.

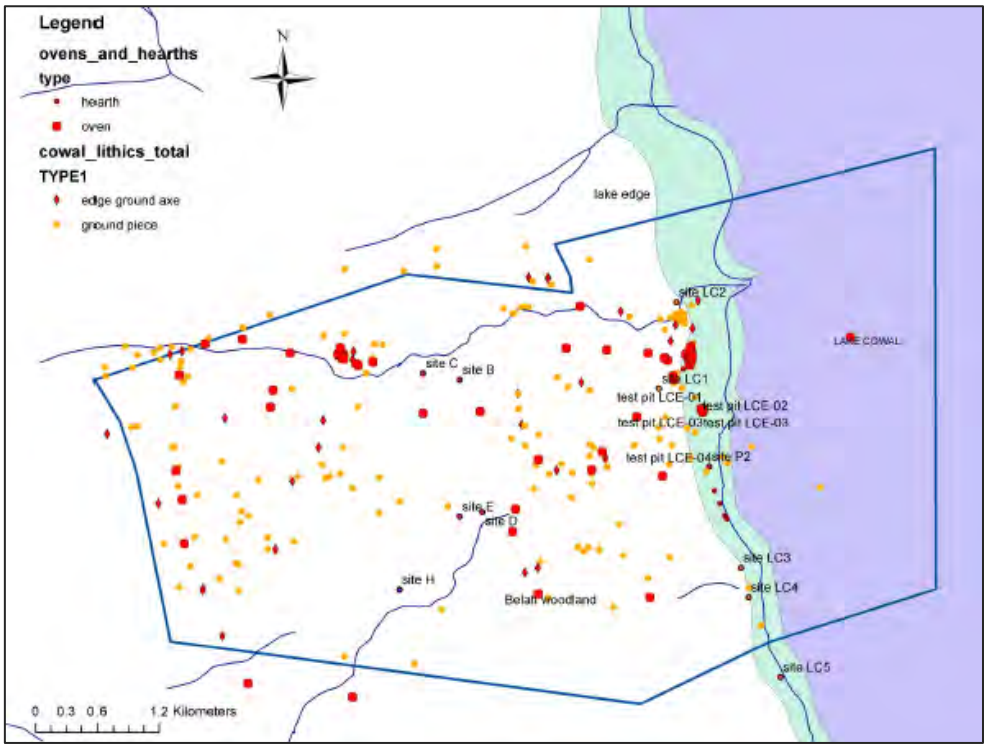


Plate E.6 **Locations of ovens and hearths in ML 1535 (Pardoe 2009, Figure 37, p. 65)**

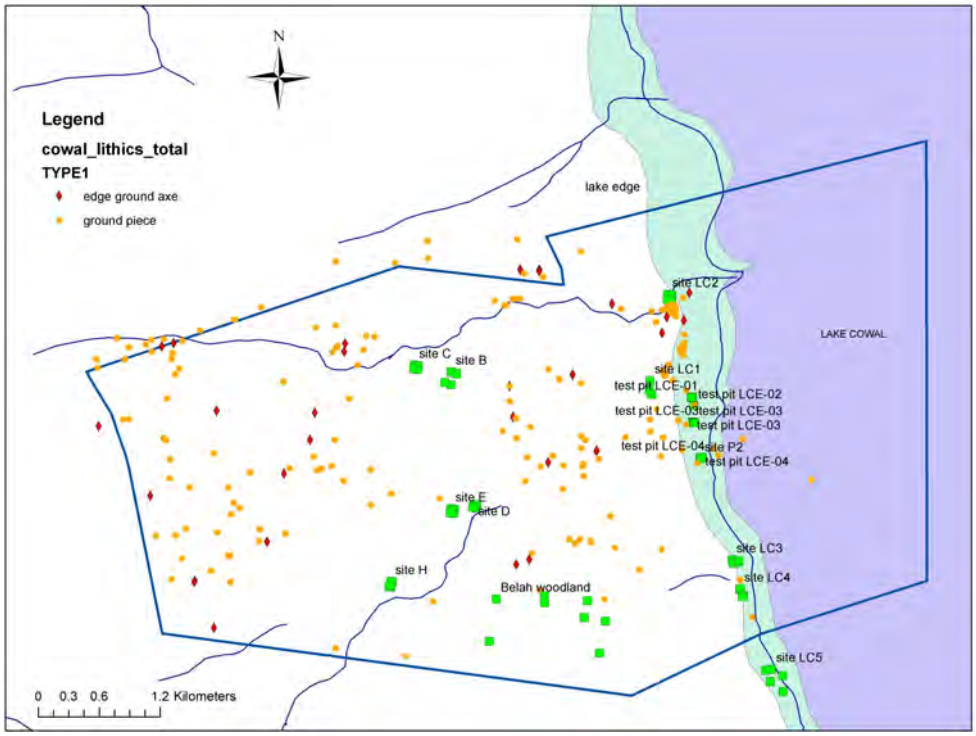


Plate E.7 **Locations of the test excavation pits and ground implements in ML 1535 (ref. Figure 27, Pardoe 2009a, Figure 27, p. 55)**

The radiocarbon dates returned from the salvage excavations demonstrate that Lake Cowal was occupied after the establishment of the region's current watercourses ~6,000–8,000 years ago (Pardoe 2009a, p. 70). The dates establish Wiradjuri occupation of Lake Cowal over thousands of years. Pardoe extrapolates this, noting that Lake Cowal is linked via the Lachlan River to the Willandra Lakes system, where occupation dates back +40,000 years BP (Pardoe 2009, p. 70). When the Willandra Lakes dried up following the end of the Last Ice Age, the Lachlan formed its new channel flowing east and south, suggesting even longer-term occupation of the region (Pardoe 2009a, p. 70).

Over 5,000 stone artefacts were collected and analysed during the salvage collection programs. Artefact typologies, shown in Table E.3 included flaked stone (debitage was the most represented artefact type), and ground-edge axes, grinding stones, axe-sharpening stones, hammerstones, and percussion stones were also recovered (Niche 2018, p. 27, Pardoe 2015, p. 1). Pardoe noted the collection program was subject to some sampling bias, as nearly all hammers, cores, grinding pieces, axes, anvils, axe sharpeners, and retouched tools were recovered as part of the representative sample (Pardoe 2009, p. 73). Most of the debitage was left with the soil, and he estimated the amount was over 10,000 pieces (Pardoe 2009, p. 73). Numerous microblades and backed artefacts were recorded, and some examples of larger blades had been manufactured then snapped to rectangular tools that could be resharpened (Niche 2018, p.27). Of the stone production typologies, 85 hammers and 441 cores were recovered, indicating stone tool manufacture was an important part of the Lake Cowal economy (Pardoe 2009, p. 73).

Table E.3 Artefacts recorded by Pardoe (2009) summarised by tool type

Tool type	Frequency	%
Flake	2,397	48
Debitage	1,691	33.9
Core	441	8.8
Ground piece	263	5.3
Hammer	85	1.7
Microblade	54	1.1
Ground-edge axe	32	0.6
Tool	25	0.5
Anvil	5	0.1
Total	**4,993**	**100%**

As identified in previous surveys, black chert (silicified volcanics) and quartz were the dominant raw materials present in the assemblage and most flaked stone was found on the back plains, with increased densities along the lake edge ridge and beach landforms, shown in Plate E.8.

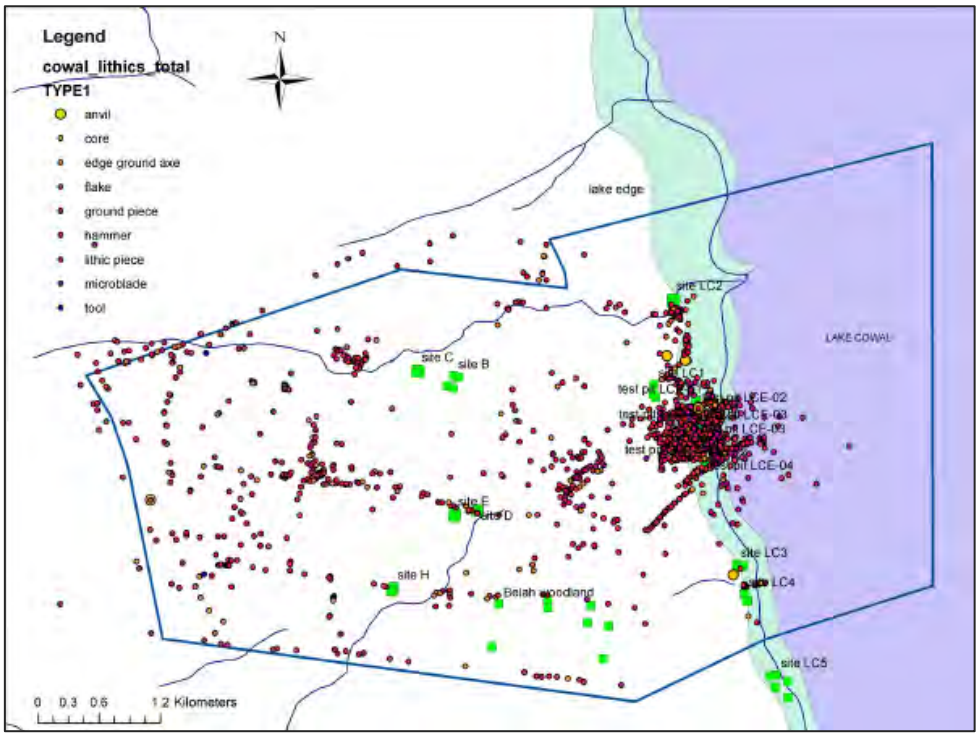


Plate E.8 Locations of stone artefacts in ML 1535 (ref. Figure 23, Pardoe 2009, p.47)

The four scar trees that were identified during various surveys were all box tree species, though only a single scar (WPT 076 on the previous TSR, not recorded on AHIMS) was positively confirmed to be of cultural origin, and was removed from the project area and stored in the temporary 'Keeping Place' on site of the CGO.

Pardoe concluded that the overall distribution of cultural materials showed that all areas west of Lake Cowal were utilised. The presence of several large sites with large ovens suggested that many people likely came to stay for possibly long periods of time (several months), most likely when the lake was full (Pardoe 2009a, p. 74). The abundance of ground-edge axes in various stages of manufacture, the known grinding groove site at Manna Mountain to the north-west, locally available material, and personal sharpening stones suggests that these tools were possibly exported to neighbouring groups (Pardoe 2009a, p. 47). Contrary to Cane's earlier interpretations, seed grinding was an important part of the local economy and high-quality indurated sandstone was a locally available in the surrounding hillsides. Though only one complete grinding dish was recorded during the works, as previously shown in Plate E.7, numerous grinding plate fragments and implements were recorded in the landscape, likely damaged and dispersed by historic farming activities. Many of the collected samples were so polished there was evidence of pecking to roughen up the surface to better grip the seed (Pardoe 2009a, p. 74).

The volume of archaeological investigations that have been conducted at Lake Cowal as a result of the development and operation of the CGO, has resulted in the documentation of a highly detailed archaeological record of the locality with discernible areas of human activities taking place in respect to the resources in the area (Pardoe 2009a, p. 73).

iii Pardoe (2013) Cowal Gold Mine Extension Modification Aboriginal Cultural Heritage Assessment (MOD 11)

Pardoe was commissioned to prepare an ACHA for a Modification (MOD 11) to the approved ML 1535 mine lease area, including a new pumping station to the east of Lake Cowal (refer to Plate E.9). Pardoe conducted an archaeological survey in May 2013 of the proposed MOD 11 area. The survey targeted areas considered to have the potential to contain Aboriginal objects based on aerial photography and mapping, as well as areas within 25 m of drainage lines. The survey included several previously recorded Aboriginal sites located within the proposed MOD 11 area, being B (#43-4-0021), C (#43-4-0022), and E (#43-4-0024) and the Wamboyne Back Plains Site 1 (#43-4-0044) (Pardoe 2013, p. ES-2). Pardoe notes that other Aboriginal objects have been previously recorded and collected within the proposed MOD 11 area under current approvals (Permit 1468 and Permit 1681), but those objects represented a component of the regional background artefact scatter of the CGO, rather than individual sites (Pardoe 2013, p. ES–2). Pardoe noted that ground surface visibility was poor at time of survey due to rain events exacerbating the effects of heavy vegetation cover.

The findings of the survey are consistent with those of the previous investigations conducted for the CGO (Pardoe 2013, p. ES-2). The survey efforts resulted in the identification of 86 previously unrecorded Aboriginal objects, dominated by flaked stone artefacts (n=37, 43%), ground implements (n=24, 28%), 'oven stones' (heat retainers) (n=22, 26%), and three ovens (3%) (Pardoe 2013, p. 59). Pardoe notes that 'oven stones' are baked ant beds that are most likely to be from ovens that have been disturbed by soil loss and historical farming activities (Pardoe 2013, p. 59). Pardoe does not provide a quantity of sites. Several stone technologies were represented in the assemblage including blades, cores, axes, grinding implements (including pestles, topstones etc.) and hammers (Pardoe 2013, p. 59). Pardoe notes that ground implements were common, indicating a reliance on seed for flour as both hard seed (mortar and pestle) and soft seed (dish and topstone) grinders are represented in the assemblage (Pardoe 2013, p. 59). A notable find was a large, weathered quartzite flake associated with site Wamboyne Back Plains Site 2 (#43-4-0045), the amount of weathering indicated to Pardoe that the flake may be of considerable antiquity. Several grinding dishes associated with this site were also heavily weathered, which he suggests indicates some antiquity (Pardoe 2013, p. 57).

Plate E.9 **Plate lake Showing proposed areas associated with MOD 11 in black and white hashing within ML 1535 and the Eastern Pump Station to the east. Current (2013) approved surface disturbance extent shown in light brown, and blue (Mine Water Supply Line) (Pardoe 2013, Figure 3, p. 3)**

Pardoe recommended the management and mitigation measures currently in place for the CGO are sufficient and should be applied to the proposed MOD 11 areas, though the proposed pump station would be designed to avoid impacts to identified cultural materials in the vicinity (Pardoe 2013, p. ES-3). Discussions for the management of the previously documented sites B (#43-4-0021), C (#43-4-0022), D (#43-4-0023), E (#43-4-0024), H (#43-4-0027), and the Wamboyne Back Plains Site 1 (#43-4-0044) and 2 (#43-4-0045) occurred throughout the ACHA process. All participants agreed that the Wamboyne Back Plains Site 2 (#43-4-0045) and its associated creekline be avoided, though the large, weathered flake considered to be of some antiquity would be collected and analysed (Pardoe 2013, p. 69). For the remaining sites it was agreed that a representative sample of Aboriginal objects be salvaged and collected for each site prior to works occurring (Pardoe 2013, p. 69). In addition, soil samples from all identifiable *in situ* ground ovens should to be collected and sent for radiocarbon dating, and residue analysis should be carried out on a sample of grinding implements (Pardoe 2013, p. ES-2).

iv Pardoe (2015) Summary of Stone Tools from Barrick Gold Mine

Pardoe was engaged by Evolution Mining Limited (Evolution) who acquired the CGO in 2015, to provide a summary of the lithic assemblage that had been salvaged, analysed, and stored in the temporary on-site Keeping Place during the construction phase of the CGO. A total of 5,158 had been collected by the previous salvage works in accordance with Permit 1468 and Permit 1681, comprising flakes, debitage (lithic pieces), cores, microblades, flaked tools, hammerstones, ground implements, ground-edge axes, and anvils (Pardoe 2015, p. 1). Their totals are shown in Plate E.10.

type of object	number
lithic piece	1739
core	449
flake	2435
microblade	54
flaked tool	26
hammer	87
ground piece	329
edge ground axe	34
anvil	5
total	5158

Plate E.10 Summary of stone tools identified at Lake Cowal collected in accordance with Permit 1468 and Permit 1681 (Pardoe 2015, p. 1)

Pardoe (2015) also provides photographs of sample artefacts, which are shown in Plate E.11 to Plate E.12 below. Plate E.11 shows an example of different types of flaked stone tools, while Plate E.12 shows examples of various ground edge implements.

Small flakes might be used once, re-fashioned into smaller tools, or be the by-product of manufacturing.	
Cores are left behind after all suitable flakes have been struck. They are sometimes used as chopping tools.	
Small micro-blades form composite knives or spear barbs	
Small snapped blades with serrated edges may be among the oldest tools at Cowal	

Plate E.11 **Examples of some of the flaked stone tools recovered at Lake Cowal in accordance with Permit 1468 and Permit 1681 (Pardoe 2015, p. 2)**

Axes are common at Cowal. There is local stone suitable for manufacture. They may be complete and well-shaped [right], rough blanks, or broken pieces with only the blade having been ground [left].	
Every axe needs its whetstone. Some are found in bedrock, such as at Manna Mountain. Others are portable. This fragment clearly shows the small groove.	
Hammers are common. Many are typical of the wider region. Like this one, they are round, with two flat grinding surfaces and an anvil pit for fine flaking or nut cracking.	
Topstones are the upper piece of a grinding dish or platter. They must fit comfortably in the hand, since they will be used daily to grind flour.	

Plate E.12 **Examples of ground implements recovered at Lake Cowal in accordance with Permit 1468 and Permit 1681 (ref. Pardoe 2015, p. 3)**

Several uncommon items have been identified and recovered at Lake Cowal including possible skin-working stones, a ball (possibly a toy, game, or bola), and a single lump of ochre recovered from a campsite that was likely used to colour and preserve wooden and string tools (Pardoe 2015, p. 4). Plate E.13 shows the total number of these more uncommon artefact types.

type of grinding object	total
axe	35
axe sharpener	11
hammer	93
mortar	20
anvil	4
dish or platter [part]	6
fragment of dish or platter	193
topstone	60
skin working?	7
ball	1
ochre lump	1
total	431

Plate E.13 Showing the total number of more uncommon cultural materials recovered at Lake Cowal in accordance with Permit 1468 and Permit 1681 (Pardoe 2015, p. 4)

In summary, Pardoe (2015) provides a table listing all of the Aboriginal objects recovered by the post-approval salvage works during the construction phase of the CGO, shown in Plate E.14.

type of object	flaked stone					ground stone					totals
	lithic piece	core	flake	microblade	tool	ground piece	axe	hammer	anvil	unidentified	
quartz (reef or conglomerate source)	997	165	504	9	2						1,677
chert	540	152	1,598	40	18					2	2,350
silcrete	56	40	144	4	3			1			248
quartzite	56	58	70		2	21	1	79	4	1	292
volcanic	38	15	77		1	2	28	1			162
metamorphic schist	2					5	1			1	9
laminated mudstone	13	5	10								28
indurated sandstone	3		3			259		2	1		268
coarse quartz sandstone conglomerate						8		1			9
ochre										1	1
chalcedony		1									1
unidentified	34	13	29	1		34	4	3			118
totals	1,739	449	2,435	54	26	329	34	87	5	5	5,163

Plate E.14 **Showing a list of all Aboriginal objects by type and material that have been recovered at Lake Cowal in accordance with Permit 1468 and Permit 1681 (Pardoe 2015, p. 5)**

v Niche (2018) Aboriginal Cultural Heritage Assessment, Cowal Gold Operations – Processing Rate Modification (MOD 14)

Niche (2018) were engaged by Evolution to conduct an ACHA for the CGO's proposed Processing Rate Modification (MOD 14), shown in Plate E.15. MOD 14 would result in an increase in ore processing rates, additional disturbance areas within and to the north-east of the existing ML 1535, a modification to the existing Tailings Storage Facilities (TSFs) to form one large TSF, and duplication of the existing water supply pipeline between ML 1535 and the Bland Creek Paleochannel borefield (bore 4) (Niche 2018, p. ES-1).

Plate E.15 Showing the existing ML 1535 (solid red boundary), the proposed MLA Modification 14 boundary (hashed red boundary), a modification component (black hashed pipeline), and the approximate extent of proposed additional modification surface disturbance (Niche 2018, Figure 2, p. 9)

The modification is situated on the micro-environment of the back plains, where there is known to be a continuous background scatter of stone artefacts and ovens/heat retainers which increase in density and size in proximity to Gilgai (which retained water at certain times) and shallow drainage depressions (Niche 2018, p. ES-1).

Niche conducted an archaeological survey over several phases in August and December 2017, which covered 95% of the proposed MOD 14 area (785.48 ha of land). The remaining 5% comprised 38.233 ha of the lake bed, which was inundated at the time of survey and therefore not surveyed. The results of the survey reflected the findings of previous archaeological investigations, and no major constraints were identified during the survey efforts. The survey was assessed as adequate and effective for the assessment (Niche 2018, p. 50).

A total of 65 previously undocumented Aboriginal sites were recorded during the survey, comprising a significant proportion of previously documented sites at the CGO. These sites were named Lake Cowal 2017-001 – Lake Cowal 2017-068. The survey identified 44 stone artefact sites (totalling 227 stone artefacts recorded) of which 12 sites included additional site features such as ovens and/or heat retainers, 17 individual heat retainers, two ovens with heat retainers, and one oven and one culturally modified tree (Niche 2018, p. 53). Most sites were identified on the Marsden and Wah Way soil landscapes, corresponding to Gilgai and alluvial plain landforms respectively.

For consistency across the background scatter of artefacts, Niche recorded any artefacts within 100 m of one another as the same site (Niche 2018, p. 56). The stone artefact sites were predominantly low-density scatters, though an artefact exposure of moderate density was recorded, site Lake Cowal 2017-036 (#39-4-0300), comprising 76 stone artefacts and a heat retainer. Most stone artefact sites contained between one and five artefacts, with very few sites containing more than ten artefacts. The dominant raw materials comprised fine-grained volcanics ('black chert') (n=151, 67%) and silcrete (n=32, 14%) (Niche 2018, p. 60). Niche noted these findings were similar to Pardoe's earlier work, except for the relative lack of quartz, which was attributed to being less visible in the landscape due to visibility conditions, or vehicle movement possibly crushing potential quartz artefacts and obscuring them on access tracks and firebreaks (Niche 2018, p. 61). Most artefacts (77%) had little to no cortex, suggesting that raw materials had been imported from some distance away, while 3% had entire cortical surfaces indicating there may have been local stone available in the nearby ranges though it may have been less frequently used (Niche 2018, p. 63). Notably one site (Lake Cowal 2017-057, #39-4-0273) contained a dense cluster of heat retainers in association with an intact oven and a stone axe. Niche interpreted this find as evidence of a 'pre-European Wiradjuri household cluster', where multiple shelters as well as several cooking/manufacturing areas would have been established (Kabaila 2005, p. 11; Niche 2018, p. 64).

Niche assessed several sites as having the potential to contain subsurface cultural materials. These included sites exhibiting high artefact densities (Lake Cowal 2017-031 (AHIMS #39-4-0304); Lake Cowal 2017-036 (AHIMS #39-4-0300); Lake Cowal 2017-041 (AHIMS #39-4-0295); Lake Cowal 2017-045 (AHIMS #39-4-0290); and Lake Cowal 2017-047 (AHIMS #39-4-0288) and site feature complexes, such as Lake Cowal 2017-057 (#39-4-0273), in stable alluvial landscapes (Niche 2018, p. 65). In contrast, any areas subject to heavy modification and disturbance were assessed as having low subsurface potential. In addition, Niche noted that intact ovens had high research potential due to the possibility of obtaining radiocarbon dates.

Several sites identified during the survey were assessed as having moderate to high archaeological (scientific) significance and research potential (Niche 2018, p. 70-80). These sites and their characteristics are summarised in Table E.4 below; all other sites identified by Niche were found to have low significance and research potential. Each site listed in Table E.4 was subject to at least a partial loss of value by the proposed implementation of MOD 14.

Table E.4 Summary of Aboriginal sites identified by Niche (2019) possessing moderate to high levels of significance

AHIMS ID	Site name	Site feature(s)	Description	Research potential	Rarity/ representativeness	Scientific significance
39-4-0324	Lake Cowal 2017-012	Oven/heat retainer	Although not an uncommon site type, the ability to obtain radiometric dates from ovens lends this site moderate research potential and scientific significance.	Moderate	Low	Moderate
39-4-0305	Lake Cowal 2017-030	Oven/heat retainer	Although not an uncommon site type, the ability to obtain radiometric dates from ovens lends this site moderate research potential and scientific significance.	Moderate	Low	Moderate

Table E.4 Summary of Aboriginal sites identified by Niche (2019) possessing moderate to high levels of significance

AHIMS ID	Site name	Site feature(s)	Description	Research potential	Rarity/ representativeness	Scientific significance
39-4-0298	Lake Cowal 2017-037	Oven/heat retainer	Although not an uncommon site type, the ability to obtain radiometric dates from ovens lends this site moderate research potential and scientific significance.	Moderate	Low	Moderate
39-4-0271	Lake Cowal 2017-055	Oven/heat retainer	Although not an uncommon site type, the ability to obtain radiometric dates from ovens lends this site moderate research potential and scientific significance.	Moderate	Low	Moderate
39-4-0311	Lake Cowal 2017-021	Culturally modified tree	Extensive land clearance practices around Lake Cowal have increased the rarity of CMTs, which also have moderate archaeological significance.	Low	Moderate	Moderate
39-4-0311	Lake Cowal 2017-021	Culturally modified tree	Extensive land clearance practices around Lake Cowal have increased the rarity of CMTs, which also have moderate archaeological significance.	Low	Moderate	Moderate
39-4-0313	Lake Cowal 2017-023	Artefact	This site contains a high density of stone artefacts in an undisturbed part of the lake edge ridge micro-environment. It was associated with subsurface archaeological potential which could be used to provide stratigraphic and dating information, and could be used to compare with sites on the Gilgai back plain.	High	Moderate	High
39-4-0300	Lake Cowal 2017-036	Artefact; oven/ heat retainer	This site contains a high number of artefacts exhibiting various stone working technologies (e.g. flaked, ground-edge) in association with heat retainers. The high number of artefacts suggests subsurface potential, and the location on the Gilgai back plain affords an opportunity to contribute to Pardoe's model of this micro-environment.	High	Moderate	High
39-4-0273	Lake Cowal 2017-057		This site complex is located in a stable alluvial environment and contains subsurface potential. Similarly to Lake Cowal 2017-036, this site has the potential to furnish radiometric dates and provide further information on Pardoe's model of the Gilgai back plain.	High	Moderate	High

The overriding conclusion reached by Niche was that the project area contains a continuous background scatter of cultural material (generally in the form of stone artefacts with some ovens/heat retainers) punctuated by locales exhibiting evidence of higher intensity use by past Wiradjuri people. The variety of site types and associated features indicate the back plains were used for a range of activities such as camping, daily activities, stone artefact manufacture, the use and discard of stone axes, use of flaked stone tools to prepare foods and other items, grinding plants to produce flour, the use of ovens to cook foods, and scarring trees for material to be used for various things such as shelter or coolamons (Niche 2018, p. 66).

The impact assessment concluded that the cumulative impacts that would be as a result of MOD 14 were relatively low. The recommendations of the ACHA included updating the IACHMP to include the new Aboriginal sites identified during the ACHA process, application for a new AHIP or variation to the existing Consents/Permits to include cultural heritage aspects proposed to be impacted by MOD 14 while maintaining the current management regime (Niche 2018, p. ES-2). Documented oven sites Lake Cowal 2017-057 (AHIMS #39-4-0273), Lake Cowal 2017-030 (AHIMS #39-4-0305), Lake Cowal 2017-012 (AHIMS #39-4-0324), Lake Cowal 2017-025 (AHIMS #39-4-0308), and Lake Cowal 2017-037 (AHIMS #39-4-0298) should be excavated to collect dating samples prior to disturbance, and provision should be made to conduct informative analyses on suitable artefacts and/or materials including radiocarbon dating, geochemical characterisation of stone artefact raw materials, residue and use-wear analysis, and technological analysis of the salvaged stone artefact assemblage (Niche 2018, p. ES-2).

Following approval of the modification, AHIP C0004570 was issued to Evolution Mining on 27 June 2019 for the MOD 14 area for a duration of 14 years.

vi Pardoe, Fullagar and Hayes (2019) Quandong stones: A specialised Australian nut-cracking tool

The native peach or quandong has been documented as a desirable and staple source of food for Aboriginal people in Central NSW. The fruit and kernel can both be eaten, and the kernel can also be processed for use as a medicinal substance. The authors of this journal article analysed a set of 1,327 ground stone implements from 12 locations in the Murray Darling Basin, a region known for its scarcity — and sometimes complete lack of — stone raw materials. For this reason, it has been widely documented that Aboriginal people in this area were obligated to develop tools fit for multiple purposes, and multi-function stone tools are commonly identified. The analysis resulted in the identification of a class of single-function tool used for the processing of quandongs. Given the proliferation of multi-function tools, the identification of specialised quandong tools confirms Aboriginal people favoured the peaches as a food and medicine staple and developed a specialised tool kit to harvest and process them.

Quandong stones have been recorded within and in proximity to the Project area. The hammerstone shown previously in Plate E.12 is an example of a quandong stone. A quandong stone was also identified during an Aboriginal heritage due diligence inspection conducted by EMM on the south-west margin of Lake Cowal (site LCF_CGO_2020_ST1, AHIMS #43-4-0162) discussed further in Section E.1.3.i.d (EMM 2020e).

E.1.3 Archaeological investigations and post-approval activities conducted by EMM Consulting prior to the 2023 CGO Open Cut ACHA (2019 – 2022)

The following section describes the various Aboriginal heritage due diligence assessments, post-approval salvage collections and test excavation activities (Permit 1468/c. 1467 and Permit 1681/c. 1680) undertaken from 2019–2022 by EMM Consulting.

i Aboriginal cultural heritage due diligence assessments

EMM was engaged by Evolution to conduct a variety of Aboriginal cultural heritage due diligence assessments for proposed exploration activities within several of the CGO's Exploration License (EL) areas from 2019–2021, discussed below. The project areas are shown in Section 5.3, Figure 5.1.

Site inspections were completed as part of the assessments to ensure that the proposed drill locations would not impact on any Aboriginal objects/sites. All site inspections identified suitable alternative drill locations if Aboriginal objects/sites were found within or in proximity to the proposed drill locations. The management recommendations for all assessments provided an Unexpected Finds protocol and recommended the avoidance of any Aboriginal sites by demarcating their locations with high-visibility curtilage to avoid inadvertent impacts. In the event where the precise drill hole locations had not been confirmed at the time of the inspection, it was recommended that an archaeologist or member of the Wiradjuri community inspect the proposed locations once confirmed prior to drilling.

a EMM (2019a, 2019b) EL 7750 Exploration drilling program, October 2019 & December 2019

The proposed program would encompass drilling ~456 locations across three explorations zones within EL 7750; the Reflector Corridor, Central Cowal, and E46 North which are situated within the lake bed, beach, slope and lake edge ridge, and back plain microenvironments. A total of 25 previously undocumented Aboriginal sites were identified during the site inspection comprising: 11 artefact scatters, 8 isolated stone artefacts, and 6 potential culturally modified trees. All culturally modified trees were situated within the beach landform, while most of the artefact sites (n=9) were located on the back plain, followed by the beach (n=7), slope (n=2), and lake edge ridge landforms (n=1). Stone implement types included flakes and debitage, cores, and several blade flakes. The stone materials present included fine-grained volcanics (black chert) as the dominant raw material present, followed by quartz and silcrete (including a red silcrete core).

An additional site inspection of six proposed drill locations was undertaken in December 2019 within ML 1535 and the EL 7750 Reflector zone, in an area just south of the current mine and within the lake bed landform characteristic of Lake Cowal. No previously undocumented Aboriginal sites were identified during the site inspection. The area was assessed as having low archaeological sensitivity due to the limited number of artefacts previously recorded within the lake bed, which would be periodically inundated then transition to a vast featureless plain with deep grey cracking clays during dry periods.

b EMM (2019c) EL 8524 East Girral exploratory works, December 2019

The proposed program would comprise drilling 61 locations within EL 8524 located at East Girral ~13 km north-west of the CGO (Section 5.3, Figure 5.1).

A total of 12 previously undocumented Aboriginal sites were identified during the site inspection, comprising eight artefact scatters and four isolated stone artefacts. All sites were located on the back plains landform; with six sites situated within Gilgai terrain and two sites identified on the banks of ephemeral creeks. Several notable finds included a quandong hammerstone (site EG OS2 (#43-4-0153), numerous portable sandstone grinding plates, axe blanks, and potential hearths and heat retainers (sites EG OS1 (#43-4-0145) and EG OS4 (#43-4-0147)), and several potential culturally modified glass artefacts (site EG OS1 (#43-4-0145)). The stone materials present included grey fine-grained volcanics, sandstone, basalt, and quartz.

c EMM (2020c, 2020d) Foreshore Remnant Vegetation Enhancement Program (RVEP) and ML 1535 Groundwater monitoring bores (MBH6BH), July 2020

The proposed groundwater monitoring bores program (EMM 2020d) would comprise drilling six groundwater monitoring bores within ML 1535 which is associated with the lake bed landform. No previously undocumented Aboriginal sites were located during the site inspection.

Evolution (EMM 2020c) proposed to install sections of fence line within their Remnant Vegetation Enhancement Program (RVEP) area on the south-western boundary of the lake within ML 1535. The fencing was proposed on the lake bed, back plain, and ledge edge landforms.

Nine previously unrecorded Aboriginal sites were identified during the site inspection though none were located within the proposed project area. The sites comprised two isolated stone artefacts, two artefact scatters, and five scarred trees. The artefacts were made of various stone materials including quartz, chert, basalt, and quartzite. Notable finds included a fractured volcanic hammerstone (AHIMS #43-4-0183), and an artefact scatter (AHIMS #43-4-0180) containing 16 artefacts including a sandstone grindstone fragment and a basalt hammerstone centred around a culturally modified tree.

d EMM (2020e) InHabitat Lake Cowal, August 2020

The Lake Cowal Foundation (LCF) proposed to develop and operate InHabitat Lake Cowal, an eco-tourism accommodation destination featuring 15 semi-permanent eco tents and associated living and presentation facilities on the south-western shore of Lake Cowal. The proposed project is situated on the slope, lake edge ridge and back plain landforms and comprises a portion of the Lake Cowal homestead property (Section 5.3, Figure 5.1).

A total of ten previously unrecorded Aboriginal sites were identified during the site inspection, consisting of six isolated stone artefacts, three culturally modified trees, and one open artefact scatter. Raw materials present included grey fine-grained volcanics, black chert, silcrete and quartz. Notable finds included a polished sandstone grindstone (AHIMS #43-4-0158), a polished river cobble hammerstone with visible pitting (AHIMS #43-4-0160), and a unique culturally modified tree with artefacts (AHIMS #43-4-0162) described below.

AHIMS #43-4-0162 consists of a mature, culturally modified Red Gum on the lake edge ridge with ~40 stone tools and implements gathered at the base of the trunk. The implements gathered were all large artefacts, which would be obtrusive in the landscape and included quandongs, axes, axe blanks, grindstones, grinding plates/dishes, hammerstones, manuports (river cobbles), and large cores comprised of various stone materials such as sandstone, basalt, and volcanics. It was later confirmed the previous landowner collected the artefacts from his field to avoid damaging them with his farming equipment and placed them at the bottom of the scar tree.

e EMM (2020e) Cowal Gold Operations Underground Development Project (SSD 10367), September 2020

The proposed project would involve the construction and operation of an underground mine at the CGO and is subject to State Significant Development (SSD) application (SSD 10367). No ground surface impacts are proposed for the construction and operation of the underground mine, and any surface changes are the subject of a separate application, in the form of a request for modification (Modification 16) to the existing development consent (DA 14/98) under Section 4.55(2) of the EP&A Act. EMM prepared an assessment guided by the *Due Diligence Code of Practice for the Protection of Aboriginal Objects* (DECCW 2010) and though the project would not cause any impacts to Aboriginal objects/sites, consultation with Registered Aboriginal Parties (RAPs) for the project to address relevant Aboriginal heritage matters was conducted.

A site inspection of the ground surface above the proposed underground mine footprint was undertaken and did not identify any previously undocumented Aboriginal sites or areas of potential risk to Aboriginal objects in the highly unlikely event that slumping would occur as a result of the works.

f EMM (2021) Cowal Gold Operations Accommodation Village, March 2021

Evolution proposed to construct and operate a multi-dwelling residential development (accommodation village) on vacant land comprising the whole of Lot 7044 DP1115128 located immediately west of Boundary Street, West Wyalong (Section 5.3, Figure 5.1). A site inspection was conducted with the assistance of Linton Howarth of the West Wyalong LALC. No previously undocumented Aboriginal sites were identified within the highly disturbed project area. A quandong tree (native peach) was identified by Linton Howarth who noted that quandong trees are unique to the area and influenced the town name 'Wyalong', which is derived from the Wiradjuri word *quandong*. It was requested that should the proposed project go ahead, the quandong tree be retained and protected as it was a particularly fruitful tree in the area, and that the local Aboriginal community and general public be allowed to access it.

ii Post-approval surface salvage collection activities, December 2019 – October 2020

EMM (2020a, 2020b) was engaged by Evolution to undertake ongoing Aboriginal heritage mitigation works of various locations within ML 1535 from December 2019 – October 2020. Survey coverage and artefact locations recovered during the surface collection activities are shown on Figure 5.3 (Section 5.3).

A total of ~650 Aboriginal objects (predominantly stone artefacts) and several heat retainers were recovered during the surface collection works and stored onsite in the temporary Keeping Place pending further analysis. Four previously undocumented potential culturally modified trees were also identified during the works; three were opportunistically identified on the eastern shore of Lake Cowal during the surveys and would not be impacted by the proposed works. However, IWL South-ST1 (2019-273) (AHIMS #43-4-0140) was located within the existing approvals area (Consent 1467/Permit 1468) and required further assessment and mitigation measures prior to topsoil stripping of the area.

Test excavation at the base IWL South-ST1 (2019-273) occurred in January 2020 to determine if any subsurface cultural deposits were associated with the tree, indirectly validating the identification of the tree as having been anthropogenically modified through recovery of subsurface cultural deposits. The test excavation consisted of two 1 m^2 pits situated ~30 cm from the tree opposite each of the two small holes at the base of the trunk. The excavations were undertaken in 5 cm spits and both pits were similar, exhibiting a 20 cm thick compact clay silt topsoil (A1 horizon), onto a hard basal clay considered to be culturally sterile, shown in Plate E.16 and Plate E.17. A thin layer of scattered charcoal was identified ~10 cm below surface that was interpreted as potentially suggesting past fire activities. A single quartz artefact was recovered from test pit 2 and a number of bones were also recovered near the surface but were considered to reflect a recent death of a fox or other (likely) non-endemic animal of similar size.

Plate E.16 Test pits being undertaken in the vicinity of IWL-ST1 (2019-273) (#43-4-0140), looking west (EMM 2020a, p.7)

Plate E.17 **Test pit 2 adjacent to IWL-ST1 (2019-273), looking north-west. The undulations in this test pit reflect changes in the underlying subsoil and not anthropogenic modification (EMM 2020a, p. 8)**

Expert assessment of IWL South-ST1 (#43-4-0140) was completed in March 2020 by Urban Tree Management (UTM) which confirmed the tree to be of cultural origin. As the tree was subject to impact, it was removed and relocated to the temporary Keeping Place for safe storage on 17 November 2020, in accordance with the AHIP management procedures (UTM 2020). An Aboriginal Site Impact Recording Form (ASIRF) is pending submission to the AHIMS database for this site.

As part of the post-approval activities, a test excavation program was conducted in February 2020 within the Gilgai plains of the north-west portion of ML 1535, where previously documented sites Lake Cowal 2017-036 (AHIMS #39-4-0300), Lake Cowal 2017-032 (AHIMS #39-4-0303), and Lake Cowal 2017-031 (AHIMS #39-4-0304) are located (Section 5.3, Figure 5.3). The aims of the excavation program were to develop a better understanding of the potential subsurface materials present in areas where surface disturbances such as erosion and vehicle movement continues to reveal stone artefacts beneath the surface. Niche recommended “an excavation that is within the surface impact footprint and in an undisturbed area adjacent to the highest density of artefacts present on the vehicle track. The excavation should start as a test program seeking high densities of subsurface artefacts and extend into trenches or open areas to reveal artefact concentrations or site features (such as ovens)” (Niche 2018 p.92).

The layout of the test excavation squares centred on the Lake Cowal 2017-036 (AHIMS #39-4-0300) site, which consisted of an extensive open artefact scatter visible along the firebreak and vehicle track. A total of 90 x 0.25 m^2 test pits were excavated to depths of 10–20 cm, the topsoil consisting of brown silty clay to 10 cm overlaying a culturally sterile indurated basal clay subsoil B horizon, shown in Plate E.18 and Plate E.19. A total of 22.5 m^2 of soil was excavated, recovering 21 artefacts, resulting in an average artefact density of 0.9 artefacts/m^2. Given the extremely low subsurface artefact densities encountered, the test excavation program did not proceed into any areas of open salvage excavation.

Plate E.18 **Soil profile of a test pit excavated to a depth of 20 cm, view north**

Plate E.19 **Soil profile of a test pit excavated to a depth of 10 cm, view north**

Analysis of the artefact assemblage showed that the dominant raw material was black chert (90%, n=19) with quartz and quartzite flakes identified in two instances. Both complete flakes (43%, n=9) and broken flakes including flaked pieces (43%, n=9) comprised the majority of the assemblage, followed by two backed artefacts (10%, n=2) and a core (5%). The backed artefacts comprised a bondi point with retouch along the left lateral margin and a backed artefact with retouch along the right lateral margin to the termination with cortex present on the left lateral margin.

Despite the high concentrations of surface artefacts (>300 were collected within the same footprint), the results of the test excavation program indicates that the back plain and Gilgai archaeological landscapes are far better characterised by surface artefact characteristics and negligible subsurface artefact accumulation has occurred in such areas. This suggests that the current efforts of the surface mitigation activities are sufficient to characterise the archaeological landscape as well as recover as much cultural material as possible prior to future mining developments.

In addition to the IWL Gilgai test excavation program, three hearths were excavated over several excursions between January – February 2020. Two were excavations of previously recorded hearth and artefact sites Lake Cowal 2017-032 (AHIMS #39-4-0303) and Lake Cowal 2017-037 (AHIMS #39-4-0298). The third location was a potential hearth site (2019-293, no AHIMS registration), consisting of a burnt clay nodule and several large unmodified stones on the Gilgai plains in proximity to Lake Cowal 2017-032 (AHIMS #39-4-0303), shown on Figure 5.3 (Section 5.3). The potential site was identified by the field team during an earlier traverse of the locality while undertaking surface collection activities prior to topsoil stripping of the area. Two 0.25 m^2 test pits were situated ~1.5 m apart, each positioned on surface expressions of large unmodified stones and burnt clay. The test pits reached a depth of ~15 cm and exhibited a compact grey clay silt (A1 horizon) overlying an indurated heavy clay subsoil (B2 horizon), which was assessed as culturally sterile. The excavation efforts did not recover any cultural materials or features, confirming the potential site was not of anthropogenic origin, but rather reflected a natural burning event, likely a tree root (Plate E.20 and Plate E.21).

Plate E.20 Excavation of two surface features associated with site 2019-293, looking south-east

Plate E.21 **Test pit 1 of 2019-293, view north. The test pit shows tree roots running along the surface of the indurated B horizon, suggesting only shallow soil profiles are present in this part of the Gilgai plains**

Attempts were made to relocate hearth and artefact site Lake Cowal 2017-032 (AHIMS #39-4-0303), however the only potential hearth site visible within the vicinity of the recorded location was situated ~40 m north-west, and consisted of several surface burnt clay nodules and large unmodified stones. A 1 m^2 test pit was excavated as four 0.25 m^2 quadrants centred over the hearth feature and excavated in 10 cm spits (see Plate E.22). The north-west and south-west quadrants were excavated to 30 cm below ground surface (Plate E.23) and comprised a very shallow (<5 cm) topsoil layer overlying a compact brown silt clay A1 horizon, which transitioned to an indurated clay subsoil B horizon around 20 cm depth. However, upon recognition that the burnt surface materials were the result of a tree root burn and unlikely to be of anthropogenic origin, the eastern quadrants were excavated to the B horizon at ~20 cm deep and not continued further.

Plate E.22 Lake Cowal 2017-032 (#39-4-0303) with 1 m^2 test excavation grid centred on hearth feature

Plate E.23 Soil profile of Lake Cowal 2017-032 (#39-4-0303) onto indurated basal clay

The hearth and artefact site Lake Cowal 2017-037 (AHIMS #39-4-0298) was confirmed to be of anthropogenic origin. As with Lake Cowal 2017-032 (AHIMS #39-4-0303), a 1 m^2 test pit was excavated as four 0.25 m^2 quadrants centred over the hearth feature and excavated in 5 cm spits; ultimately reaching ~20 cm below ground surface (Plate E.24). The excavations revealed that the feature was a ~40 cm diameter broadly circular 'dish-shape', which began below the topsoil (~5 cm below ground surface) and extended into and beneath the indurated clay sub soil (B2 horizon) at ~20 cm below ground surface (Plate E.25). The dish shaped feature contained abundant charcoal, and while not definitive, a small number of potential artefacts (mostly quartz) were recovered during the excavations. In combination with the regular shape of the feature this supported the assessment of the site as being of anthropogenic origin, likely reflecting a small single use campfire.

The results of the Gilgai test excavation program and the hearth excavations indicates that surface artefact scatters are prevalent in the back plains and there is limited potential for subsurface archaeological deposits due to historic land disturbances and the arid environment of the central west which results in significant topsoil erosion. This can result in artefacts accumulating on the ground surface via erosive and other site formation processes which decreases the potential for stratified artefact sites. Of the three hearth sites that were excavated, one was of anthropogenic origin while the remaining two were the result of natural causes, indicating the ambiguity of potential hearth and heat retainer sites that have been recorded prior.

Plate E.24 **Lake Cowal 2017-037 (AHIMS #39-4-0298) prior to excavation. Note the grouping of burnt clay nodules in the centre of the feature, view north**

Plate E.25 **Lake Cowal 2017-037 (AHIMS #39-4-0298) partially excavated, view east. As can be shown here, the hearth has a dish-shaped cross section, stopping just below the modern topsoil (A1 horizon) ~5 cm below the surface**

During the excavation program attempts were made to relocate previously documented sites Lake Cowal 2017-055 (AHIMS #39-4-0271), Lake Cowal 2017-036 (AHIMS #39-4-0300), Lake Cowal 2017-031 (AHIMS #39-4-0300), and Lake Cowal 2017-012 (AHIMS #39-4-0324). Each location was positively identified, however no hearth aspects including any potential hearth features, charcoal or ash smears, or baked clay nodules at the location or within the general vicinity were identified for any of the previously recorded sites. Discussions occurred on-site between all field participants and it was agreed the prior site features were not present and possibly eroded through natural or anthropogenic activities that have occurred with the operation of the CGO (refer EMM letter report, 6 December 2019). The sites were deemed as 'Destroyed' and ASIRFs were lodged with the AHIMS database.

Table E.5 shows the previously documented Aboriginal sites that were collected during EMM's surface collection and excavation salvage works and their corresponding ASIRFs submitted to the AHIMS database.

Table E.5 **Previously identified AHIMS sites recovered during EMM's post-approval salvage activities**

AHIMS number	Site name	Site type
39-4-0271	Lake Cowal 2017-055	Hearth, artefact(s)
39-4-0272	Lake Cowal 2017-056	Artefact
39-4-0285	Lake Cowal 2017-050	Artefact
39-4-0293	Lake Cowal 2017-039	Artefact
39-4-0297	Lake Cowal 2017-038	Artefact
39-4-0298	Lake Cowal 2017-037	Hearth

Table E.5 Previously identified AHIMS sites recovered during EMM's post-approval salvage activities

AHIMS number	Site name	Site type
39-4-0299	Lake Cowal 2017-035	Hearth
39-4-0300	Lake Cowal 2017-036	Hearth, artefact(s)
39-4-0303	Lake Cowal 2017-032	Hearth, artefact(s)
39-4-0304	Lake Cowal 2017-031	Hearth, artefact(s)
39-4-0324	Lake Cowal 2017-012	Hearth
43-4-0106	Thornton Plains Grinding Stone	Artefact
43-4-0107	Thornton Gilgai Isolated Artefact	Artefact
43-4-0108	Thornton Gilgai Scatter 25Sep19	Artefact
43-4-0109	Thornton Gilgai Hearth 25Sep19	Hearth

E.2 Existing impact permits and consents applicable to the project area

CONSENT : 1467
(HO use only)

NATIONAL PARKS AND WILDLIFE ACT 1974
SECTION 90

CONSENT

CONSENT TO CARRY OUT THE DESTRUCTION OF AN ABORIGINAL OBJECT/PLACE

WHEREAS the Aboriginal objects described in Schedule "A" are situated upon the land described in Schedule "B", and which constitute Aboriginal objects within the meaning of Sections 5(1) and 90 of the National Parks and Wildlife Act 1974 ("Aboriginal objects"), and WHEREAS application has been made by:

Barrick Australia Limited
10th Floor, 2 Mill Street,
Perth. WA. 6000

Postal Address:
Locked Bag 12
Cloisters Square
Perth WA 6850

FOR CONSENT to destroy those objects identified in Schedule A and situated in the lands described in Schedule B of the proposed new open cut gold mine at Lake Cowal.

NOW I, Brian Gilligan, Director-General of National Parks and Wildlife, in pursuance of Section 90 of the said Act, and subject to the Conditions hereunder set out DO HEREBY CONSENT to the destruction of the said objects by the said applicant.

TERMS AND CONDITIONS OF THIS CONSENT

This Consent is issued subject to General Terms and Conditions covering all archaeological Permits and Consents, as well as the Special and Specific Terms and Conditions pertaining to Consents to Destroy Aboriginal objects all of which conditions are detailed in the attached pages.

DATED at Orange this 27 day of November 2002

Terry Kerr

for Director-General of
National Parks and Wildlife

SCHEDULE A:
All Aboriginal objects situated within the boundaries of the lands described in schedule B, unless excluded in the Special and Specific conditions.

SCHEDULE B:

- The area of Mining Lease Application 45 under the *Mining Act* 1992 (NSW) lodged by Barrick Australia Limited ("MLA 45") (as shown on the map in Schedule C to this Consent);
- The area of the following proposed bores (as shown on the map in Schedule D of this Consent) as follows:
  - the proposed bore within the road reserve to the west of Portion 69, Parish of Gibrigal, County of Gipps;
  - the proposed bore within Travelling Stock Reserve 84719 to the south of Portion 19, Parish of Gibrigal, County of Gipps;
  - the proposed bore within the road reserve to the north of Portion 105, Parish of Cadalgulee, County of Gipps; and
  - the proposed bore within the road reserve to the west of Portion 104, Parish of Cadalgulee, County of Gipps.
- The area of the proposed water pipeline (and its 40 metre wide corridor) which runs from the borefield to MLA45 within the following land (as shown on the map in Schedule C, D and E of this Consent):
  - the road reserve that runs to the west of Portions 69 and 19, Parish of Gibrigal, County of Gipps;
  - the road reserve (part of Butcher Road) and part of Travelling Stock Reserve 84719 that runs to the south of Portion 19, Parish of Gibrigal, County of Gipps;
  - the road reserve that runs to the east of Portion 66, Parish of Cadalgulee, County of Gipps;
  - the road reserve that runs to the north of Portion 105, Parish of Cadalgulee, County of Gipps, until it reaches the proposed bore;
  - the road reserve (part of Webster's Road) that runs in a south westerly direction adjacent to Portions 104 and 102, Parish of Cadalgulee, County of Gipps until it reaches the north west corner of Portion 93, Parish of Cadalgulee, County of Gipps;
  - the road reserve that runs to the west of Portion 93, Parish of Cadalgulee, County of Gipps for approximately 1 kilometre;
  - Lots 44, 45 and 46 on DP42918 - in an east/west direction parallel to, and approximately 175 metres from, the northern boundary of Lots 44, 45 and 46, for approximately 2 kilometres; and
  - Lots 46 and 47 on DP 42918 and Lots 18, 23 and 24 on DP753097 - in a south westerly direction for approximately 7 kilometres until it reaches MLA 45.

SPECIAL and SPECIFIC CONDITIONS

1. The Consent does not cover human skeletal remains. Should human remains be discovered all work at the particular location shall cease and the NPWS archaeologist at Dubbo shall be notified immediately.

2. The Consent covers only those objects described in the instrument of Consent and in any Schedules thereto.

3. This Consent operates in respect of the land covered by MLA 45 only for the period that the following approvals remain in force:
   - Exploration Licence 2864 and Exploration Licence 4510 or any renewals of the same; or
   - the development consent granted for the Cowal Gold Mine by the Minister for Urban Affairs and Planning on 26 February 1999 or a modification of the same or any new development consent which authorises the Cowal Gold Mine.

4. This Consent operates as follows:
   4.1 Subject to paragraph 4.3, 4.4 and 4.5 below, this Consent does not operate in relation to a specific area until a holder of Permit # 1468 has certified in writing, in accordance with Special Condition 16 of that permit, that the archaeological works authorised by Permit # 1468 for that specific area have been completed;
   4.2 Subject to the Special and Specific Conditions of this Instrument of Consent, once that certification has been given in relation to a specific area, this Consent authorises the destruction of Aboriginal objects in the area specified in the certification by Barrick Australia Limited, its employees and contractors and the employees and contractors of its parent company Barrick Gold of Australia Limited in the course of their lawful activities in that area. In particular:
      - Where Permit # 1468 authorises the collection of a representative sample of Aboriginal objects from the surface of land, this Consent authorises the destruction of surface and sub-surface Aboriginal objects that remain after the representative sample (as determined by the permit holder and/or his instructed delegates) has been collected;
      - where Permit # 1468 authorises the collection of a representative sample of Aboriginal objects after excavation, this Consent authorises the destruction of Aboriginal objects that remain after excavated Aboriginal objects identified by the permit holder and/or his instructed delegates have been collected;
      - where Special Condition 9 of Permit # 1468 authorises the identification of concentrations of Aboriginal objects on the back plain, this Consent authorises the destruction of Aboriginal objects on the back plain after the permit holder and/or his instructed delegates have undertaken the measuring and recording activities authorised by Special Condition 9.
   4.3 If Permit # 1468 does not authorise any archaeological works within a specific area, this Consent authorises the destruction of all Aboriginal objects within that specific area.
   4.4 This Consent may operate within the footprint of the proposed open cut pit and site P1 (NPWS#43-4-7) before the test pit excavations and extended excavations authorised by Special Condition 3 of Permit # 1468 have been carried out, provided that a permit holder has certified pursuant to Special Condition 16 of Permit # 1468 that the salvage and collection activities in relation to surface Aboriginal objects in that area have been completed.
   4.5 Nothing in this Consent or Permit # 1468 should be interpreted to mean that all surface and/or sub-surface Aboriginal objects must be collected from any specific area before a holder of Permit # 1468 may certify that the collection activities for that specific area have been completed and this Consent may operate in relation to the relevant area.

5. This consent shall lapse when the Minister for Mineral Resources acknowledges that satisfactory rehabilitation work has been completed under a mining lease granted in respect of MLA 45 or eighteen (18) years after the completion of construction works, which ever occurs first. For the purpose of this condition, construction works are the earthworks, engineering and building works which are required to be completed before mining operations commence.

6. Should any Aboriginal objects listed in Schedule 'A' above remain in existence/insitu at the date of the lapse of this Consent, any destruction of the Aboriginal objects will be unlawful unless authorised by a new consent granted under section 90 of the *National Parks and Wildlife Act* 1974.

7. During the term of this Consent, Barrick Australia Limited shall furnish the National Parks and Wildlife Service with a report on the activities carried out under the Consent, if required by the Director General.

8. A copy of this consent and the Permit # 1468 shall be available for inspection as per General Condition 6 (see below) at the Cowal Gold Project Office at all times during the period of the consent.

9. Offset Conditions

9.1 The obligations contained in this condition are subject to the following:

(a) subject to subparagraph (b) below, the details and scope of each of the matters referred to in this condition are to be agreed in writing with the registered native title claimants for the area of MLA45 and the West Wyalong Local Aboriginal Land Council (hereafter, the "Aboriginal Community"), unless such agreement is not reached before the commencement of construction, when they will be determined by the Director-General;

(b) if the Aboriginal Community advises Barrick Australia Limited and the Director-General in writing that they do not want Barrick Australia Limited to fund one of the obligations referred to in paragraphs 9.2 to 9.5, the obligation contained in the relevant condition immediately ceases;

(c) the total amount of funds dedicated to complying with the obligations referred to in paragraphs 9.2 to 9.5 need not exceed $250,000; and

(d) the deadline for completion of any of the obligations referred to in paragraphs 9.2 to 9.5 may be extended by the Director-General if he considers that it is reasonable in the circumstances to do so.

9.2 Barrick Australia Limited must fund the design and construction of a keeping place for Aboriginal objects collected pursuant to Permit # 1468, at a location to be agreed with the Aboriginal Community. The keeping place must be constructed within 12 months of the commencement of mining operations.

9.3 Barrick Australia Limited must fund a regional cultural heritage study and the associated research and publication of a booklet about Wiradjuri cultural heritage and associations with land. The study and booklet must be centred on Lake Cowal and the area between Lake Cowal and the Lachlan River. The scope and methodology of the study shall be agreed with the Director-General. The regional study shall identify areas of cultural significance to Aboriginal people including areas within Barrick Australia Limited's land holdings which may be considered for future conservation. The study must be completed and the booklet published within 3 years of the commencement of construction, subject to any requests for extensions of time by the Aboriginal Community to allow additional study to be carried out. 1000 copies of the booklet must be produced. The booklet must be distributed to the Wiradjuri Council of Elders, the West Wyalong Local Aboriginal Land Council, the Condobolin Local Aboriginal Land Council, the Mooka Traditional Owners Council, the Wiradjuri Regional Aboriginal Land Council, the New South Wales Aboriginal Land Council, NPWS, the Australian Museum, NSW Heritage Office, local public libraries, local councils, local schools, the Mitchell Library and other bodies nominated by the Aboriginal Community

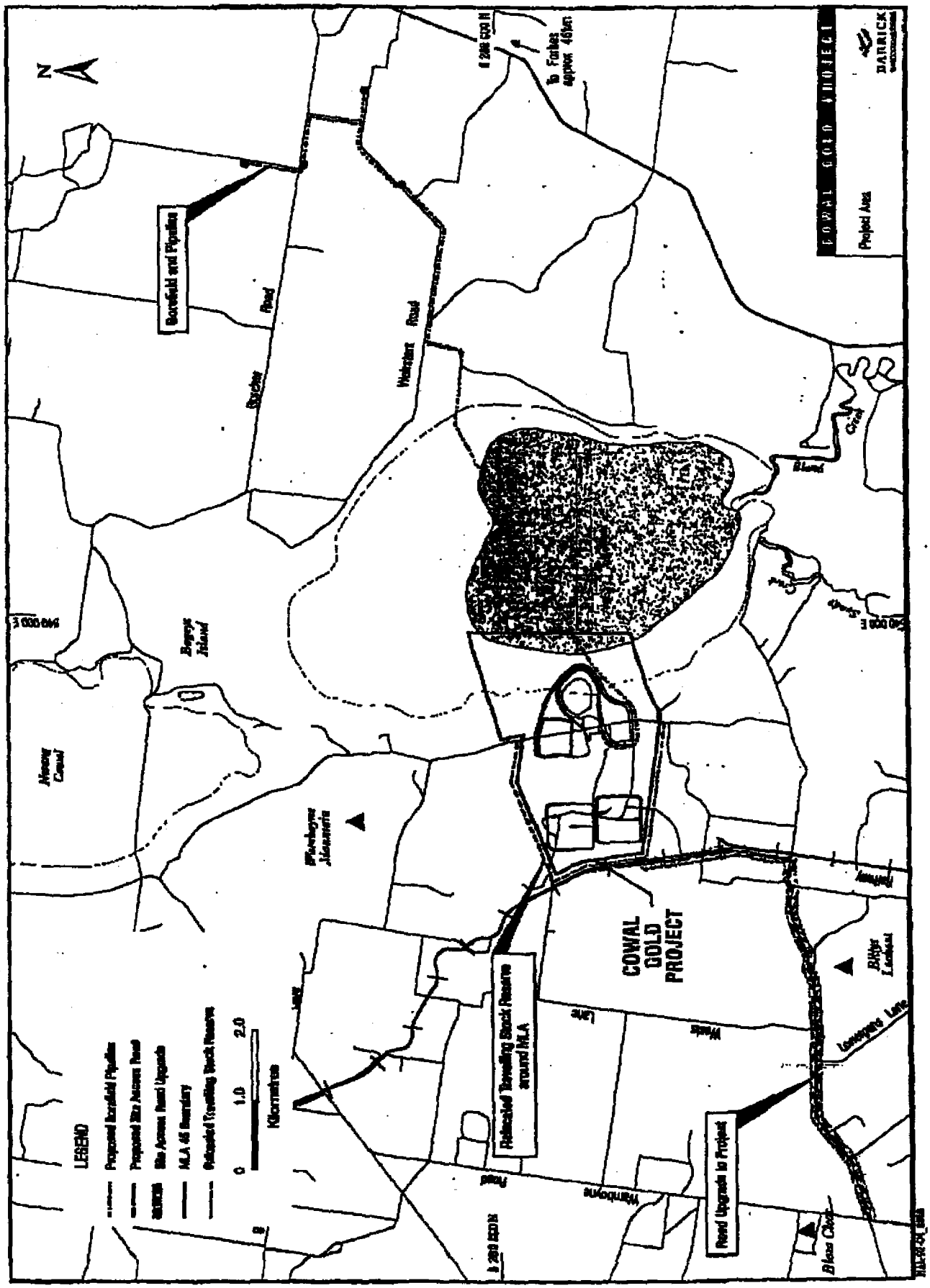
9.4 Barrick Australia Limited must fund the creation of a transportable display consisting of information and material on the Wiradjuri people in the context of Lake Cowal and the region generally, to be available for educational purposes at schools, public libraries, council offices, public buildings and other places nominated by the Aboriginal Community. The display must be completed within 6 months of publication of the booklet referred to in paragraph 9.3 above.

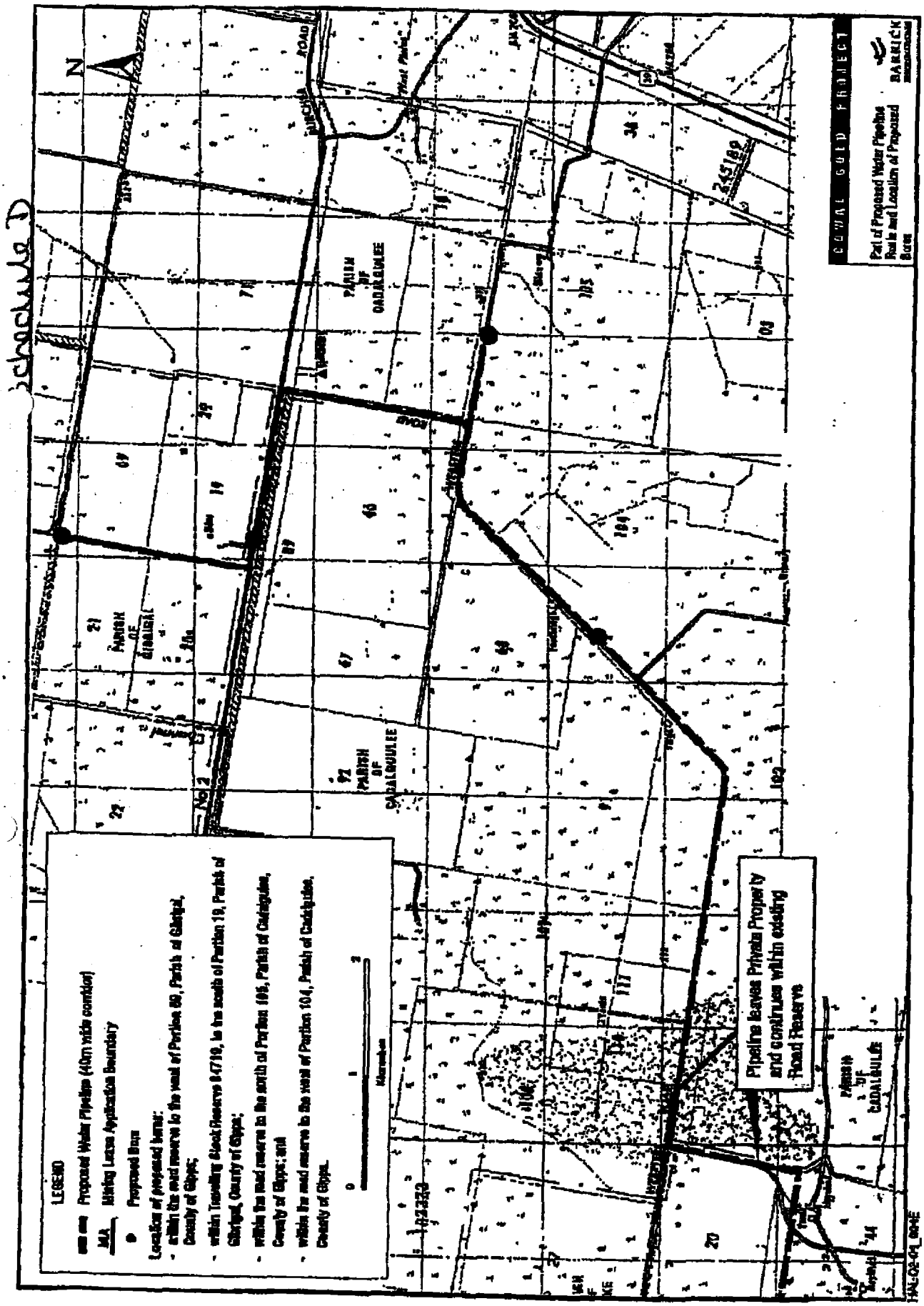
9.5 Barrick Australia Limited must fund a survey to document the whereabouts of Aboriginal objects taken from Wiradjuri land and held in public and private collections around Australia, and support (by financial and other means) any submission by the Aboriginal Community for the return of that material to the Wiradjuri people. The survey must be completed within 12 months from the commencement of construction.

10. This Consent authorises any destruction of Aboriginal objects which may occur at Sites B, C, D, E and H as a result of vehicular movements following completion of the conservation works required by special condition 8 of Permit # 1468 at any such site.

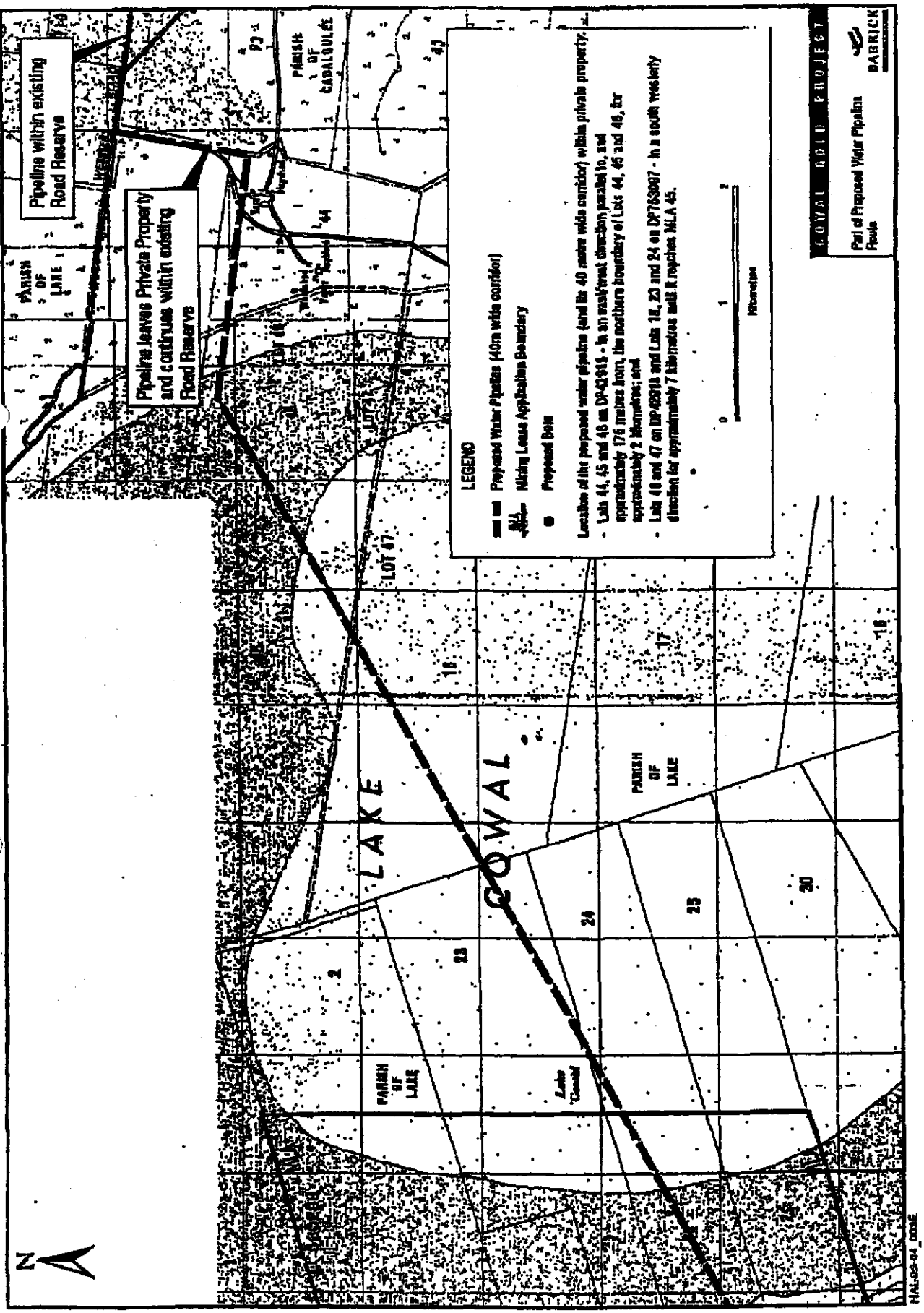
11. Wherever the word "destroy" is used in this consent it includes destroy, deface, damage or desecrate. Wherever the word "destruction" is used in this consent it includes destruction, defacement, damage or desecration.

Schedule C


N
COWAL GOLD PROJECT
Project Area
Borefield and Pipeline
Road Upgrade to Project
Reserved Travelling Stock Reserve around MLA
Wallaroo Road
Bingara Island
Henry Canal
Lake Cowal
Lake Brewster
Blue Creek
LEGEND
Proposed Borefield Pipeline
Proposed Site Access Road
Site Access Road Upgrade
MLA 65 Boundary
Reserved Travelling Stock Reserve
0
1.0
2.0
Kilometres


COWAL GOLD PROJECT
Part of Proposed Water Pipeline Route and Location of Proposed Bores
BARRICK
N
LEGEND
Proposed Water Pipeline (40m wide corridor)
Mining Lease Application Boundary
Proposed Bore
Location of proposed bore:
- within the road reserve to the west of Portion 69, Parish of Gidgi, County of Gipps;
- within Travelling Stock Reserve 84716, to the south of Portion 19, Parish of Gidgi, County of Gipps;
- within the road reserve to the north of Portion 105, Parish of Cadelgulee, County of Gipps; and
- within the road reserve to the west of Portion 104, Parish of Cadelgulee, County of Gipps.
Kilometres
Pipeline leaves Private Property and continues within existing Road Reserve
PARISH OF GIDGI
PARISH OF CADELGULEE
PARISH OF BARALGULEE
No 2
HAL-02-41_004E

Schedule E


Pipeline within existing Road Reserve
Pipeline leaves Private Property and continues within existing Road Reserve
PARISH OF LAKE
PARISH OF CABALGULEE
LOT 47
LAKE COWAL
PARISH OF LAKE
PARISH OF LAKE
Lake Cowal
LEGEND
Proposed Water Pipeline (40m wide corridor)
Mining Lease Application Boundary
Proposed Bore
Location of the proposed water pipeline (and its 40 metre wide corridor) within private property:
- Lots 44, 45 and 46 on DP42915 - in an east/west direction parallel to, and approximately 170 metres from, the northern boundary of Lots 44, 45 and 46, for approximately 2 kilometres; and
- Lots 46 and 47 on DP42915 and Lots 16, 23 and 24 on DP753907 - in a south westerly direction for approximately 7 kilometres until it reaches MLA 45.
0
1
2
Kilometres
COWAL GOLD PROJECT
Port of Proposed Water Pipeline Route
BARRICK
N
HAL/GIS-94_0008

GENERAL TERMS AND CONDITIONS

1. Permits and Consents are not transferable.

2. A Permit covers only that area stated in the Permit.

3. A Consent covers only that area stated in the instrument of Consent and in any Schedules thereto.

4. Terms and conditions of Permits may be varied at any time at the discretion of the Director-General.

5. The Person to whom the Permit is issued or the Consent granted shall be responsible for the manner in which the work covered by the Permit or Consent is performed.

6. An officer of the National Parks and Wildlife Service, acting on the authority of the Director-General, may at any time examine work done or any objects recovered under any Permit or Consent.

7. Permits and Consents are necessary for all activities for which they are issued or granted, but do not in themselves give authority to enter or work on freehold land or leased Crown Land. Permission must be sought from the owner or occupier and arrangements made with him/her.

8. The holder of the Permit or Consent shall furnish, when required to do so, an undertaking to indemnify the National Parks and Wildlife Service against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses in respect of any accident or injury to any person or property which may arise solely out of the existence of any works associated with the Permit or Consent.

9. All reports received in connection with work carried out under a Permit or Consent shall be treated as confidential but the National Parks and Wildlife Service shall have the right to copy all such reports, to allow consideration thereof by qualified referees.

10. For a period of five years from the date of issue of the Permit or Consent, the holder of the Permit or Consent may refuse to allow the National Parks and Wildlife Service and The Australian Museum, if such information is held by those institutions, to make public any information contained in any report referred to in Condition 9 above, except where it is deemed necessary for management, protection or research reasons. After this period of five years from the date of issue of the Permit or Consent, the Service and The Australian Museum shall have the right to use and authorise the use of information contained in all reports submitted under the Permit or Consent, except where specifically requested by the holder of the Permit or Consent.

11. Upon publication of any information relating to work done under a Permit or Consent, a copy of such publication(s) shall be forwarded to the National Parks and Wildlife Service, The Australian Museum, Sydney, and the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, unless permission to do otherwise has been obtained from the Service.

12. The holder of the Permit or Consent shall consult with the local Aboriginal community regarding the work covered by the Permit or Consent and shall respond to any reasonable request to involve the Aboriginal community in the work.

13. The National Parks and Wildlife Service and The Australian Museum may supply copies of relevant reports as furnished by the holder of the permit or Consent to local Aboriginal communities. Upon request by the Service, the holder of the Permit or Consent shall supply a

summary of his/her findings with photographs, diagrams, etc., as required, to local Aboriginal communities or other interest local groups.

14. The holder of the Permit or Consent shall keep field records and a copy of all such records shall be lodged with the National Parks and Wildlife Service at the termination of each field work period. A copy of all field records shall be lodged with The Australian Museum at the time the archaeological materials are deposited with the Museum.

15. The holder of the Permit or Consent shall notify the Dubbo office of the National Parks and Wildlife Service at the commencement and completion of fieldwork, and shall supply to District officers details of field work programs and results if requested.

CONSENT : 1680

NATIONAL PARKS AND WILDLIFE ACT 1974
SECTION 90

CONSENT

CONSENT TO CARRY OUT THE DESTRUCTION OF AN ABORIGINAL OBJECT/PLACE

WHEREAS the Aboriginal objects described in Schedule "A" are situated upon the land described in Schedule "B", and which constitute Aboriginal objects within the meaning of Sections 5(1) and 90 of the National Parks and Wildlife Act 1974 ("**Aboriginal objects**"), and WHEREAS application has been made by:

Barrick Australia Limited
10th Floor, 2 Mill Street,
Perth. WA. 6000

Postal Address:
Locked Bag 12
Cloisters Square
Perth WA 6850

FOR CONSENT to destroy those objects identified in Schedule A and situated in the lands described in Schedule B of the proposed road upgrade and relocated travelling stock route at Lake Cowal.

NOW I, Brian Gilligan, Director-General of National Parks and Wildlife, in pursuance of Section 90 of the said Act, and subject to the Conditions hereunder set out DO HEREBY CONSENT to the destruction of the said objects by the said applicant.

TERMS AND CONDITIONS OF THIS CONSENT

This Consent is issued subject to General Terms and Conditions covering all archaeological Permits and Consents, as well as the Special and Specific Terms and Conditions pertaining to Consents to Destroy Aboriginal objects all of which conditions are detailed in the attached pages.

DATED at Dubbo this Twenty Eighth day of, July 2003

Terry Kerr

for Director-General of
National Parks and Wildlife

SCHEDULE A:
All Aboriginal objects situated within the boundaries of the lands described in schedule B, unless excluded in the Special and Specific conditions.

SCHEDULE B:

- The area of the proposed road upgrade as follows (and as shown on the maps attached as schedule C and D)
  - The road reserve that runs from the south west corner on Mining Lease 1535, parallel to the western side of the West Wyalong-Burcher Railway, for a distance of approximately 3.3 kilometres until its intersection with Lake Cowal/Blow Clear Road.
  - The road reserve that runs west from this point for a distance of approximately 10.5 kilometres (Blow Clear/Lake Cowal Road) to its intersection with Wamboyne Road at Blow Clear.

- The area of the proposed relocated Travelling Stock Route as follows (and as shown on the maps attached as schedule C):
  - From Lake Cowal Road on the northern side of Mining Lease 1535 westwards to the north west corner of Mining Lease 1535 (which is a corridor approximately 290 metres wide until it meets Lot 57 where it narrow to approximately 200 metres wide);
  - South from this point along the western boundary of Mining Lease 1535 to the south west corner of Mining Lease 1535 (which is a corridor approximately 200 metres wide);
  - Then east from this point along the southern boundary of Mining Lease 1535 until again intersecting the Lake Cowal Road (which is a corridor approximately 200 metres wide).

SPECIAL and SPECIFIC CONDITIONS

1. The Consent does not cover human skeletal remains. Should human remains be discovered all work at the particular location shall cease and the NPWS archaeologist at Dubbo shall be notified immediately.

2. The Consent covers only those objects described in the instrument of Consent and in any Schedules thereto.

3. This Consent operates in respect of the land nominated above only for the period that the following approvals remain in force:
   - the development consent granted for the Cowal Gold Mine by the Minister for Urban Affairs and Planning on 26 February 1999 or a modification of the same or any new development consent which authorises the Cowal Gold Mine; or
   - the approval granted for the Cowal Gold Project Access Road Upgrade by the Bland Shire Council on 21 April 1999 pursuant to Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW), or a modification of the same or any new approval which authorises the Cowal Gold Project Access Road Upgrade.
4. This Consent operates as follows:
   4.1 Subject to paragraph 4.3 below, this Consent does not operate in relation to a specific area until it has been certified in writing, in accordance with Special Condition 8 of Permit # 1681, that the archaeological works authorised by Special Condition 3 of Permit # 1681 for that specific area have been completed;
   4.2 Subject to the Special and Specific Conditions of this Instrument of Consent and the obligation to comply with Special Condition 11 of Permit #1681, once that certification has been given in relation to a specific area, this Consent authorises the

destruction of Aboriginal objects in the area specified in the certification by Barrick Australia Limited, its employees and contractors and the employees and contractors of its parent company Barrick Gold of Australia Limited in the course of their lawful activities in that area. In particular, where Permit # 1681 authorises the collection of a representative sample of Aboriginal objects from the surface of land, this Consent authorises the destruction of surface and sub-surface Aboriginal objects that remain after the representative sample (as determined by the permit holder and/or his instructed delegates) has been collected.

4.3 Nothing in this Consent or Permit # 1681 should be interpreted to mean that all surface and/or sub-surface Aboriginal objects must be collected from any specific area before it may be certified pursuant to Permit # 1681 that the collection activities for that specific area have been completed and this Consent may operate in relation to the relevant area.

5. This consent shall lapse when the Minister for Mineral Resources acknowledges that satisfactory rehabilitation work has been completed under Mining Lease 1535 or eighteen (18) years after the completion of construction works, which ever occurs first. For the purpose of this condition, construction works are the earthworks, engineering and building works which are required to be completed before mining operations commence.

6. Should any Aboriginal objects listed in Schedule 'A' above remain in existence/insitu at the date of the lapse of this Consent, any destruction of the Aboriginal objects will be unlawful unless authorised by a new consent granted under section 90 of the *National Parks and Wildlife Act* 1974.

7. During the term of this Consent, Barrick Australia Limited shall furnish the National Parks and Wildlife Service with a report on the activities carried out under the Consent, if required by the Director General.

8. A copy of this consent and the Permit # 1681 shall be available for inspection as per General Condition 6 (see below) at the Cowal Gold Project Office at all times during the period of the consent.

9. Wherever the word "destroy" is used in this consent it includes destroy, deface, damage or desecrate. Wherever the word "destruction" is used in this consent it includes destruction, defacement, damage or desecration.

GENERAL TERMS AND CONDITIONS

1. Permits and Consents are not transferable.

2. A Permit covers only that area stated in the Permit.

3. A Consent covers only that area stated in the instrument of Consent and in any Schedules thereto.

4. Terms and conditions of Permits may be varied at any time at the discretion of the Director-General.

5. The Person to whom the Permit is issued or the Consent granted shall be responsible for the manner in which the work covered by the Permit or Consent is performed.

6. An officer of the National Parks and Wildlife Service, acting on the authority of the Director-General, may at any time examine work done or any objects recovered under any Permit or Consent.

7. Permits and Consents are necessary for all activities for which they are issued or granted, but do not in themselves give authority to enter or work on freehold land or leased Crown Land. Permission must be sought from the owner or occupier and arrangements made with him/her.

8. The holder of the Permit or Consent shall furnish, when required to do so, an undertaking to indemnify the National Parks and Wildlife Service against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses in respect of any accident or injury to any person or property which may arise solely out of the existence of any works associated with the Permit or Consent.

9. All reports received in connection with work carried out under a Permit or Consent shall be treated as confidential but the National Parks and Wildlife Service shall have the right to copy all such reports, to allow consideration thereof by qualified referees.

10. For a period of five years from the date of issue of the Permit or Consent, the holder of the Permit or Consent may refuse to allow the National Parks and Wildlife Service and The Australian Museum, if such information is held by those institutions, to make public any information contained in any report referred to in Condition 9 above, except where it is deemed necessary for management, protection or research reasons. After this period of five years from the date of issue of the Permit or Consent, the Service and The Australian Museum shall have the right to use and authorise the use of information contained in all reports submitted under the Permit or Consent, except where specifically requested by the holder of the Permit or Consent.

11. Upon publication of any information relating to work done under a Permit or Consent, a copy of such publication(s) shall be forwarded to the National Parks and Wildlife Service, The Australian Museum, Sydney, and the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, unless permission to do otherwise has been obtained from the Service.

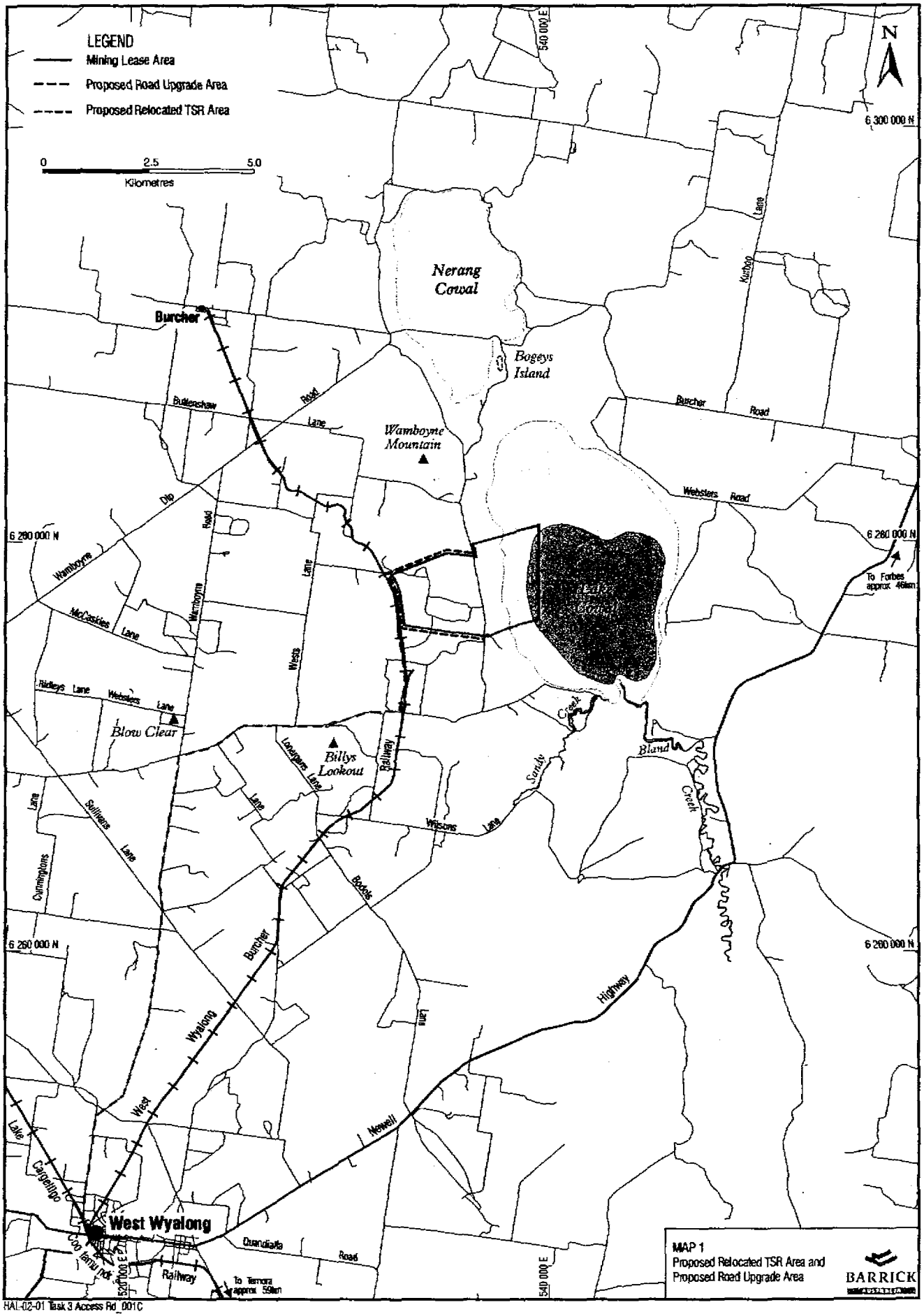
12. The holder of the Permit or Consent shall consult with the local Aboriginal community regarding the work covered by the Permit or Consent and shall respond to any reasonable request to involve the Aboriginal community in the work.

13. The National Parks and Wildlife Service and The Australian Museum may supply copies of relevant reports as furnished by the holder of the permit or Consent to local Aboriginal communities. Upon request by the Service, the holder of the Permit or Consent shall supply a summary of his/her findings with photographs, diagrams, etc., as required, to local Aboriginal communities or other interest local groups.

14. The holder of the Permit or Consent shall keep field records and a copy of all such records shall be lodged with the National Parks and Wildlife Service at the termination of each field work period. A copy of all field records shall be lodged with The Australian Museum at the time the archaeological materials are deposited with the Museum.

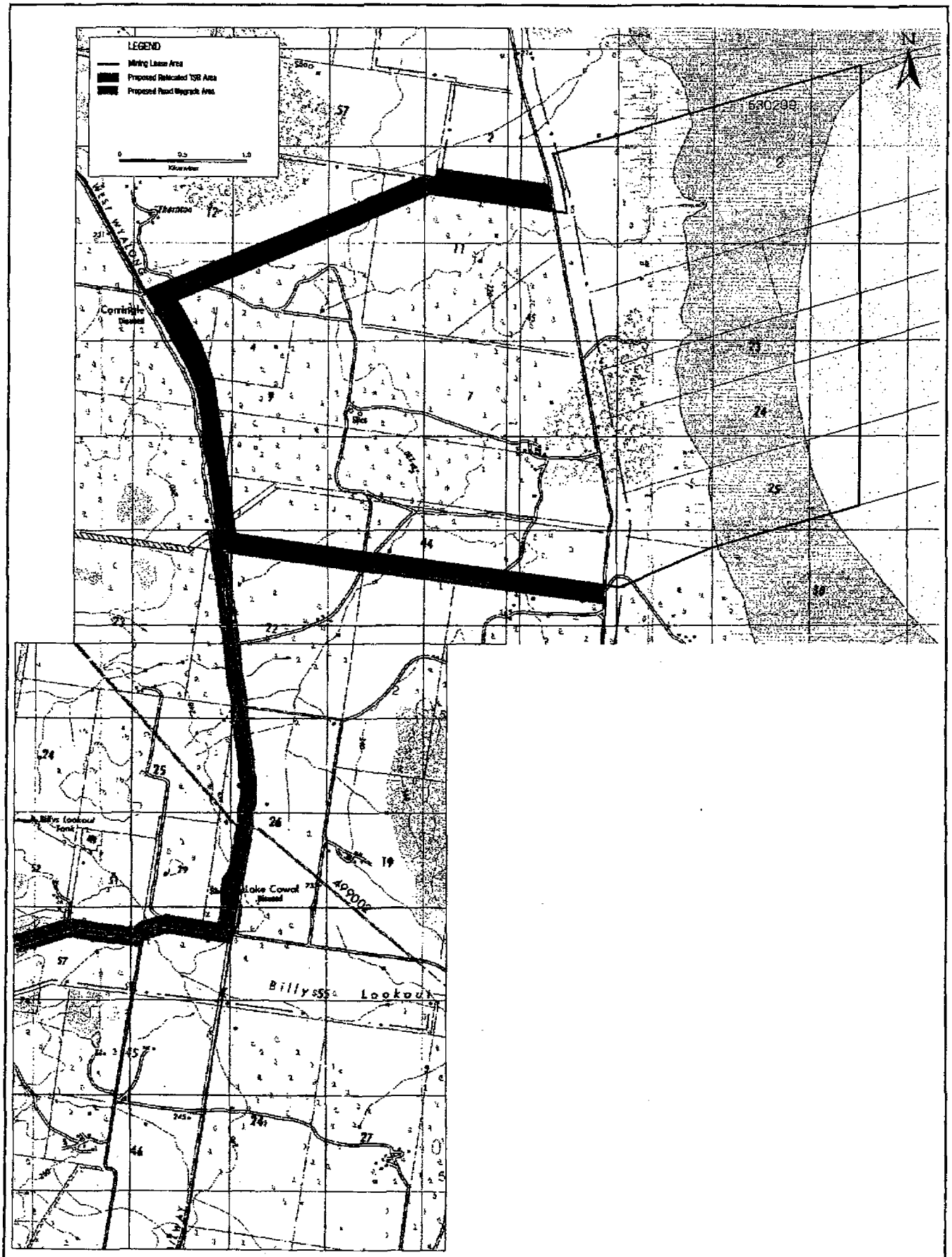
15. The holder of the Permit or Consent shall notify the Dubbo office of the National Parks and Wildlife Service at the commencement and completion of fieldwork, and shall supply to District officers details of field work programs and results if requested.

SCHEDULE C



HAL-02-01 Task 3 Access Rd_001C

SCHEDULE D



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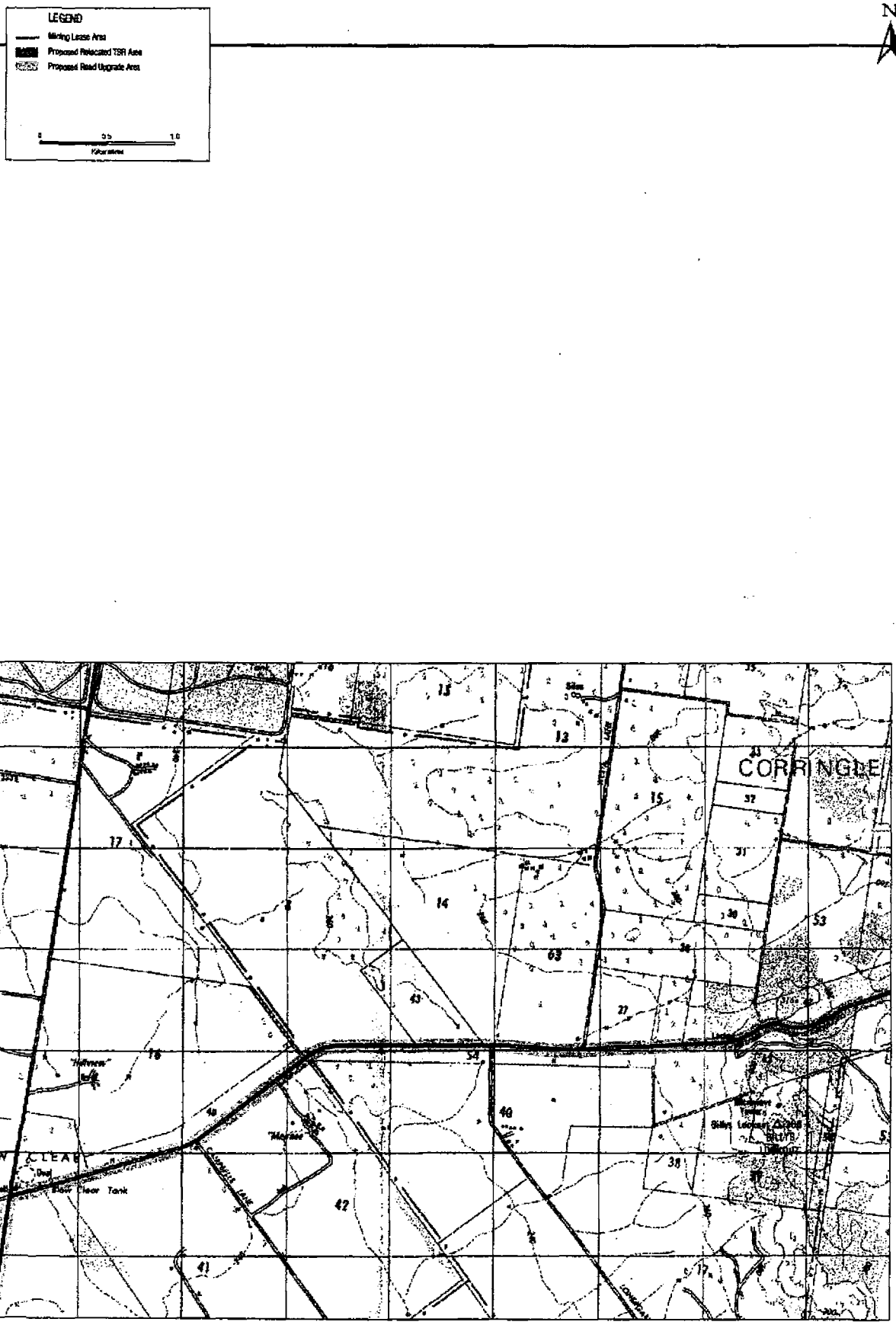
SCHEDULE E



MAP 3
Proposed Relocated TSR Area and
Proposed Road Upgrade Area

BARRICK

PERMIT #: 1468
(HO use only)

NATIONAL PARKS AND WILDLIFE ACT 1974
SECTION 87 (1)

PERMIT (AMENDED)

PERMIT TO CARRY OUT PRELIMINARY RESEARCH, EXCAVATE , SALVAGE and COLLECT

PERMIT ISSUED TO:

1 Dr Colin Pardoe
Bio-anthropology and Archaeology
3 Rose Street
Gilberton
Sth Australia, 5081

2 Dr Johan Kamminga
National Heritage Consultants
34 Simpson Street
Watson
ACT, 2602

Postal Address:
As Above

AUTHORITY is hereby given for the person/s named above to:

- disturb or excavate any land, or cause any land to be disturbed or excavated, for the purpose of discovering an Aboriginal object within the meaning of that term in section 5(1) of the *National Parks and Wildlife Act* 1974 (NSW) ("Aboriginal object"); and
- to disturb or move on any land an Aboriginal object that is the property of the Crown,

in the course of undertaking research, excavation, salvage, collection and storage/curation of Aboriginal objects as described in the Research Design and Study Plan for the Barrick Australia Limited Cowal Gold Project which was Attachment 5 to the application for this permit dated 15 August 2002 (the "Application"), as modified by the special and specific conditions contained in this permit.

AREA COVERED by Permit for purpose as named above: as described in Schedule B of Consent # 1467 issued in conjunction within this permit.

TERM OF PERMIT: As specified in Specific Condition 5 of Consent #1467 issued in conjunction with this permit.

TERMS AND CONDITIONS OF THIS PERMIT

This permit is issued subject to the General Terms and Conditions covering archaeological permits and consents, as well as those Specific and Special Terms and Conditions pertaining to each type of permit as determined by the Director-General, which may appear hereunder: See attached page.

DATED at Buronga this Twenty-Seventh day of October 2003

Director-General of the Department of Environment and Conservation

Tony Kevin A/Director Central
27.10.03

SPECIAL and SPECIFIC CONDITIONS

1. The permit does not cover human skeletal remains. Should human remains be uncovered all work at the particular location shall cease and the Department of Environment and Conservation , Cultural Heritage Branch, archaeologist at Dubbo shall be notified immediately.

2. All work shall be carried out in accordance with the Research Design and Study Plan that is Attachment 5 to the Application (the "Research Design and Study Plan") as modified by the Special and Specific Conditions applying to the permit.

3. This permit allows for test pit investigations and extended excavation (if warranted) of three alluvial fans within the footprint of the proposed open cut pit and site P1 (NPWS# 43-4-7). It further allows for the salvage, collection and storage/curation of a representative sample of Aboriginal objects located during these works in accordance with Special Condition 12. These works must be carried out in the following manner:
- Excavation need not proceed beyond the test pit investigation stage in the absence of any cultural material.
- All test pits and excavations shall be conducted in accordance with the Research Design and Study plan except that test pits for the alluvial fans on the open cut footprint shall be placed as follows. A 10 metre (or less) x 1 metre trench shall be placed on the fan on any axis as determined by the permit holders and/or their instructed delegates who must be qualified archaeologists. This shall be intersected by a second trench of the same dimensions perpendicular to the first such that the trenches will define and fall within the boundaries of an extended 10 mt x 10 mt excavation should cultural material be encountered.

4. The scarred tree known as P2 (NPWS # 43-4-8) shall be treated as per the Research Design and Study Plan with the following qualifications:
- The tree shall be cut a minimum of 40-50 cm above and below the scar (where possible).Where this is not possible cuts will be made as far away from the scar edge as practicable.
- The cut surfaces of the scarred sections shall be bored with a number of holes which shall be filled with an insecticide to provide termite resistance. The holes should then be plugged and the surfaces sealed to exclude moisture.
- The tree shall be temporarily stored in the temporary keeping place (as approved for Section 87 permit no 1361) in a manner that will provide freedom from incidental damage yet allow for continuous air circulation. That is, the tree shall not be wrapped or constrained in any manner that prevents the timber from breathing or causes it to become wet such that it may be subject to undue cracking or fungal attack.
- The final location of the tree shall be determined in consultation with the Wiradjuri Condobolin Corporation. The final location of the tree must satisfy the following. A concrete slab or similar shall be laid and the super structure of the shelter be prefabricated and ready for immediate installation before moving the object to the selected location. This is to avoid any undue exposure to the weather that may negatively impact upon the integrity of the object. Said shelter shall be constructed in a manner that provides security but visual access only to the object.
- Interpretive signage shall be provided by Barrick Australia Limited to the shelter briefly explaining the traditional function of the object.

5. This permit allows for the excavation of site LC 1 (NPWS# 43-3-21). It further allows for the salvage, collection and storage/curation of a representative sample of Aboriginal objects located during these works in accordance with Special Condition 12. The excavation shall be undertaken in accordance with the Research Design and Study Plan by a specialist archaeologist nominated by the registered native title claimants for the area of MLA 45 as specified in the Research Design and Study Plan. If the registered native title claimants for the area of MLA 45 advise the permits holders in writing that they do not wish to nominate a specialist archaeologist to undertake these works, the excavation works shall be undertaken by the a permit holder and/or his instructed delegates who must be qualified archaeologists. The excavations will however be overseen by a holder of this

permit and the nominated archaeologist must comply with any directions from the permit holders.

6. Salvage works at sites LC1, LC2, LC3, LC4, P1, A, F, G, I, J, K, L, M and N, defined in Attachment S of the Application and situated on the land described in Schedule B of Consent # 1467 shall be completed in the following manner:

- A permit holder and/or his instructed delegates shall inspect the land in these site locations and identify surface Aboriginal objects. The Wiradjuri Condobolin Corporation, West Wyalong Local Aboriginal Land Council and Mooka Traditional Owners Council (hereafter the "Aboriginal community") shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in recording and collection works.
- A representative sample of Aboriginal objects from each site shall be taken. Their position shall be recorded by a GPS and they shall be bagged and temporarily stored in accordance with Special Condition 13 until they are dealt with in accordance with the procedures outlined in Special Condition 12.
- The collected Aboriginal objects shall be replaced in a location as close as possible to their original location at a time when the works within the specific area do not pose a future threat to them. Replacement will be supervised by a permit holder and/or his instructed delegates. The Aboriginal community shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in replacement works.
- Remaining Aboriginal objects shall be collected with the soil during soil stripping operations and temporarily stored in soil stockpiles before being replaced during rehabilitation activities.
- A Cultural Heritage Officer retained by Barrick shall undertake routine monitoring following replacement as a threat abatement measure. Should this officer identify a likely threat, the officer shall be empowered to halt proceedings. Barrick Australia Limited shall immediately upon notification, investigate the matter, and should the threat be verified, take necessary action to remove or mitigate the threat.

7. Salvage works at sites LCB9 and LCB14 defined in Attachment S of the Application and situated on land described in Schedule B of Consent # 1467 shall be completed in the following manner:

- A permit holder and/or his instructed delegates shall inspect the land in these site locations and identify surface Aboriginal objects. The Aboriginal community shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in recording and collection works.
- A representative sample of surface Aboriginal objects from each of these sites shall be collected. Their position shall be recorded by a GPS and they shall be bagged and temporarily stored in accordance with Special Condition 13 until they are dealt with in accordance with the procedures described in Special Condition 12.
- a permit holder and/or his instructed delegates who must be qualified archaeologists shall excavate test pits of the width of the pipeline trench x 50 cm long x 50 cm deep, in 5 cm spits, at 5 metre intervals along that part of the proposed pipeline trench that is within Sites LCB9 and LCB14 to determine the existence of sub-surface cultural materials;
- If sub-surface cultural materials are identified, an extended excavation shall be carried out along the length of the proposed pipeline trench within the relevant site to a maximum depth of 1 metre;
- a representative sample of Aboriginal objects located during the test pit excavations and extended excavations (if any) shall be collected. Their position shall be recorded by a GPS and they shall be bagged and temporarily stored in accordance with the procedures described in Special Condition 12.
- During the pipe laying activities, the trench and spoil shall be monitored for the incidence of sub-surface Aboriginal objects during removal. A representative sample of any Aboriginal objects so located shall be collected and treated in the manner set out above.
- At the completion of pipe laying activities, the Aboriginal objects shall be replaced as near as practicable to their original location. The Aboriginal community shall be notified

of the programme and a representative /s shall be invited to observe and where appropriate participate in replacement works.

8. The following five sites defined in Attachment S of the Application and situated on the land described in Schedule B of Consent # 1467 shall have conservation works effected as follows:
- Sites B, C, E and H shall be covered by a geo-textile blanket extending a minimum of two metres beyond all visible artefacts defining their boundaries. A layer of loam or sand, a minimum of 200 mm thick, shall be hand spread over this blanket, working progressively over fill as it is placed. That is, traffic directly on the blanket shall be avoided. A secondary geo-textile blanket shall cover the loam and be pegged down at the edges.
- Topsoil stockpiles may be placed over these protected sites. If so, removal of top soil from the stockpiles for rehabilitation works shall stop when the first (top layer) of geo-textile is encountered. This blanket shall then be removed to facilitate hand scarifying of the loam for reconstitution and subsequent revegetation in accordance with the mine rehabilitation plan.
- Site D lies on or very close to an existing drainage contour. A permit holder shall in consultation with design engineering staff determine if the contour can be shifted to avoid the site. The maximum area of the site that can reasonably be conserved shall be protected in the manner described for B, C, E and H.
- After the completion of the above conservation works, the protected areas shall be sign-posted.
- These measures shall be undertaken within 90 days of the period commencing 19th May 2003.
- However, if the area of any of these sites is proposed to be utilised by Barrick Australia Limited for its activities, other than vehicular passage, within the area of MLA 45, the following shall occur:
- A permit holder shall give 21 days written notice to the Director-General of their intention to undertake the archaeological works referred to below, together with evidence of Barrick Australia Limited's consultation with the Aboriginal community about the proposed archaeological works and any compensatory measures proposed to be undertaken by Barrick Australia Limited; and
- A permit holder and/or his instructed delegates shall carry out inspection, salvage and collection works at each site in accordance with the procedure contained in Special Condition 6.

9. Additional works on the Back Plain (as that term is described in the Research Design and Study Plan) - Areas outside of the sites on the Back Plain that are identified in the Application shall be inspected to identify, where possible, other concentrations of surface Aboriginal objects within the Permit Area. The Aboriginal Community shall be notified of the programme and a representative/s shall be invited to observe and where appropriate participate in inspection and recording works.
- In relation to 15 concentrations of Aboriginal objects, artefact densities in those concentrations shall be measured across areas of approximately 10m x 10 m. Their position shall be recorded by a GPS and the concentrations of Aboriginal objects shall be individually measured and described to provide supplementary detail for subsequent spatial and technological analysis.
- The Aboriginal objects shall be left where found to be collected with the soil during soil stripping operations and temporarily stored in soil stockpiles before being replaced during rehabilitation activities.

10. Additional works generally - where the Research Design and Study Plan provides for the inspection of land and the collection of Aboriginal objects prior to construction earthworks other than as referred to in Special Conditions 6, 7, 8 and 9, such inspection and collection shall be carried out in accordance with the procedure contained in Special Condition 6.

11. All areas where soil stripping occurs shall be further inspected following this operation in the event that datable materials might be revealed. Samples shall be obtained by a permit

holder and/or his instructed delegates and be submitted for chronological analysis. Costs for such analysis shall be borne by Barrick Australia Limited.

12. All Aboriginal objects subject to salvage and collection shall be dealt with in accordance with this special condition. Sufficient data will be taken from each Aboriginal object, including material type and size characteristics, to enable a technological analysis to be undertaken for report purposes provided always that numbers are large enough for meaningful analysis. This information shall form the basis of a master inventory which must be maintained at all times. After collected items have been closely examined and classified by a permit holder and/or his instructed delegates who must be qualified archaeologists, each collected item that has been classified as an Aboriginal object shall be separately bagged and labelled duplicating the above information and placed in a clearly labelled box detailing the specific area of collection. They shall be dealt with in accordance with Special Condition 13.

13. All collected Aboriginal objects shall be retained in the existing temporary Keeping Place within the Barrick Cowal Gold Project Compound. Keys shall be held by the Cowal Gold Project Site Coordinator and access shall be limited to Aboriginal Community representatives, the permit holders and/or their instructed delegates, the Land, Environment and Wiradjuri Heritage Officer and for audit purposes, Department of Environment and Conservation , Cultural Heritage Branch staff. Note that these are temporary facilities and a more permanent on site Keeping Place may be required in the future for Aboriginal objects removed from the mine footprint area in the event that this area remains a water filled void.

14. Unless otherwise directed by the special conditions, any Aboriginal objects recovered, being the property of the Crown shall be deposited at the Australian Museum, in accordance with the adopted procedures for the deposition of objects as prescribed by The Australian Museum, at or before a period of 2 years from the date of expiration of the permit or any renewal whichever occurs first. Information about deposition requirements can be obtained from the Aboriginal Collections Manager, Division of Anthropology, the Australian Museum.

15. The holder/s of the permit shall furnish the Department of Environment and Conservation, Cultural Heritage Branch with a final report detailing the results of investigations within 9 months of the completion of the excavations and field investigations. Said report will be expected to address matters relating to the spatial distribution of sites, technological and chronological considerations, and inferences of land use histories related to palaeo- environments. A separate plain English report shall also be produced for the Aboriginal community within the same time frame.

16. When the archaeological works authorised by this permit for a particular area have been completed, a permit holder will certify that fact in writing to Barrick Australia Limited. Such certification may be given before the examination and classification of collected items pursuant to Special Condition 12. A copy of that certification shall be provided to the Director-General.

17. Where the Research Design and Study Plan refers to the Land, Environment and Wiradjuri Heritage Officer, it shall be read as referring to a cultural heritage officer retained by Barrick (and approved by the West Wyalong Local Aboriginal Land Council).

18. Where the Research design and Study Plan provides in relation to each zone that "*works will stop in the relevant location when Barrick become aware of Aboriginal objects not previously identified during earthworks, construction or operation of the project, individual Aboriginal objects will be collected. Necessary permits or consents already in place shall be complied with prior to recommencement of work in the relevant area*" the following shall occur instead:

- A Cultural Heritage Officer retained by Barrick (and approved by the West Wyalong Local Aboriginal Land Council) shall monitor construction earthworks;

- If an Aboriginal object (other that human skeletal remains) of a type that has not been previously identified during the archaeological works referred to in the Research Design and Study Plans and Special Conditions 3-10 of this permit, is identified, the Aboriginal object shall be collected and its position recorded by GPS. The collected Aboriginal object shall then be bagged and temporarily stored in accordance with Special condition 13 until it is dealt with in accordance with Special Condition 12.

GENERAL TERMS AND CONDITIONS

1. Permits and Consents are not transferable.

2. A Permit covers only that area stated in the Permit.

3. Consent covers only that area stated in the instrument of Consent and in any Schedules thereto.

4. Terms and conditions of Permits may be varied at any time at the discretion of the Director-General.

5. The Person to Whom the Permit is issued or the Consent granted shall be responsible for the manner in which the work covered by the Permit or Consent is performed.

6. An officer of the, acting on the authority of the Director-General, may at any time examine work done or any objects recovered under any Permit or Consent.

7. Permits and Consents are necessary for all activities for which they are issued or granted, but do not in themselves give authority to enter or work on freehold land or leased Crown Land. Permission must be sought from the owner or occupier and arrangements made with him/her.

8. The holder of the Permit or Consent shall furnish, when required to do so, an undertaking to indemnify the Department of Environment and Conservation against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses in respect of any accident or injury to any person or property which may arise solely out of the existence of any works associated with the Permit or Consent.

9. All reports received in connection with work carried out under a Permit or Consent shall be treated as confidential but the Department of Environment and Conservation shall have the right to copy all such reports, to allow consideration thereof by qualified referees.

10. For a period of five years from the date of issue of the Permit or Consent, the holder of the Permit or Consent may refuse to allow the Department of Environment and conservation and The Australian Museum, if such information is held by those institutions, to make public any information contained in any report referred to in Condition 2 (specific Conditions) above, except where it is deemed necessary for management, protection or research reasons. After this period of five years from the date of issue of the Permit or Consent, the Service and The Australian Museum shall have the right to use and authorise the use of information contained in all reports submitted under the Permit or Consent, except where specifically requested by the holder of the Permit or Consent.

11. Upon publication of any information relating to work done under a Permit or Consent, a copy of such publication(s) shall be forwarded to the Department of Environment and Conservation, The Australian Museum, Sydney, and the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, unless permission to do otherwise has been obtained from the Service.

12. The holder of the Permit or Consent shall consult with the local Aboriginal community regarding the work covered by the Permit or Consent and shall respond to any reasonable request to involve the Aboriginal community in the work.

13. The Department of Environment and Conservation and The Australian Museum may supply copies of relevant reports as furnished by the holder of the Permit or Consent to local Aboriginal communities.

14. The holder of the Permit or Consent shall keep field records and a copy of all such records shall be lodged with the Department of Environment and Conservation at the termination of each field work period.

15. The holder of the Permit or Consent shall notify the Dubbo office of the Department of Environment and Conservation at the commencement and completion of fieldwork, and shall supply to District officers details of field work programs and results if requested.

Cowal:4
2003:ARH

PERMIT #: 1681

NATIONAL PARKS AND WILDLIFE ACT 1974
SECTION 87 (1)

PERMIT

PERMIT TO SALVAGE and COLLECT

PERMIT ISSUED TO:

1 Dr Colin Pardoe
Bio-anthropology and Archaeology
3 Rose Street
Gilberton
Sth Australia, 5081

2 Dr Johan Kamminga
National Heritage Consultants
34 Simpson Street
Watson
ACT, 2602

Postal Address:
As Above

AUTHORITY is hereby given for the person/s named above to:

- disturb or excavate any land, or cause any land to be disturbed or excavated, for the purpose of discovering an Aboriginal object within the meaning of that term in section 5(1) of the *National Parks and Wildlife Act* 1974 (NSW) ("**Aboriginal object**"); and
- to disturb or move on any land an Aboriginal object that is the property of the Crown,

in the course of undertaking salvage, collection and storage/curation of Aboriginal objects as described in the Research Design and Study Plan for the Barrick Australia Limited Cowal Gold Project which was Attachment 5 to the application for this permit dated 15 August 2002 (the "**Application**"), as modified by the special and specific conditions contained in this permit.

AREA COVERED by Permit for purpose as named above: as described in Schedule B of Consent # 1680 issued in conjunction within this permit.

TERM OF PERMIT: As specified in Special Condition 3 and 5 of Consent #1680 issued in conjunction with this permit.

TERMS AND CONDITIONS OF THIS PERMIT

This permit is issued subject to the General Terms and Conditions covering archaeological permits and consents, as well as those Specific and Special Terms and Conditions pertaining to each type of permit as determined by the Director, which may appear hereunder: See attached page.

DATED at Dubbo this Twenty Eighth day of, July 2003

Director General of National Parks and Wildlife

SPECIAL and SPECIFIC CONDITIONS

1. The permit does not cover human skeletal remains. Should human remains be uncovered all work at the particular location shall cease and the NPWS archaeologist at Dubbo shall be notified immediately.

2. All work shall be carried out in accordance with the Research Design and Study Plan that is Attachment 5 to the Application (the "**Research Design and Study Plan**") as modified by the Special and Specific Conditions applying to the permit.

3. Although no sites are known to occur in the Permit Area a permit holder and/or his instructed delegates shall inspect the land in the Permit Area which is proposed to be disturbed by construction work in connection with the development consent granted for the Cowal Gold Mine by the Minister for Urban Affairs and Planning on 26 February 1999 and the approval granted for the Cowal Gold Project Access Road Upgrade by the Bland Shire Council on 21 April 1999 pursuant to Part 5 of the *Environmental Planning and Assessment Act 1979*. Should surface Aboriginal objects be identified, a representative sample of Aboriginal objects shall be taken. Their position shall be recorded by GPS and they shall be bagged and temporarily stored according to Special Condition 5 until they are dealt with in accordance with the procedures outlined in Special Condition 4.

4. All Aboriginal objects subject to salvage and collection shall be dealt with in accordance with this Special Condition. Sufficient data will be taken from each Aboriginal object, including material type and size characteristics, to enable a technological analysis to be undertaken for report purposes provided always that numbers are large enough for meaningful analysis. This information shall form the basis of a master inventory which must be maintained at all times. After collected items have been closely examined and classified by a permit holder and/or his instructed delegates who must be qualified archaeologists, each collected item that has been classified as an Aboriginal object shall be separately bagged and labelled duplicating the above information and placed in a clearly labelled box detailing the specific area of collection. Examination and classification shall follow collection as expediently as possible so that development of the master inventory does not significantly lag behind collection works.

5. All collected Aboriginal objects shall be retained in the existing temporary Keeping Place within the Barrick Cowal Gold Project Compound. Keys shall be held by the General Manager Cowal Gold Project or his delegate, the Cowal Gold Project Site Coordinator, and access shall be limited to Aboriginal Community representatives, the permit holders and/or their instructed delegates, a cultural heritage officer retained by Barrick and for audit purposes, NPWS staff. Note that these are temporary facilities and a more permanent Keeping Place is required as a condition of Consent # 1467 for Aboriginal objects removed from the mine footprint area in the event that this area remains a water filled void.

6. Unless otherwise directed by the special conditions, any Aboriginal objects recovered, being the property of the Crown shall be deposited at the Australian Museum, in accordance with the adopted procedures for the deposition of objects as prescribed by The Australian Museum, at or before a period of 2 years from the date of expiration of the permit or any renewal whichever occurs first. Information about deposition requirements can be obtained from the Aboriginal Collections Manager, Division of Anthropology, the Australian Museum.

7. The holder/s of the permit shall furnish the National Parks and Wildlife Service with a final report detailing the results of investigations within 9 months of the completion of the excavations and field investigations. Said report will be expected to address matters relating to the spatial distribution of sites, technological and chronological considerations, and inferences of land use histories related to palaeo- environments. A separate plain

English report shall also be produced for the Aboriginal community within the same time frame.

8. When the archaeological works authorised by this permit for a particular area have been completed, a permit holder or his delegate, emeritus Professor Frederick James Allen, will certify that fact in writing to Barrick Australia Limited. Such certification may be given before the examination and classification of collected items pursuant to Special Condition 4. A copy of that certification shall be provided to the Director-General.

9. The inspecting, measuring and recording activities (for concentrations of surface Aboriginal objects) proposed in the Research Design and Study Plan for the back plain zone shall not be read as applying to the Permit Area.

10. Where the Research Design and Study Plan refers to the "*Land, Environment and Wiradjuri Heritage Officer*" in relation to the back plain zone, for the purposes of this permit, it shall instead be read as referring to a cultural heritage officer retained by Barrick (and approved by the West Wyalong Local Aboriginal Land Council).

11. Where the Research Design and Study Plan provides in relation to the back plain zone that "*works will stop in the relevant location when Barrick become aware of Aboriginal relics not previously identified during earthworks, construction or operation of the project. Individual Aboriginal objects will be collected. Necessary permits or consents already in place shall be complied with prior to the recommencement of work in the relevant area*" the following shall occur in the Permit Area instead:
    - A cultural heritage officer retained by Barrick (and approved by the West Wyalong Local Aboriginal Land Council) shall monitor construction earthworks;
    - If an Aboriginal object (other than human skeletal remains) of a type that has not been previously identified during the archaeological works referred to in Special Condition 3 of this permit, is identified, the Aboriginal object shall be collected and its position recorded by a GPS. The collected Aboriginal object shall then be bagged and temporarily stored in accordance with Special Condition 5 until it is dealt with in accordance with Special Condition 4.

GENERAL TERMS AND CONDITIONS

1. Permits and Consents are not transferable.

2. A Permit covers only that area stated in the Permit.

3. Consent covers only that area stated in the instrument of Consent and in any Schedules thereto.

4. Terms and conditions of Permits may be varied at any time at the discretion of the Director-General.

5. The Person to whom the Permit is issued or the Consent granted shall be responsible for the manner in which the work covered by the Permit or Consent is performed.

6. An officer of the National Parks and Wildlife Service, acting on the authority of the Director-General, may at any time examine work done or any objects recovered under any Permit or Consent.

7. Permits and Consents are necessary for all activities for which they are issued or granted, but do not in themselves give authority to enter or work on freehold land or leased Crown Land. Permission must be sought from the owner or occupier and arrangements made with him/her.

8. The holder of the Permit or Consent shall furnish, when required to do so, an undertaking to indemnify the National Parks and Wildlife Service against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses in respect of any accident or injury to any person or property which may arise solely out of the existence of any works associated with the Permit or Consent.

9. All reports received in connection with work carried out under a Permit or Consent shall be treated as confidential but the National Parks and Wildlife Service shall have the right to copy all such reports, to allow consideration thereof by qualified referees.

10. For a period of five years from the date of issue of the Permit or Consent, the holder of the Permit or Consent may refuse to allow the National Parks and Wildlife Service and The Australian Museum, if such information is held by those institutions, to make public any information contained in any report referred to in Condition 2 (specific Conditions) above, except where it is deemed necessary for management, protection or research reasons. After this period of five years from the date of issue of the Permit or Consent, the Service and The Australian Museum shall have the right to use and authorise the use of information contained in all reports submitted under the Permit or Consent, except where specifically requested by the holder of the Permit or Consent.

11. Upon publication of any information relating to work done under a Permit or Consent, a copy of such publication(s) shall be forwarded to the National Parks and Wildlife Service, The Australian Museum, Sydney, and the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, unless permission to do otherwise has been obtained from the Service.

12. The holder of the Permit or Consent shall consult with the local Aboriginal community regarding the work covered by the Permit or Consent and shall respond to any reasonable request to involve the Aboriginal community in the work.

13. The National Parks and Wildlife Service and The Australian Museum may supply copies of relevant reports as furnished by the holder of the Permit or Consent to local Aboriginal communities.

14. The holder of the Permit or Consent shall keep field records and a copy of all such records shall be lodged with the National Parks and Wildlife Service at the termination of each field work period.

15. The holder of the Permit or Consent shall notify the Dubbo office of the National Parks and Wildlife Service at the commencement and completion of fieldwork, and shall supply to District officers details of field work programs and results if requested.

Care Agreement

National Parks and Wildlife Act 1974

NSW GOVERNMENT | Office of Environment & Heritage

Your reference: Niche Project Number 4973
Our reference: C0004976 / A00497-2019
Document number: C0004976
Contact: John Gilding (03) 5483 9118

Evolution Mining (Cowal) Pty Ltd
Level 24
175 Liverpool Street
Sydney NSW 2000

Attn: Danielle Wallace, Superintendent – Environmental & Social Responsibility
Via email: Danielle.Wallace@evolutionmining.com.au

CARE AGREEMENT C0004976

Dear Ms Wallace

I refer to your application for the transfer of Aboriginal objects for safe keeping under section 85A(1)(c) of the *National Parks and Wildlife Act 1974* (NPW Act), received by the Office of Environment and Heritage (OEH) on 21 June 2019.

OEH has considered the application and supporting information provided and has decided to transfer the Aboriginal objects to Evolution Mining (Cowal) Pty Limited, on behalf of the Registered Aboriginal Parties identified in Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations - processing rate modification'. Report produced by Niche Environment and Heritage on behalf of Evolution Mining (Cowal) Pty Ltd, West Wyalong, NSW, pursuant to s85A(1)(c) of the NPW Act, under a Care Agreement which includes a number of conditions. The Care Agreement is attached.

In order to execute the agreement and for it to be valid you need to:

1/ Sign the agreement in front of a witness in the space provided at the back of the form under "Care Agreement Executed as a Deed",

2/ Have your witness sign the agreement in the space provided

3/ Return the signed and witnessed agreement back to OEH.

If you have any questions, or wish to discuss this matter further please contact John Gilding via email at john.gilding@environment.nsw.gov.au or phone (03) 5483 9118.

.....

Andrew Fisher
Senior Team Leader Planning – South West
Albury
(by Delegation)

Date: 27 June 2019

Care Agreement for the transfer and safekeeping of Aboriginal objects number: C0004976

Section 85A1(c) *National Parks and Wildlife Act 1974* (NPW Act)

OEH Office issuing this Care Agreement
Office of Environment and Heritage
Conservation and Regional Delivery
South West
512 Dean Street
Albury NSW 2640
Telephone number: (02) 6022 0624
Fax number: (02) 6021 0610
Email: rog.southwest@environment.nsw.gov.au

SCHEDULE A

Reference Schedule

Item 1	Name of Agreement Holder: Address: Facsimile: Phone number:	Evolution Mining (Cowal) Pty Limited Level 24, 175 Liverpool Street Sydney NSW 200 (02) 9696 2900
Item 2	AHIP number	1468/1467 1681/1680 4376/C0004570
Item 3	Commencement date	01 July 2019
Item 4	Term of care agreement	31 December 2032
Item 5	New storage location of Aboriginal objects	Cowal Gold Operations Temporary Keeping Place Lake Cowal Road Lake Cowal NSW 2671

Details

Parties

Chief Executive of the Office of Environment and Heritage

And

The party identified at Item 1 of Schedule A to this Care Agreement (**Agreement holder**) Evolution Mining (Cowal) Pty Limited, an organisation representing the Registered Aboriginal Parties as identified in:

> Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations - processing rate modification'. Report produced by Niche Environment and Heritage on behalf of Evolution Mining (Cowal) Pty Ltd, West Wyalong, NSW

Background

A. On 21 June 2019 an application was made to the Chief Executive of the Office of Environment and Heritage for the transfer and safekeeping of Aboriginal objects pursuant to s.85A1(c) of the *National Parks and Wildlife Act 1974*.

B.

The purpose of the application is to fulfil obligations to the Registered Aboriginal Parties by the applicant regarding long-term management and curation of object salvaged as part of the project Cowal Gold Operations, Lake Cowal:

- Required and approved under relevant regulatory instruments:
  - DA14/98 MOD14
  - DA83/98
  - AHIP s87 Permit 1468 and 1681
  - AHIP s90 Consent 1467 and 1680
  - AHIP s90 Permit 4376 (C0004570)
- Consultation undertaken with the Registered Aboriginal Parties (RAPs) in compliance with Reg 80C and support for the proposal by the RAPs
- The objects will be:
  - catalogued as per Reeves (2019)
  - secured within a locked shipping container with shelved, catalogued storage
  - management and access procedures will be as per the Indigenous Archaeology and Cultural Heritage Management Plan – Barrick 2003 (updated to reflect current instruments and conditions of consent
- All objects will be maintained in accordance with the most current legislative requirements governing ACH management within this type of context

C. The Aboriginal object covered by this instrument are as identified in Reeves (2019), the IACHMP (Barrick 2003) and as specified in AHIPs 1468/2567, 1681/1680 and 4376 (C0004570). Salvage excavation is to be undertaken by Jamie Reeves (Niche Environmental) or by another suitably qualified and experienced project manager as per Conditions 3, 4 and 5 of AHIP 4376 (C0004570).

Note: A Dictionary at the end of the Care Agreement defines terms used in this document. Further information about this Care Agreement is also set out after the Dictionary

OPERATIVE PROVISIONS

1. COMMENCEMENT AND DURATION OF THE CARE AGREEMENT

1.1 The Care Agreement commences on the commencement date set out at Item 3 of Schedule A.

1.2 The term of this Care Agreement is stated at Item 4 of Schedule A.

2. LOCATION OF OBJECTS TO WHICH THIS CARE AGREEMENT APPLIES

2.1 The location/s of Aboriginal Objects to which this Care Agreement applies is/are set out in Item 5 of Schedule A.

3. TRANSFER OF ABORIGINAL OBJECTS

3.1 Pursuant to s85A(1)(c) of the Act, the Aboriginal objects specified in Schedule B are transferred to the Agreement holder in accordance with the conditions of this Care Agreement.

4 RESPONSIBILITIES OF AGREEMENT HOLDER FOR SAFEKEEPING

4.1 Upon transfer of the Aboriginal objects specified in Schedule B to the Agreement holder, the safekeeping of those Aboriginal objects is the responsibility of the Agreement holder.

4.2 The Agreement Holder is to abide by the terms of this Care Agreement.

4.3 The Agreement holder must ensure that all persons involved in the safekeeping of the Aboriginal objects specified in Schedule B (whether employees, contractors, sub-contractors, agents or other persons granted access) are made aware of and comply with the conditions of this Care Agreement.

4.4 If the Aboriginal objects specified in Schedule B are loaned out for educational/display purposes, the responsibility for their safekeeping still rests with the Agreement holder.

5 CONDITIONS OF SAFEKEEPING

5.1 Upon transfer to the Agreement holder, the Aboriginal objects specified in Schedule B are to be stored securely at the storage location identified at [Item 5 of Schedule A]

5.2 A copy of Schedule B, which list the object, must be kept with the collection.

5.3 The Aboriginal objects must be stored in:

5.3.1 good quality, double-bagged plastic zip-lock bags and archival quality boxes and/or

5.3.2 in a locked glass display cabinet; and/or

5.3.3 in an education kit.

5.4 Both bags and boxes, display cabinet must be externally labelled using permanent marker, and an 'independent' label on robust material (e.g. tyvek) written with permanent marker must be placed inside each box or bag, next to the object on display. The label must identify its:

5.4.1 contents

5.4.2 origin

5.4.3 storage location (any other information that will ensure that a bag and its contents can be returned to is correct storage location if it is left outside the storage box for any reason)

5.4.4 and in accordance with methods detailed in Reeves (2019)

5.5 Upon request, the Agreement holder must provide reasonable access to the Aboriginal objects specified in Schedule B, to any persons in accordance with Aboriginal lore and custom.

5.6 Upon request from OEH, the Agreement holder must provide reasonable access to Aboriginal objects specified in Schedule B to any OEH authorised officer.

6 NOTIFICATION AND REPORTING CONDITIONS

6.1 Written notice

6.1.1 The Agreement holder must notify the OEH office in writing within 7 days of taking custody of the Aboriginal objects specified in Schedule B.

6.1.2 Any requirement to provide written notice to the OEH office in this Care Agreement may be complied with by faxing the notice to the OEH office's fax number, emailing the notice to rog.southwest@environment.nsw.gov.au or by sending by registered post to the OEH office's address. The OEH office's contact details are specified at the front of this Care Agreement.

6.2 The Agreement holder must seek approval from the OEH office by applying in writing to the OEH office, if they intend to move the Aboriginal objects specified in Schedule B to another location. The Aboriginal objects, subject to the application, must not be moved to the new location, until OEH has issued a written approval to the Agreement holder.

6.3 The Agreement holder must provide a copy of this Care Agreement to each Registered Aboriginal Party or others consulted, within 14 days from the date of this Care Agreement, to inform these parties of the Care Agreement.

7 GENERAL PROVISIONS

7.1 Variation of Care Agreement

7.1.1 The Agreement holder may apply to the OEH office in writing for a variation of any conditions of a Care Agreement.

7.2 Transfer of Care Agreement to another person

7.2.1 Only the Chief Executive of OEH can transfer Aboriginal objects under s85A1(c) of the Act.

7.2.2 If the Agreement holder wants the safekeeping under the Care Agreement to be the responsibility of another person, the Agreement holder must notify OEH in writing. The proposed new Care Agreement holder must then submit an application for a Care Agreement to the OEH office. This clause also applies in circumstances where a company is sold or wound up.

7.3 Termination of Care Agreement

7.3.1 The Care Agreement may be terminated at any time at the discretion of the Chief Executive of OEH, including where the Agreement Holder does not honour the terms of this Care Agreement.

7.3.2 Upon termination of the Care Agreement, the Agreement holder must arrange with OEH for the return of the Aboriginal objects within 28 Days.

7.3.3 In the event the Agreement holder can no longer ensure safekeeping of the objects in accordance with the terms of the Care Agreement, whether by reason of death or other unexpected circumstances, the Aboriginal objects must be returned to the Chief Executive of OEH.

8 DICTIONARY

8.1 In this Care Agreement, unless the contrary is indicated, the terms below have the following meanings:

Aboriginal object(s)	has the same meaning as in the Act
Act	means the National Parks and Wildlife Act 1974 (NSW)
Care Agreement	Means this document and includes all Schedules
Agreement holder	means the person listed at Item 1 in Schedule A
AHIMS	means the Aboriginal Heritage Information Management System maintained by OEH
AHIP	means an Aboriginal Heritage Impact Permit issued by OEH under Part 6 of the National Parks and Wildlife Act 1974 (NSW)
Application	means the completed application form and all other documents in written or electronic form which accompanied the application when it was lodged or which were subsequently submitted in support of the application.
Authorised officer	means an employee of the OEH who is appointed as authorised officer under s.156B of the Act
OEH	means Office of Environment and Heritage (NSW)
OEH office	means the office listed on the cover page of this Care Agreement
Chief Executive	means the Chief Executive of the Office of Environment and Heritage (NSW)
Local Aboriginal group	means the RAPs identified in Table 1
Registered Aboriginal Parties	means the following parties identified in Table 1
Salvage	the recovery of Aboriginal objects in accordance with the conditions of any AHIP referred to in the Care Agreement.

Table 1 Registered Aboriginal Parties for the modification (from Reeves 2019: 11)

Representative Aboriginal Party		
Name	**Name**	**Name**
Alona Apps	Jahnaya Freeman	Norma Freeman
Beverley Johnson	Janine Thompson	Peter Peckham
Braydon & Mikayla Davis	Jirrah Freeman	Sharon Williams
Calara Culture & Heritage Aboriginal Corporation	Judy Johnson	Shawn Williams
Cindy Fuller	Keith Freeman	Stuart Cutmore
Condobolin Local Aboriginal Land Council	Krystal Ingram	Wayne Williams
Didge Ngunawal Clan	Louise Davis	West Wyalong Local Aboriginal Land Council
Enid Clarke	Marnie Freeman	Wiradjuri Condobolin Corporation
Ernie Johnson	Murie Elders Aboriginal Corporation	Wiradjuri Interim Working Party
Isabelle Collins	Neville Williams	

Care Agreement Executed as a Deed

EXECUTED for and on behalf of the Chief Executive of the Office of Environment and Heritage

By

ANDREW FISHER

Name

27/6/19

Date

SNR TEAM LEADER, PLANNING – SOUTH WEST

Position

Signature

Witness (signature)

ANGELA GOODFELLOW

Name of Witness (print)

27/6/19

Date

Care Agreement

Transfer of Aboriginal objects for safekeeping pursuant to section 85A1(c) *National Parks and Wildlife Act 1974*

NSW GOVERNMENT | Office of Environment & Heritage

EXECUTED for and on behalf of the Agreement holder

By

_____ _____/_____/_____

Name Date

_____

Position

_____

Signature

_____

Witness (signature)

_____ _____/_____/_____

Name of Witness (print) Date

SCHEDULE B

Aboriginal Objects

Aboriginal objects identified on AHIMS:

Attachment 2 – AHIMS Site Information and Proposed Harm

Portion of site	AHIMS ID	Site Feature	Name	Information Access Restriction	Easting	Northing	Datum	Zone	Type of harm	Degree of harm*	Consequence of harm
Whole	39-4-0315	Artefact	Lake Cowal 2017-003	No	534673	6279675	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0316	Artefact	Lake Cowal 2017-004	No	534848	6279730	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0317	Artefact	Lake Cowal 2017-005	No	534973	6279873	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0318	Artefact; Heat Retainer	Lake Cowal 2017-006	No	533950	6280001	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0319	Artefact	Lake Cowal 2017-007	No	533347	6279720	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0320	Artefact	Lake Cowal 2017-008	No	533176	6279651	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0321	Artefact	Lake Cowal 2017-009	No	532874	6279641	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0322	Artefact	Lake Cowal 2017-010	No	532695	6279642	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0323	Artefact	Lake Cowal 2017-011	No	532980	6278959	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0324	Oven	Lake Cowal 2017-012	No	532801	6278992	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0325	Artefact	Lake Cowal 2017-013	No	533183	6279041	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0326	Artefact	Lake Cowal 2017-014	No	532196	6279786	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0329	Heat Retainer	Lake Cowal 2017-015	No	531915	6280297	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0330	Heat Retainer	Lake Cowal 2017-016	No	531808	6280296	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0331	Heat Retainer	Lake Cowal 2017-017	No	532155	6280283	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0332	Heat Retainer	Lake Cowal 2017-018	No	532029	6280283	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0328	Heat Retainer	Lake Cowal 2017-019	No	532271	6279680	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0310	Artefact	Lake Cowal 2017-027	No	532409	6279489	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0307	Artefact	Lake Cowal 2017-028	No	532222	6279397	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0306	Artefact	Lake Cowal 2017-029	No	532120	6279359	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0305	Oven	Lake Cowal 2017-030	No	532005	6279201	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	39-4-0280	Heat Retainer	Lake Cowal 2017-066	No	532214	6278851	GDA	55	Directly harmed	Whole	Partial loss of value
Whole	43-4-0055	Heat Retainer	Lake Cowal 2017-068	No	533250	6280160	GDA	55	Directly harmed	Whole	Partial loss of value

Care Agreement

Transfer of Aboriginal objects for safekeeping pursuant to section 85A1(c) *National Parks and Wildlife Act 1974*

NSW GOVERNMENT | Office of Environment & Heritage

Application Area:

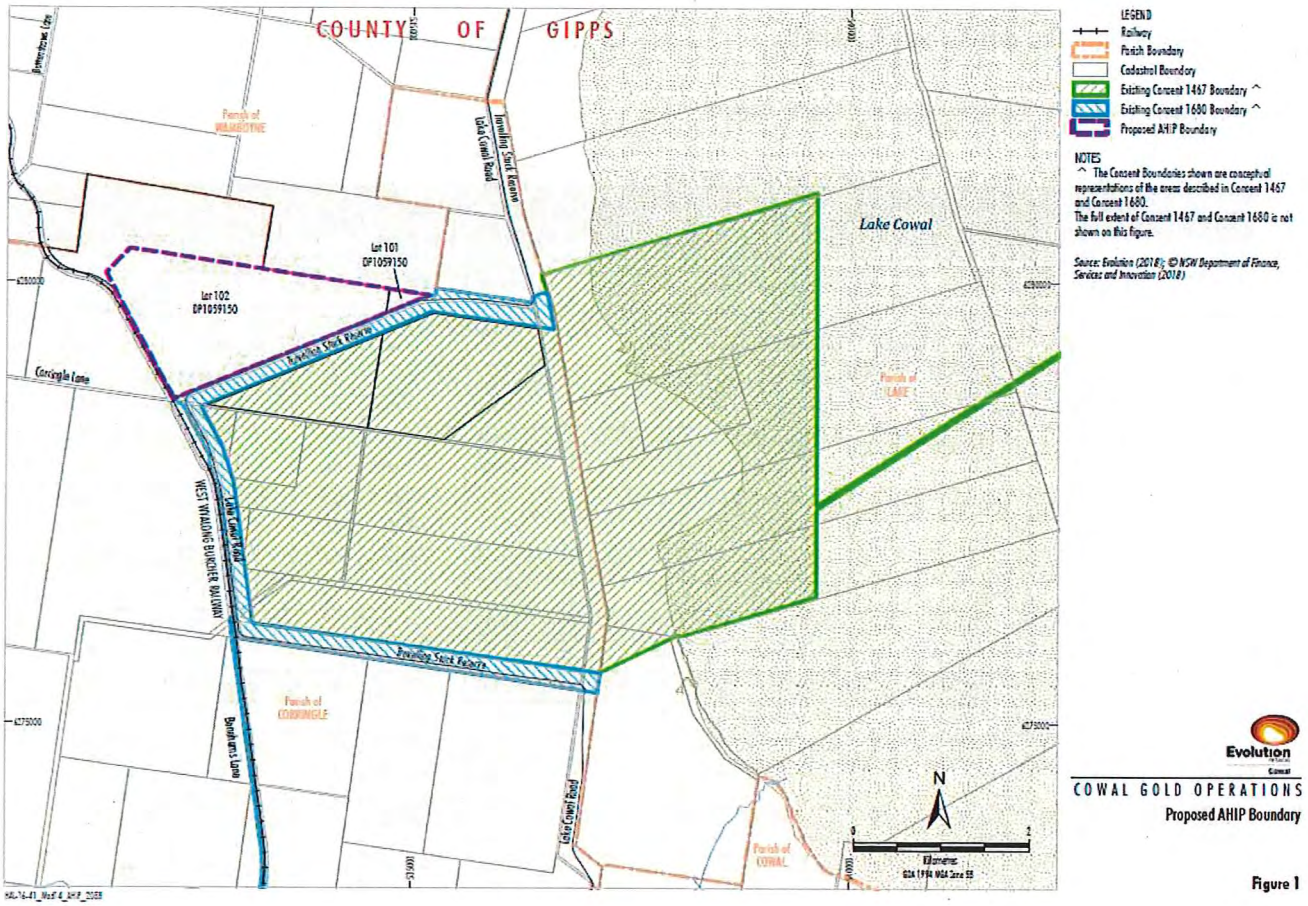


Figure 1

Aboriginal Heritage Impact Permit

Section 90 of the *National Parks and Wildlife Act 1974*

NSW GOVERNMENT | Office of Environment & Heritage

AHIP number: C0004570

(AHIMS Permit ID: 4376)

AHIP Issued To:

Evolution Mining (Cowal) Pty Ltd
Level 24
175 Liverpool Street
Sydney NSW 2000

OEH Office issuing this AHIP
Office of Environment and Heritage
Conservation and Regional Delivery
South West 512 Dean Street Albury NSW 2640
Telephone number: (02) 6022 0624
Fax number: (02) 6021 0610
Email: rog.southwest@environment.nsw.gov.au

Additional details for public register

a) Name of development or project	Cowal Gold Operations – Processing Rate Modification
b) Location	Lot 101 and 102 DP 1059150, Lake Cowal Road, NSW 2671
c) Local Government Area(s)	Bland Shire Council
d) Description of harm authorised	• Certain Aboriginal objects must not be harmed • Movement of certain Aboriginal objects • Salvage excavations • Community collection • Harm to certain Aboriginal objects through the proposed works
e) AHIP commencement date and duration	*Commencement:* 27 June 2019 *Duration:* 14 Years

AHIP TO HARM ABORIGINAL OBJECTS

A. Background

(i) On 7 January 2019 an application was made to the Chief Executive of the Office of Environment and Heritage (OEH) for an Aboriginal Heritage Impact Permit (AHIP) pursuant to s.90 of the *National Parks and Wildlife Act 1974* (the Act).

(ii) The purpose of the application was to harm aboriginal objects within the expansion area for Cowal Gold Operations, Modification 14 at Lake Cowal, NSW.

(iii) OEH considered the application and supporting information provided, and matters under section 90K of the Act and decided to issue an AHIP subject to conditions.

B. AHIP issued subject to conditions

An AHIP is issued to harm Aboriginal objects identified in Schedules B and C, in accordance with the conditions of this AHIP.

This AHIP is issued pursuant to section 90 of the Act.

C. Commencement and duration of AHIP

This AHIP commences on the date it is signed unless otherwise provided by this AHIP.

Unless otherwise revoked in writing, this AHIP remains in force for:

(i) 14 years from the date of commencement, that is, until 27 June 2033.

D. Proposed Works

Evolution Mining (Cowal) Pty Ltd (the Applicant), is proposing a Processing Rate Modification (MOD14, the project) for Cowal Gold Operations (CGO). The CGO is part of Mining Lease (ML) 1535 at Lake Cowal, near West Wyalong, New South Wales (NSW).

The proposed project includes:

- Increasing ore processing rate from 7.5 to 9.8 Million tons per annum
- Modification of the existing tailings storage to form one larger storage facility
- Relocation of infrastructure:
    - Contained water storage
    - Internal roads
    - Stockpiles of soil, ore and rock
- Installation of a second crushing circuit
- Duplication of water supply pipeline across Lake Cowal
- Increase extraction of water from external supply source
- Increase consumption of process consumables (including cyanide)
- Increase in human resources to develop and operate the facility
- Relocation of Travelling Stoke Reserve (TSR) and Lake Cowal Road
- Provision of crushed rock material to local councils to assist with road construction materials

The MOD14 project intends surface disturbance outside of the original consent area for ML 1535 and as such seeks a new AHIP to facilitate the development and harm to Aboriginal objects.

Subject to the application is harm in whole or in part to 23 objects.

Note: A Dictionary at the end of the AHIP defines terms used in this document. Further information about this AHIP is also set out after the Dictionary.

.....

Andrew Fisher
Senior Team Leader Planning – South West
Albury
(by Delegation)
DATED: 27 June 2019

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LAND TO WHICH THIS AHIP APPLIES

Lot 101 and 102, DP 1059150, Parish Wamboyne, County of Gipps, Bland Shire, being that area with boundary shown in purple 'Proposed AHIP Bounday' Figure 1 and as provided within Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations – processing rate modification'. Report produced by Niche Environment and Heritage for Evolution Mining (Cowal), Sydney.

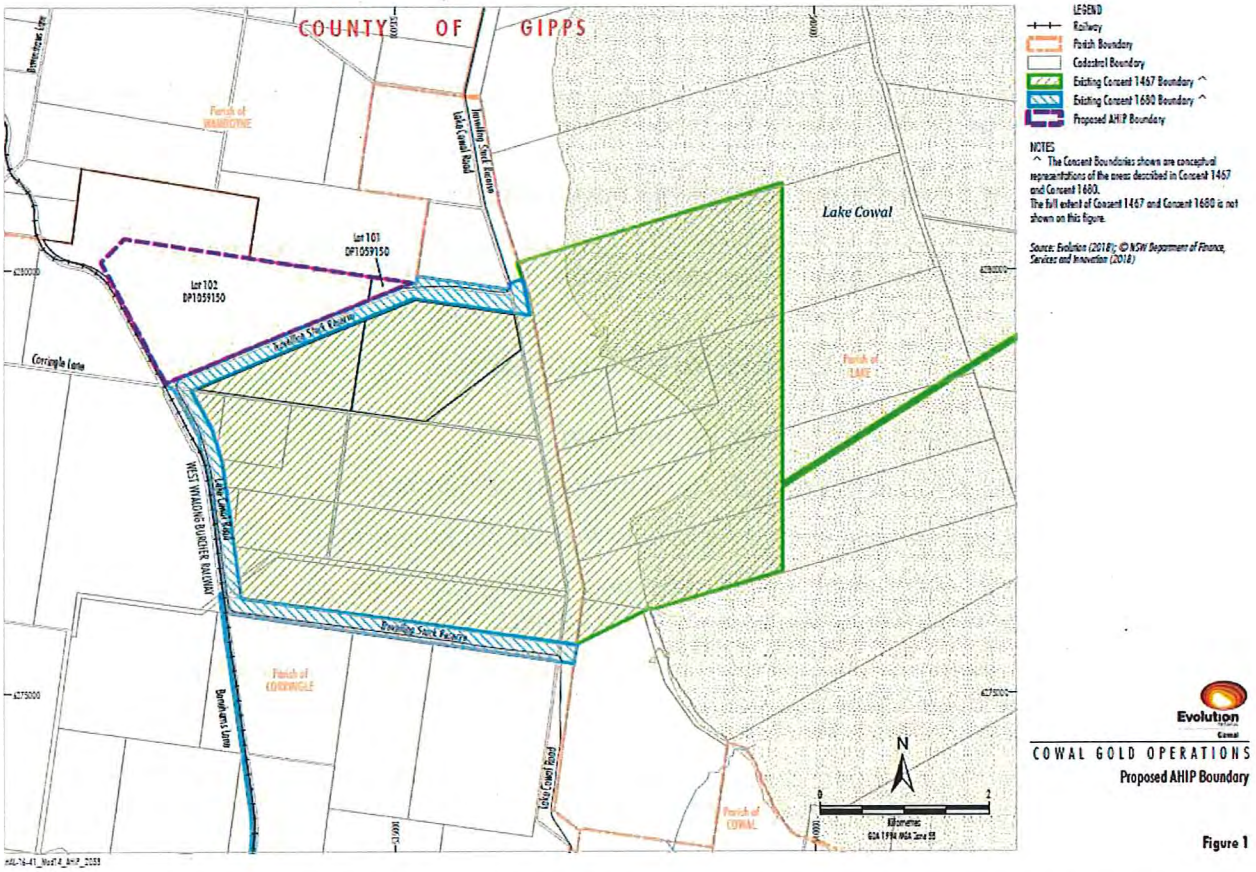

Figure 1. Consent area under this AHIP, as delineated in purple 'proposed AHIP boundary'.

CONDITIONS

The conditions of this AHIP specify the actions that are permitted and/or required in relation to areas and Aboriginal objects, which are detailed in the Schedules that follow.

Administrative Conditions

Responsibility for compliance with conditions of AHIP

1. The AHIP holder must ensure that all persons involved in actions or works covered by this AHIP (whether employees, contractors, sub-contractors, agents or invitees) are made aware of and comply with the conditions of this AHIP.

2. The *Indigenous Archaeology and Cultural Heritage Management Plan*, for Lake Cowal Gold Operations is to be updated reflecting the contents of this consent and any related instruments (i.e. s85 Care Agreement).

Project manager to oversee the actions relating to this AHIP

3. A suitably qualified and experienced individual must be appointed as a project manager who is responsible for overseeing, for and on behalf of the AHIP holder, all the actions relating to this AHIP.
4. The individual appointed as project manager must be the project manager nominated in the application form.
5. If an alternative to the nominated project manager is appointed, OEH must be notified of their contact details within 14 days of this appointment.

Actions must be in accordance with AHIP application

6. All actions on the land must be carried out in accordance with the application except as otherwise expressly provided by a condition of this AHIP.

Operational Conditions

Certain Aboriginal objects must not be harmed

7. All human remains in, on or under the land must not be harmed.
8. The Aboriginal objects described in Schedule A must not be harmed.
9. To ensure that the Aboriginal objects described in Schedule A are not harmed, the following measures must be implemented as soon as practicable and complied with:
   (a) Visual markers must be installed to clearly indicate the location of the Aboriginal objects and 'no-harm area' described in Schedule A, to any person on foot or in a vehicle in the vicinity,
   (b) Persons entering the land such as employees, contractors, sub-contractors, agents and invitees must be provided with an Aboriginal Cultural Heritage awareness and site module as part of site induction,
   (c) Appropriate sediment control measures must be installed, operated and maintained to prevent harm to the Aboriginal objects and 'no-harm areas' described in Schedule A,
   (d) Vehicles must not be driven on or in the immediate vicinity of an Aboriginal object described in Schedule A,
   (e) Vehicles must not be driven on any part of a 'no-harm area' described in Schedule A,
   (f) Plant, equipment or any materials including fill, must not be stored on any part of a 'no-harm area' described in Schedule A.
10. To ensure that the Aboriginal objects described in Schedule A are not harmed, the Evolution. 2019. 'Cowal Gold Operations Indigenous Archaeology and Cultural Heritage Management Plan' Evolution Mining, Lake Cowal, NSW, provided as part of the application, must be updated to reflect this permit and also the care agreement, and implemented as soon as practicable and complied with.

Certain Aboriginal objects may be moved

11. The Aboriginal objects described in Schedule B1 may only be moved.

12. The movement of these Aboriginal objects must be carried out in accordance with Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations - processing rate modification'. Report produced by Niche Environment and Heritage on behalf of Evolution Mining (Cowal) Pty Ltd, West Wyalong, NSW that was provided with the application.

Salvage excavations

13. Salvage excavations may be carried out in, on or under each salvage excavation area described in Schedule B2.
14. Aboriginal objects that are recovered during the excavations may be analysed on-site and/or may be taken off-site for further analysis.
15. The excavations and analysis of Aboriginal objects, must be carried out in accordance with Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations - processing rate modification'. Report produced by Niche Environment and Heritage on behalf of Evolution Mining (Cowal) Pty Ltd, West Wyalong, NSW. that was provided with the application, with the following modifications:
    (a) Sample sieving of spoil from grader scrapes in windrows
    (b) Dating of any *in situ* middens and ovens/hearths if viable samples are present
16. The excavations must be completed in an area before any harm of Aboriginal objects described in Schedule C can commence in that same area.

Community collection

17. The Registered Aboriginal Parties must be provided with an opportunity to collect Aboriginal objects within the 'community collection area' described in Schedule B3.
18. The opportunity for community collection must be provided:
    (a) in accordance with Reeves, J. 2019. 'Aboriginal Cultural Heritage Assessment: Cowal Gold Operations - processing rate modification'. Report produced by Niche Environment and Heritage on behalf of Evolution Mining (Cowal) Pty Ltd, West Wyalong, NSW that was provided with the application, and
    (b) before any harm of Aboriginal objects described in Schedule C can commence in the area.
19. Aboriginal objects that are recovered during the community collection may be analysed on-site and/or may be taken off-site for further analysis as decided by the Registered Aboriginal Parties.
20. If an opportunity for community collection has been provided and this collection does not occur, the AHIP holder may proceed with any actions to harm Aboriginal objects described in Schedule C, in accordance with the conditions of this AHIP.

Harm of certain Aboriginal objects through the proposed works

21. The Aboriginal objects described in Schedule C may be harmed. Nothing in this condition authorised harm to Aboriginal objects described in Schedule A (whether human remains, Aboriginal objects or 'no-harm areas').
22. Aboriginal objects described in Schedule C must not be harmed unless:
    (a) all movement of Aboriginal objects described in Schedule B1 has occurred in the area,
    (b) all excavations described in Schedule B2 have been completed in the area, and
    (c) all opportunities for community collection of Aboriginal objects described in Schedule B3 have been provided in the area.

Long term management of certain Aboriginal objects

23. Long term management arrangements for any of the Aboriginal objects collected as part of this AHIP will be managed in accordance with Care Agreement C0004976

24. Requirement 26 "Stone artefact deposition and storage" in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (24 September 2010, available online at: http://www.environment.nsw.gov.au/licences/archinvestigations.htm) must be complied with.

Access routes

25. Where practicable, existing access routes to parts of the land where actions relating to this AHIP are to be carried out must be used.

Notification and Reporting Conditions

Notification of commencement and completion of actions

26. Written notice must be provided to the OEH office at least 7 days prior to the commencement of actions authorised by this AHIP.

27. Written notice must be provided to the OEH office within 7 days of the completion of actions authorised by this AHIP.

Copy of this AHIP and notices to be provided to Registered Aboriginal Parties

28. A copy of this AHIP must be provided to each Registered Aboriginal Party, within 14 days of receipt of the AHIP from OEH.

29. Where this AHIP is varied or transferred, a copy of the AHIP variation or transfer notice must be provided to each Registered Aboriginal Party, within 14 days of receipt of the notice.

Human remains

30. If any human remains are discovered and/or harmed in, on or under the land, the AHIP holder must:

    (a) not further harm these remains
    (b) immediately cease all work at the particular location
    (c) secure the area so as to avoid further harm to the remains
    (d) notify the local police and OEH's Environment Line on 131 555 as soon as practicable and provide any available details of the remains and their location, and
    (e) not recommence any work at the particular location unless authorised in writing by OEH.

Incidents which may breach the Act or AHIP

31. The AHIP holder must notify the OEH office in writing as soon as practicable after becoming aware of:

    (a) any contravention of s.86 of the Act not authorised by an AHIP, and/or
    (b) any contravention of the conditions of this AHIP.

Reports about incidents which may breach the Act or AHIP

32. Where OEH suspects that an incident has occurred which may have breached the Act or AHIP, OEH may request a written incident report, which includes the following:

(a) the nature of the incident
(b) the actual or likely impact of the incident on Aboriginal objects and/or Aboriginal places
(c) the nature and location of these Aboriginal objects and/or Aboriginal places, referring to and providing maps and photos where appropriate
(d) any conditions of an AHIP which may have been breached, and
(e) the measures which have been taken or will be taken to prevent a recurrence of the incident.

33. The incident report must be provided to the OEH office within the timeframe specified in the request.

Provision of Aboriginal Site Impact Recording Form

34. An Aboriginal Site Impact Recording Form must be completed and submitted to the AHIMS Registrar, for each AHIMS site identified in Schedules B and C, within 6 months of the completion of the actions authorised by this AHIP.

Note:
(i) The Aboriginal Site Impact Recording Form can be found on the OEH website: http://www.environment.nsw.gov.au/licences/DECCAHIMSSiteRecordingForm.htm
(ii) Contact details for the AHIMS Registrar can be found on the OEH website: http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm

Report about harm to Aboriginal objects Salvage Report

35. A Salvage Report must be prepared about the actions relating to the harm of Aboriginal objects (as permitted by this AHIP). The report must:

(a) include a short summary of the report
(b) describe any ongoing consultation with or involvement of representatives of Registered Aboriginal Parties in relation to this AHIP
(c) describe how any Aboriginal objects or 'no-harm areas' described in Schedule A were managed during the period covered by the AHIP
(d) provide details of the Aboriginal objects which were fully or partially harmed in the course of undertaking the actions
(e) if any salvage excavations were authorised by this AHIP, provide a description of the methods and results of the salvage excavation
(f) detail any community collection of Aboriginal objects undertaken by the Registered Aboriginal Parties
(g) comment on the effectiveness of any mitigation measures that were implemented
(h) comment on the effectiveness of any management plan which was in place
(i) if any Aboriginal objects were moved to a temporary storage location, a description of the nature and types of Aboriginal objects which are now at that location
(j) detail the results of any analysis of Aboriginal objects
(k) detail the long term management arrangements for any Aboriginal objects, and
(l) include a statement confirming that all Aboriginal Site Impact Recording Forms have been completed and submitted to the AHIMS Registrar.

36. The Salvage Report must be submitted to the OEH office within 6 months of the completion of the actions authorised by this AHIP.

37. A copy of the Salvage Report, including a summary of the report in plain English, must be sent by registered post to each Registered Aboriginal Party within 14 days of the report being submitted to OEH.

General Conditions

Indemnity

38. The AHIP holder agrees to indemnify and keep indemnified, the Crown in right of NSW, the Minister administering the Act, the Chief Executive of OEH, and their employees, agents and contractors, in the absence of any willful misconduct or negligence on their part, from and against all actions, demands, claims, proceedings, losses, damages, costs (including legal costs), charges or expenses suffered or incurred by them resulting from:
    (a) any damage or destruction to any real or personal property; and
    (b) injury suffered or sustained (including death) by any persons arising out of or in connection with any actions undertaken pursuant to this AHIP.

Release

39. The AHIP holder agrees to release to the full extent permitted by law, the Crown in right of NSW, the Minister administering the Act, the Chief Executive of OEH, and their employees, agents and contractors, in the absence of any willful misconduct or negligence on their part, from all suits, actions, demands and claims of every kind resulting from:
    (a) any damage or destruction to any real or personal property; and
    (b) injury suffered or sustained (including death) by any persons arising from or in connection with any actions undertaken pursuant to this AHIP.

Written notice

40. Any requirement to provide written notice to the OEH office in this AHIP may be complied with by faxing the notice to the OEH office's fax number, emailing the notice to rog.southwest@environment.nsw.gov.au or by sending by registered post to the OEH office's address. The OEH office's contact details are specified at the front of this AHIP.

SCHEDULES

The following schedules identify the areas and Aboriginal objects that are subject to the conditions of this AHIP.

Schedule A: Aboriginal objects which must not be harmed

A1 Human remains

All human remains in, on or under the land must not be harmed, as specified by the conditions of this AHIP.

A2 Aboriginal objects that are identified on AHIMS

The following Aboriginal objects identified on AHIMS must not be harmed, as specified by the conditions of this AHIP.

Portion of Site (whole or part)	AHIMS Site ID	Site Feature	Site Name	Information access restriction? (Y/N)	Easting	Northing	Datum
Whole	39-4-0311	Modified tree	Lake Cowal 2017-21	*N*	537664	6276591	GDA

A3 No-harm areas

Not Applicable.

Schedule B: Aboriginal objects that may be harmed through the certain actions

B1 Movement

The following Aboriginal objects identified on AHIMS may only be moved in accordance with the conditions of this AHIP (excluding any Aboriginal objects described in Schedule A).

Portion of Site (whole or part)	AHIMS Site ID	Site Feature	Site Name	Information access restriction? (Y/N)	Easting	Northing	Datum
Whole	*39-4-0315*	*Artefact*	*Lake Cowal 2017-003*	*N*	534708	6279668	GDA
Whole	*39-4-0316*	*Artefact*	*Lake Cowal 2017-004*	*N*	534871	6279741	GDA
Whole	*39-4-0317*	*Artefact*	*Lake Cowal*	*N*	534978	6279873	GDA

			2017-005				
Whole	39-4-0318	Artefact, heart retainer	Lake Cowal 2017-006	N	533914	6279947	GDA
Whole	39-4-0319	Artefact	Lake Cowal 2017-007	N	533400	6279743	GDA
Whole	39-4-0320	Artefact	Lake Cowal 2017-008	N	533177	6279651	GDA
Whole	39-4-0321	Artefact	Lake Cowal 2017-009	N	532874	6279641	GDA
Whole	39-4-0322	Artefact	Lake Cowal 2017-010	N	532771	6279631	GDA
Whole	39-4-0323	Artefact	Lake Cowal 2017-011	N	532949	6278945	GDA
Whole	39-4-0324	Hearth/Oven	Lake Cowal 2017-012	N	532802	6278992	GDA
Whole	39-4-0325	Artefact	Lake Cowal 2017-013	N	533161	6279034	GDA
Whole	39-4-0326	Artefact	Lake Cowal 2017-014	N	532197	6279787	GDA
Whole	39-4-0329	Heat Retainer	Lake Cowal 2017-015	N	531916	6280298	GDA
Whole	39-4-0330	Heat retainer	Lake Cowal 2017-016	N	531808	6280296	GDA
Whole	39-4-0331	Heat Retainer	Lake Cowal 2017-017	N	532155	6280283	GDA
Whole	39-4-0332	Heat Retainer	Lake Cowal 2017-018	N	532029	6280283	GDA
Whole	39-4-0328	Heat retainer	Lake Cowal 2017-019	N	532271	6279681	GDA
Whole	39-4-0310	Artefact	Lake Cowal 2017-027	N	532396	6279486	GDA
Whole	39-4-	Artefact	Lake	N	532222	6279398	GDA

	0307		*Cowal 2017-028*				
Whole	*39-4-0306*	*Artefact*	*Lake Cowal 2017-029*	*N*	532120	6279360	GDA
Whole	*39-4-0305*	*Oven*	*Lake Cowal 2017-030*	*N*	532404	6279099	GDA
Whole	*39-4-0280*	*Heat Retainer*	*Lake Cowal 2017-066*	*N*	532214	6278851	GDA
Whole	*43-4-0055*	*Heat Retainer*	*Lake Cowal 2017-068*	*N*	533250	6280160	GDA

B2 Salvage excavations

Salvage excavations may be carried out in the area marked "AHIP application boundary", in 'Land to which this AHIP applies', and Schedule C2, but only in accordance with the conditions of this AHIP.

The salvage excavation area comprises the following known Aboriginal objects, as identified on AHIMS (excluding any Aboriginal objects described in Schedule A):

Portion of Site (whole or part)	AHIMS Site ID	Site Feature	Site Name	Information access restriction? (Y/N)	Easting	Northing	Datum
Whole	*39-4-0315*	*Artefact*	*Lake Cowal 2017-003*	*N*	534708	6279668	GDA
Whole	*39-4-0316*	*Artefact*	*Lake Cowal 2017-004*	*N*	534871	6279741	GDA
Whole	*39-4-0317*	*Artefact*	*Lake Cowal 2017-005*	*N*	534978	6279873	GDA
Whole	*39-4-0318*	*Artefact, heart retainer*	*Lake Cowal 2017-006*	*N*	533914	6279947	GDA
Whole	*39-4-0319*	*Artefact*	*Lake Cowal 2017-007*	*N*	533400	6279743	GDA
Whole	*39-4-0320*	*Artefact*	*Lake Cowal 2017-008*	*N*	533177	6279651	GDA
Whole	*39-4-*	*Artefact*	*Lake*	*N*	532874	6279641	GDA

	0321		*Cowal 2017-009*				
Whole	*39-4-0322*	*Artefact*	*Lake Cowal 2017-010*	*N*	532771	6279631	GDA
Whole	*39-4-0323*	*Artefact*	*Lake Cowal 2017-011*	*N*	532949	6278945	GDA
Whole	*39-4-0324*	*Hearth/Oven*	*Lake Cowal 2017-012*	*N*	532802	6278992	GDA
Whole	*39-4-0325*	*Artefact*	*Lake Cowal 2017-013*	*N*	533161	6279034	GDA
Whole	*39-4-0326*	*Artefact*	*Lake Cowal 2017-014*	*N*	532197	6279787	GDA
Whole	*39-4-0329*	*Heat Retainer*	*Lake Cowal 2017-015*	*N*	531916	6280298	GDA
Whole	*39-4-0330*	*Heat retainer*	*Lake Cowal 2017-016*	*N*	531808	6280296	GDA
Whole	*39-4-0331*	*Heat Retainer*	*Lake Cowal 2017-017*	*N*	532155	6280283	GDA
Whole	*39-4-0332*	*Heat Retainer*	*Lake Cowal 2017-018*	*N*	532029	6280283	GDA
Whole	*39-4-0328*	*Heat retainer*	*Lake Cowal 2017-019*	*N*	532271	6279681	GDA
Whole	*39-4-0310*	*Artefact*	*Lake Cowal 2017-027*	*N*	532396	6279486	GDA
Whole	*39-4-0307*	*Artefact*	*Lake Cowal 2017-028*	*N*	532222	6279398	GDA
Whole	*39-4-0306*	*Artefact*	*Lake Cowal 2017-029*	*N*	532120	6279360	GDA
Whole	*39-4-0305*	Oven	*Lake Cowal 2017-030*	*N*	532404	6279099	GDA
Whole	*39-4-0280*	*Heat Retainer*	*Lake Cowal 2017-066*	*N*	532214	6278851	GDA

Whole	*43-4-0055*	*Heat Retainer*	*Lake Cowal 2017-068*	*N*	533250	6280160	GDA

B3 Community collection

Community collection may be carried out in the area marked "Proposed AHIP boundary", within 'Land to which this AHIP applies' and Schedule C2, in accordance with the conditions of this AHIP.

The community collection area includes the following known Aboriginal objects, as identified on AHIMS (excluding any Aboriginal objects described in Schedule A):

Portion of Site (whole or part)	AHIMS Site ID	Site Feature	Site Name	Information access restriction? (Y/N)	Easting	Northing	Datum
Whole	*39-4-0315*	*Artefact*	*Lake Cowal 2017-003*	*N*	534708	6279668	GDA
Whole	*39-4-0316*	*Artefact*	*Lake Cowal 2017-004*	*N*	534871	6279741	GDA
Whole	*39-4-0317*	*Artefact*	*Lake Cowal 2017-005*	*N*	534978	6279873	GDA
Whole	*39-4-0318*	*Artefact, heart retainer*	*Lake Cowal 2017-006*	*N*	533914	6279947	GDA
Whole	*39-4-0319*	*Artefact*	*Lake Cowal 2017-007*	*N*	533400	6279743	GDA
Whole	*39-4-0320*	*Artefact*	*Lake Cowal 2017-008*	*N*	533177	6279651	GDA
Whole	*39-4-0321*	*Artefact*	*Lake Cowal 2017-009*	*N*	532874	6279641	GDA
Whole	*39-4-0322*	*Artefact*	*Lake Cowal 2017-010*	*N*	532771	6279631	GDA
Whole	*39-4-0323*	*Artefact*	*Lake Cowal 2017-011*	*N*	532949	6278945	GDA
Whole	*39-4-0324*	*Hearth/Oven*	*Lake Cowal 2017-012*	*N*	532802	6278992	GDA
Whole	*39-4-*	*Artefact*	*Lake Cowal*	*N*	533161	6279034	GDA

	0325		2017-013				
Whole	39-4-0326	Artefact	Lake Cowal 2017-014	N	532197	6279787	GDA
Whole	39-4-0329	Heat Retainer	Lake Cowal 2017-015	N	531916	6280298	GDA
Whole	39-4-0330	Heat retainer	Lake Cowal 2017-016	N	531808	6280296	GDA
Whole	39-4-0331	Heat Retainer	Lake Cowal 2017-017	N	532155	6280283	GDA
Whole	39-4-0332	Heat Retainer	Lake Cowal 2017-018	N	532029	6280283	GDA
Whole	39-4-0328	Heat retainer	Lake Cowal 2017-019	N	532271	6279681	GDA
Whole	39-4-0310	Artefact	Lake Cowal 2017-027	N	532396	6279486	GDA
Whole	39-4-0307	Artefact	Lake Cowal 2017-028	N	532222	6279398	GDA
Whole	39-4-0306	Artefact	Lake Cowal 2017-029	N	532120	6279360	GDA
Whole	39-4-0305	Oven	Lake Cowal 2017-030	N	532404	6279099	GDA
Whole	39-4-0280	Heat Retainer	Lake Cowal 2017-066	N	532214	6278851	GDA
Whole	43-4-0055	Heat Retainer	Lake Cowal 2017-068	N	533250	6280160	GDA

Schedule C: Aboriginal objects which may be harmed through the proposed works

The Aboriginal objects described in this schedule may be harmed, but only in accordance with the conditions of this AHIP (excluding any Aboriginal objects described in Schedule A).

C1 Harm of Aboriginal objects identified on AHIMS

Portion of Site (whole or part)	AHIMS Site ID	Site Feature	Site Name	Information access restriction? (Y/N)	Easting	Northing	Datum
Whole	*39-4-0315*	*Artefact*	*Lake Cowal 2017-003*	*N*	534708	6279668	GDA
Whole	*39-4-0316*	*Artefact*	*Lake Cowal 2017-004*	*N*	534871	6279741	GDA
Whole	*39-4-0317*	*Artefact*	*Lake Cowal 2017-005*	*N*	534978	6279873	GDA
Whole	*39-4-0318*	*Artefact, heart retainer*	*Lake Cowal 2017-006*	*N*	533914	6279947	GDA
Whole	*39-4-0319*	*Artefact*	*Lake Cowal 2017-007*	*N*	533400	6279743	GDA
Whole	*39-4-0320*	*Artefact*	*Lake Cowal 2017-008*	*N*	533177	6279651	GDA
Whole	*39-4-0321*	*Artefact*	*Lake Cowal 2017-009*	*N*	532874	6279641	GDA
Whole	*39-4-0322*	*Artefact*	*Lake Cowal 2017-010*	*N*	532771	6279631	GDA
Whole	*39-4-0323*	*Artefact*	*Lake Cowal 2017-011*	*N*	532949	6278945	GDA
Whole	*39-4-0324*	*Hearth/Oven*	*Lake Cowal 2017-012*	*N*	532802	6278992	GDA
Whole	*39-4-0325*	*Artefact*	*Lake Cowal 2017-013*	*N*	533161	6279034	GDA
Whole	*39-4-0326*	*Artefact*	*Lake Cowal*	*N*	532197	6279787	GDA

			2017-014				
Whole	*39-4-0329*	*Heat Retainer*	*Lake Cowal 2017-015*	*N*	531916	6280298	GDA
Whole	*39-4-0330*	*Heat retainer*	*Lake Cowal 2017-016*	*N*	531808	6280296	GDA
Whole	*39-4-0331*	*Heat Retainer*	*Lake Cowal 2017-017*	*N*	532155	6280283	GDA
Whole	*39-4-0332*	*Heat Retainer*	*Lake Cowal 2017-018*	*N*	532029	6280283	GDA
Whole	*39-4-0328*	*Heat retainer*	*Lake Cowal 2017-019*	*N*	532271	6279681	GDA
Whole	*39-4-0310*	*Artefact*	*Lake Cowal 2017-027*	*N*	532396	6279486	GDA
Whole	*39-4-0307*	*Artefact*	*Lake Cowal 2017-028*	*N*	532222	6279398	GDA
Whole	*39-4-0306*	*Artefact*	*Lake Cowal 2017-029*	*N*	532120	6279360	GDA
Whole	*39-4-0305*	*Oven*	*Lake Cowal 2017-030*	*N*	532404	6279099	GDA
Whole	*39-4-0280*	*Heat Retainer*	*Lake Cowal 2017-066*	*N*	532214	6278851	GDA
Whole	*43-4-0055*	*Heat Retainer*	*Lake Cowal 2017-068*	*N*	533250	6280160	GDA

C2 Areas where harm of Aboriginal objects is authorised

Excluding objects identified in Schedule A, objects may be harmed through the proposed works in the area identified in with a purple boundary 'Proposed AHIP boundary'

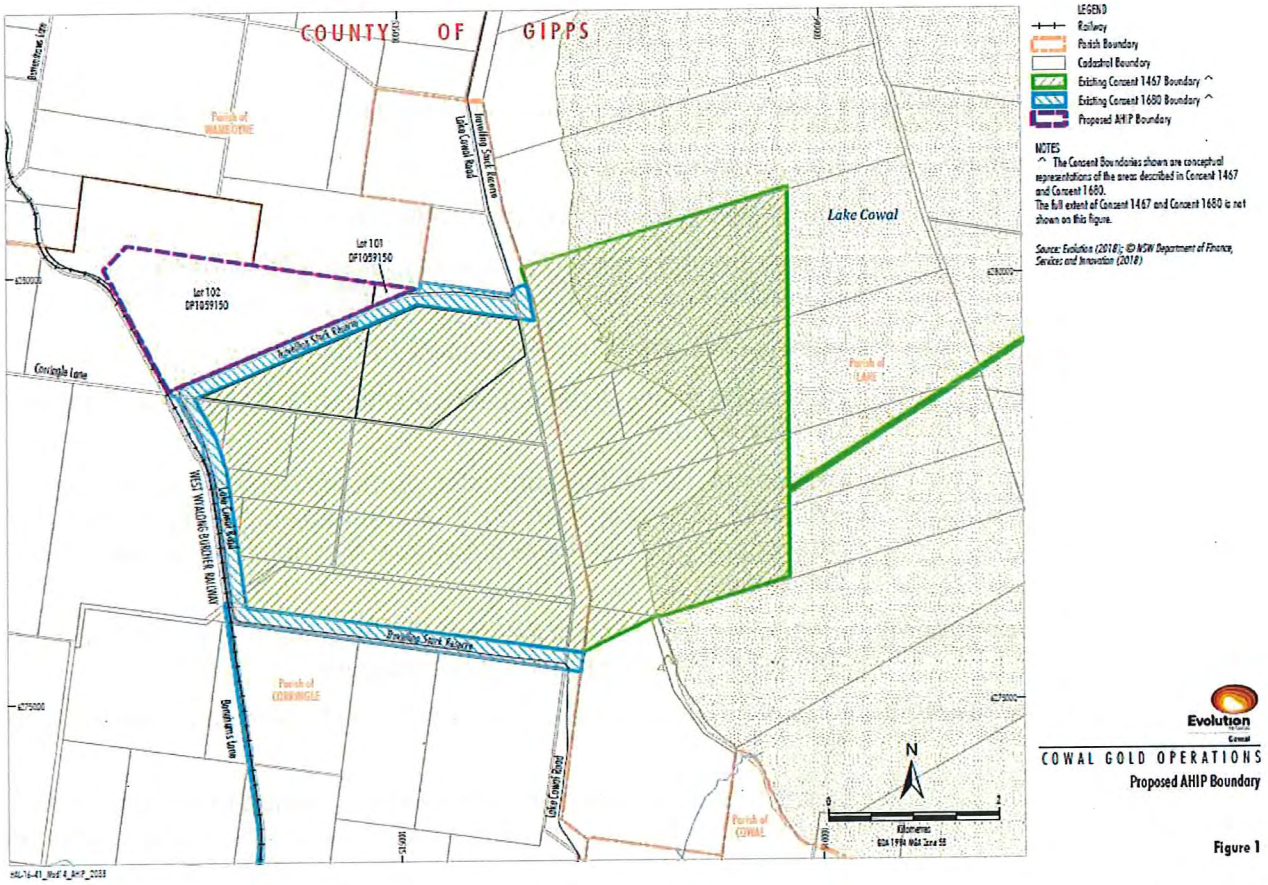
COUNTY OF GIPPS
Parish of WAMBEYNE
Lake Cowal Road
Travelling Stock Reserve
Lot 101 DP1059150
Lot 102 DP1059150
Lake Cowal
Parish of LAKE
Travelling Stock Reserve
Gooagle Lane
WEST WYALONG-BURCHER RAILWAY
Cowal Gold Road
Travelling Stock Reserve
Parish of CORRINGLE
Bundaburrah Lane
Cowal Gold Road
Parish of COWAL
N
0
2
Kilometres
LEGEND
Railway
Parish Boundary
Cadastral Boundary
Existing Consent 1467 Boundary ^
Existing Consent 1680 Boundary ^
Proposed AHIP Boundary
NOTES:
^ The Consent Boundaries shown are conceptual representations of the areas described in Consent 1467 and Consent 1680.
The full extent of Consent 1467 and Consent 1680 is not shown on this figure.
Source: Evolution (2018); © NSW Department of Finance, Services and Innovation (2018)
Evolution Cowal
COWAL GOLD OPERATIONS
Proposed AHIP Boundary

Figure 1

DICTIONARY

In this AHIP, unless the contrary is indicated the terms below have the following meanings:

Aboriginal object	has the same meaning as in the Act.
Act	means the *National Parks and Wildlife Act 1974*.
AHIMS	means the Aboriginal Heritage Information Management System maintained by OEH, as defined in s.90Q of the Act.
AHIP	means Aboriginal Heritage Impact Permit
AHIP holder	means the entity or person listed on the cover page under the heading "AHIP issued to".
Application	means the completed application form and all other documents in written or electronic form which accompanied the application when it was lodged or which were subsequently submitted in support of the application.
Community collection	means the collection of Aboriginal objects by one or all Registered Aboriginal Parties or their representatives.
Community collection area	means an area described as a community collection area in Schedule B3
Harm	has the same meaning as in the Act. In relation to Aboriginal objects, harm means the movement, damage, defacement and/or destruction of Aboriginal objects. In relation to an Aboriginal place, harm means the damage, defacement and/or destruction of the Aboriginal place.
Land	means the land described under the heading "Land to which this AHIP applies".
No-harm areas	means those areas described in Schedule A3.
OEH	Office of Environment and Heritage (NSW).
OEH office	means the office listed on the cover page of this AHIP.
Proposed works	means the works described under the heading "D. Proposed Works" at the front of this AHIP.
Public register	means the public register established under s.188F of the Act, that contains details of AHIPs issued by the Chief Executive of OEH, as described under the heading "Information about this AHIP".
Registered Aboriginal Parties	means the Registered Aboriginal Parties listed in the application.
Salvage excavation	means an archaeological excavation carried out in accordance with the methodology accompanying the application, as modified by the conditions of this AHIP. The purpose of salvage excavation is to recover a sample of Aboriginal objects as an archival record of Aboriginal life from a site that will be destroyed.
Salvage excavation area	means any area described as a salvage excavation area in Schedule B2.
Test excavation	means an archaeological excavation carried out in accordance with

	methodology accompanying the application, as modified by the conditions of this AHIP. The purpose of test excavation is to collect a sample of Aboriginal objects, in order to establish the nature and extent of sub-surface Aboriginal objects and to assist in the assessment of management options for the site.
Test excavation area	means any area described as a test excavation area in Schedule B2

INFORMATION ABOUT THIS AHIP

Public Register

Under section 188F of the Act, the Chief Executive of OEH is required to keep a public register containing the details of each AHIP issued. The details of this AHIP that will be published on the public register are outlined on the front page of this AHIP.

The public register is available online at www.environment.nsw.gov.au

Appeals

Under section 90L of the Act, the AHIP holder may appeal to the Land and Environment Court if they are dissatisfied with any condition of this AHIP. The appeal must be lodged within 21 days of the date this AHIP was issued.

Penalties for breach of the Act or AHIP condition

Significant penalties can be imposed by the Land and Environment Court for harm to an Aboriginal object or Aboriginal Place other than as authorised by a condition of an AHIP, or for a breach of an AHIP condition. OEH can also issue penalty notices for a breach of the Act or AHIP condition.

Responsibility for obtaining all approvals and compliance with applicable laws

The AHIP holder is responsible for obtaining and complying with all approvals necessary to lawfully carry out the work referred to in this AHIP, including but not limited to development consents.

Other relevant provisions of the *National Parks and Wildlife Act*

Newly identified Aboriginal objects must be notified to the Chief Executive of OEH under s.89A of the Act using the form available online at www.environment.nsw.gov.au

Stop work orders, interim protection orders and remediation directions may be issued in certain circumstances to protect Aboriginal objects or places.

Obligation to report Aboriginal remains under Commonwealth laws

The AHIP holder may have additional obligations to report any discovery of Aboriginal remains under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.

Exercise of investigation and compliance powers

Officers appointed or authorised under the Act may exercise certain powers and functions, including the power to enter land.

Duration of AHIP

This AHIP remains in force for the period specified in the AHIP.

Variation of AHIP

The AHIP holder may apply to the OEH office for a variation of any conditions of an AHIP, using the AHIP variation application form available online at www.environment.nsw.gov.au. Requests for significant variations must be accompanied by evidence of further consultation with Registered Aboriginal Parties and may include payment of fees.

The conditions of an AHIP may be varied at any time by the Chief Executive of OEH in order to correct a typographical error or to resolve an inconsistency between conditions. The AHIP holder may appeal a decision of the Chief Executive of OEH to vary the conditions of the AHIP.

Transfer of AHIP

The AHIP holder may apply to transfer this AHIP to another person by using the AHIP transfer application form available online at www.environment.nsw.gov.au.

Surrender of AHIP

The AHIP holder may apply to surrender this AHIP by using the AHIP surrender application form available online at www.environment.nsw.gov.au. The surrender must be approved by the Chief Executive of OEH and may be subject to conditions.

Suspension and revocation of AHIP

An AHIP may be suspended or revoked at any time at the discretion of the Chief Executive of OEH. Prior to suspending or revoking the AHIP, the AHIP holder will be given notice and an opportunity to make submissions. The AHIP holder will be notified in writing of the final decision. The AHIP holder may appeal a decision to revoke the AHIP.

Entry to land

An AHIP does not automatically entitle its holder to enter land for the purpose of conducting work related to the AHIP. The AHIP holder is responsible for obtaining permission to enter land from the owner and/or occupier of the land.

Disclosure of information pursuant to lawful requirement

This AHIP does not prevent the disclosure of any information or document in OEH's possession in accordance with any lawful requirement.

Making copies of reports

By providing a report, the AHIP holder acknowledges that OEH can use the information in that report to inform its regulatory functions, note details of that report in AHIMS and include a copy of the report in its library which may be available to members of the public.

OEH is able to make copies of any reports provided to OEH under this AHIP.

E.3 Site definitions and recording methods used for this assessment

E.3.1 Aboriginal sites

In the AHIMS database, Aboriginal sites are defined in several ways. At the simplest level, sites are recorded as 'closed' or 'open'. Closed sites are associated with rockshelters and include other evidence of Aboriginal occupation that may be present, such as areas where subsurface Aboriginal objects may occur within the shelter ('potential archaeological deposit' (PAD)), faunal remains, and art on the shelter walls (paintings/engravings). Open sites are broadly defined and encompass all other types of Aboriginal site features that are located in areas where there is no rockshelter. The most common open site features found generally include artefacts, grinding grooves, art, culturally modified trees, and shell deposits (middens) (OEH 2012). The presence or absence of stone artefacts is often a defining factor in site identification, with almost every site likely to have at least some associated artefacts, as discard or loss of this most ubiquitous and practically indestructible marker of past Aboriginal visitation.

Any one site (or group of linked sites described as a 'complex') can contain several different site features. For example, a shelter may have art on the walls, artefacts on the floor surface or outside the shelter, and be predicted to contain faunal remains and further artefacts in the accumulated deposit inside.

A description of terms used to describe different site features known to occur in the vicinity of the project area is provided in Table E.6 and use definitions provided by OEH and those adopted by EMM in their field investigations to produce consistency in recording. Similarly, there may be places of contemporary significance to Aboriginal people in the region and that will require consultation with this community to identify.

Table E.6 Site definitions and recording

Site feature	Definition and recording methods
Aboriginal ceremony and Dreaming	Previously referred to as mythological sites these are spiritual/story places where no physical evidence of previous use of the place may occur; e.g. natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places etc.
Artefact site (open stone artefact site)	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people. Open stone artefact sites were defined by the presence of one (isolated find) or more (artefact scatter) stone artefacts visible on the ground surface. The boundaries of a site are limited to the spatial extent of the visible stone artefacts. The mapped site points and/or 'site areas' do not represent the areas of potential archaeological deposit (PAD) that also apply to some sites (refer to the term 'PAD' below). Open stone artefact sites were recorded by marking each artefact location or each cluster of artefacts within a 5 m radius as a separate waypoint in the GPS. Site boundaries were allocated by drawing a line around the cluster waypoints for each site using ArcGIS software. Stone artefacts more than 50 m apart were recorded as separate sites. EMM acknowledges that the 50 m rule applied here is an arbitrary distinction for site boundaries and is used mainly for efficiencies in site management and to establish consistency in site recording methods
Burials	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked; e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc.
Fish trap	A modified area on watercourses where fish were trapped for short-term storage and gathering.
Grinding grooves	Grinding grooves were defined as an area of outcropping bedrock containing evidence of one or more grinding grooves where ground-stone hatchets or other grinding practices (i.e. seed grinding) were implemented.

Table E.6 Site definitions and recording

Site feature	Definition and recording methods
Habitation structure	Structures constructed by Aboriginal people for short- or long-term shelter. More temporary structures are commonly preserved away from the NSW coastline, may include historic camps of contemporary significance. Smaller structures may make use of natural materials such as branches, logs and bark sheets or manufactured materials such as corrugated iron to form shelters. Archaeological remains of a former structure such as chimney/fireplace, raised earth building platform, excavated pits, rubble mounds etc.
Modified tree (carved or scarred)	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers. Modified trees (either carved or scarred) can be difficult to identify. Scars commonly occur on trees through natural processes such a branch tears, insect damage, storm and fire damage and faunal damage. Scars can also occur from mechanical damage from vehicles or farming equipment. The attributes of potential scarred trees were discussed during the survey amongst archaeologists and RAPs before it was decided if a scar would be recorded or not. A precautionary approach was adopted, whereby some of the more ambiguous examples were recorded anyway. The assessment of scar trees was made from the experience of the survey team and the guideline *Aboriginal scarred trees in New South Wales: a field manual* (DEC 2005). In some of the more ambiguous examples, it cannot be verified whether some scars recorded during the survey are of natural or Aboriginal origin. In such instances, an expert evaluation by a scar tree expert (arborist or other) would be required to determine the status of certain trees.
Potential archaeological deposit (PAD)	An area where Aboriginal objects may occur below the ground surface. The term 'potential archaeological deposit' was first applied in Sydney regional archaeology in the 1980s and referred to rockshelters that were large enough and contained enough accumulated deposit to allow archaeologists to predict that subsurface cultural material was likely to be present. Since then the term has come to include open sites where the same prediction can be made. EMM has defined PADs as the predicted extent of concentrated subsurface Aboriginal objects in a particular area. PADs are not technically Aboriginal sites until, and if, subsurface Aboriginal objects are identified, which is typically established through archaeological test excavation. PAD areas have been assigned to landforms that are distinguishable from the surrounding landscape (e.g. elevated areas with good outlook overlooking watercourses) as being likely to retain higher artefact densities than the assumed 'background scatter' of archaeological material in the broader landscape. The identification of PADs associated with Aboriginal open camp sites was partly based on observations in the field and discussions with RAPs, but also related to the predictive model. Although PAD was attributed to areas for a variety of reasons, the main qualifiers were: The presence of surface artefacts or other Aboriginal objects. Ground surface visibility as part of the archaeological survey effort was typically considered high enough in each PAD area to identify at least one or more surface artefacts thereby indicating likelihood of subsurface potential. Notwithstanding, finding no visible surface artefacts in an area would not disqualify an area from being attributed with PAD. Level to gently inclined ground (<10%) indicating suitable camping or activity areas. Contours that distinguish the landforms with PAD from the surrounding landscape (e.g. spur crest, hill crest or knoll). Landform boundaries were also interpreted through observations in the field. Notably, rocky crest landforms that were protected from intensive cultivation were often attributed with PAD. Proximity to water: typically up to 100 m from 1st and 2nd order streams and up to 200 m from 3rd order streams and above. Elevated landforms at the confluence of higher order streams were also more likely to be attributed with PAD. EMM acknowledges that all PAD areas have been historically cleared of native vegetation and some have been subject to pasture improvements such as ploughing. As such, the term PAD does not assume high subsurface integrity; instead it is a prediction of potential subsurface artefact concentrations. All stone quarry sites are predicted to have PAD. The assumption is that in most cases the visible surface material at quarries is represented by larger artefacts (such as cores) and that smaller material (e.g. flakes) is likely to be buried.

Table E.6 Site definitions and recording

Site feature	Definition and recording methods
Restricted	Site information contained in the Aboriginal Heritage Information Management System is available only to certain authorised groups of people, as requested by the Aboriginal community. Detailed information may not be available in search reports.
Shell	An accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering or consumption. Usually found in deposits previously referred to as shell middens. Must be found in association with other objects like stone tools, fish bones, charcoal, fireplaces/hearths, and burials. Will vary greatly in size and composition.
Stone quarry	Usually a source of good quality stone which is quarried and used for the production of stone tools. Stone quarries represent where Aboriginal people gathered raw stone materials for stone tools and/or manufactured stone tools from the adjacent source material. Quarry sites are found at rock outcrops where the material was of suitable quality to have been used to manufacture stone tools. Stone quarries were defined by the presence of outcropping stone material with nearby evidence of the same material type used in the stone tool manufacture process. This was most commonly indicated by large stone cores or stone flakes distributed amongst the same naturally outcropping material. EMM acknowledges that the 'open stone artefact' site type shares some of the same characteristics as 'stone quarries', such as the presence of stone artefacts. However, they have been distinguished from each other because quarries can not only represent open camping activities, but also a fixed location where Aboriginal people needed to visit to extract a resource. In contrast, the locations of typical open camp sites were not fixed but chosen by Aboriginal people for their favourable conditions.

E.4 AHIMS search results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022

Client Service ID : 721182

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0043	Lake Cowal Road Open Site with PAD	GDA	55	529140	6270755	Open site	Valid	Artefact : -		102740
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
39-4-0278	Lake Cowal 2017-062	GDA	55	533108	6276725	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0279	Lake Cowal 2017-063	GDA	55	533136	6276546	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0280	Lake Cowal 2017-066	GDA	55	532214	6278851	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0282	Lake Cowal 2017-053	GDA	55	533184	6276202	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0283	Lake Cowal 2017-052	GDA	55	533076	6276984	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0285	Lake Cowal 2017-050	GDA	55	533013	6278015	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
43-4-0054	Lake Cowal 2017-067	GDA	55	533062	6277100	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Mr.Jamie Reeves					Permits		
39-4-0287	Lake Cowal 2017-051	GDA	55	533035	6277235	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0299	Lake Cowal 2017-035	GDA	55	532686	6278407	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0300	Lake Cowal 2017-036	GDA	55	533125	6278700	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0301	Lake Cowal 2017-034	GDA	55	532643	6278720	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0302	Lake Cowal 2017-033	GDA	55	532725	6278789	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0303	Lake Cowal 2017-032	GDA	55	532978	6278454	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0304	Lake Cowal 2017-031	GDA	55	533193	6278317	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0305	Lake Cowal 2017-030	GDA	55	532404	6279099	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0306	Lake Cowal 2017-029	GDA	55	532120	6279360	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0307	Lake Cowal 2017-028	GDA	55	532222	6279398	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 528248.61762503 - 533211.69260148, Northings : 6269247.91231804 - 6288925.00622153 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 40

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022

Client Service ID : 721182

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
39-4-0310	Lake Cowal 2017-027	GDA	55	532396	6279486	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0320	Lake Cowal 2017-008	GDA	55	533177	6279651	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0321	Lake Cowal 2017-009	GDA	55	532874	6279641	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0322	Lake Cowal 2017-010	GDA	55	532771	6279631	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0323	Lake Cowal 2017-011	GDA	55	532949	6278945	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0324	Lake Cowal 2017-012	GDA	55	532802	6278992	Closed site	Not a Site	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0325	Lake Cowal 2017-013	GDA	55	533161	6279034	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0326	Lake Cowal 2017-014	GDA	55	532197	6279787	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0328	Lake Cowal 2017-019	GDA	55	532271	6279681	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0329	Lake Cowal 2017-015	GDA	55	531916	6280298	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0330	Lake Cowal 2017-016	GDA	55	531808	6280296	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0331	Lake Cowal 2017-017	GDA	55	532155	6280283	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0332	Lake Cowal 2017-018	GDA	55	532029	6280283	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
43-4-0106	Thornton Plains Grinding Stone	GDA	55	531609	6279883	Open site	Destroyed	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0107	Thornton Gilgai Isolated Artefact	GDA	55	532781	6280207	Open site	Destroyed	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0108	Thornton Gilgai Scatter 25Sep19	GDA	55	532987	6280174	Open site	Destroyed	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0110	Thornton 25Sep19	GDA	55	530812	6280299	Open site	Valid	Hearth : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0111	Thornton	GDA	55	530937	6280190	Open site	Valid	Hearth : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 528248.61762503 - 533211.69260148, Northings : 6269247.91231804 - 6288925.00622153 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 40

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022

Client Service ID : 721182

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0105	Lake Cowal 2019 CI	GDA	55	532341	6278911	Open site	Valid	Artefact : -		
	Contact	**Recorders**	DPIE - Armidale,Mr.John Gilding					**Permits**		
43-4-0112	Lake Cowal 2019A	GDA	55	531695	6280277	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Peter Kuskie,South East Archaeology					**Permits**		
43-4-0113	Lake Cowal 2019B	GDA	55	531606	6279882	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Peter Kuskie,South East Archaeology					**Permits**		
43-4-0140	IWL South-ST1	GDA	55	533143	6277835	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		

**** Site Status**

Valid – The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 528248.61762503 - 533211.69260148, Northings : 6269247.91231804 - 6288925.00622153 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 40

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0020	Lake Cowal back plains site A	AGD	55	536100	6278065	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0021	Cowal back plains site B	AGD	55	535529	6278500	Open site	Destroyed	Artefact : -		3148
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0022	Cowal Back Plains site C	AGD	55	535227	6278566	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Scott Cane					Permits	1467,1468	
43-4-0023	Lake Cowal back plains site D	AGD	55	535708	6277202	Open site	Destroyed	Artefact : -		3148
	Contact	Recorders	Doctor.Scott Cane,Mr.Roly Williams					Permits	1467,1468	
43-4-0024	E	AGD	55	535180	6276950	Open site	Valid	Artefact : -		3148
	Contact	Recorders	Doctor.Scott Cane,Mr.Roly Williams					Permits	1467,1468	
43-4-0025	Lake Cowal back plains site F	AGD	55	534393	6277443	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane,Mr.Roly Williams					Permits	1467,1468	
43-4-0026	Lake Cowal back plains site G	AGD	55	534000	6277344	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane,Mr.Roly Williams					Permits	1467,1468	
43-4-0027	H	AGD	55	535214	6276163	Open site	Valid	Artefact : -		3148
	Contact	Recorders	Doctor.Scott Cane					Permits	1467,1468	
43-4-0028	Lake cowal back plains site I	AGD	55	533960	6278262	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0029	Lake Cowal back plains site J	AGD	55	533279	6278393	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0030	Lake Cowal back plains site K	AGD	55	533279	6277770	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0031	Lake Cowal back plains site L	AGD	55	533900	6276590	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0032	Lake Cowal back plains site M	AGD	55	534655	6276360	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0033	Lake Cowal back plains site N	AGD	55	534622	6276033	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0034	L-C-2	AGD	55	533900	6276590	Open site	Valid	Artefact : 1, Stone Quarry : 1		
	Contact	Recorders	Doctor.Scott Cane					Permits		
43-4-0035	L-C-3	AGD	55	534655	6276360	Open site	Valid	Artefact : 1, Modified Tree (Carved or Scarred) : 1		102172
	Contact	Recorders	Doctor.Scott Cane					Permits		
43-4-0044	Wamboyne Back Plain Site 1	GDA	55	535144	6278861	Open site	Destroyed	Artefact : 1		
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Colin Pardoe					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0045	Wamboyne Back Plain Site 2	GDA	55	536061	6279420	Open site	Valid	Artefact : 1		102172
	Contact	Recorders	Doctor,Colin Pardoe					Permits		
39-4-0271	Lake Cowal 2017-055	GDA	55	533853	6276163	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0272	Lake Cowal 2017-056	GDA	55	534670	6275987	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0273	Lake Cowal 2017-057	GDA	55	535310	6276670	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0274	Lake Cowal 2017-058	GDA	55	535427	6276766	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0275	Lake Cowal 2017-059	GDA	55	535879	6277455	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0276	Lake Cowal 2017-060	GDA	55	536522	6276076	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0277	Lake Cowal 2017-061	GDA	55	535267	6277489	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0278	Lake Cowal 2017-062	GDA	55	533108	6276725	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0279	Lake Cowal 2017-063	GDA	55	533136	6276546	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0280	Lake Cowal 2017-066	GDA	55	532214	6278851	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0281	Lake Cowal 2017-054	GDA	55	533399	6276157	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0282	Lake Cowal 2017-053	GDA	55	533184	6276202	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0283	Lake Cowal 2017-052	GDA	55	533076	6276984	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0284	Lake Cowal 2017-048	GDA	55	535903	6276066	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0285	Lake Cowal 2017-050	GDA	55	533013	6278015	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
43-4-0054	Lake Cowal 2017-067	GDA	55	533062	6277100	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Mr.Jamie Reeves					Permits		
43-4-0055	Lake Cowal 2017-068	GDA	55	533250	6280160	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Mr.Jamie Reeves					Permits	4376	

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
39-4-0286	Lake Cowal 2017-049	GDA	55	536046	6275732	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0287	Lake Cowal 2017-051	GDA	55	533035	6277235	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0288	Lake Cowal 2017-047	GDA	55	535960	6276260	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0289	Lake Cowal 2017-046	GDA	55	536466	6276174	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0290	Lake Cowal 2017-045	GDA	55	536300	6276201	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0291	Lake Cowal 2017-044	GDA	55	536424	6275897	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0292	Lake Cowal 2017-043	GDA	55	536278	6275796	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0293	Lake Cowal 2017-039	GDA	55	533990	6279152	Open site	Partially Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0294	Lake Cowal 2017-040	GDA	55	536690	6276212	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0295	Lake Cowal 2017-041	GDA	55	536791	6276036	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0296	Lake Cowal 2017-042	GDA	55	536497	6275756	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0297	Lake Cowal 2017-038	GDA	55	533990	6279152	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0298	Lake Cowal 2017-037	GDA	55	533304	6277252	Open site	Destroyed	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0299	Lake Cowal 2017-035	GDA	55	532686	6278407	Open site	Destroyed	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0300	Lake Cowal 2017-036	GDA	55	533125	6278700	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0301	Lake Cowal 2017-034	GDA	55	532643	6278720	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0302	Lake Cowal 2017-033	GDA	55	532725	6278789	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0303	Lake Cowal 2017-032	GDA	55	532978	6278454	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
39-4-0304	Lake Cowal 2017-031	GDA	55	533193	6278317	Open site	Destroyed	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0305	Lake Cowal 2017-030	GDA	55	532404	6279099	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0306	Lake Cowal 2017-029	GDA	55	532120	6279360	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0307	Lake Cowal 2017-028	GDA	55	532222	6279398	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0309	Lake Cowal 2017-026	GDA	55	537127	6275983	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0310	Lake Cowal 2017-027	GDA	55	532396	6279486	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0315	Lake Cowal 2017-003	GDA	55	534708	6279668	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0316	Lake Cowal 2017-004	GDA	55	534871	6279741	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0317	Lake Cowal 2017-005	GDA	55	534978	6279873	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0318	Lake Cowal 2017-006	GDA	55	533914	6279947	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0319	Lake Cowal 2017-007	GDA	55	533400	6279743	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0320	Lake Cowal 2017-008	GDA	55	533177	6279651	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0321	Lake Cowal 2017-009	GDA	55	532874	6279641	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0322	Lake Cowal 2017-010	GDA	55	532771	6279631	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0323	Lake Cowal 2017-011	GDA	55	532949	6278945	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0324	Lake Cowal 2017-012	GDA	55	532802	6278992	Closed site	Not a Site	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0325	Lake Cowal 2017-013	GDA	55	533161	6279034	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0326	Lake Cowal 2017-014	GDA	55	532197	6279787	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
39-4-0328	Lake Cowal 2017-019	GDA	55	532271	6279681	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0331	Lake Cowal 2017-017	GDA	55	532155	6280283	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits	4376	
39-4-0333	Lake Cowal 2017-001	GDA	55	533957	6279294	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
43-4-0107	Thornton Gilgai Isolated Artefact	GDA	55	532781	6280207	Open site	Destroyed	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0108	Thornton Gilgai Scatter 25Sep19	GDA	55	532987	6280174	Open site	Destroyed	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0109	Thornton Gilgai Hearth 25Sep19	GDA	55	533236	6280138	Open site	Destroyed	Hearth : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0085	Lake Cowal 2018.049	GDA	55	536838	6279898	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0086	Lake Cowal 2018.046	GDA	55	536714	6279496	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0087	Lake Cowal 2018.055	GDA	55	537007	6279127	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0088	Lake Cowal 2018.056	GDA	55	537007	6279127	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0091	Lake Cowal 2018.047	GDA	55	536718	6279991	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0092	Lake Cowal 2018.051	GDA	55	536792	6279916	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0105	Lake Cowal 2019 CI	GDA	55	532341	6278911	Open site	Valid	Artefact : -		
	Contact	Recorders	DPIE - Armidale,Mr.John Gilding					Permits		
43-4-0114	E46 OS3	GDA	55	536727	6281882	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0115	E46 OS4	GDA	55	536741	6281468	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0116	E46 OS5	GDA	55	536827	6281467	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0117	E46 ST1	GDA	55	537114	6280363	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0118	E46 ST2	GDA	55	537119	6280352	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0119	E46 ST3	GDA	55	537143	6280332	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0120	E46 ST4	GDA	55	536760	6282188	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0121	E46 ST5	GDA	55	536927	6281530	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0122	E46 ST6	GDA	55	536834	6281734	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0123	BH2 Gilgai	GDA	55	536664	6281468	Open site	Valid	Art (Pigment or Engraved) : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0125	E46 BH1	GDA	55	536782	6281322	Open site	Valid	Art (Pigment or Engraved) : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0126	E46 BH2	GDA	55	536701	6281432	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0127	E46 OS W	GDA	55	536195	6281065	Open site	Valid	Artefact : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0128	E46 IF	GDA	55	536239	6280974	Open site	Valid	Artefact : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0129	E46 IF2	GDA	55	536216	6280973	Open site	Valid	Artefact : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0130	E46 IF3	GDA	55	536406	6281074	Open site	Valid	Artefact : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0131	BH2 Gilgal	GDA	55	536664	6281468	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0132	E46 IF4	GDA	55	536333	6281078	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0133	E46 IF5	GDA	55	536866	6282080	Open site	Valid	Art (Pigment or Engraved) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0134	E46 IF6	GDA	55	537026	6282069	Open site	Valid	Art (Pigment or Engraved) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0135	E46 IF7	GDA	55	536765	6282271	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0136	E46 OS E	GDA	55	536945	6281249	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0137	E46 OS1	GDA	55	536721	6282111	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0138	E46 OS2	GDA	55	536787	6282405	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0139	E46 Addit IF N	GDA	55	536722	6282272	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0140	IWL South-ST1	GDA	55	533143	6277835	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 02

Client Service ID : 721184

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports

** Site Status

Valid – The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 532053.71606285 - 537156.65645531, Northings : 6269025.99028779 - 6288696.01154134 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-3-0021	Cowal site LC1	AGD	55	537164	6278408	Open site	Destroyed	Artefact : -	Open Camp Site	102172,102173
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	1467,1468	
43-3-0022	Cowal site LC2	AGD	55	537312	6279255	Open site	Destroyed	Artefact : -	Open Camp Site	102172,102173
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	1467,1468	
43-3-0023	Cowal site LC3	AGD	55	537830	6276648	Open site	Destroyed	Artefact : -	Open Camp Site	102172,102173
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	1467,1468	
43-3-0024	Cowal site LC4	AGD	55	537887	6276638	Open site	Destroyed	Artefact : -	Open Camp Site	102172,102173
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	1467,1468	
43-3-0025	LC5;	AGD	55	538000	6275000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	R Williams,Doctor.Scott Cane					Permits		
43-3-0026	LC6;	AGD	55	539000	6274000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	R Williams,Doctor.Scott Cane					Permits		
43-3-0027	SC1;	AGD	55	541000	6271000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	R Williams,Doctor.Scott Cane					Permits		
43-4-0003	Lake Cowal;	AGD	55	545321	6272539	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	G.S Vale					Permits		
43-4-0005	Lake Cowal;	AGD	55	545338	6270711	Open site	Valid	Modified Tree (Carved or Scarred) : -	Carved Tree	65
	Contact	Recorders	Unknown Author					Permits		
43-4-0007	Cowal site P1	AGD	55	537359	6277000	Open site	Destroyed	Artefact : -	Open Camp Site	3148,102172,102173
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	1361,1467,1468	
43-4-0008	Cowal Scarred Tree P2	AGD	55	537575	6277643	Open site	Destroyed	Modified Tree (Carved or Scarred) : -	Scarred Tree	3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,R Williams,Doctor.Scott Cane					Permits	3323	
43-4-0020	Lake Cowal back plains site A	AGD	55	536100	6278065	Open site	Destroyed	Artefact : -		3148,102172
	Contact	Recorders	Doctor.Colin Pardoe,Doctor.Scott Cane					Permits	1467,1468	
43-4-0045	Wamboyne Back Plain Site 2	GDA	55	536061	6279420	Open site	Valid	Artefact : 1		102172
	Contact	Recorders	Doctor.Colin Pardoe					Permits		
39-4-0276	Lake Cowal 2017-060	GDA	55	536522	6276076	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0286	Lake Cowal 2017-049	GDA	55	536046	6275732	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
39-4-0289	Lake Cowal 2017-046	GDA	55	536466	6276174	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0290	Lake Cowal 2017-045	GDA	55	536300	6276201	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0291	Lake Cowal 2017-044	GDA	55	536424	6275897	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0292	Lake Cowal 2017-043	GDA	55	536278	6275796	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0294	Lake Cowal 2017-040	GDA	55	536690	6276212	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0295	Lake Cowal 2017-041	GDA	55	536791	6276036	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0296	Lake Cowal 2017-042	GDA	55	536497	6275756	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0308	Lake Cowal 2017-025	GDA	55	537650	6275815	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0309	Lake Cowal 2017-026	GDA	55	537127	6275983	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0311	Lake Cowal 2017-021	GDA	55	537664	6276591	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0312	Lake Cowal 2017-022	GDA	55	537937	6276332	Open site	Valid	Hearth : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0313	Lake Cowal 2017-023	GDA	55	537968	6276001	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0314	Lake Cowal 2017-024	GDA	55	537848	6275909	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
39-4-0327	Lake Cowal 2017-020	GDA	55	537664	6276591	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Rebecca Vartto					Permits		
43-4-0085	Lake Cowal 2018.049	GDA	55	536838	6279898	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0086	Lake Cowal 2018.046	GDA	55	536714	6279496	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0087	Lake Cowal 2018.055	GDA	55	537007	6279127	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0088	Lake Cowal 2018.056	GDA	55	537007	6279127	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0089	Lake Cowal 2018.054	GDA	55	537944	6279675	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0090	Lake Cowal 2018.053	GDA	55	537560	6279955	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0091	Lake Cowal 2018.047	GDA	55	536718	6279991	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0092	Lake Cowal 2018.051	GDA	55	536792	6279916	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage,Ms.Katherine Day					Permits		
43-4-0114	E46 OS3	GDA	55	536727	6281882	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0115	E46 OS4	GDA	55	536741	6281468	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0116	E46 OS5	GDA	55	536827	6281467	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0117	E46 ST1	GDA	55	537114	6280363	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0118	E46 ST2	GDA	55	537119	6280352	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0119	E46 ST3	GDA	55	537143	6280332	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0120	E46 ST4	GDA	55	536760	6282188	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		
43-4-0121	E46 ST5	GDA	55	536927	6281530	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0122	E46 ST6	GDA	55	536834	6281734	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0123	BH2 Gilgai	GDA	55	536664	6281468	Open site	Valid	Art (Pigment or Engraved) : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0124	E40A OS	GDA	55	538011	6275979	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0125	E46 BH1	GDA	55	536782	6281322	Open site	Valid	Art (Pigment or Engraved) : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0126	E46 BH2	GDA	55	536701	6281432	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0127	E46 OS W	GDA	55	536195	6281065	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0128	E46 IF	GDA	55	536239	6280974	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0129	E46 IF2	GDA	55	536216	6280973	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0130	E46 IF3	GDA	55	536406	6281074	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
43-4-0131	BH2 Gilgai	GDA	55	536664	6281468	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					**Permits**		
43-4-0132	E46 IF4	GDA	55	536333	6281078	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					**Permits**		
43-4-0133	E46 IF5	GDA	55	536866	6282080	Open site	Valid	Art (Pigment or Engraved) : 1		
	Contact	**Recorders**	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					**Permits**		

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0134	E46 IF6	GDA	55	537026	6282069	Open site	Valid	Art (Pigment or Engraved) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0135	E46 IF7	GDA	55	536765	6282271	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0136	E46 OS E	GDA	55	536945	6281249	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0137	E46 OS1	GDA	55	536721	6282111	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0138	E46 OS2	GDA	55	536787	6282405	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0139	E46 Addit IF N	GDA	55	536722	6282272	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Taylar Reid,EMM Consulting Pty Ltd - Newcastle					Permits		
43-4-0154	CGO_LCF_2020_OS1	GDA	55	541782	6272680	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0155	CGO_LCF_2020_IF1	GDA	55	541788	6272562	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0156	LCF_CGO_2020	GDA	55	541963	6272831	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0157	LCF_CGO_2020_IF2	GDA	55	541668	6272662	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0158	LCF_CGO_2020_IF3	GDA	55	541644	6272694	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0159	LCF_CGO_2020_IF5	GDA	55	541722	6272684	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0160	LCF_CGO_2020_IF4	GDA	55	541630	6272801	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	
43-4-0161	LCF_CGO_2020_IF6	GDA	55	541883	6272871	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					Permits	4929	

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 CGO Oct 2022 06

Client Service ID : 721185

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-4-0162	LCF_CGO_2020_ST1	GDA	55	541905	6272879	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**	4929	
43-4-0163	LCF_CGO_2020_ST2	GDA	55	541934	6272865	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**	4929	
43-4-0164	Lake Cowal Homestead OS 1	GDA	55	541681	6272887	Open site	Valid	Artefact : -		
	Contact	**Recorders**	DzArk Environmental and Heritage Management - Dubbo,Mr.Harrison Rochford					**Permits**	4929	

**** Site Status**

Valid – The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 13/10/2022 for Cameron Neal for the following area at Datum :GDA, Zone : 55, Eastings : 535998.58182866 - 548853.60442347, Northings : 6268795.91670778 - 6288017.03476023 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 74

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 east bores only

Client Service ID : 750927

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
43-5-0074	LCB11	AGD	55	553756	6285529	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0073	LCB10	AGD	55	554045	6285490	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0061	LCB-9	GDA	55	554560	6285399	Open site	Valid	Artefact : 8		
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**	1467,1468	
43-5-0040	MD 14;	AGD	55	556460	6280520	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
43-5-0077	LCB15	AGD	55	553143	6286501	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0075	LCB12	AGD	55	553607	6285559	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0065	LCB1	AGD	55	554334	6283966	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0067	LCB3	AGD	55	554429	6284593	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0076	LCB13	AGD	55	553314	6285598	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0066	LCB2	AGD	55	554401	6284412	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0068	LCB4	AGD	55	554485	6284821	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0070	LCB6	AGD	55	554517	6285144	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0050	MD 32	AGD	55	558670	6283960	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**		
43-5-0069	LCB5	AGD	55	554470	6284845	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0072	LCB8	AGD	55	554543	6285318	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0078	LCB16	AGD	55	553269	6287320	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0071	LCB7	AGD	55	554541	6285295	Open site	Valid	Artefact : -		102172
	Contact	**Recorders**	Doctor.Johan Kamminga					**Permits**		
43-5-0059	L-C-1	AGD	55	561000	6278065	Open site	Valid	Artefact : 1, Modified Tree (Carved or Scarred) : 1		

Report generated by AHIMS Web Service on 06/02/2023 for Morgan Wilcox for the following area at Lat, Long From : -33.6523, 147.4169 - Lat, Long To : -33.5093, 147.6641. Number of Aboriginal sites and Aboriginal objects found is 20

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : J190417 east bores only

Client Service ID : 750927

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Doctor,Scott Cane					Permits		
43-5-0060	LCB-14	GDA	55	553085	6286144	Open site	Valid	Artefact : 4		102172
	Contact	Recorders	Doctor,Johan Kamminga					Permits	1467,1468	
43-5-0051	MD 31	AGD	55	556570	6280730	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		

** Site Status

Valid – The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 06/02/2023 for Morgan Wilcox for the following area at Lat, Long From : -33.6523, 147.4169 - Lat, Long To : -33.5093, 147.6641. Number of Aboriginal sites and Aboriginal objects found is 20

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E.5 AHIMS site cards

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 35-4-0044 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_IF1

Easting: 542329 **Northing:** 6372635 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

Land Form Unit: Plain **Vegetation:** Open Woodland

Distance to Water (m): 70 **Primary Report:**

How to get to the site: Site is located on private property, access to site must be sought through Cowal Gold Mine.

Other site information: -

Site location map

Site plan

Site contents information

open/closed site: Open **Site condition:** Good

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1.	Artefact	1	1	1				

Feature condition: Good

Description:

Isolated find comprising of a single grey chert core.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.								

Feature condition:

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.								

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

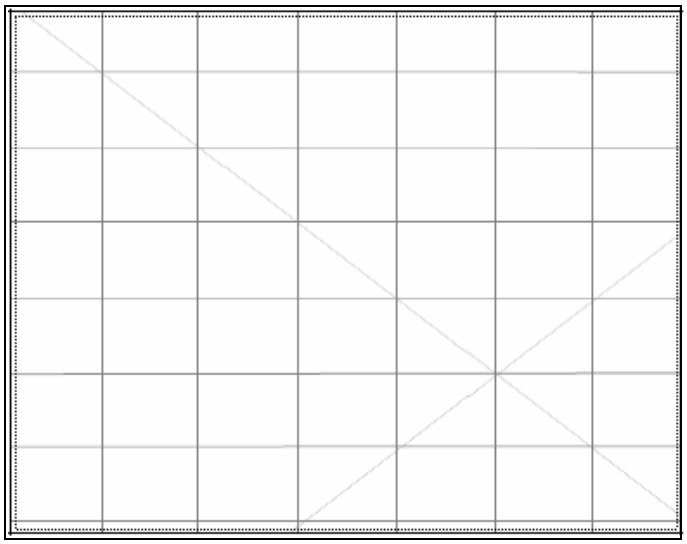
Feature condition:

Description:

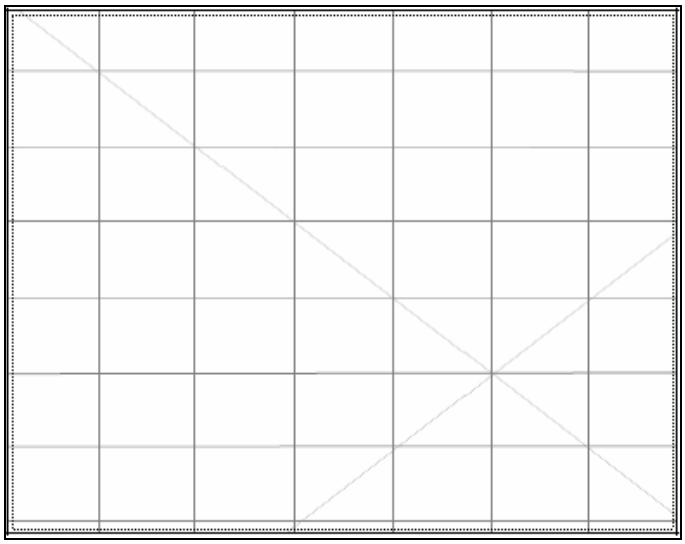
Site photographs

Description: Artefact found at Cowal Gold Mine, along the bank of Sandy Creek.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 39-4-0271 **Date recorded:** 14-12-2017

Site Location Information

Site name: Lake Cowal 2017-055

Easting: 533853 **Northing:** 6276163 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Venn	Cassandra

Organisation: Niche Environment and Heritage

Address: Level 1 19 Sorrell St Parramatta

Phone: 0296305658 **E-mail:** BrokenHillGuest2@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

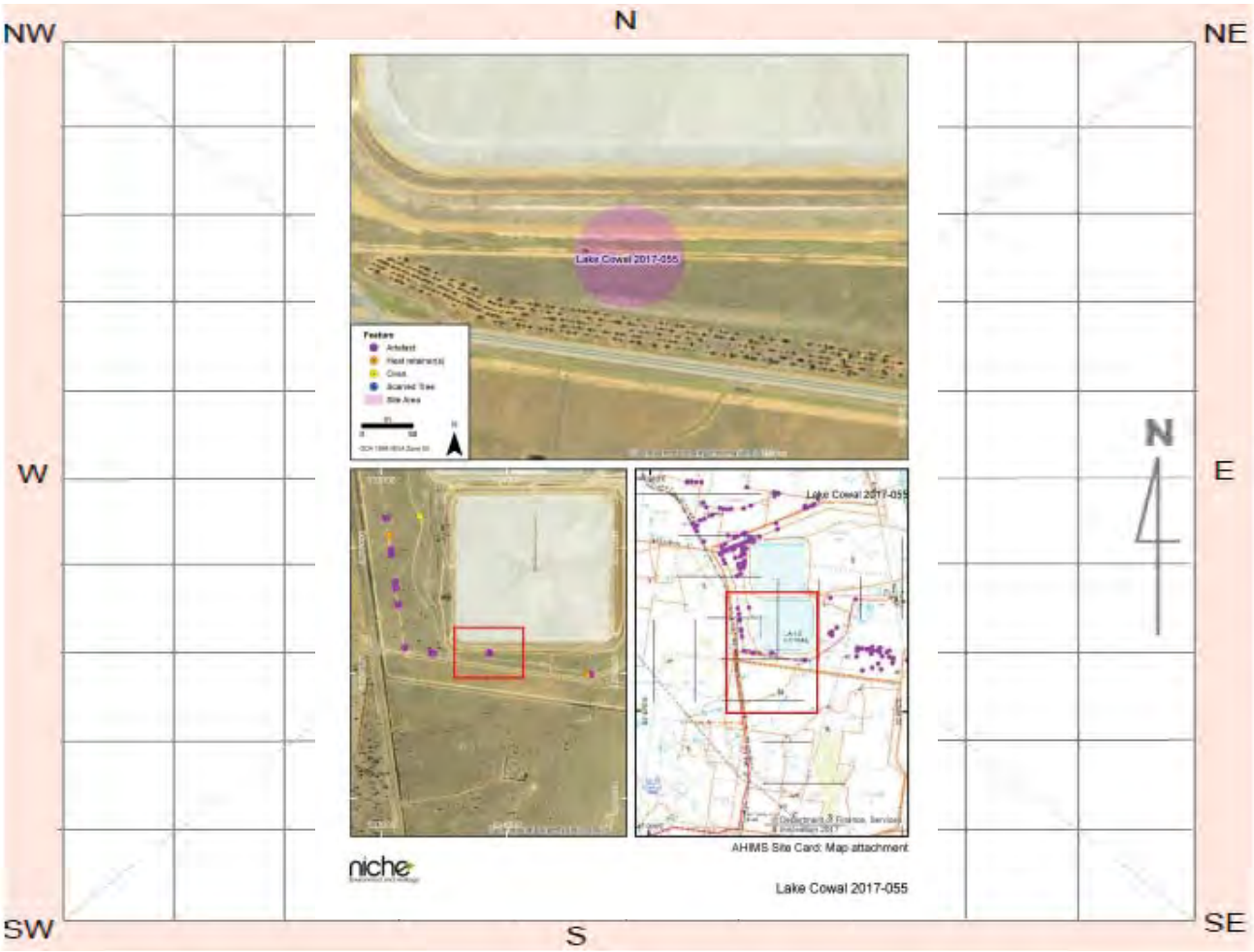
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 4167 **Primary Report:**

How to get to the site: The site is located on private property and access needs to be organised through Evolution Mining.

Other site information: The site is located on a vehicle track.

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	30	30				

Description:

One artefact was found in close proximity to a hearth and within 10 m of a haul road.

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	1	30	30				

Description:

The hearth is found within close proximity to an isolated artefact.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

Other Site Info: The site is located on a vehicle track.

Site plan

Site photographs

Description: Site overview.

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 39-4-0298 **Date recorded:** 14-12-2017

Site Location Information

Site name: Lake Cowal 2017-037

Easting: 533304 **Northing:** 6277252 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Venn	Cassandra

Organisation: Niche Environment and Heritage

Address: Level 1 19 Sorrell St Parramatta

Phone: 0296305658 **E-mail:** BrokenHillGuest2@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

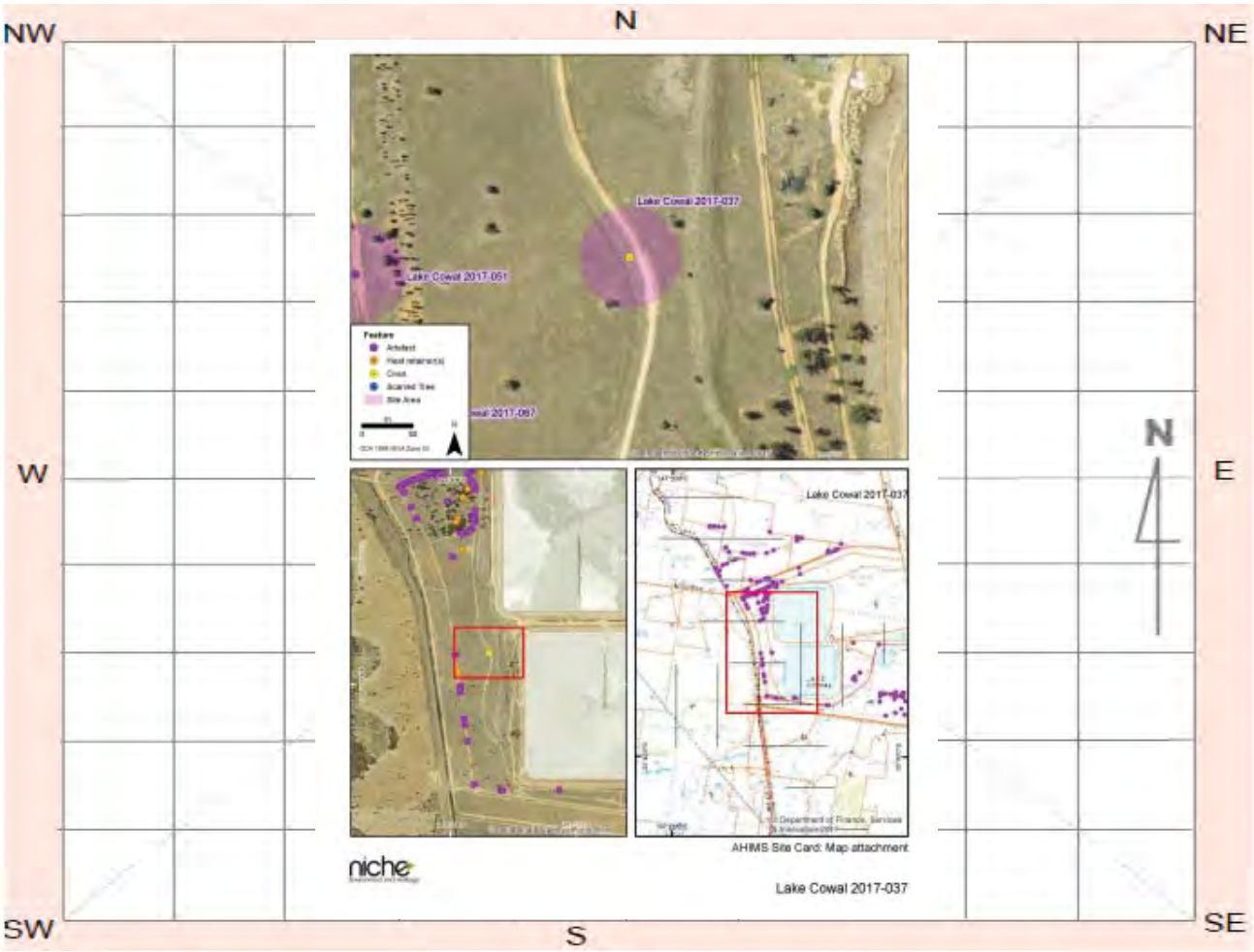
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 4929 **Primary Report:**

How to get to the site: The site is located on private property and access needs to be organised through Evolution Mining.

Other site information: Located between a road and a drainage channel.

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Hearth	1	10	10				

Description:

Contains approximately 14 heat retainers.

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

Features:

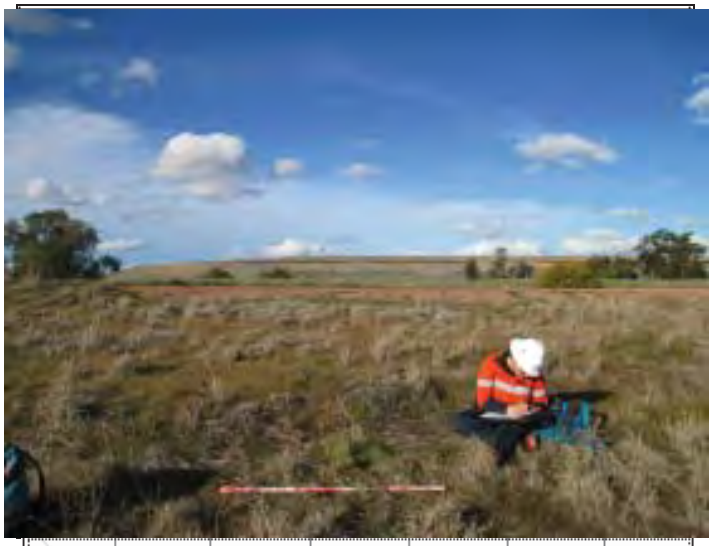
		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

Other Site Info: Located between a road and a drainage channel.

Site plan

Site photographs



Description: Site overview.

Description: Heat retainers.

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 39-4-0300 **Date recorded:** 14-12-2017

Site Location Information

Site name: Lake Cowal 2017-036

Easting: 533125 **Northing:** 6278700 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Venn	Cassandra

Organisation: Niche Environment and Heritage

Address: Level 1 19 Sorrell St Parramatta

Phone: 0296305658 **E-mail:** BrokenHillGuest2@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

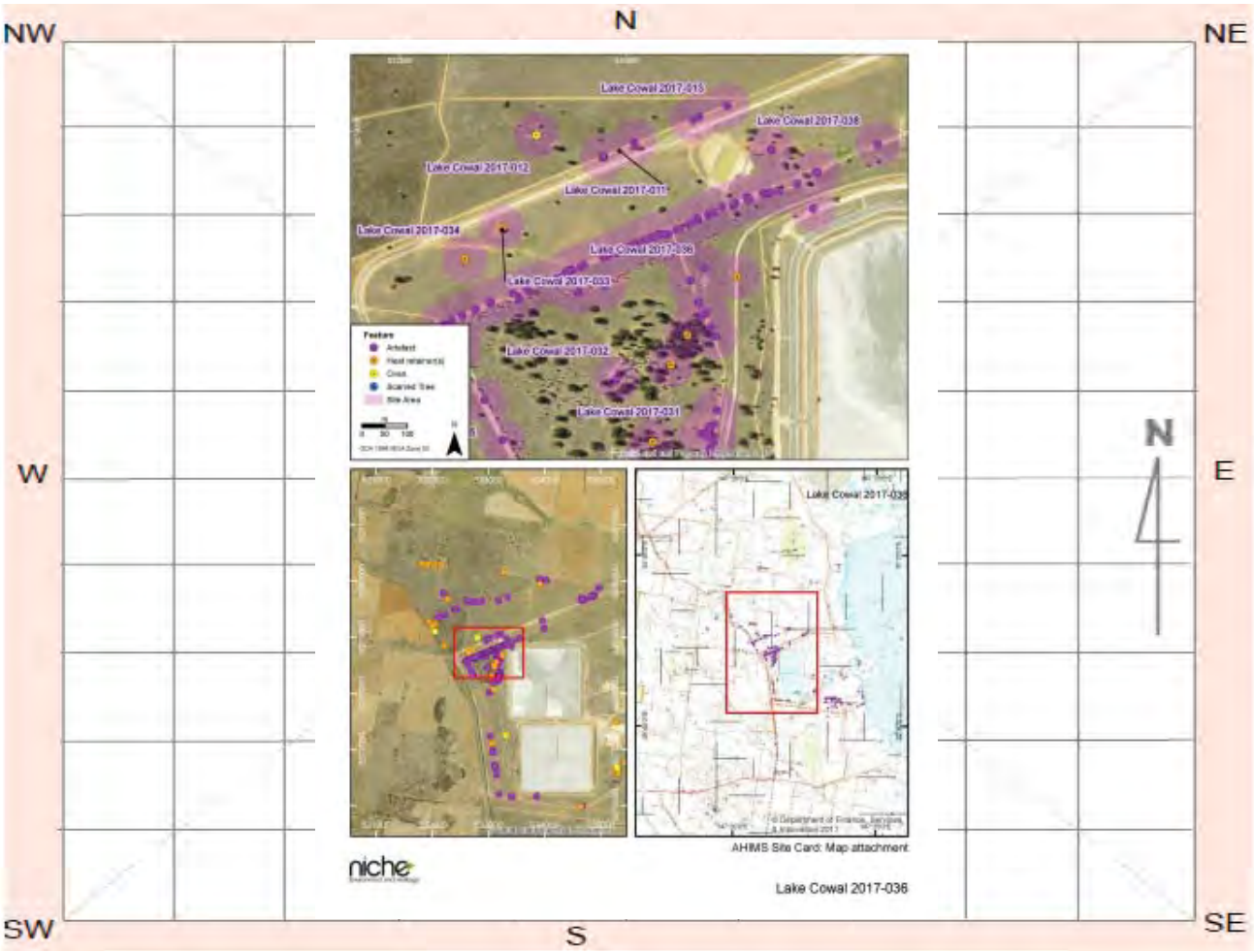
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 4915 **Primary Report:**

How to get to the site: The site is located on private property and access needs to be organised through Evolution Mining.

Other site information: Site is located on an access track.

Site location map



Site contents information

open/closed site: Open

Site condition: Vehicle damage

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	26	200	100				

Description:

One broken tula slug, and 25 other artefacts spread out along an access track.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	3	30	30				

Description:

Two heat retainers at separate locations and one oven.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

Other Site Info: Site is located on an access track.

Site plan

Site photographs

Description: Site overview.

Description: Sample of artefacts.

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

[✓] New recording [ ] Additional Info

National Parks and Wildlife Service

Box 1967, Hurstville NSW 2220. Tel: (02) 585 6444

Standard Site Recording Form Revised 5/88

43-3-0022

NPWS Code

1:250,000 map sheet: Forbes 14 3

AMG Grid reference (Full reference - please include leading digits)

250K: E C 5 3 7 0 (25K) mE — 250K: E C 6 2 7 9 0 (25K) mN (S/S)

Scale of map used for grid reference (Please use largest scale available.) [ ] 25K, 50K (preferred) [ ] 100K [✓] 250K

1:25K, 50K, 100K map name:

HEAD OFFICE USE ONLY:

NPWS Site no: 43-3-22

Site types: Open Camp Site

Accessioned by: BK Date: 15MAY95

Data entered by: LM Date: 13/2/96

Owner/Manager: ? State Gov. W.J. Butlershaws

Address: Laurel Park Cl W. Wyalong

Site name: Site LC2

Locality/property name: Game Reserve/ Laurel Park

NPWS District: Griffith Region: Western

Reason for investigation: EIS Survey.

Portion no: Game Reserve/"2"

Parish: MARSDEN

Photos taken? yes

How many attached? None

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. (Draw diagram on separate sheet.)

Follow the lake shore north from the mooring camp for about 1km. You will come to a well predefined creek - the site is on either side of this creek, about 100 mts from the lakeshore.

Other sites in locality? yes Site Types include: open sites

Are sites in NPWS Register? yes.

Have artefacts been removed from site? No When?

By whom? Deposited where?

Is site important to local Aborigines? Mildly - ceremonial interest

Give contact(s) name(s) + address(es) Bill Nixon: West Wyalong Land Council. Ashley Williams: Wiradjuri Reserve L. Council: Wagga Wagga.

Contacted for this recording? yes.

(Attach additional information separately) If not, why not?

Verbal/written reference sources (including full title of accompanying report). NPWS Report Catalogue #

CRNE-SIB 1995 Camp Sites on Lake Cowal. Report to NSA. Hawthorn Unc.

Checklist: surface visibility, damage/disturbance/ threat to site

Condition of site:

- Disturbed by farm activity + ripping of sandhill sand ridges for rabbits.

Visibility high - due to drought

Recommendations for management & protection (attach separate sheet if necessary):

fence: possible salvage if threatened by mining

Site recorded by: S Crane + Ashley Williams Date: Oct 1994.

Address/institution:

P.O. Box 1773 Port Lincoln

SITE POSITION & ENVIRONMENT

OFFICE USE ONLY: NPWS site no:

1. Land form a. beach/hill slope/ridge top, etc: creek under adjacent to lake b. site aspect: c. slope: level

d. mark on diagram provided *or* on your own sketch the position of the site:

e. Describe briefly:

artefacts scattered 1 in 100 mts of creek line.

f. Local rock type: Sandstone / Quartzite

g. Land use/effect: Cropping + v. spring ploughing - cleared land

2. Distance from drinking water: 10m Source: creek - and lake - 100m.

3. Resource Zone associated with site (estuarine, riverine, forest etc): creek + lake - shore.

4. Vegetation: paddocks / Red Gum.

5. Edible plants noted:

6. Faunal resources (include shellfish): Birds.

7. Other exploitable resources (river pebbles, ochre, etc):

Site type: open artefact Scatter.

CHECKLIST TO HELP:
length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.

OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

DESCRIPTION OF SITE & CONTENTS.

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.

Site interpreted as a 'base camp' - artefact densities around 4-5 / sq mt - land average at 1/5 sq mt. Chert dominant wider range 1 artefact types than LC1. - mic. modified artefacts) hand axes, hammers, manuports. Higher proportion 1 Backed Blades, + few grindstones - thought to reflect economic emphasis on hunting rather than grinding seeds.

Attach sketches etc. eg. plan & section of shelter, show relation between site contents, indicate north, show scale.

Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

43-3-22

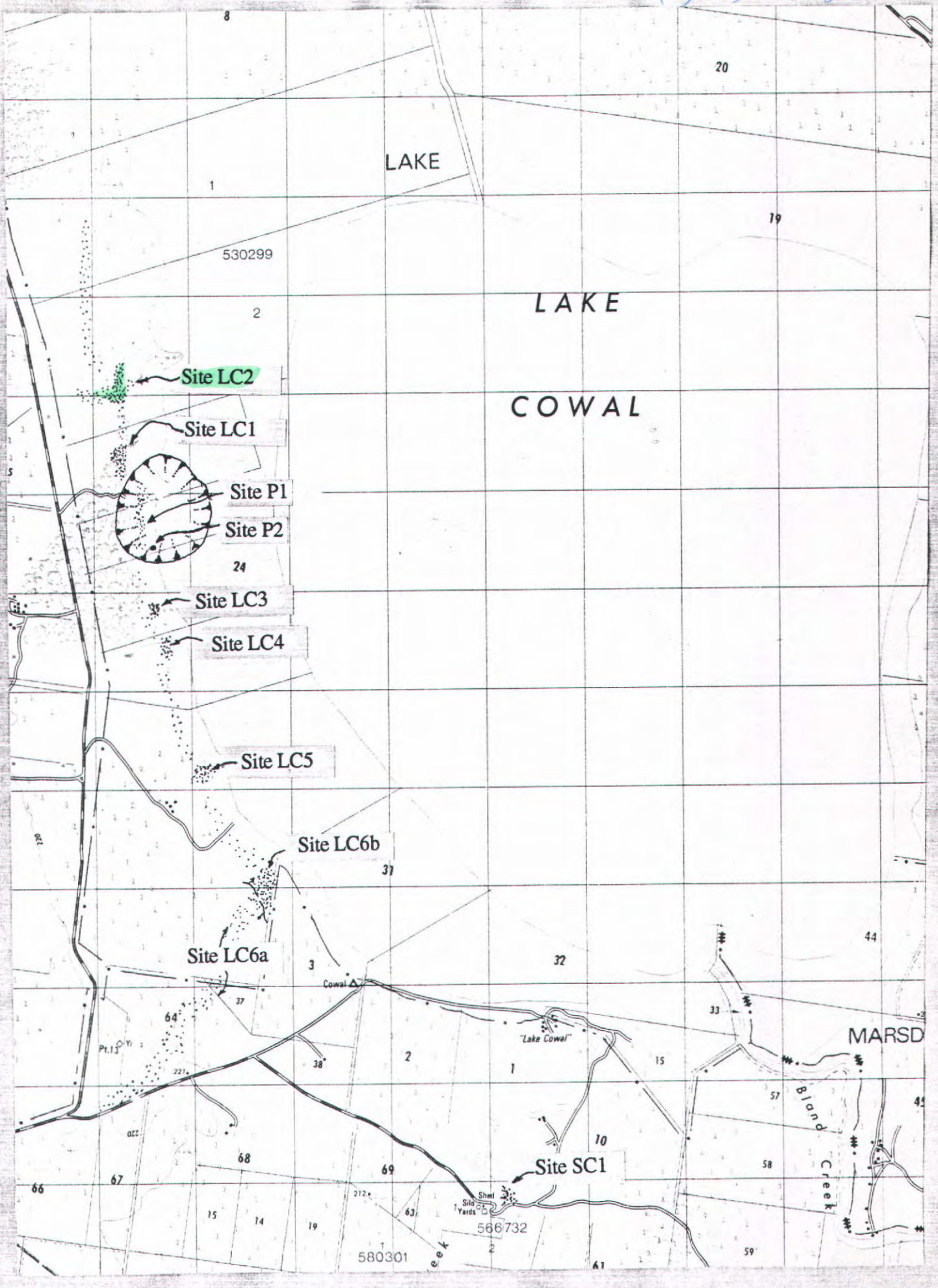


Figure 4: Sites located at Lake Cowal (the dots symbolise artefact densities)

Aboriginal Site Impact Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW
April 2012 OEH 2012/0558

1 This form must be completed following impacts to AHIMS sites that are:
   a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
   b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)
   c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:
      - State Significant Development (SSD - Part 4),
      - State Significant Infrastructure (SSI - Part 5.1), or
      - A Major Project (Part 3A - now repealed) under the *Environmental Planning and Assessment Act 1979 (EP&A Act),* or
   d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.
2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).
3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.
4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval) This form must be submitted in addition to any reports.

AHIMS site ID: 43-3-0022

Site impact authorisation (select one)

Reference numbers, dates

☐ Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW.*)

Date OEH was notified (under requirement 15c of the Code):

OEH Regional office notified:

☒ AHIP (The impacts to this site were authorised by an AHIP.)

AHIP number: 1468

Date issued/signed: 27 October 2003

AHIMS permit ID/number: 1468

☐ SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I

Project number:

Date Director General's Requirements issued:

or

☐ SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)

Date of project approval:

Site status following impacts:

☐ Not a site (The investigations concluded that this is not a site.)

☐ Valid site (The investigations confirmed that this is an Aboriginal site.)

☐ Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)

☒ Destroyed (The site was completely destroyed following authorised impacts.)

Geographic location

Site name: Cowal site LC2

Easting: 537312 **Northing:** 6279255 **Coordinates must be in GDA (MGA)**

Map sheet: Wamboyne 8330

Zone: 55 **Location method:** Differential GPS

Primary recorder

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Dr	Pardoe	Colin

Organisation: Colin Pardoe Bio-Anthropology & Archaeology

Address: 16 Hackett Gardens, Turner, ACT 2612

Phone: 428692798 **E-mail:** colin.pardoe@ozemail.com.au

Date recorded: 26 August 2003 **Fax:**

Site information

Open/closed site: Open

Features:

	1.	Aboriginal ceremony and dreaming		11.	Habitation structure
	2.	Aboriginal resource and gathering		12.	Hearth
	3.	Art		13.	Non-human bone and organic material
X	4.	Artefact		14.	Ochre quarry
	5.	Burial		15.	Potential archaeological deposit
	6.	Ceremonial ring		16.	Stone quarry
	7.	Conflict		17.	Shell
	8.	Earth mound		18.	Stone arrangement
	9.	Fish trap		19.	Modified tree
	10.	Grinding groove		20.	Water hole

Site condition

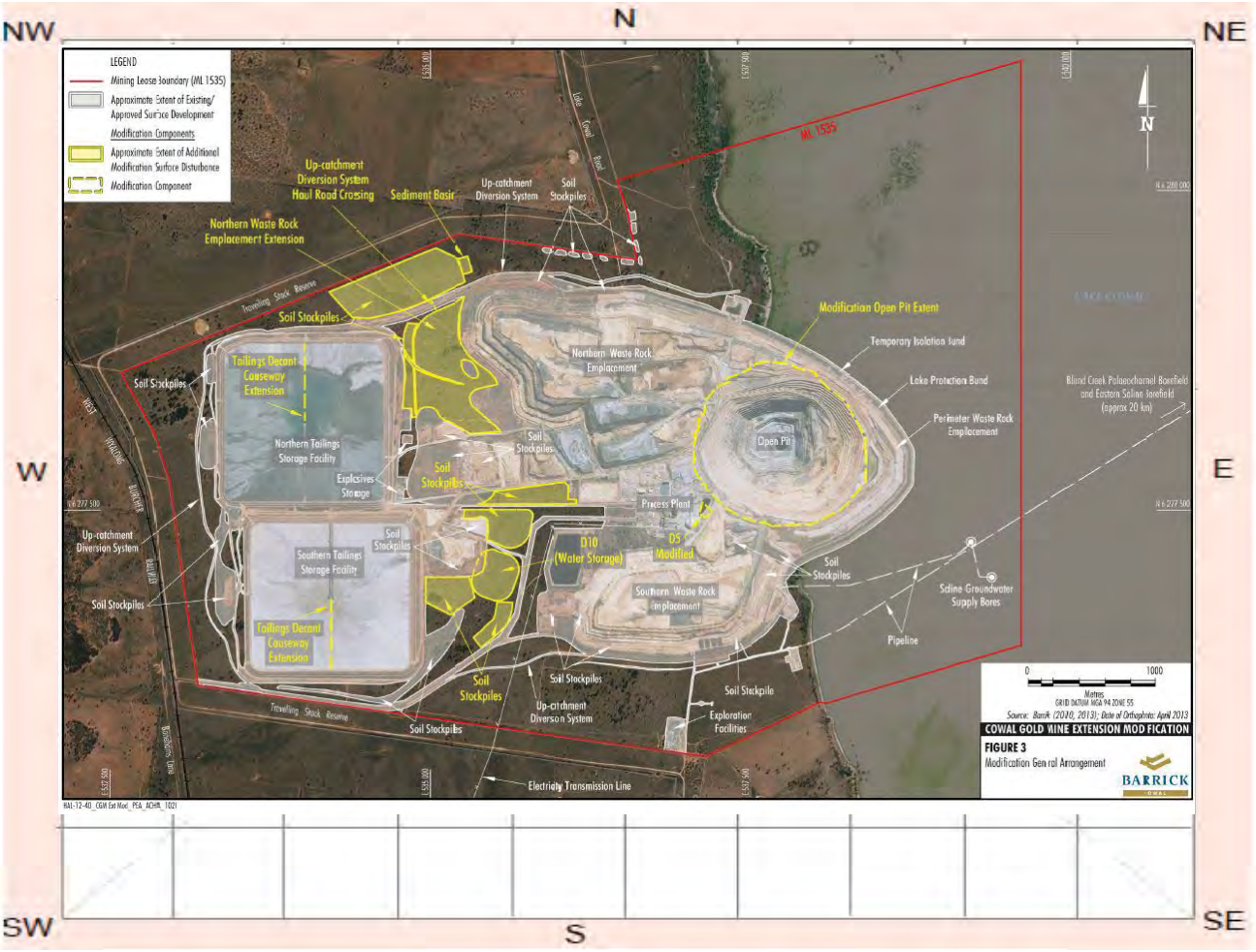
Written description of the condition of the AHIMS site (including relevant features) following the authorised impact of the site

The site has been resumed following the procedure set out in Permit 1468. A representative sample of objects [lithic items] was collected and these are stored in accordance with the permit.

note in the following map, the location has been developed.

Site map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

methods for site resumption are described in special condition 6 of permit 1468:
Inspect the land and identify surface Aboriginal objects.
A representative sample of Aboriginal objects from each site shall be taken.
Remaining Aboriginal objects shall be collected with the soil during soil stripping.

Special condition 13 describes storage measures
all collected Aboriginal objects shall be retained in the existing temporary Keeping Place.

Special condition 12 describes data logging for identification purposes
sufficient data will be taken from each Aboriginal object, including material type and size characteristics to enable a technological analysis to be undertaken for report purposes provided always that numbers are large enough for meaningful analysis.

results are set out in:

Pardoe, C. 2009a. Archaeological Investigations at Lake Cowal. Report to Barrick Gold of Australia Limited.

Management recommendations

Summary of any management recommendations for the AHIMS site

The site has been resumed. Objects may be replaced on the land in the future.

Post-investigation significance

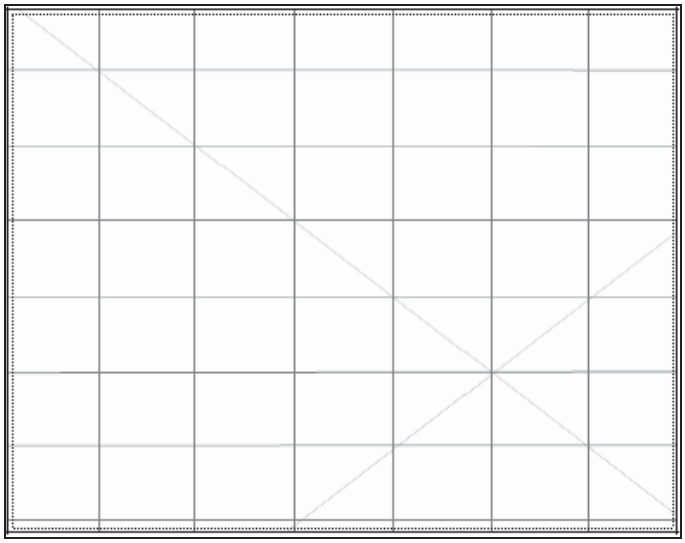
Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

The items form part of the register of Aboriginal objects [mainly lithic items] and their nature and distribution is one of the better samples in the western Wiradjuri region.

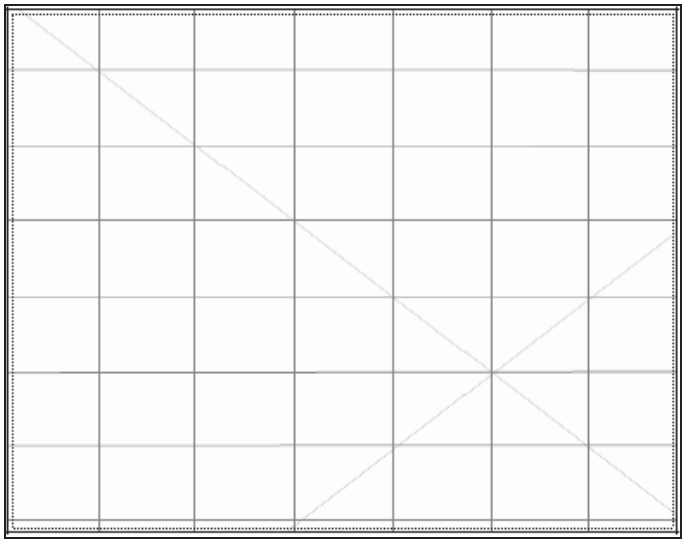
Additional comments

Site photographs

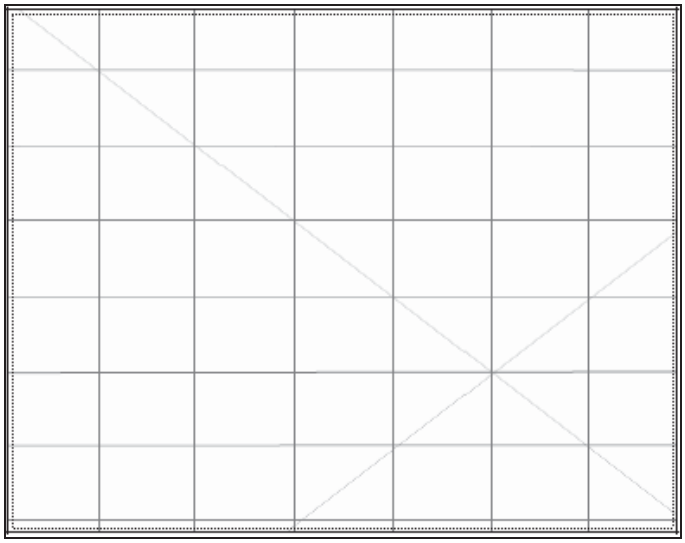
Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



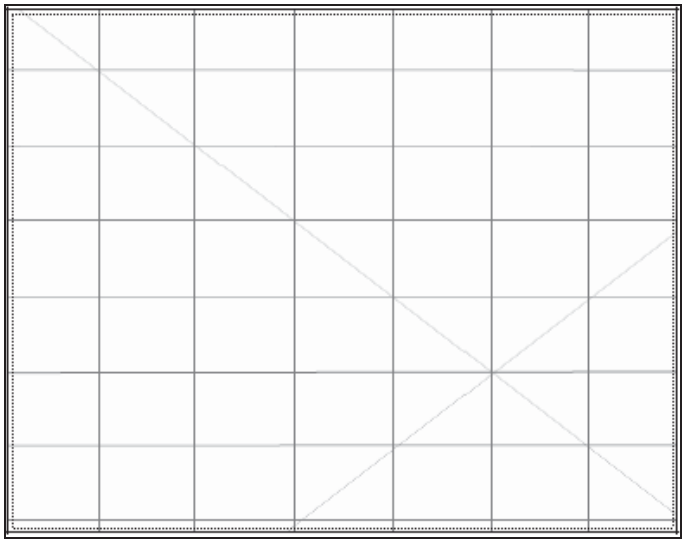
Description:



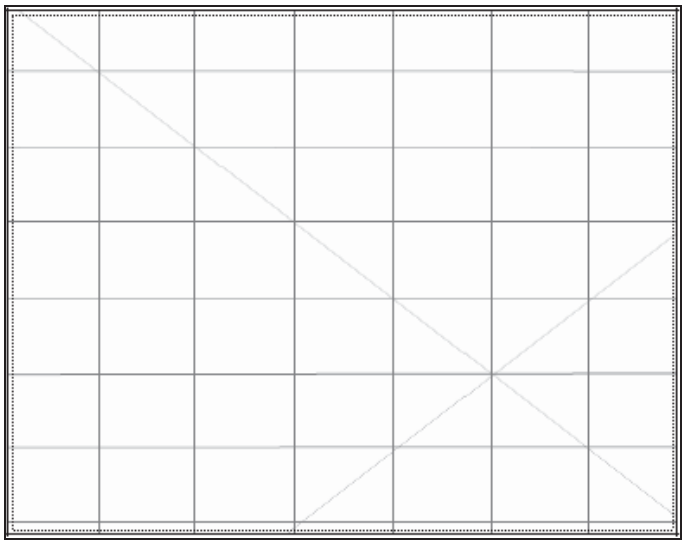
Description:



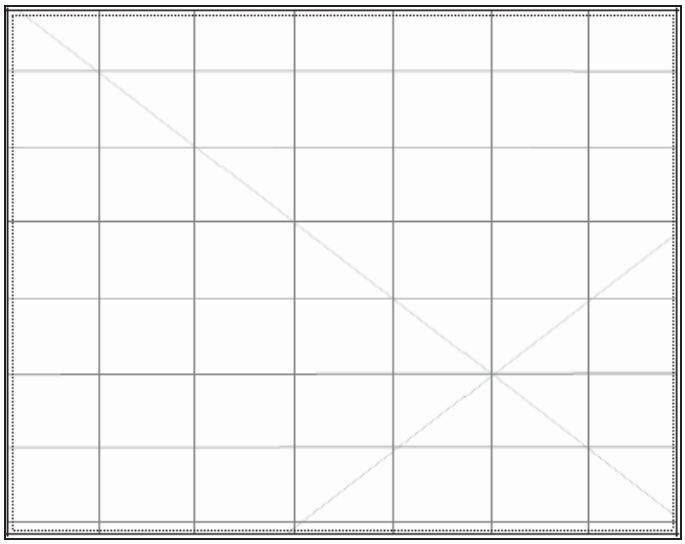
Description:



Description:



Description:



Description:

National Parks and Wildlife Service

SITE NAME L-C-2

Standard Site Recording Form

ENTERED: RO / WESTERN

MAP NAME	EDITION	SCALE	REFERENCE
Forbes.	1,250,000		533900mE 6276 590mN

HEAD OFFICE USE ONLY:

NWPS site no: 43-4-0034

Site types: artefact scatter & scarred tree.

File nos:

Report filed with site no: 43-4-0034

Classification: Site status:

Filed by:

Date:

Site name: L.

Local post office: WEST WYALONG.

Locality/property name: CONAL WEST.

NPWS District: DUBBO. Region: WESTERN

Reason for investigation (give H.O. instruction no. or full title of accompanying report where applicable):
Scott, Cane. 1995 Campsite at Lake Conal. A supplimenting report.

Portion no: LOT 3 Other land category: BLAND SHIRE

Parish: GORRINGLE. County: GIPPS

Plan/sketch/section of site attached? Yes/No. How many? 1

Air photo refs. (for stereo pair): NO.

Annotated photos attached? Yes/No How many?

Condition of site: MOSTLY CLEARED

Causes of damage/disturbance/threat to site: (Fill in separate management/protection recommendations sheet if necessary)
Agriculture / grazing

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. Draw diagram on separate sheet if necessary).
Refer attached plan

Other sites in locality? Yes/No. Site Types include: Lithic scatter & one scarred tree

Are sites in NPWS Register? Yes/No. Unregistered sites-plans for future recording? Yes/No.

Have artefacts been removed from site? Yes/No/don't know. When?

By whom? Deposited where?

Is site important to local Aborigines? Yes/No/don't know.

Give contact(s) name(s) + address(es) McRoley Williams, Regional Aboriginal Land Council 153 Docker St, Wagga Wagga 2650

Contacted for this recording? Yes/No.

(Attach additional information separately) If not, why not?

Verbal/written reference sources:

Refer above report

Site recorded by: Scott Cane Date: 1995

Address/institution:

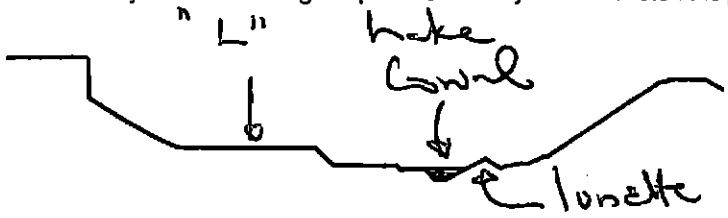
PO Box 1773 Port Lincoln SA 5607

SITE POSITION & ENVIRONMENT

OFFICE USE ONLY: NPWS site no:

1. Land form e.g. beach / hill slope / ridge top, etc:

2. Describe briefly & mark on diagram provided *or* on your own sketch the position of the site:



3a Local rock type: b rock type at site: c site aspect: ESE d slope: low ~20°

4. Distance from drinking water: 3-4 km. Source: Lake Perm / temp.?

5. Vegetation:
Sparse / cleared.

6. Edible plants noted: None identified pastoral area.

7. Faunal resources (include shellfish)
Cleared pastoral area. - birds, etc.

DESCRIPTION OF SITE & CONTENTS. **Site type(es):**

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.
Attach sketches etc, eg. plan & section of shelter, show relation between site contents, indicate scale.
Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

CHECKLIST TO HELP: length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.

OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

Scatter in central part of southern tailings storage (cell 2) within a narrow band of remnant scrub. Visibility of 5%. A broken hammerstone, 3 quartz flakes + a chert flake scattered over an area of 100 x 10 m. along a track. One broken hammerstone, 3 quartz flakes + one chert flake found scattered over an area next to a gilgai depression.

1/200 m^2

Quartz	60%
Chert	20%
Quartzite	20%

National Parks and Wildlife Service

Standard Site Recording Form

SITE NAME: C-C-3
ENTERED: RO/WESTERN

MAP NAME	EDITION	SCALE	REFERENCE
FORBES		1:250 000	534 655mE 6276 360mN

HEAD OFFICE USE ONLY:

NWPS site no: 43-4-0035

Site types: artefact scatter + scarred tree.

File nos: [redacted]

Report filed with site no: 43-4-0035

Classification: Site status:

Filed by:

Date:

Site name: M

Local post office: WEST WYALONG

Locality/property name: CANAL WEST

NPWS District: DUBBO Region: WESTERN

Reason for investigation (give H.O. instruction no. or full title of accompanying report where applicable):
Cane, S B (1995) Campsites at Lake Canal - A Supplementary Report refereced in Culture + Heritage (1997) Overview of Archaeological Information Canal Gold Project

Portion no: Lot 3 Other land category: Bland Shire
Parish: Corringle County: Gipps

Plan/sketch/section of site attached? (Yes)/No. How many? 1

Air photo refs. (for stereo pair): —

Annotated photos attached? Yes/(No) How many?

Condition of site: Cleared, grazing/cropping farm land

Causes of damage/disturbance/threat to site: (Fill in separate management/protection recommendations sheet if necessary) General farming activities (grazing, cropping).

How to get to the site (refer to permanent features, give best approach to site eg. from above, below, along cliff. Draw diagram on separate sheet if necessary).

Refer attached plan

Other sites in locality? (Yes)/No. Site Types include: Lithic scatters and one scarred tree

Are sites in NPWS Register? Yes/No. Some Unregistered sites-plans for future recording? Yes/No.

Have artefacts been removed from site? Yes/(No)/don't know. When?

By whom? Deposited where?

Is site important to local Aborigines? Yes/No (don't know.)

Give contact(s) name(s) + address(es) Mr Roley Williams Wiradjuri RALC 153 Docker St Wagga Wagga 2650

Contacted for this recording? (Yes)/No.

(Attach additional information separately) If not, why not?

Verbal/written reference sources:

Refer to above reports

Site recorded by: Dr. Scott Cane Date: 1995

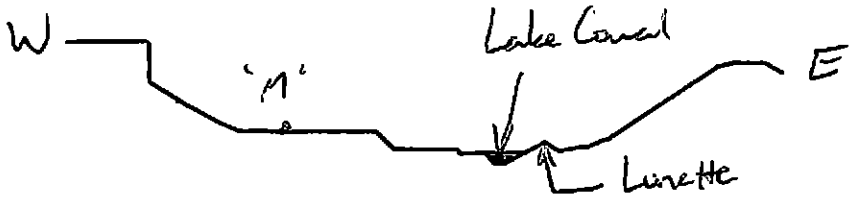
Address/Institution: PO Box 1773 Port Lincoln SA 5607

SITE POSITION & ENVIRONMENT

OFFICE USE ONLY: NPWS site no:

1. Land form e.g. beach/hill slope/ridge top, etc:

2. Describe briefly & mark on diagram provided *or* on your own sketch the position of the site:



3a Local rock type: b rock type at site: c site aspect: ESE d slope: La-0°

4. Distance from drinking water: 3-4 km Source: Lake Perm (temp.)

5. Vegetation: Cleared, formerly woodland.

6. Edible plants noted:

7. Faunal resources (include shellfish) Used for cleared pastoral area

DESCRIPTION OF SITE & CONTENTS. Site type(es):

Note state of preservation of site & contents. Do NOT dig, disturb, damage site or contents.
Attach sketches etc, eg. plan & section of shelter, show relation between site contents, indicate scale.
Attach annotated photos (stereo where useful) showing scale, particularly for art sites.

CHECKLIST TO HELP: length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.
DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.
ART: area of surface decorated, motifs, colours, wet, dry pigment, technique of engraving, no. of figures, sizes, patination.
BURIALS: number & condition of bone, position, age, sex, associated artefacts.
TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.
QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.
OTHER SITES EG. structures (fish traps, stone arrangements, bora rings, mia mias), mythological sites, rock holes, engraved groove channels, contact sites (missions massacres cemeteries) as appropriate

Refer to description in above report.

Density 1 / 33 sq.m.

Artefacts

Flake	6 (40%)
Mod flake	4 (27%)
Flaked piece	3 (20%)
Core	2 (13%)

Materials

Quartz	7%
Chert	53%
Silcrete	13%
Quartzite	27%

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0072 **Date recorded:** 29-04-2019

Site Location Information

Site name: Lake Cowal 2018.019

Easting: 520571 **Northing:** 6279832 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Anderson	Clare

Organisation: Niche Environment and Heritage

Address: PO Box W36, Parramatta, NSW 2150

Phone: 0488774105 **E-mail:** canderson@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

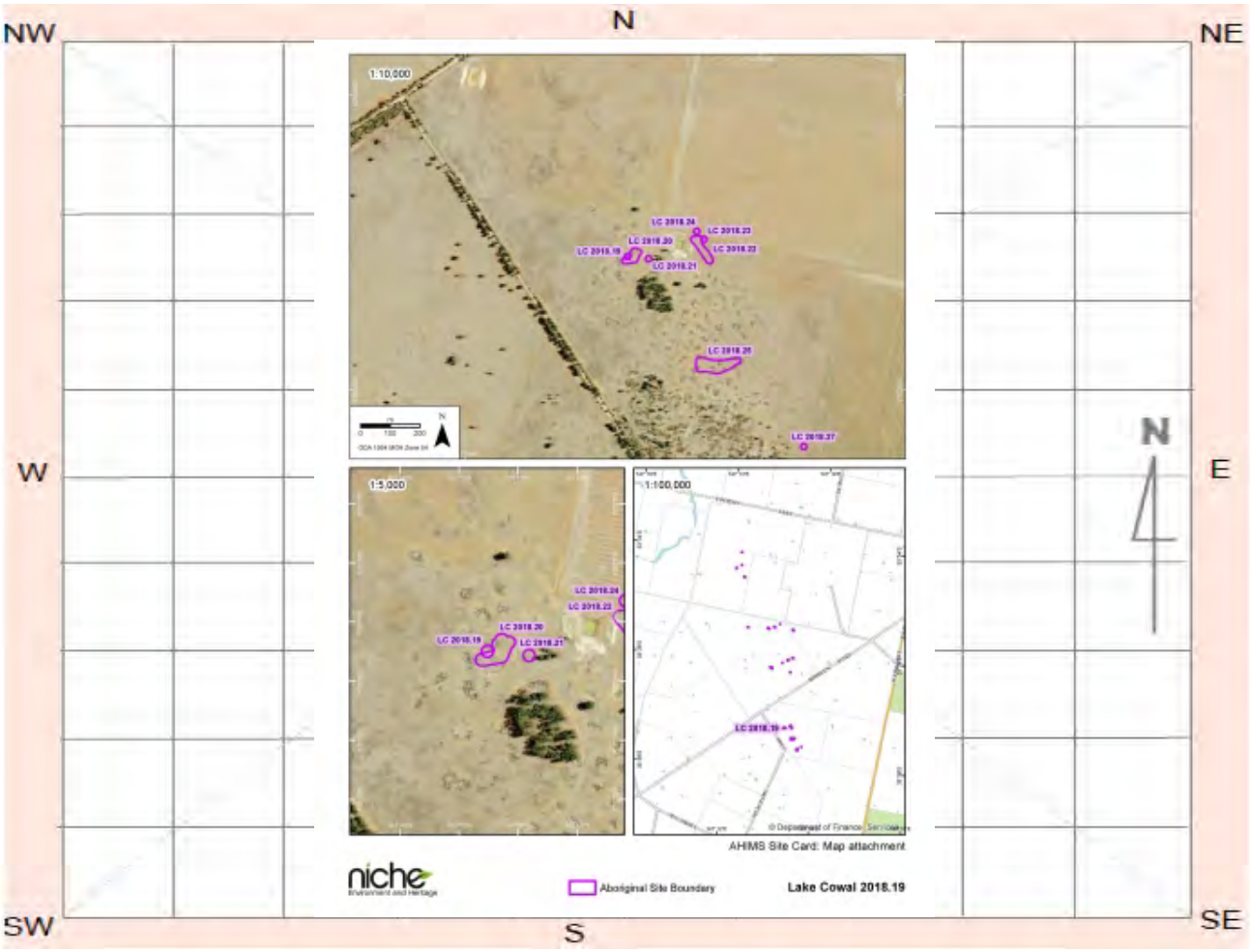
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: access on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	5	5				

Description:

1 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: Heat retainer

Description: Heat retainer - location

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0072 **Date recorded:** 29-04-2019

Site Location Information

Site name: Lake Cowal 2018.019

Easting: 520571 **Northing:** 6279832 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Anderson	Clare

Organisation: Niche Environment and Heritage

Address: PO Box W36, Parramatta, NSW 2150

Phone: 0488774105 **E-mail:** canderson@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

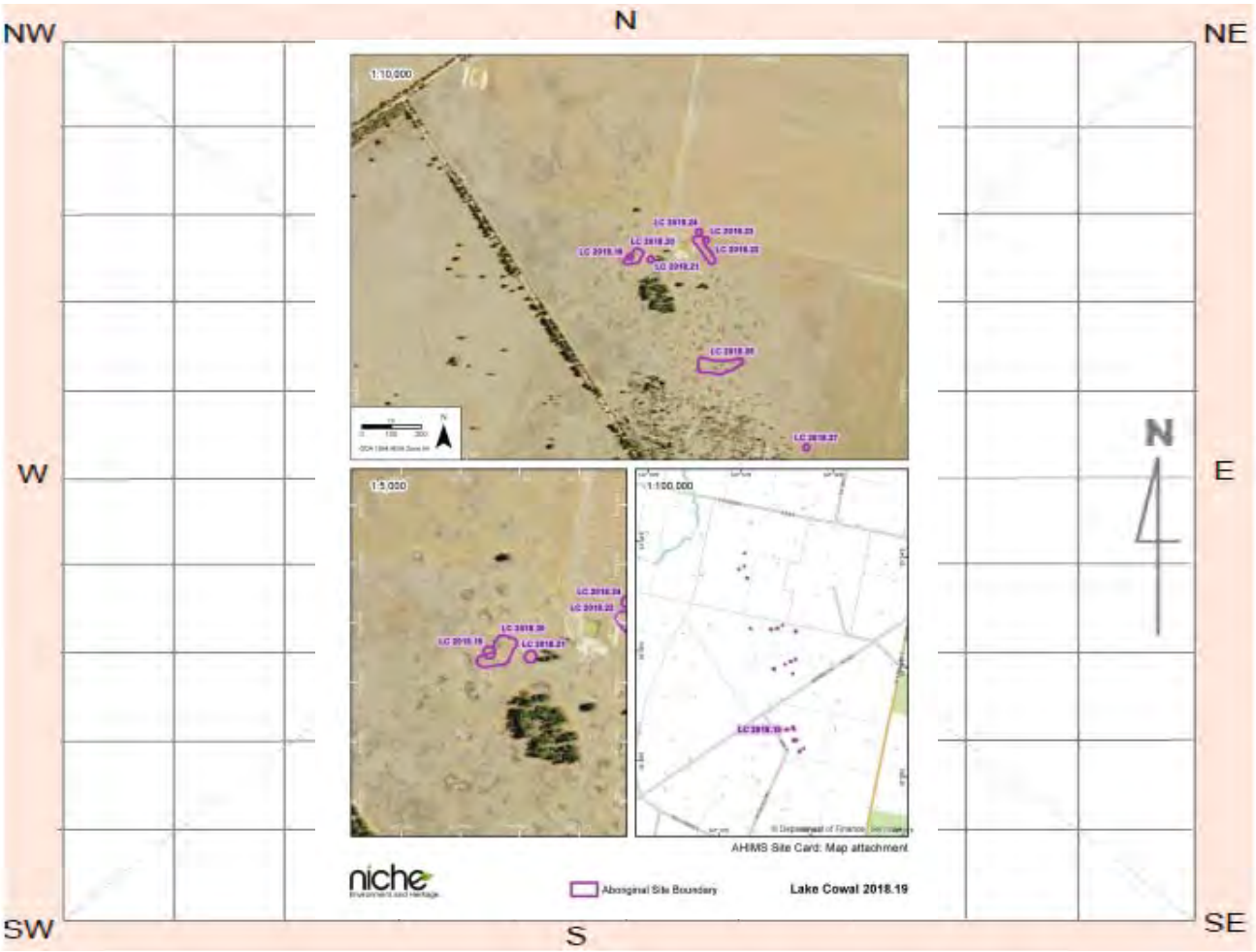
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: access on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Hearth	1	5	5				

Description:

1 x heat retainer

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

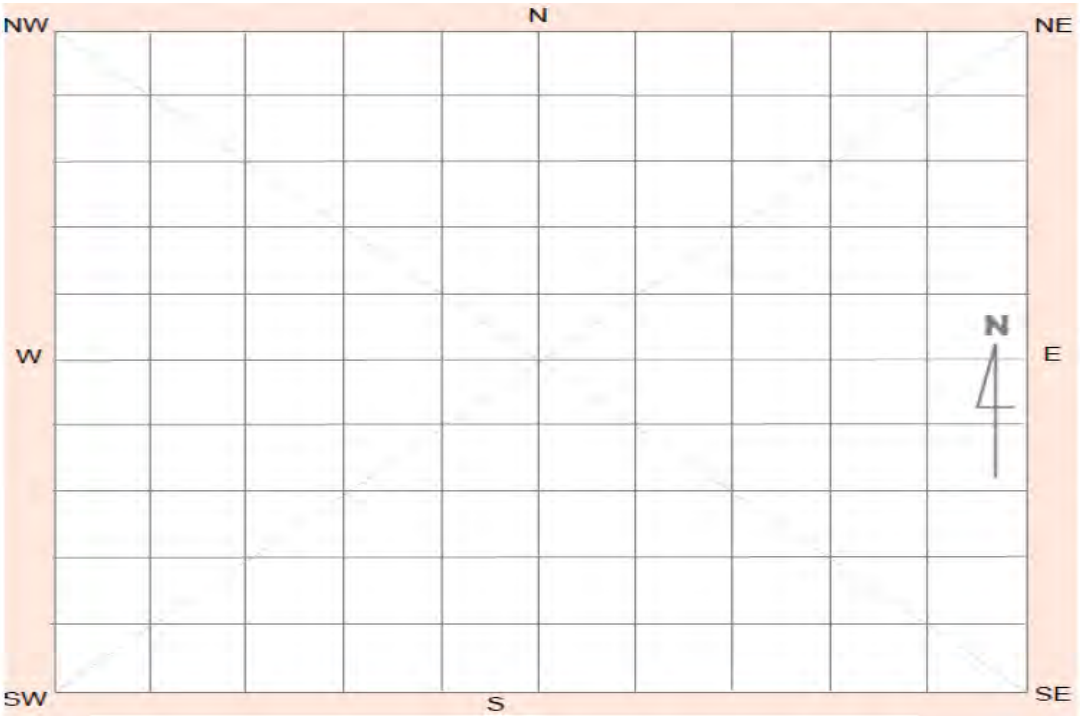
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan



Site photographs

Description: Heat retainer

Description: Heat retainer - location

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0073 **Date recorded:** 01-05-2019

Site Location Information

Site name: Lake Cowal 2018.059

Easting: 519479 **Northing:** 6284245 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

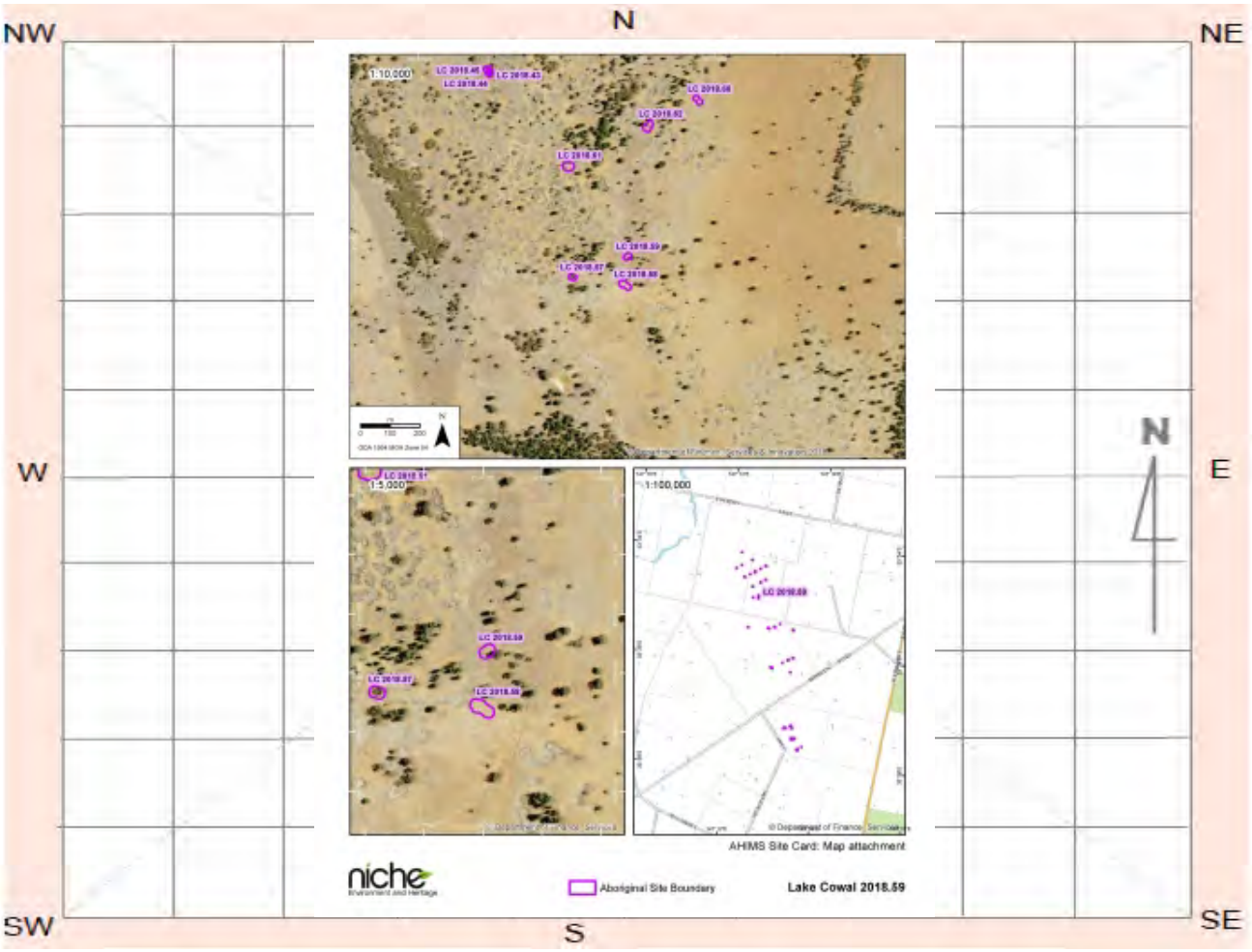
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai, disturbance - ploughing

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	5	5	5				

Description:

3 x artefacts, 2 x conjoin

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

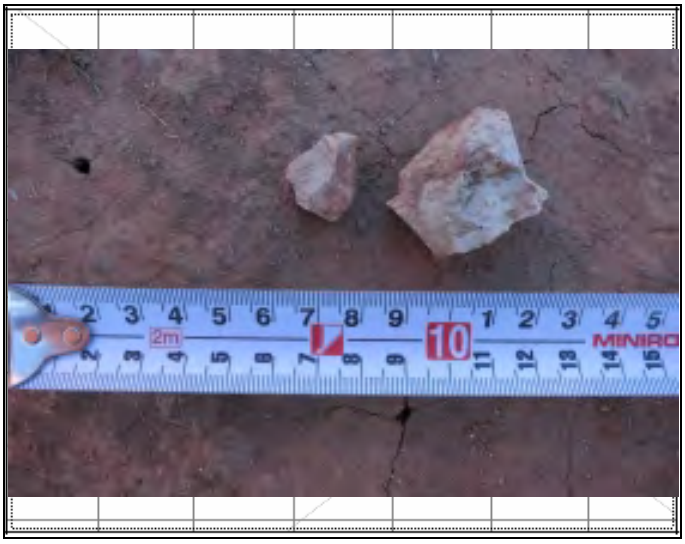
Description:

Other Site Info: Gilgai, disturbance - ploughing

Site plan

Site photographs

Description: 3 x artefacts, 2 x conjoin



Description: 3 x artefacts, 2 x conjoin

Description: 3 x artefacts, 2 x conjoin, site

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0074 **Date recorded:** 30-04-2019

Site Location Information

Site name: Lake Cowal 2018.058

Easting: 519470 **Northing:** 6284152 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Anderson	Clare

Organisation: Niche Environment and Heritage

Address: PO Box W36, Parramatta, NSW 2150

Phone: 0488774105 **E-mail:** canderson@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

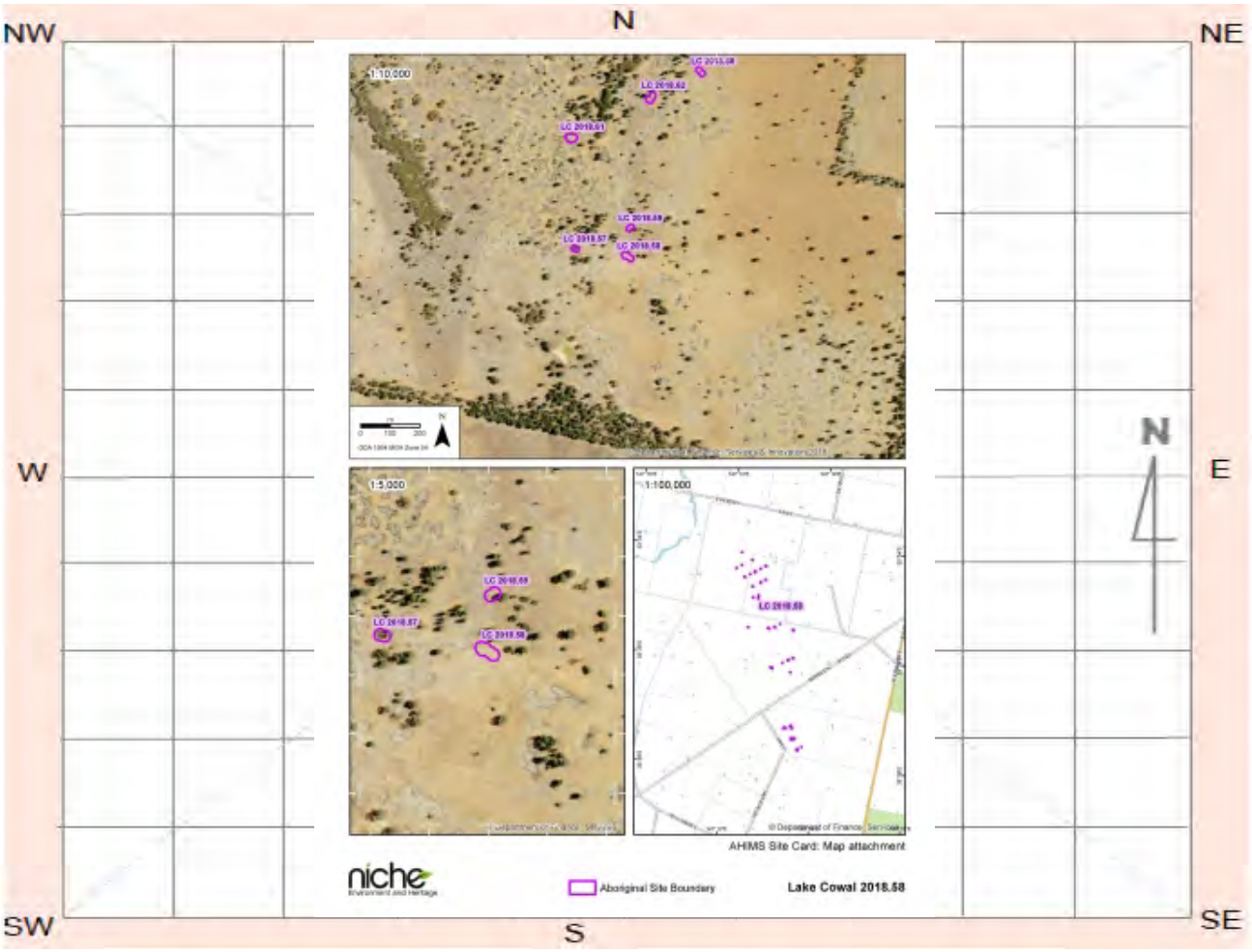
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	5	5	5				

Description:

5 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

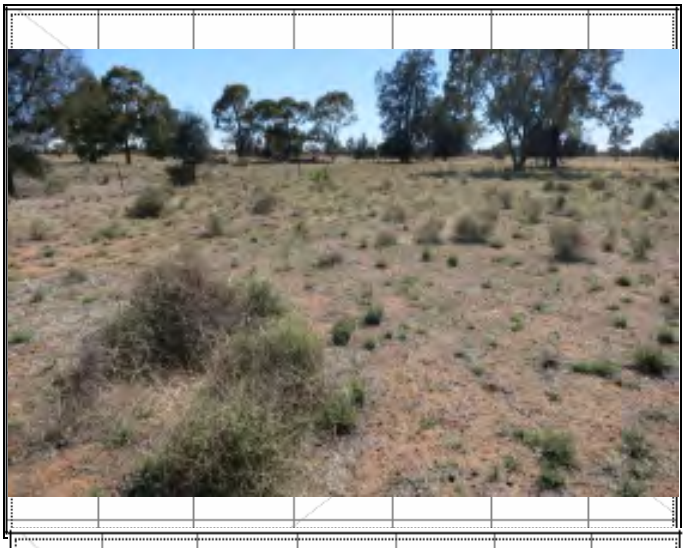
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs



Description: Heat retainer and site

Description: Heat retainer

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0074 **Date recorded:** 30-04-2019

Site Location Information

Site name: Lake Cowal 2018.058

Easting: 519470 **Northing:** 6284152 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Anderson	Clare

Organisation: Niche Environment and Heritage

Address: PO Box W36, Parramatta, NSW 2150

Phone: 0488774105 **E-mail:** canderson@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

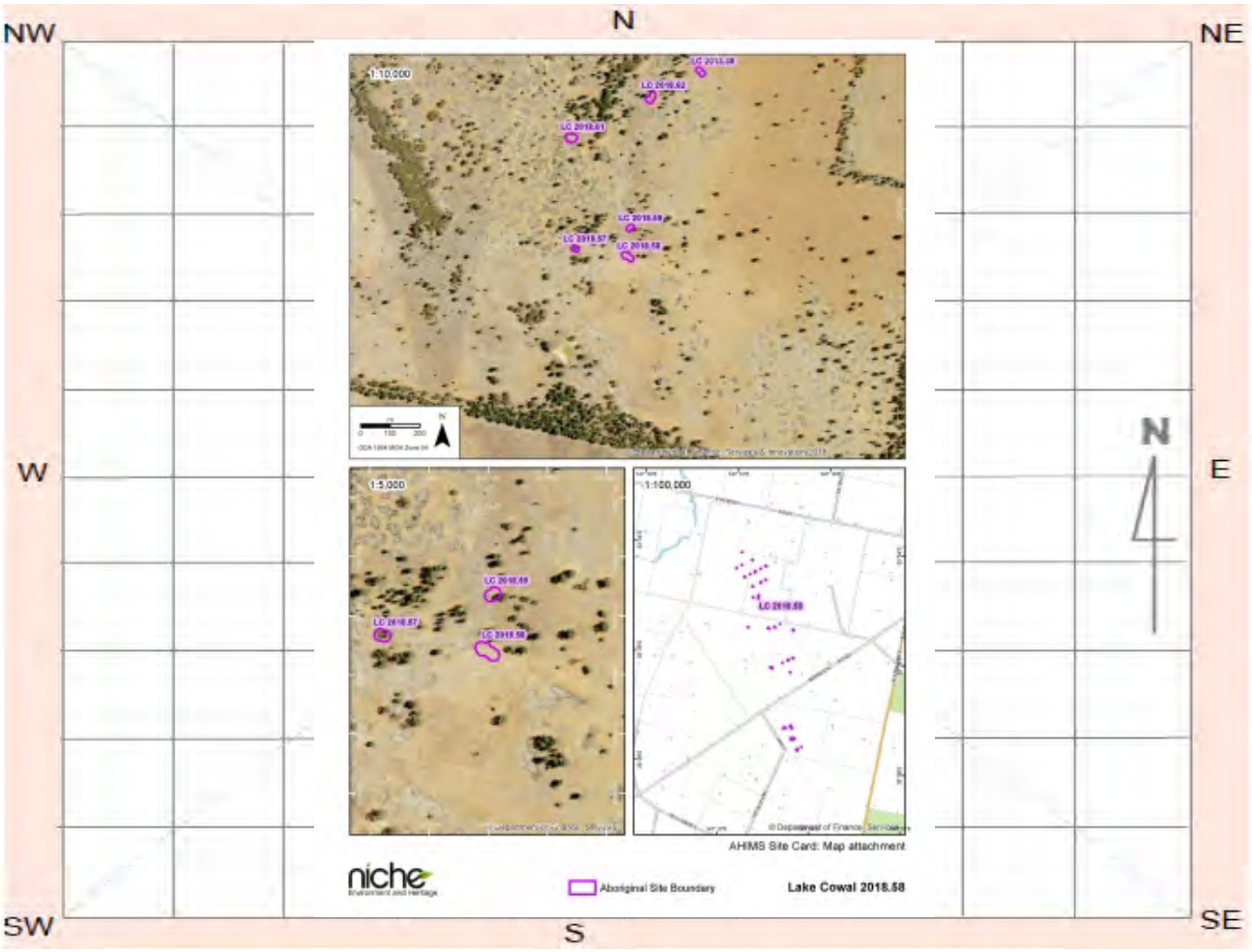
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	5	5	5				

Description:

5 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

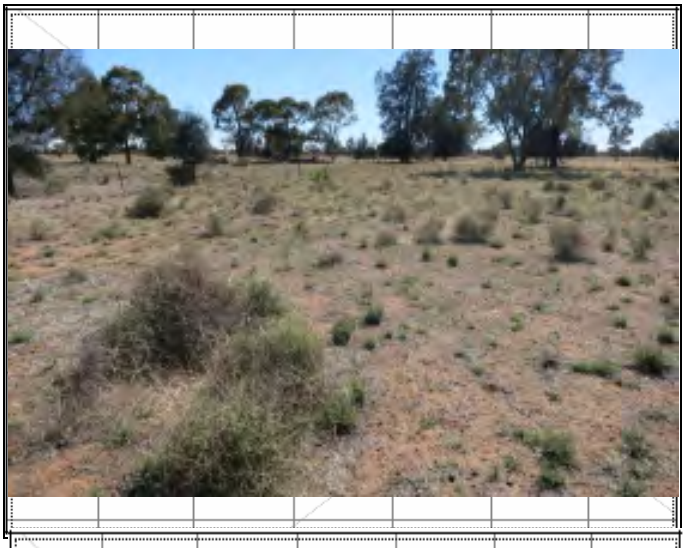
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs



Description: Heat retainer and site

Description: Heat retainer

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0075 **Date recorded:** 30-04-2019

Site Location Information

Site name: Lake Cowal 2018.057

Easting: 519298 **Northing:** 6284163 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Anderson	Clare

Organisation: Niche Environment and Heritage

Address: PO Box W36, Parramatta, NSW 2150

Phone: 0488774105 **E-mail:** canderson@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

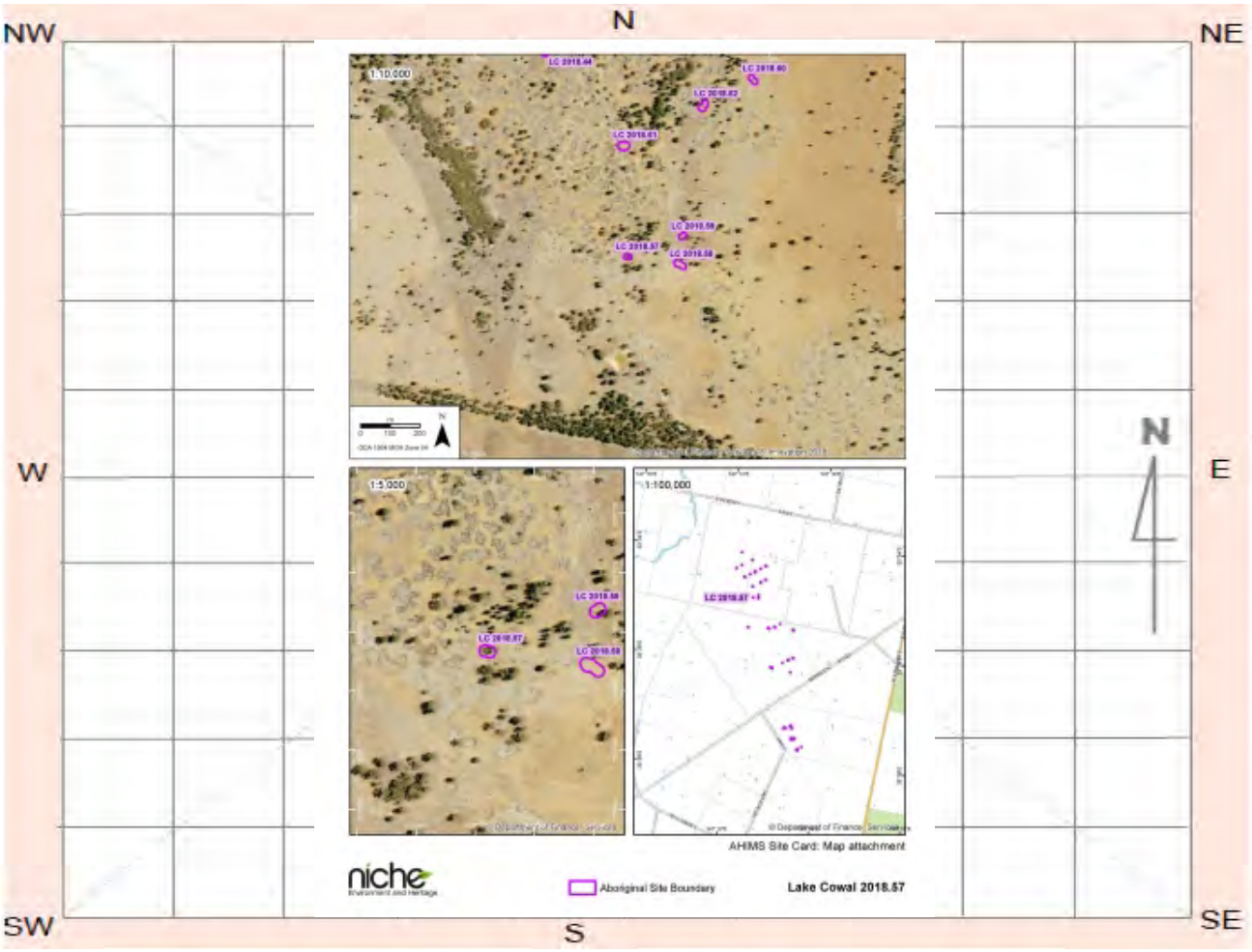
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	2	5	5				

Description:

2 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: Heat retainer

Description: Heat retainer

Description: Heat retainer

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0076 **Date recorded:** 07-05-2019

Site Location Information

Site name: Lake Cowal 2018.064

Easting: 519483 **Northing:** 6285146 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

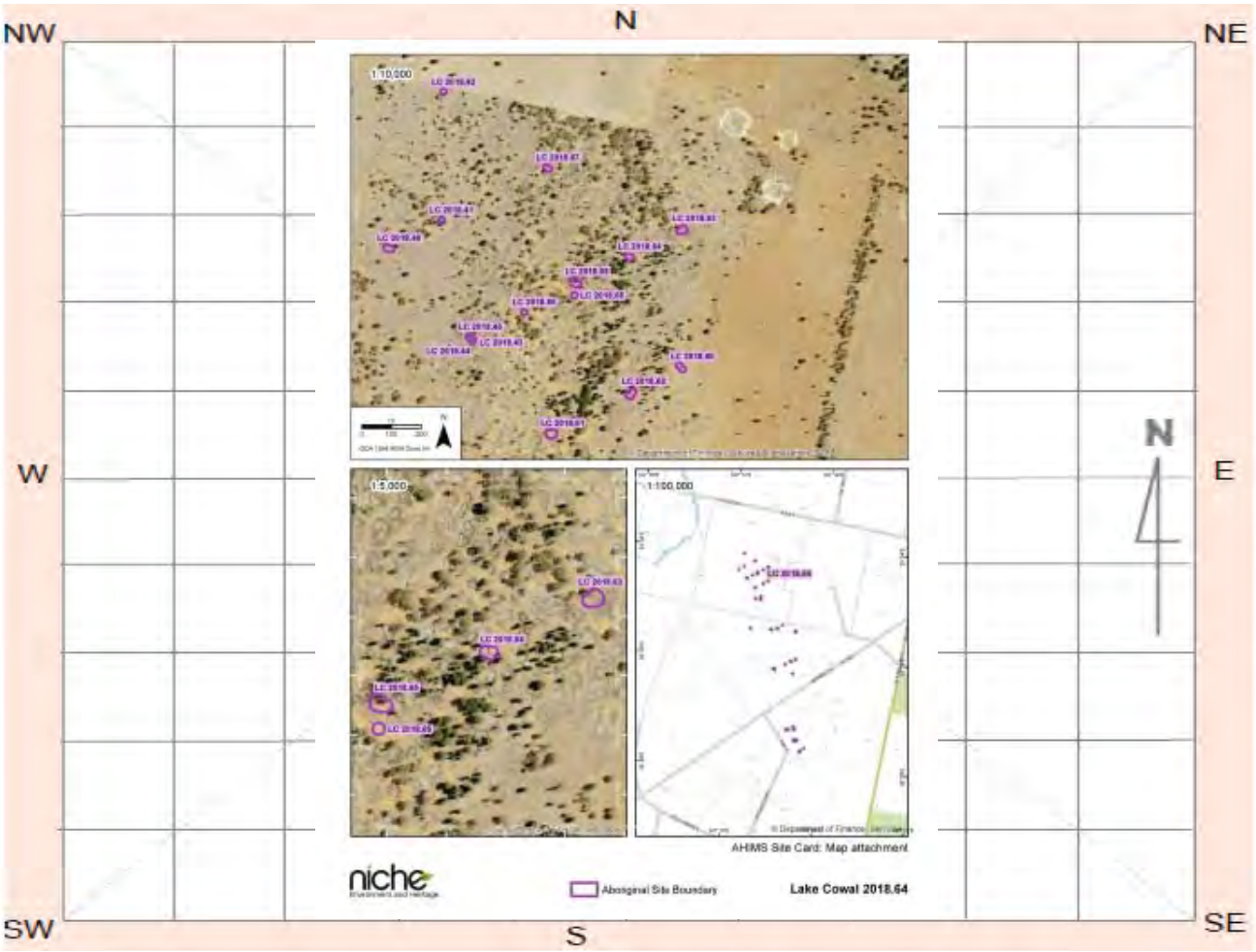
Land Form Unit: Plain **Vegetation:** Open Forest

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	5	5	5				

Description:

5 x clay ball heat retainers

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

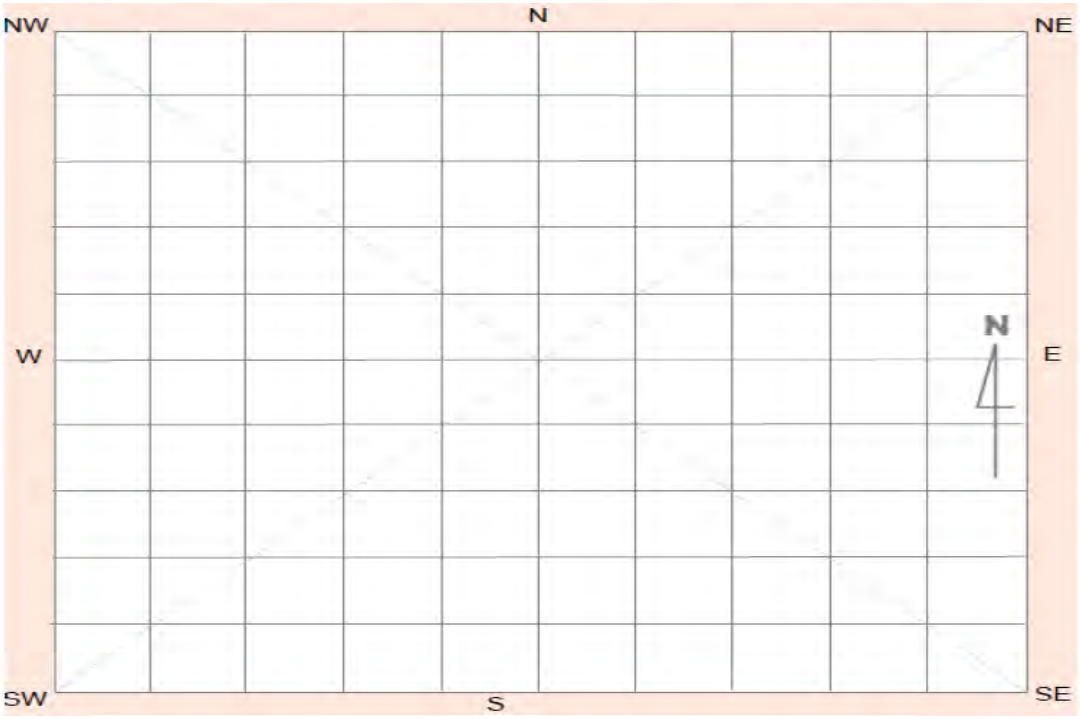
Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

Other Site Info: Gilgai

Site plan



Site photographs

Description: Site image with scale

Description: Site image with scale

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0077 **Date recorded:** 03-05-2019

Site Location Information

Site name: Lake Cowal 2018.063

Easting: 519660 **Northing:** 6285242 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

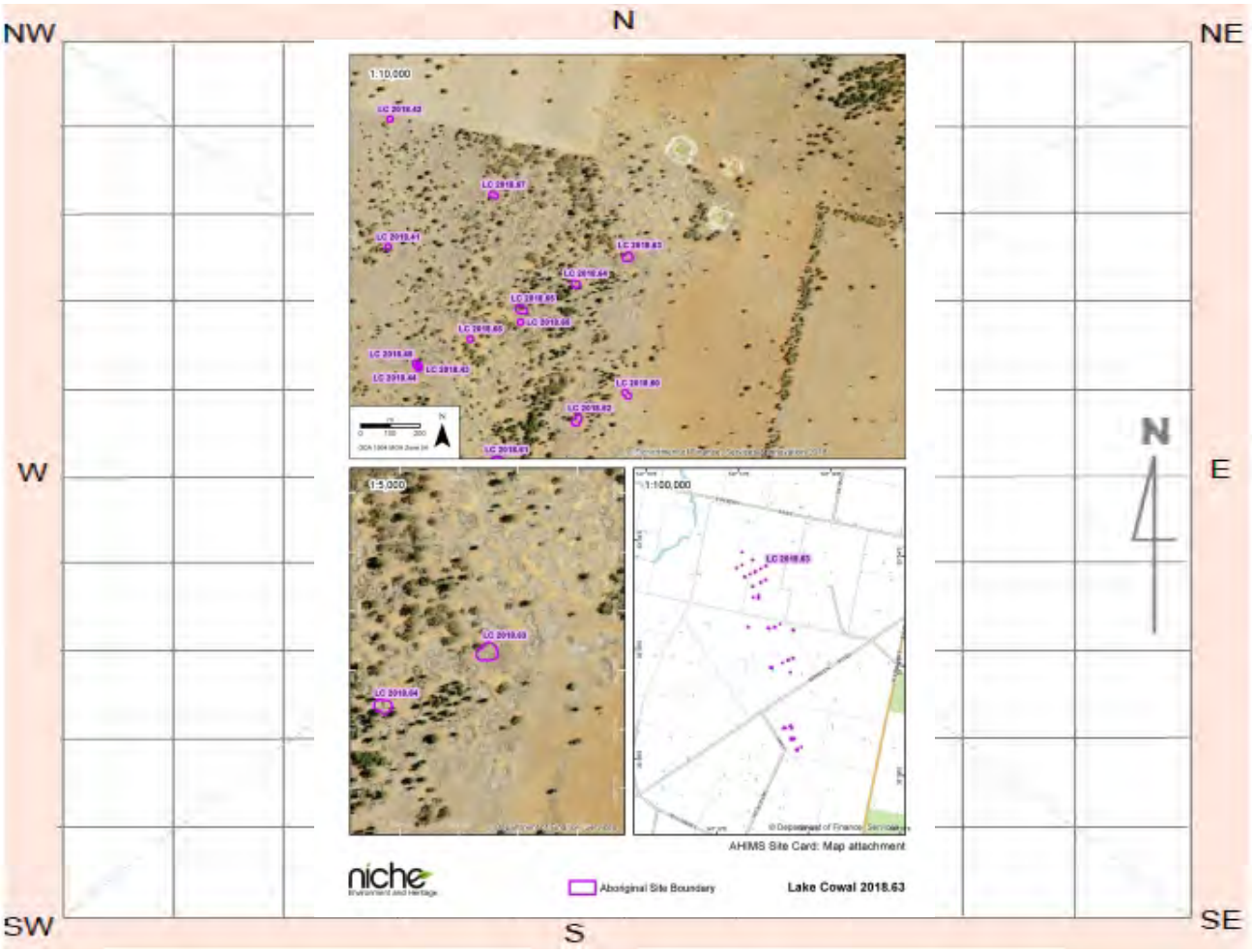
Land Form Unit: Plain **Vegetation:** Closed Forest

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai, disturbance - grazing

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	3	5	5				

Description:

3 artefacts

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	4	5	5				

Description:

4 x heat retainers, 1 x slag piece

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai, disturbance - grazing

Site plan

Site photographs

Description: Site image with scale

Description: Site image with scale

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0078 **Date recorded:** 03-05-2019

Site Location Information

Site name: Lake Cowal 2018.062

Easting: 519512 **Northing:** 6284681 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

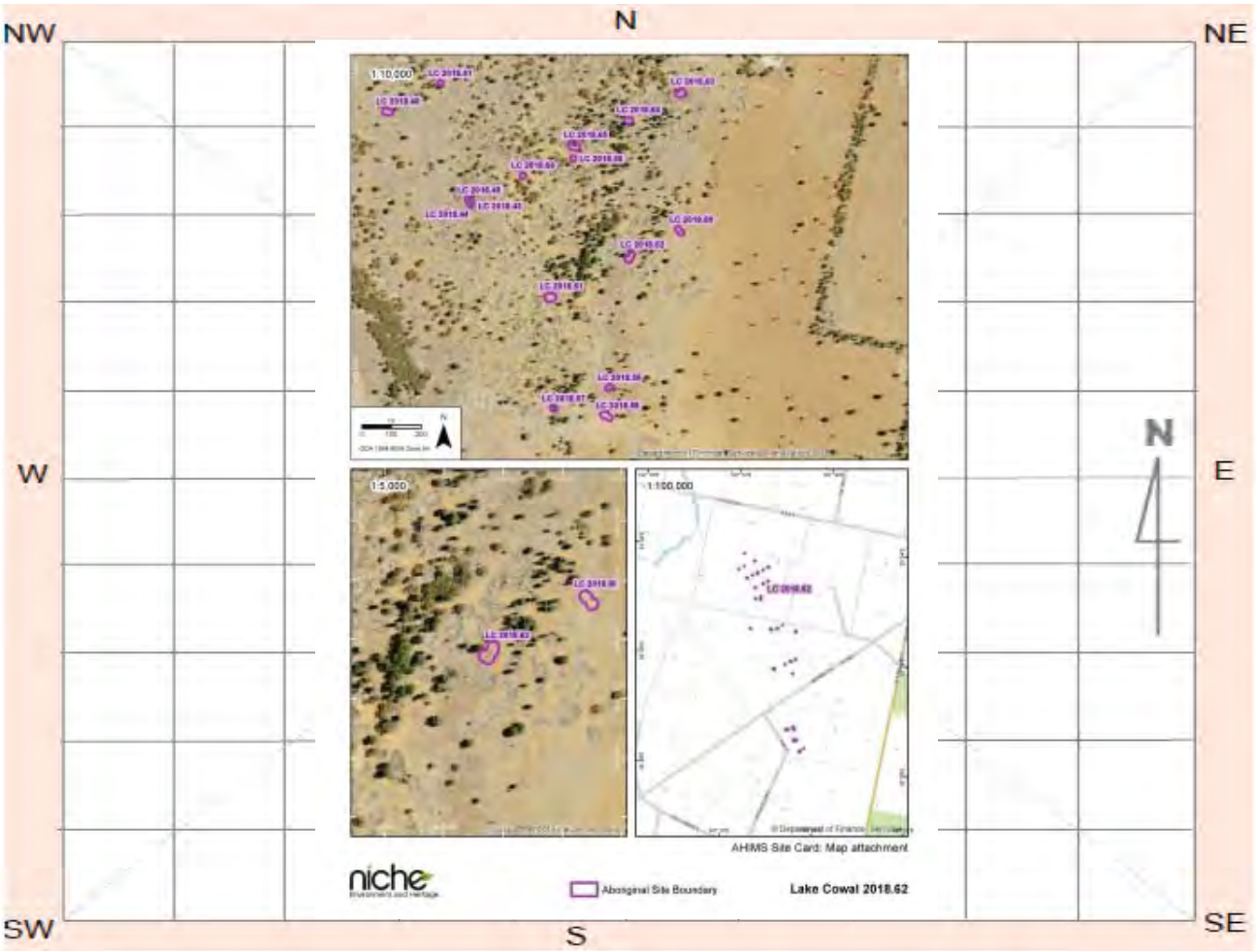
Land Form Unit: Plain **Vegetation:** Open Forest

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai, disturbance - erosion, stock?

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	4	5	5				

Description:

1 x partially exposed hearth, 1 x calcrete heat retainer, 2 x heat retainers (termite nest, dating potential, 30cm x 15cm)

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

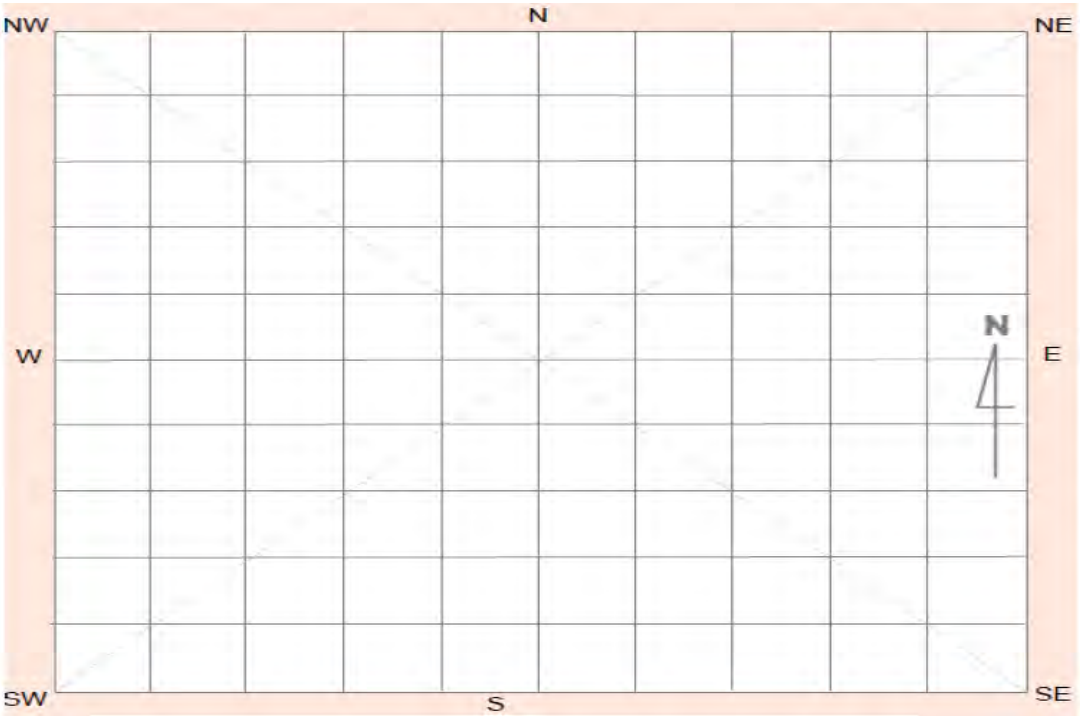
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai, disturbance - erosion, stock?

Site plan



Site photographs

Description: Site image with scale

Description: Site image with scale

Description: Site image with scale

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0079 **Date recorded:** 03-05-2019

Site Location Information

Site name: Lake Cowal 2018.061

Easting: 519260 **Northing:** 6284539 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

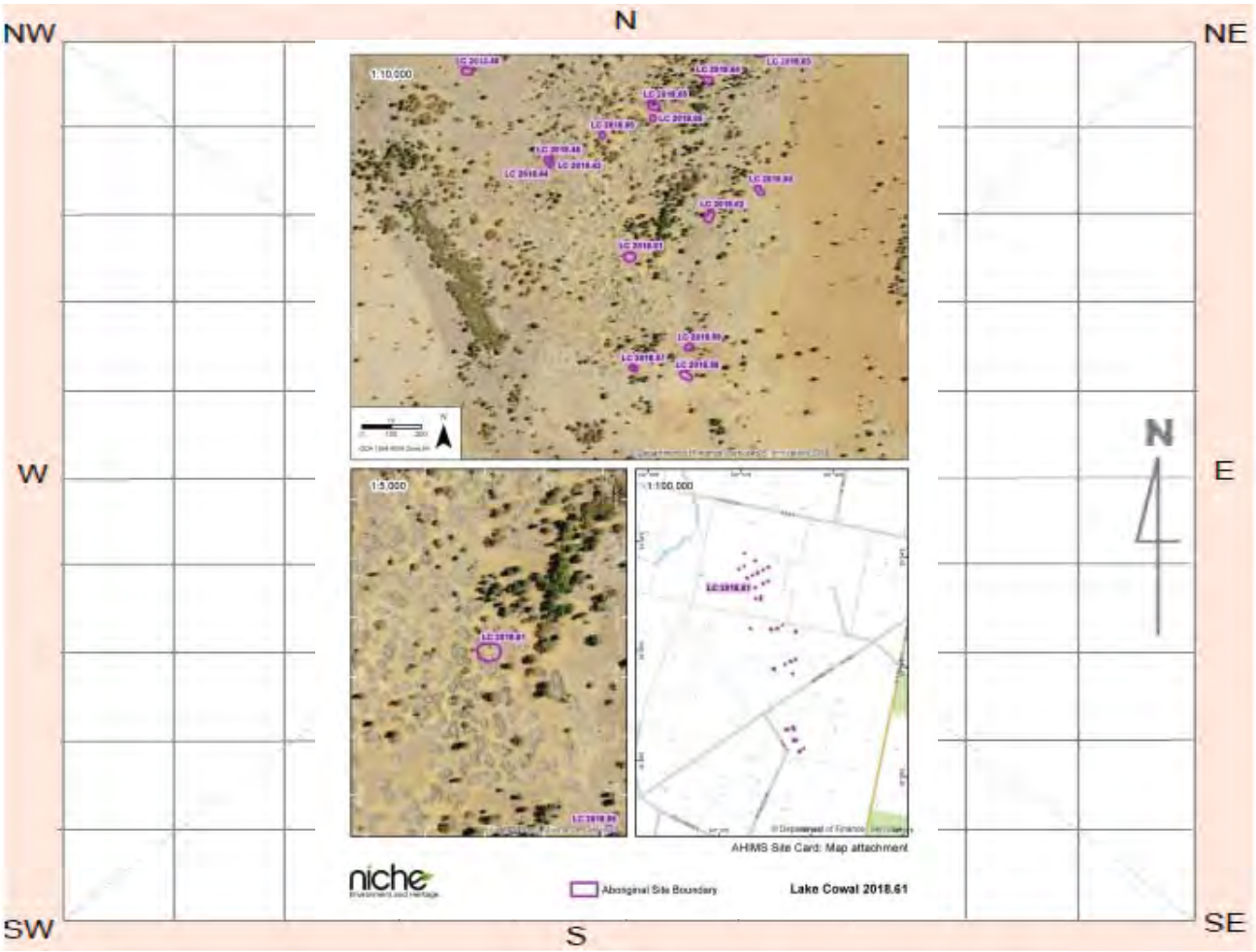
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai, disturbance - erosion, stock?

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	8	5	5				

Description:

8 x artefacts

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	1	1	1				

Description:

Partially exposed hearth with dating potential

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

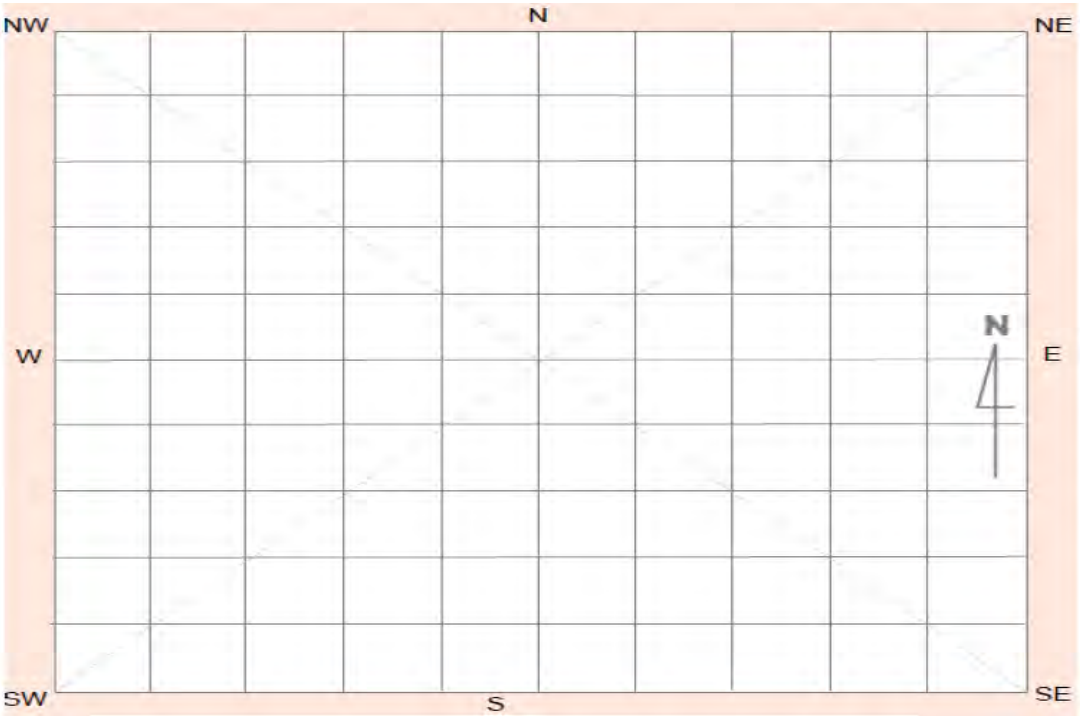
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

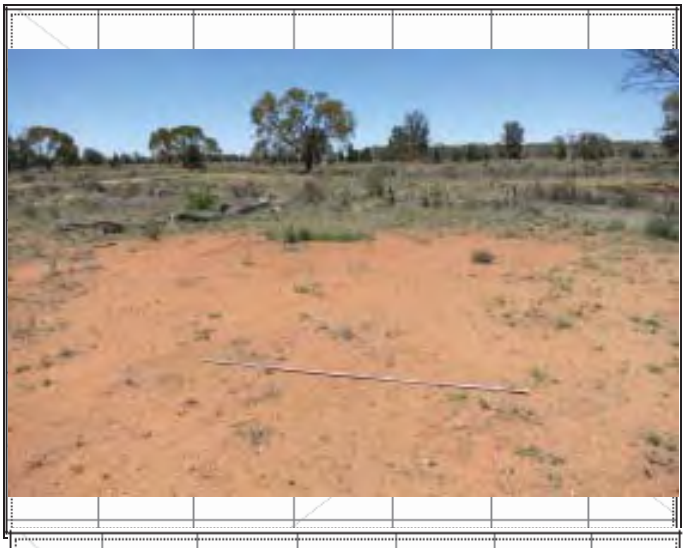
Description:

Other Site Info: Gilgai, disturbance - erosion, stock?

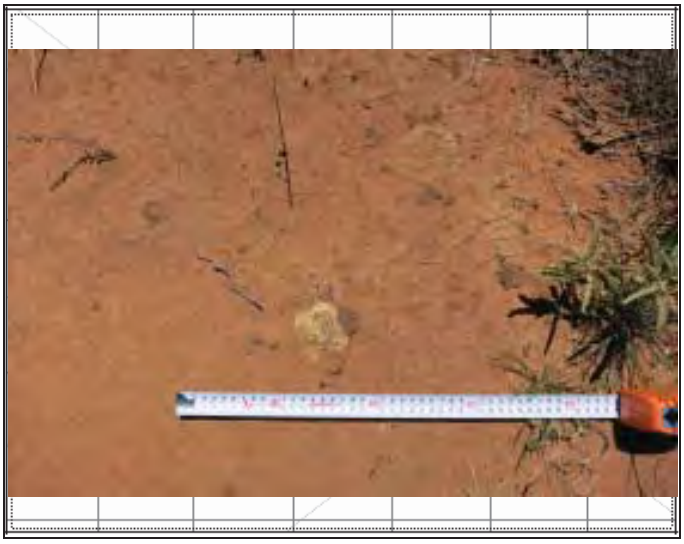
Site plan



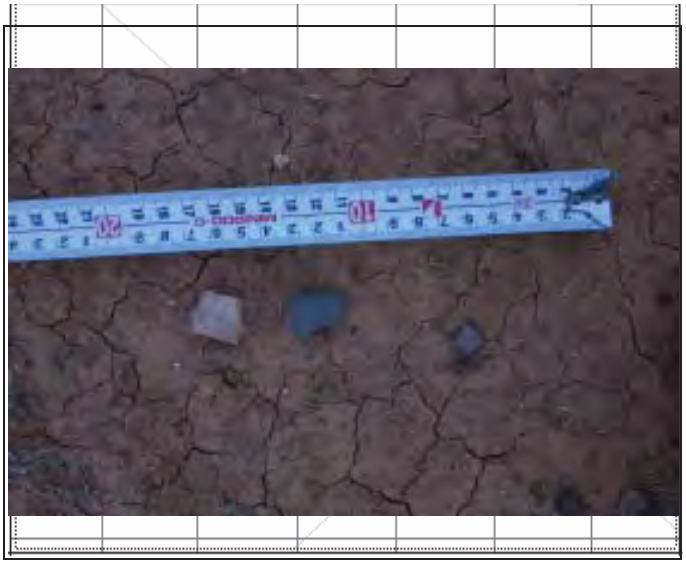
Site photographs



Description: Site image with scale



Description: Site image with scale



Description: Site image with scale

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0080 **Date recorded:** 02-05-2019

Site Location Information

Site name: Lake Cowal 2018.060

Easting: 519688 **Northing:** 6284778 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

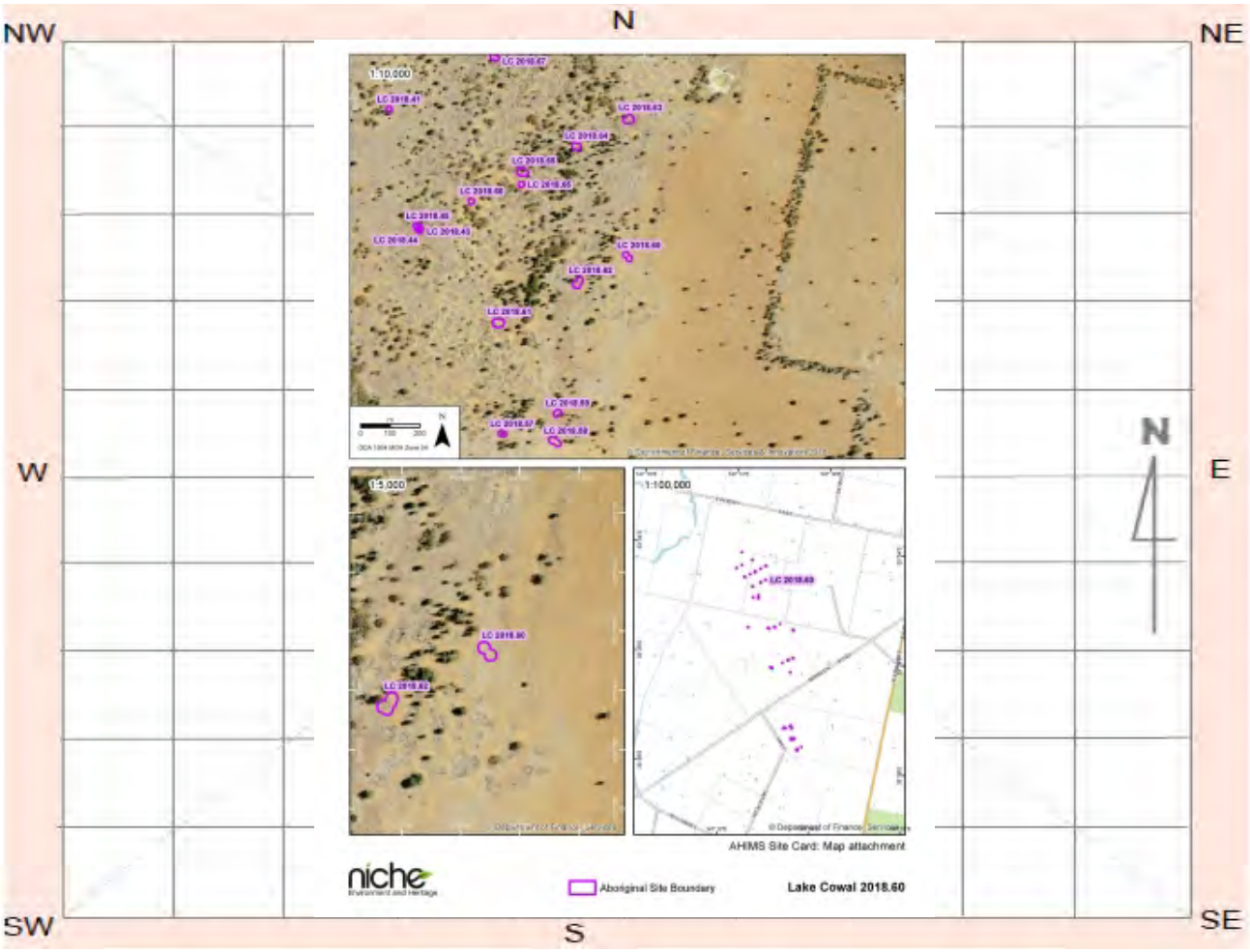
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai, disturbance - ploughing

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

1 x artefact

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	1	5	5				

Description:

1 x heat retainer

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

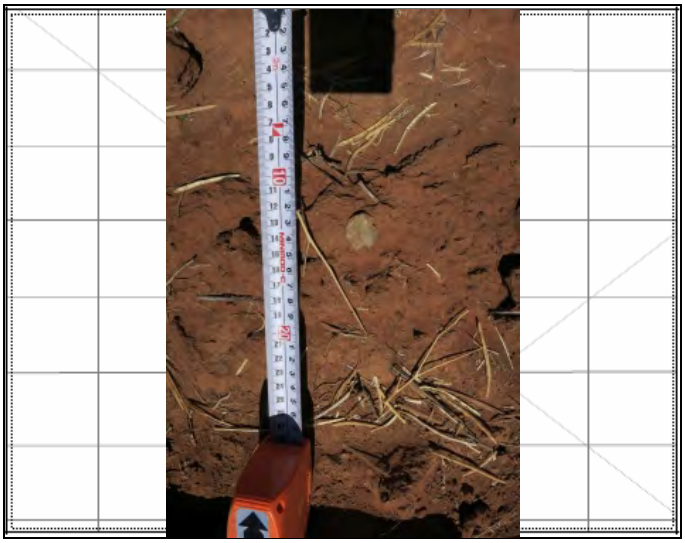
Description:

Other Site Info: Gilgai, disturbance - ploughing

Site plan

Site photographs

Description: 1 x heat retainer



Description: 1 x artefact

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0081 **Date recorded:** 14-05-2019

Site Location Information

Site name: Lake Cowal 2018.068

Easting: 524266 **Northing:** 6272355 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

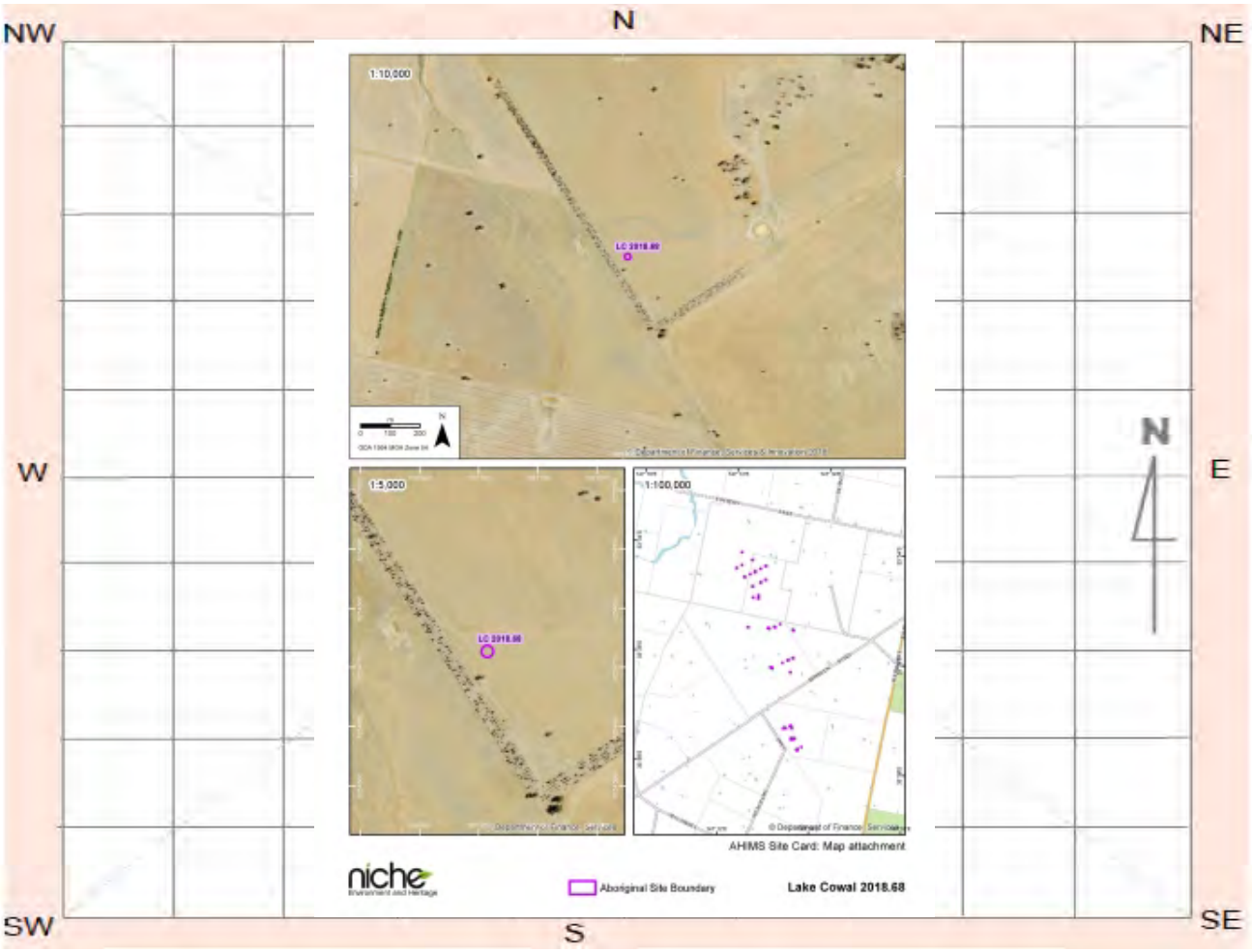
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	5	5				

Description:

1 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

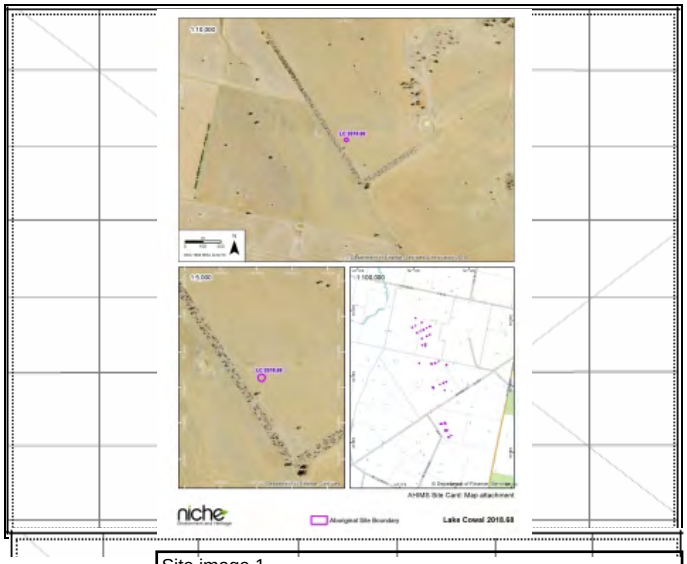
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs



Description: Site image 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0082 **Date recorded:** 14-05-2019

Site Location Information

Site name: Lake Cowal 2018.067

Easting: 519200 **Northing:** 6285426 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

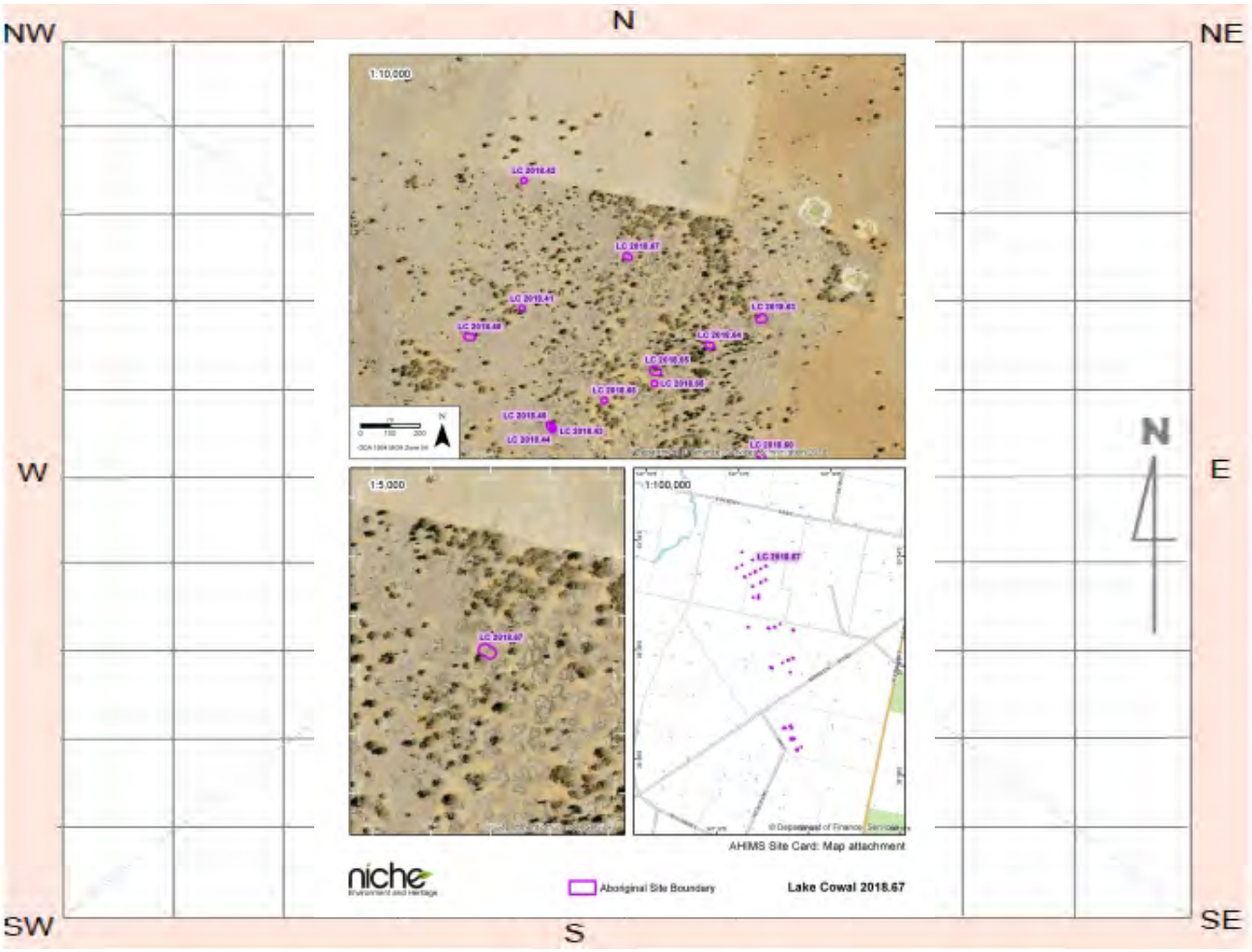
Land Form Unit: Plain **Vegetation:** Open Woodland

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

1 artefacts

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	1	5	5				

Description:

1 x heat retainer

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

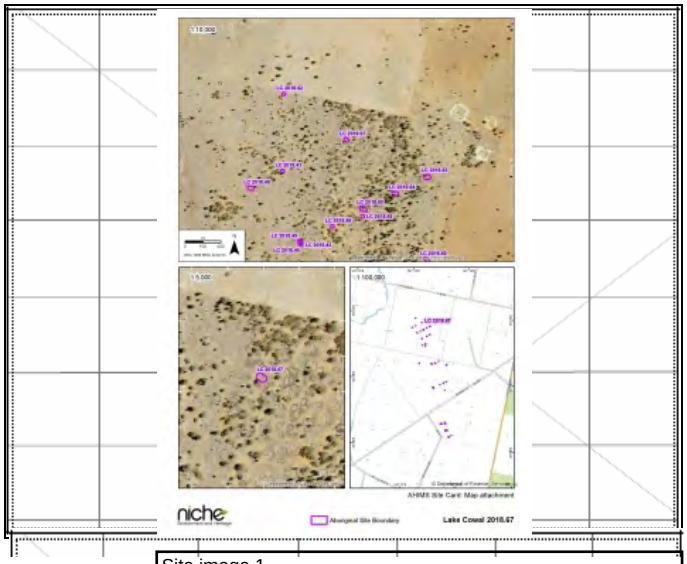
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs



Description: Site image 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0083 **Date recorded:** 14-05-2019

Site Location Information

Site name: Lake Cowal 2018.066

Easting: 519146 **Northing:** 6284940 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

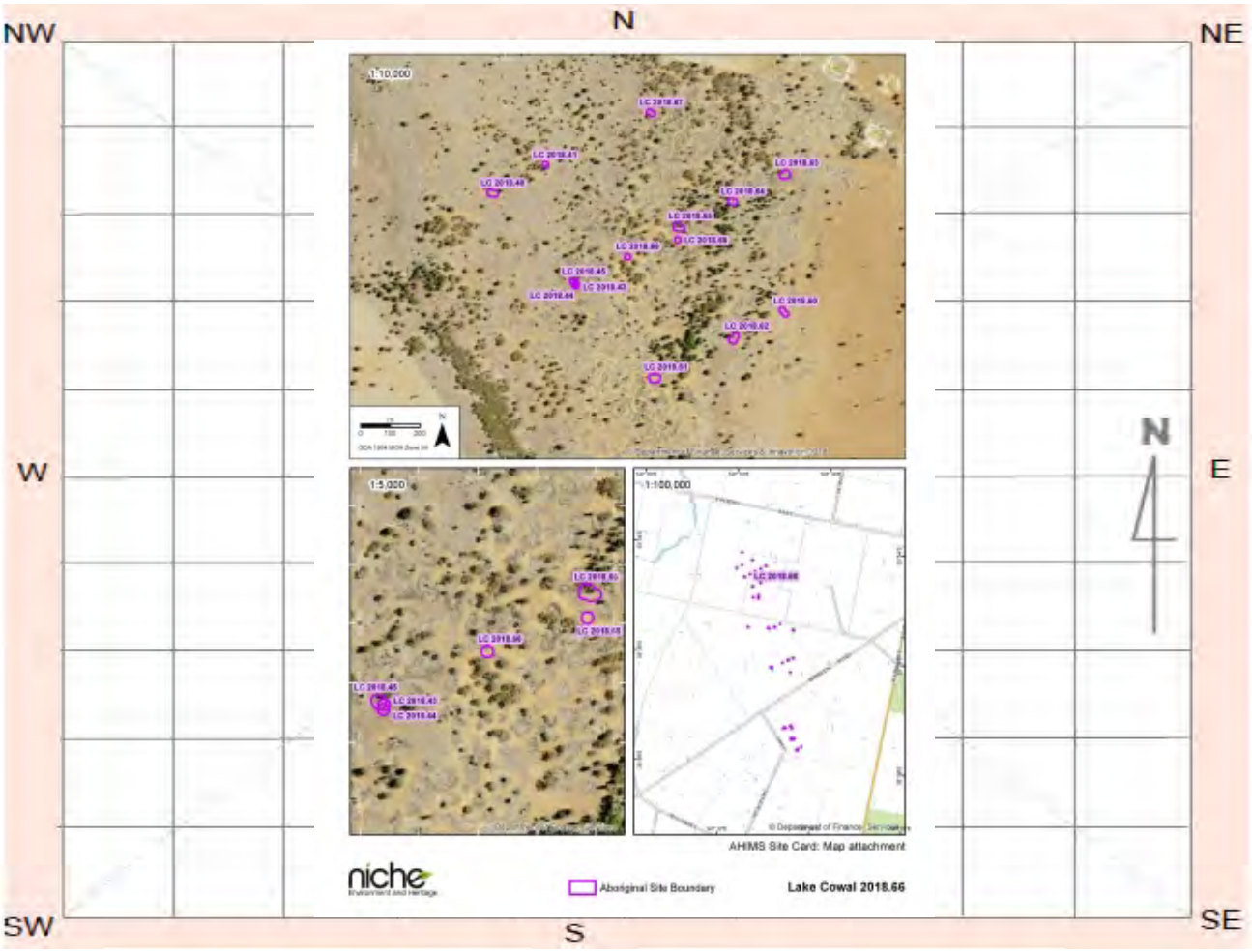
Land Form Unit: Plain **Vegetation:** Open Woodland

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	2	5	5				

Description:

2 artefacts

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: Site image 1 with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0084 **Date recorded:** 14-05-2019

Site Location Information

Site name: Lake Cowal 2018.065

Easting: 519323 **Northing:** 6285046 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

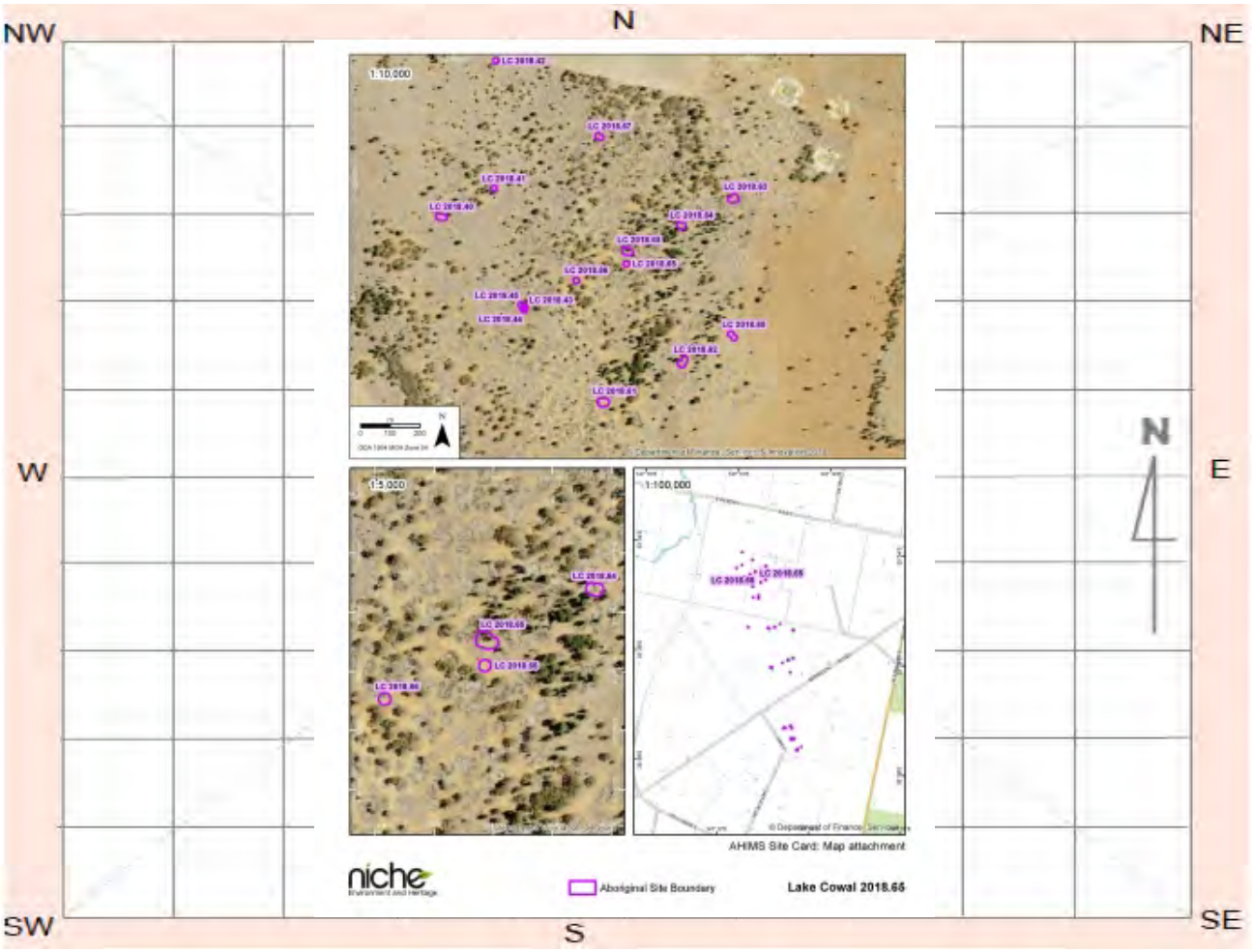
Land Form Unit: Plain **Vegetation:** Open Woodland

Distance to Water (m): 200 **Primary Report:** Niche 2018 4509_Cowal_DrillSites_EL8524_ACH_DueDiligence_unpublis

How to get to the site: Access on private property

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	2	5	5				

Description:

2 artefacts

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	4	5	5				

Description:

large scatter of heat retainers

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: Site image 1 with scale

Description: Site image 2 with scale

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0085 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.049

Easting: 536838 **Northing:** 6279898 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

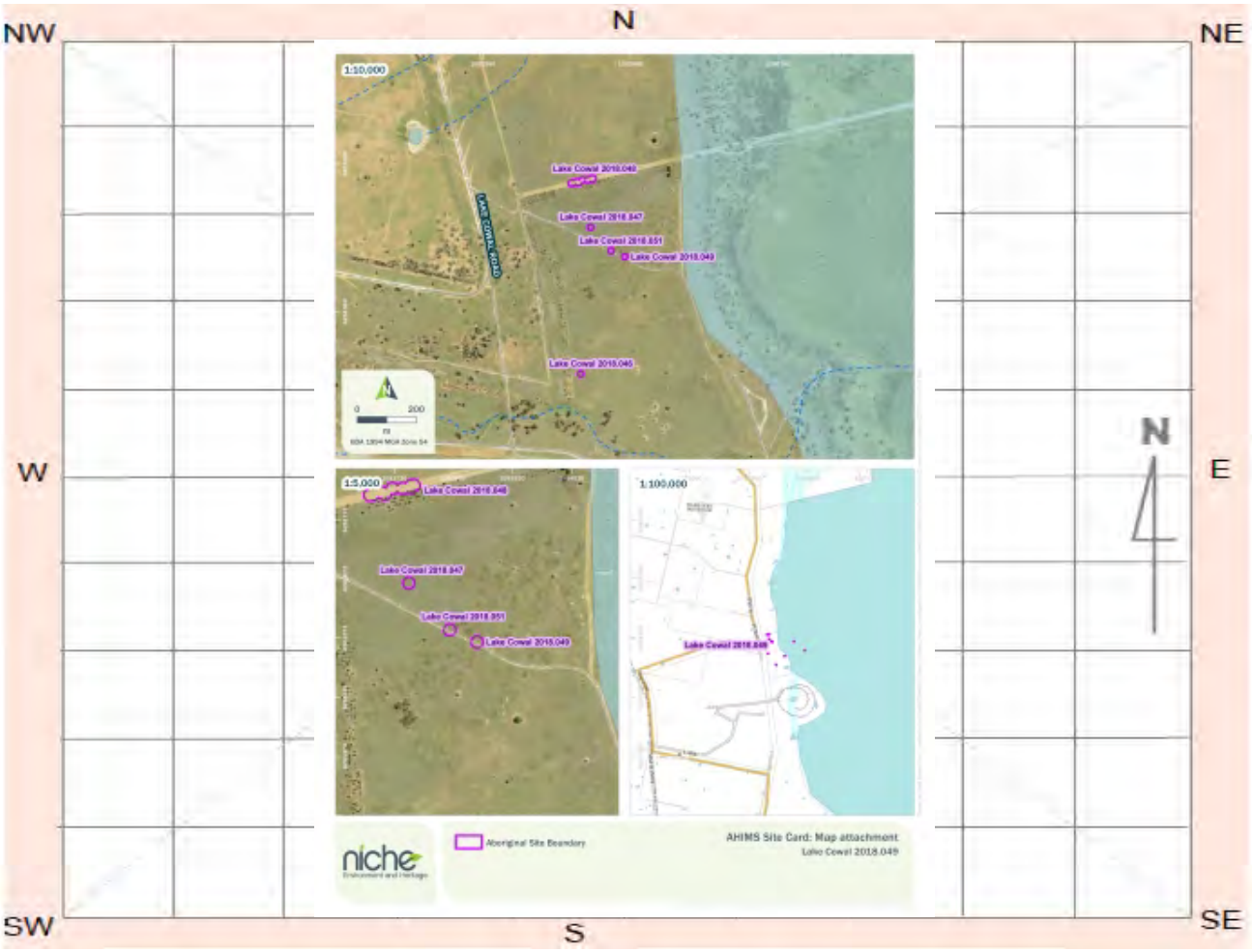
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

1 x volcanic complete tool 30 x 32 x 10 mm

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0086 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.046

Easting: 536714 **Northing:** 6279496 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

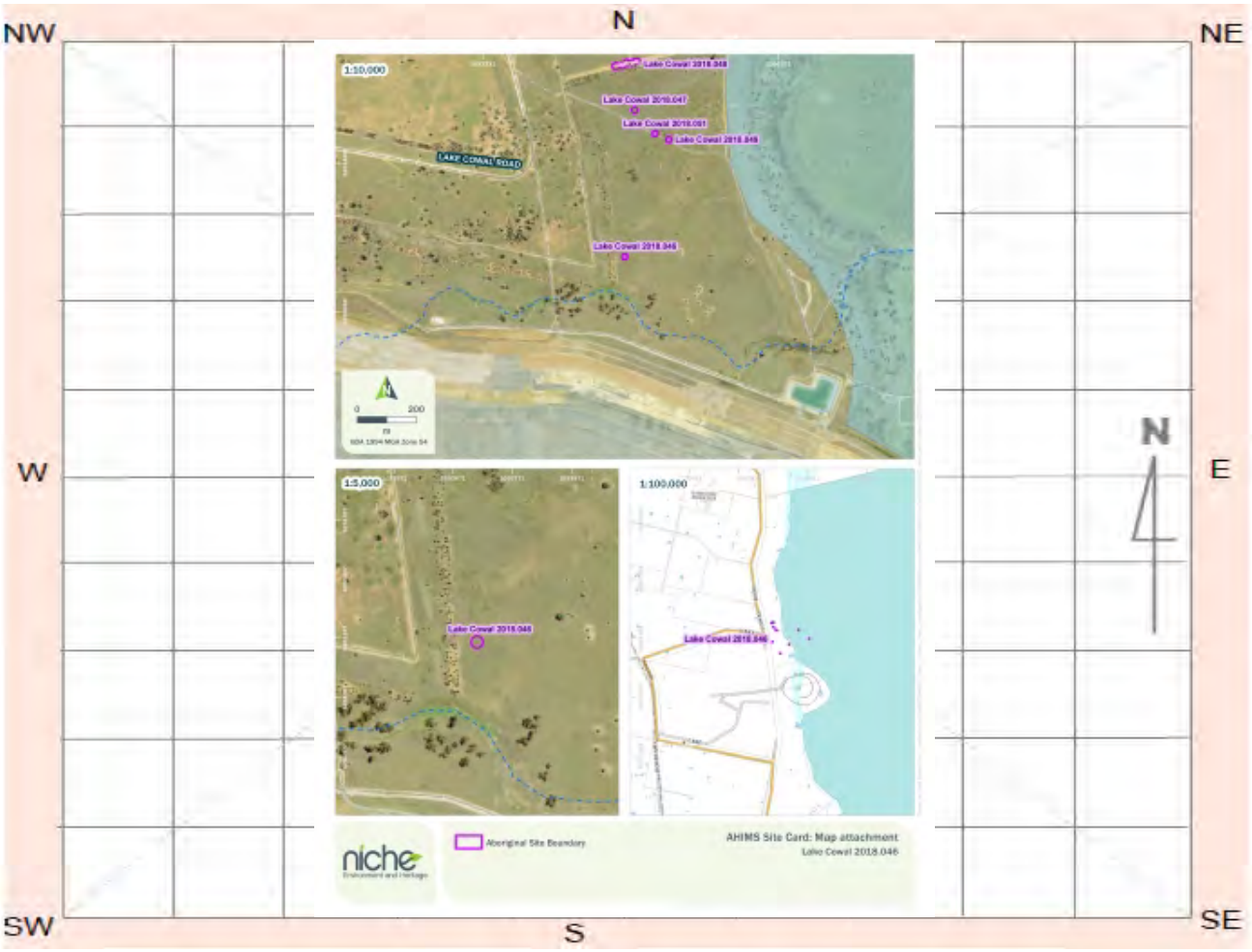
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

1 x volcanic core 70 x 56 x 29 mm

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0087 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.055

Easting: 537007 **Northing:** 6279127 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

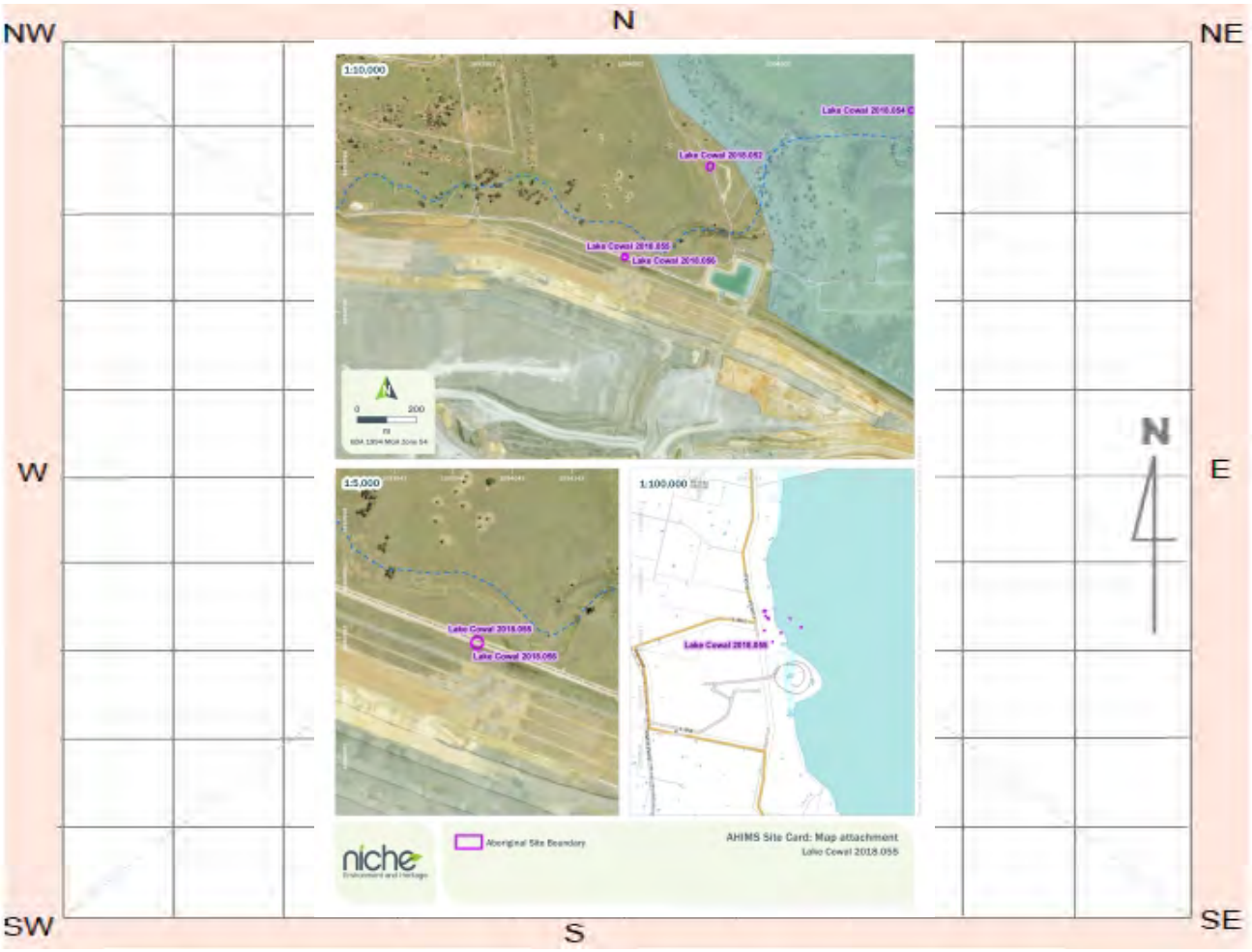
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

Isolated find - 1 x heat retainer

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0088 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.056

Easting: 537007 **Northing:** 6279127 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

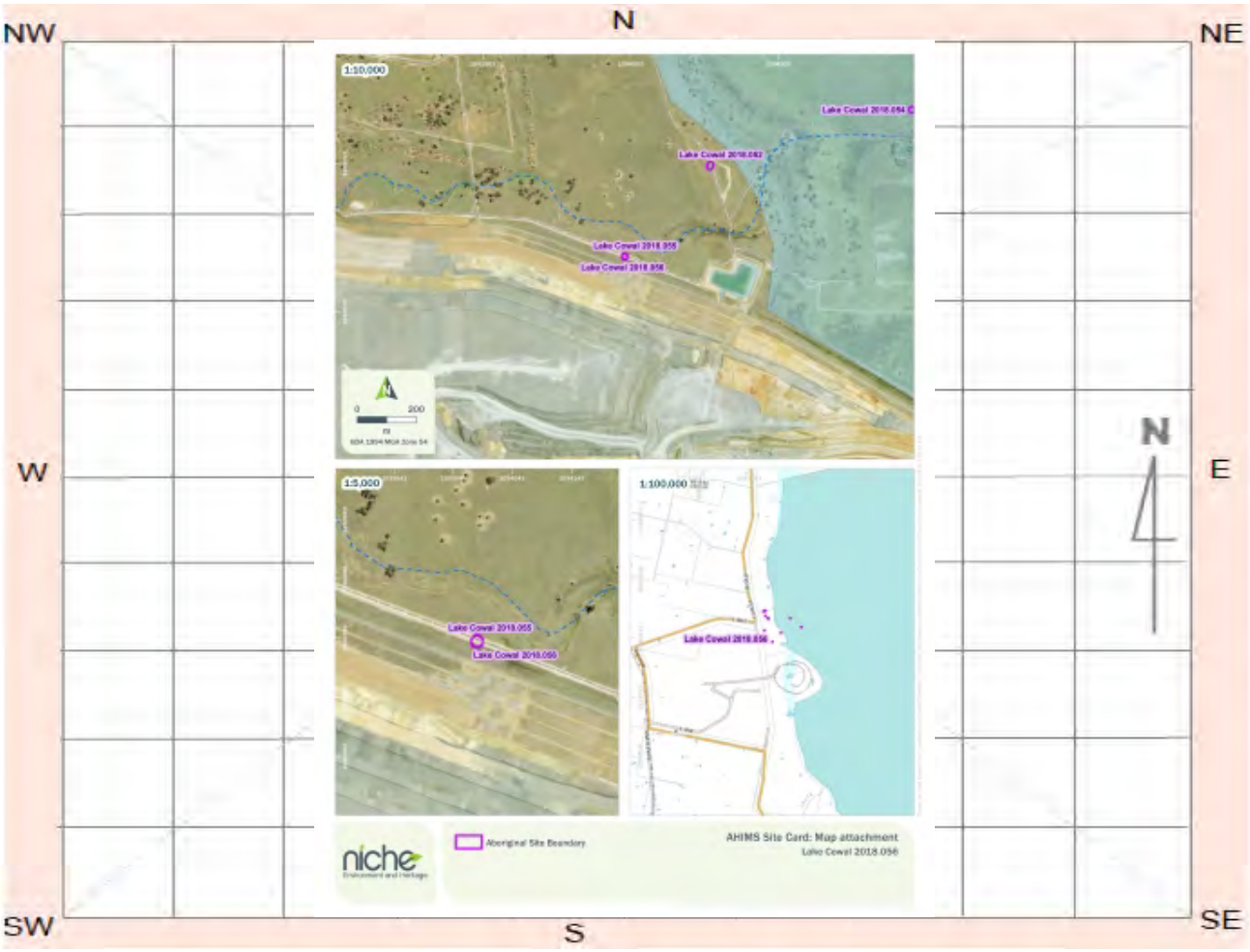
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

Isolated find 1 x complete flake, 1 x proximal tool

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: Site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0089 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.054

Easting: 537944 **Northing:** 6279675 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

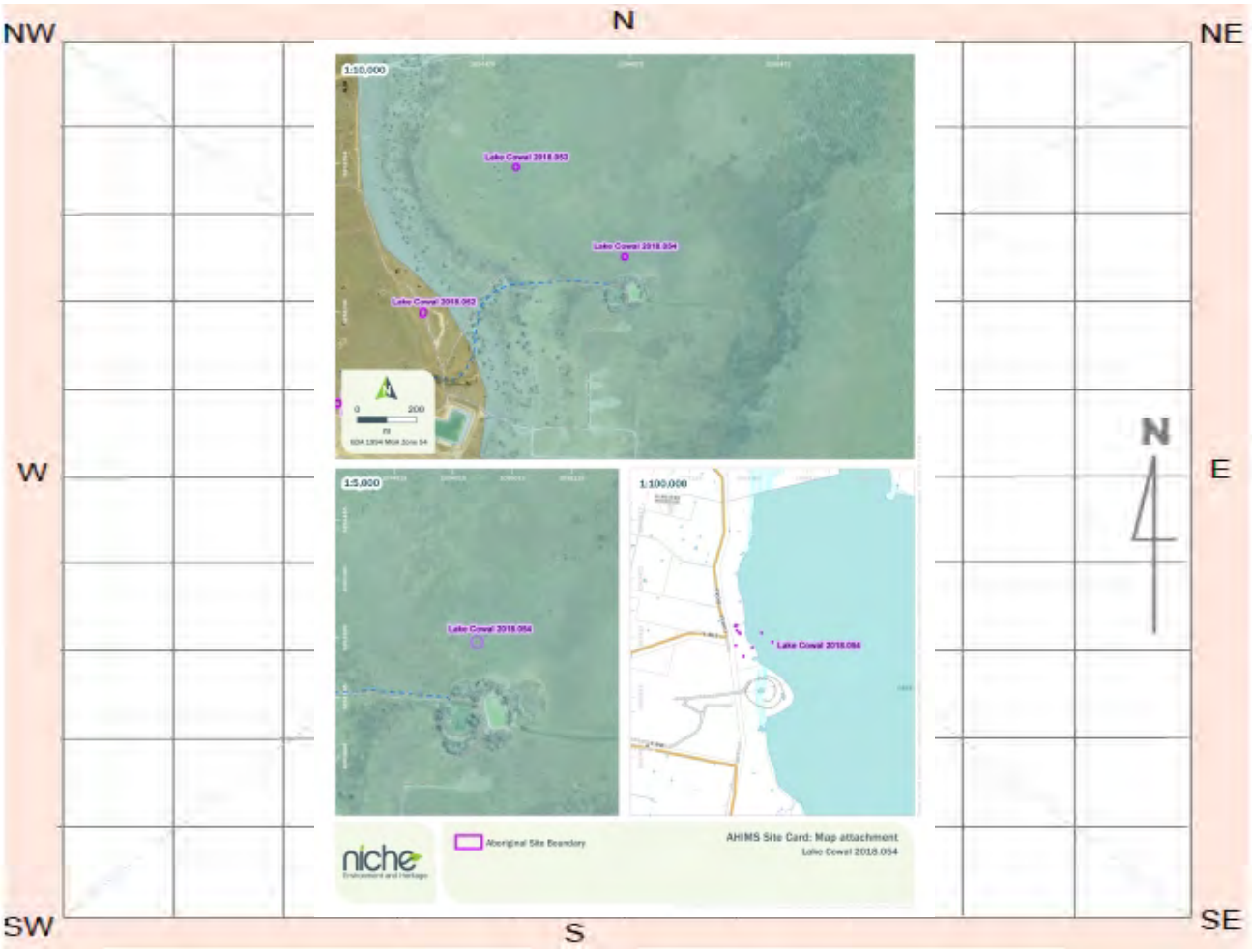
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

Open camp site - 1 x complete tool, 2 x quartzite proximal flake, 1 x quartzite complete tool

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

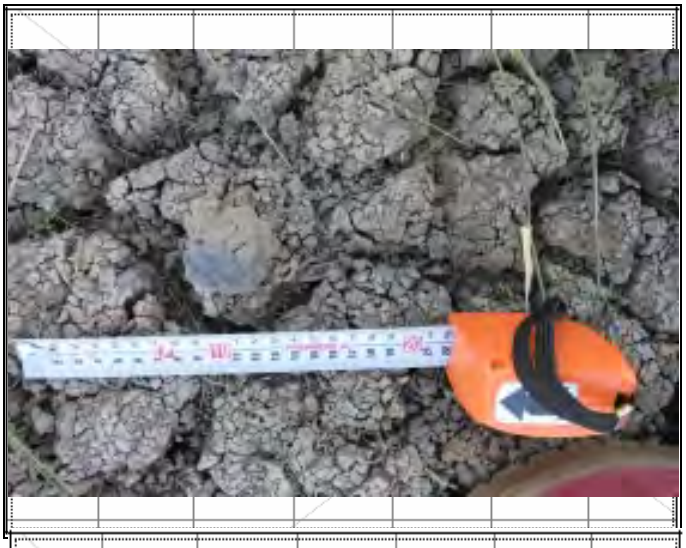
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs



Description: site picture 1

Description: site picture 2

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0090 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.053

Easting: 537560 **Northing:** 6279955 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

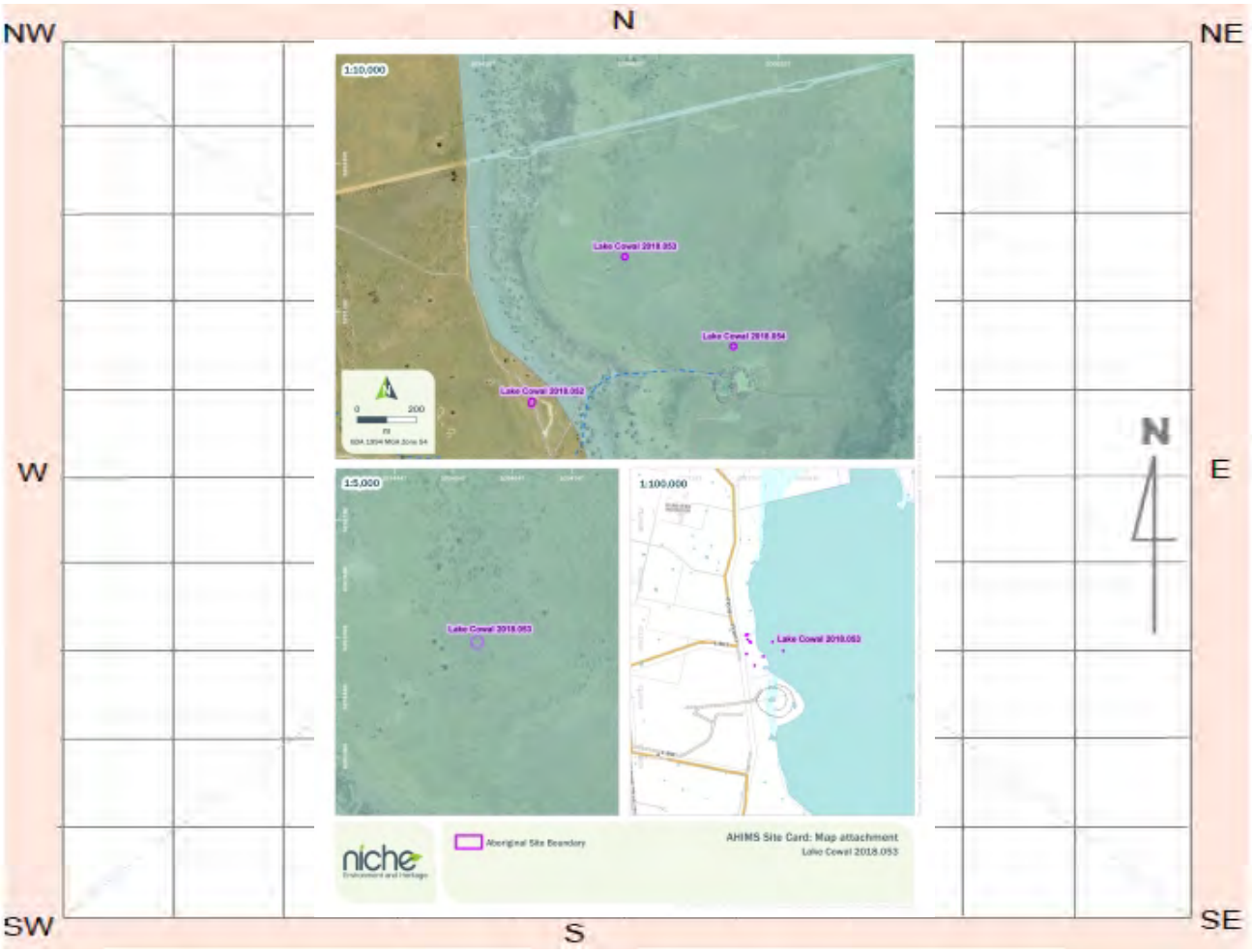
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

Open camp site - 1 x volcanic complete tool, 1 x quartzite complete tool.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0091 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.047

Easting: 536718 **Northing:** 6279991 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

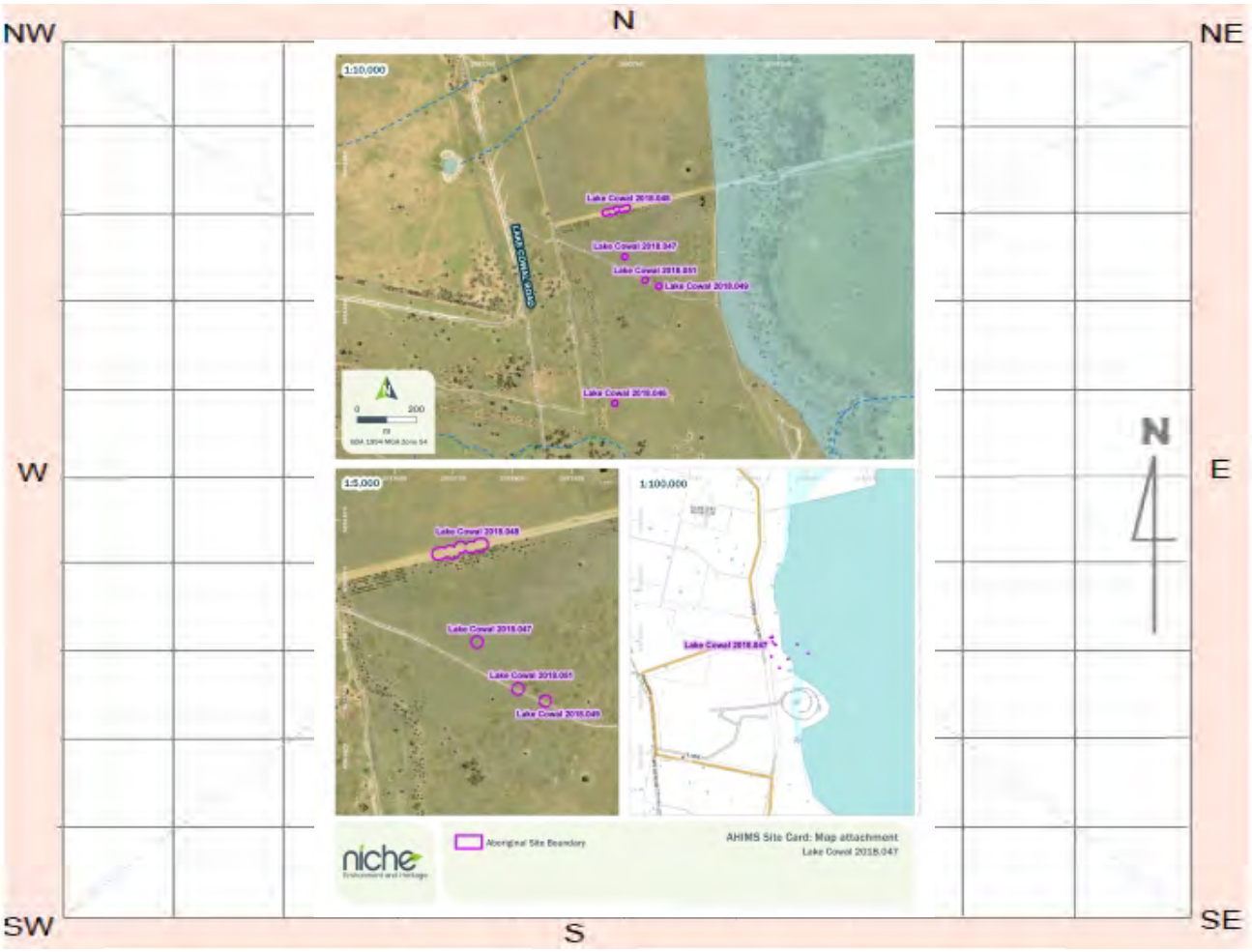
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

1 x quartz complete flake 19 x 15 x 5 mm

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0092 **Date recorded:** 06-06-2019

Site Location Information

Site name: Lake Cowal 2018.051

Easting: 536792 **Northing:** 6279916 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

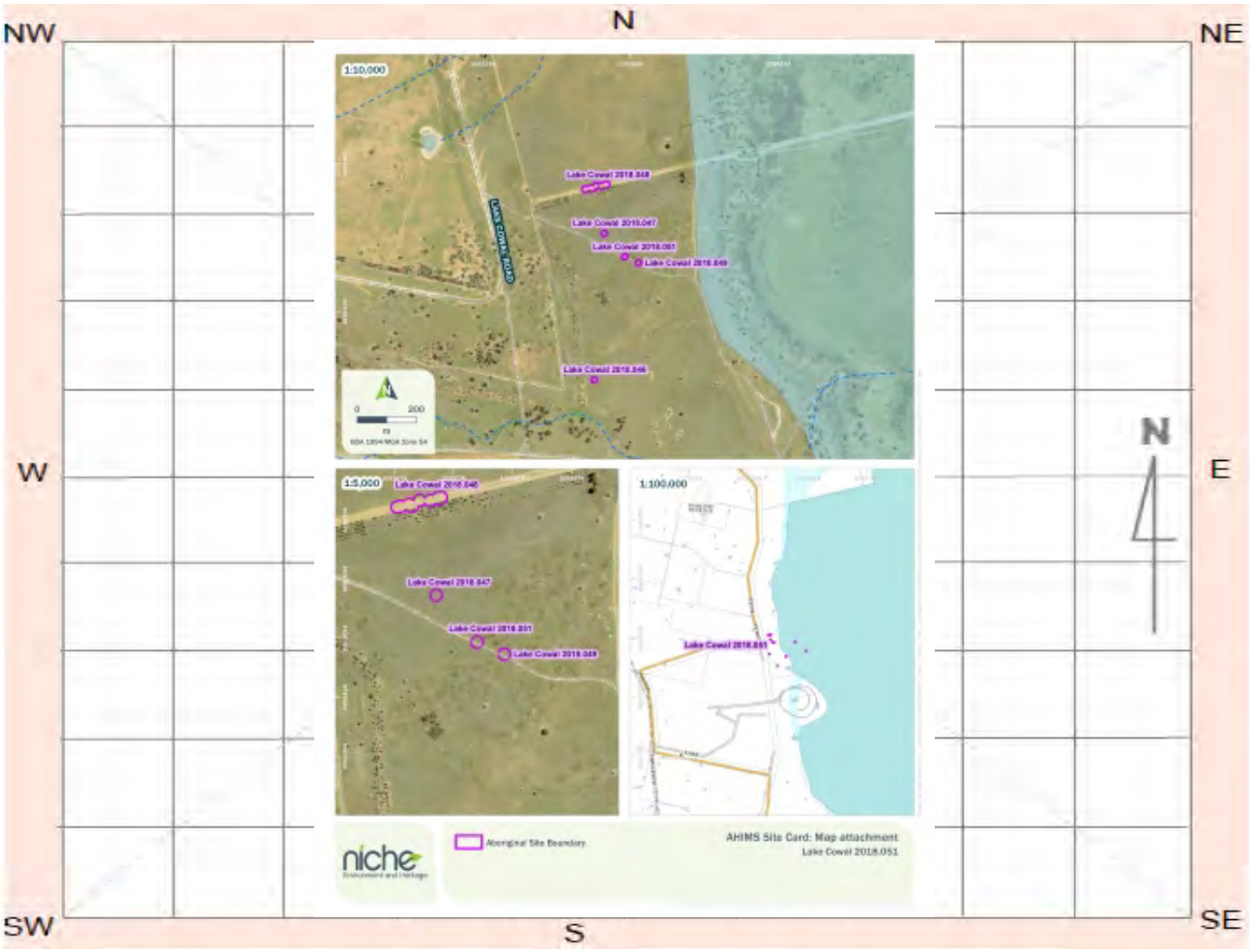
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access is on private property

Other site information:

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

Open camp site - 1 x volcanic complete flake, 1 x quartz complete flake

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info:

Site plan

Site photographs

Description: site picture 1

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0093 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.12

Easting: 520427 **Northing:** 6281129 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

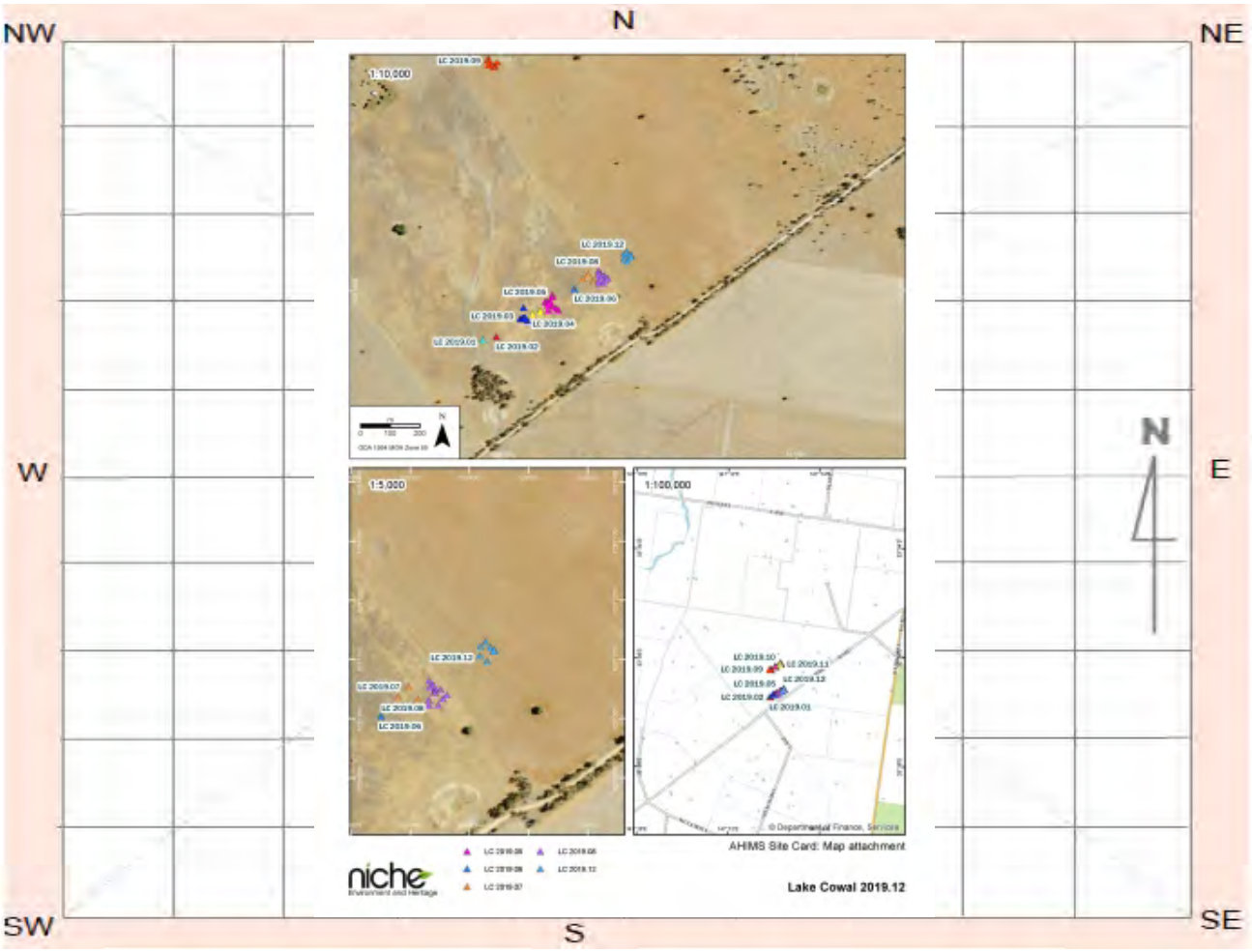
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	2	5	5				

Description:

2 artefacts - prox flake, , cores

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	2	5	5				

Description:

Heat retainer and termite nest heat retainer - WPs 326, 327-332

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0094 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.08

Easting: 520362 **Northing:** 6281039 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

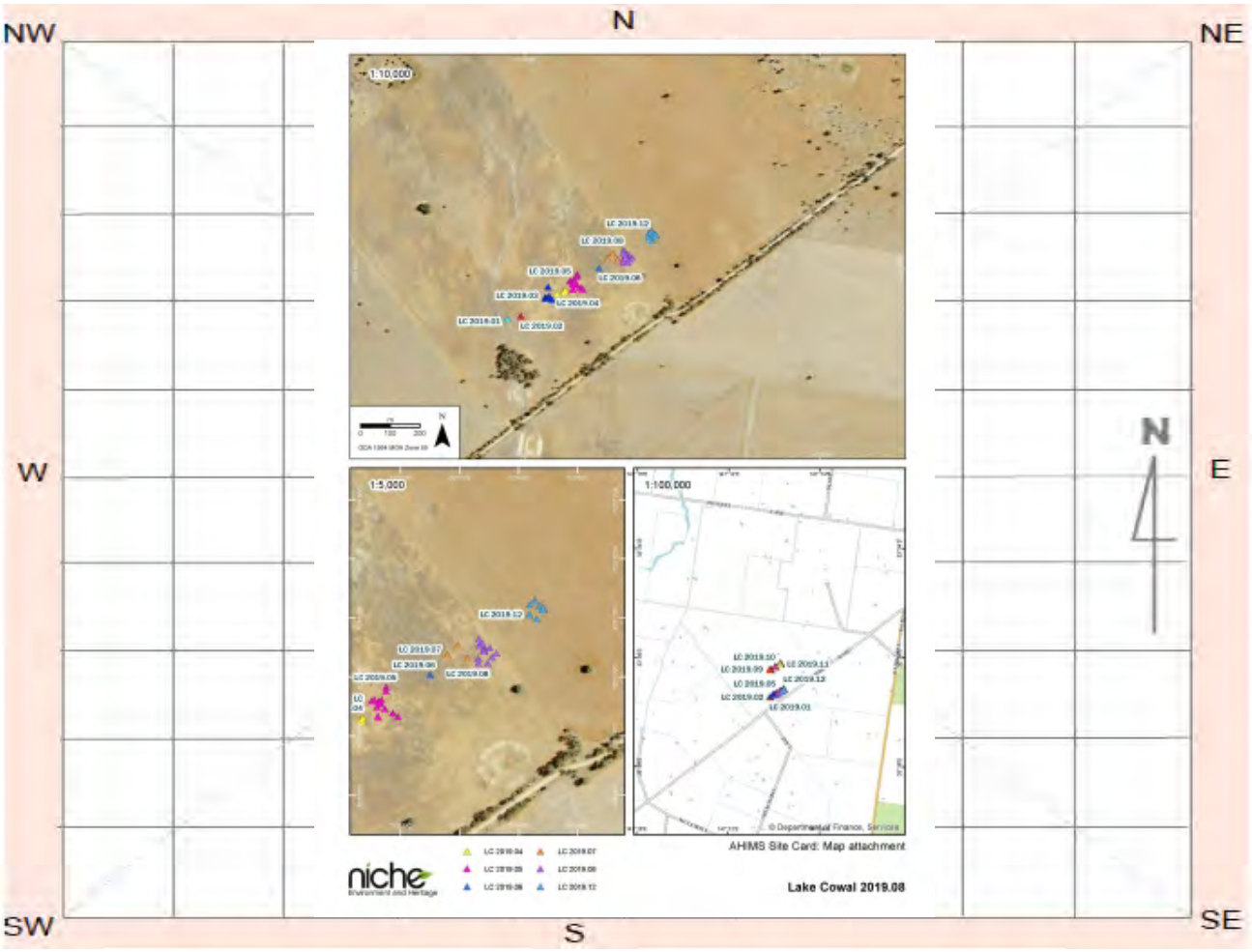
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	5	5	5				

Description:

5 artefacts - quartzite compl flake, quartz flake, , 2 x metamorphic cores, grinding stone frag

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	1	5	5				

Description:

Heat retainers - WPs 271, 273-275, 277-78, 280

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

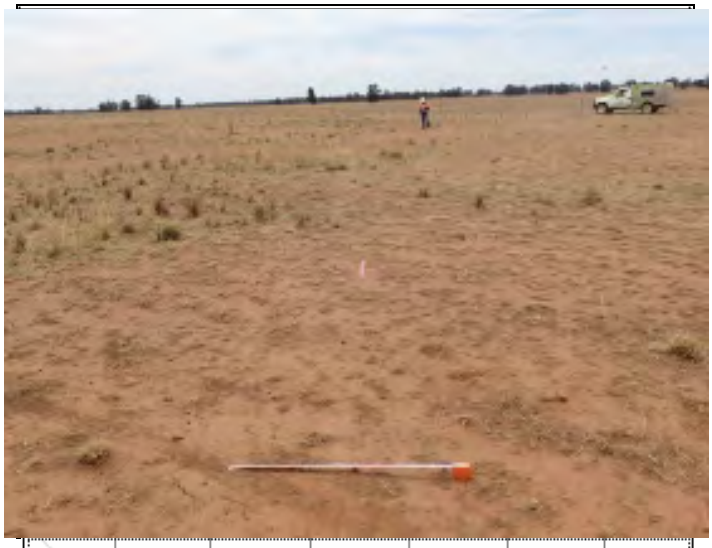
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs



Description: site image, scale, with heat retainer flagged in foreground

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0095 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.11

Easting: 520314 **Northing:** 6281972 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

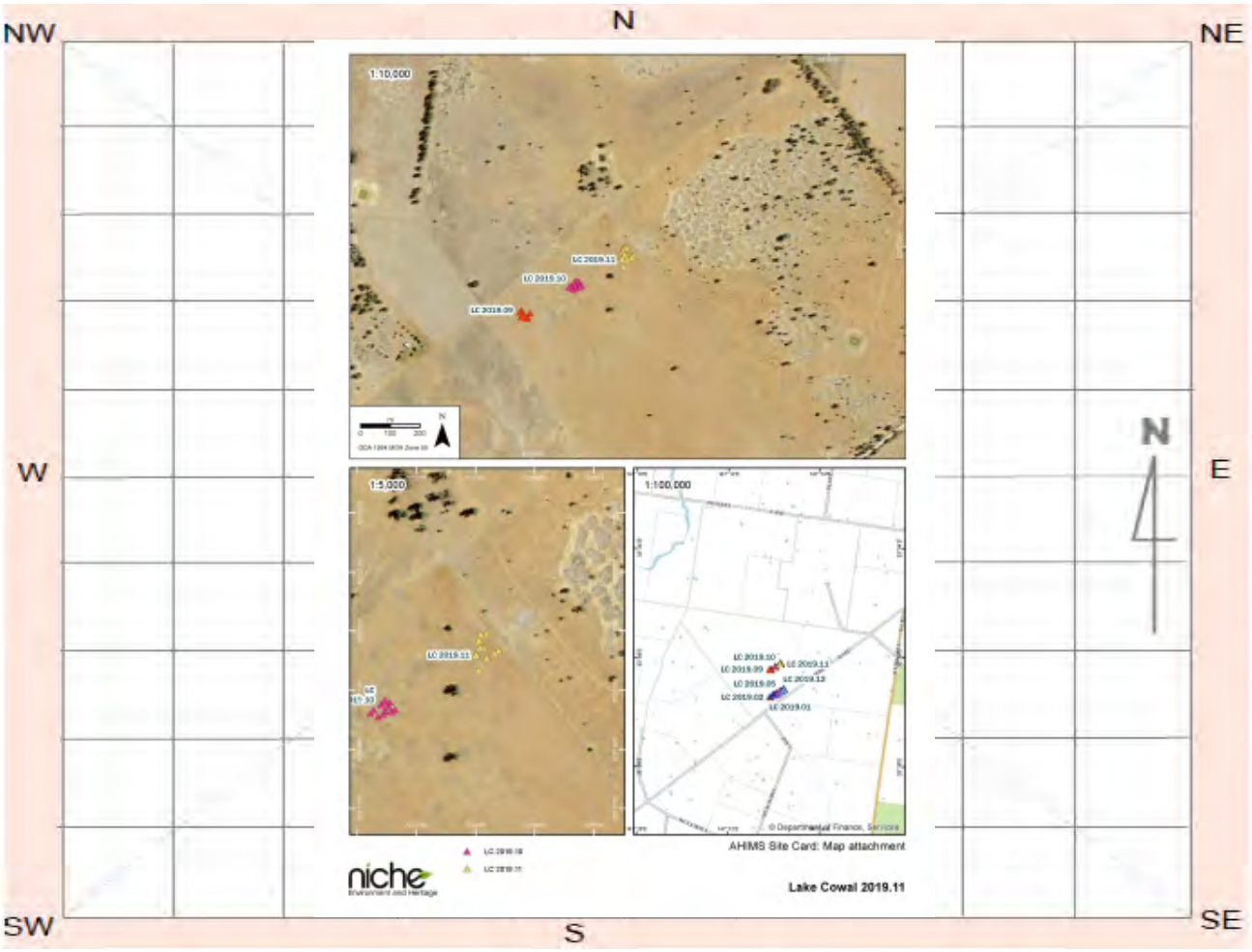
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	6	5	5				

Description:

6 artefacts - broken tools, complete flakes, core

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	1	5	5				

Description:

Heat retainers at WPs 311, 320, 321, 322

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0096 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.09

Easting: 519977 **Northing:** 6281755 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

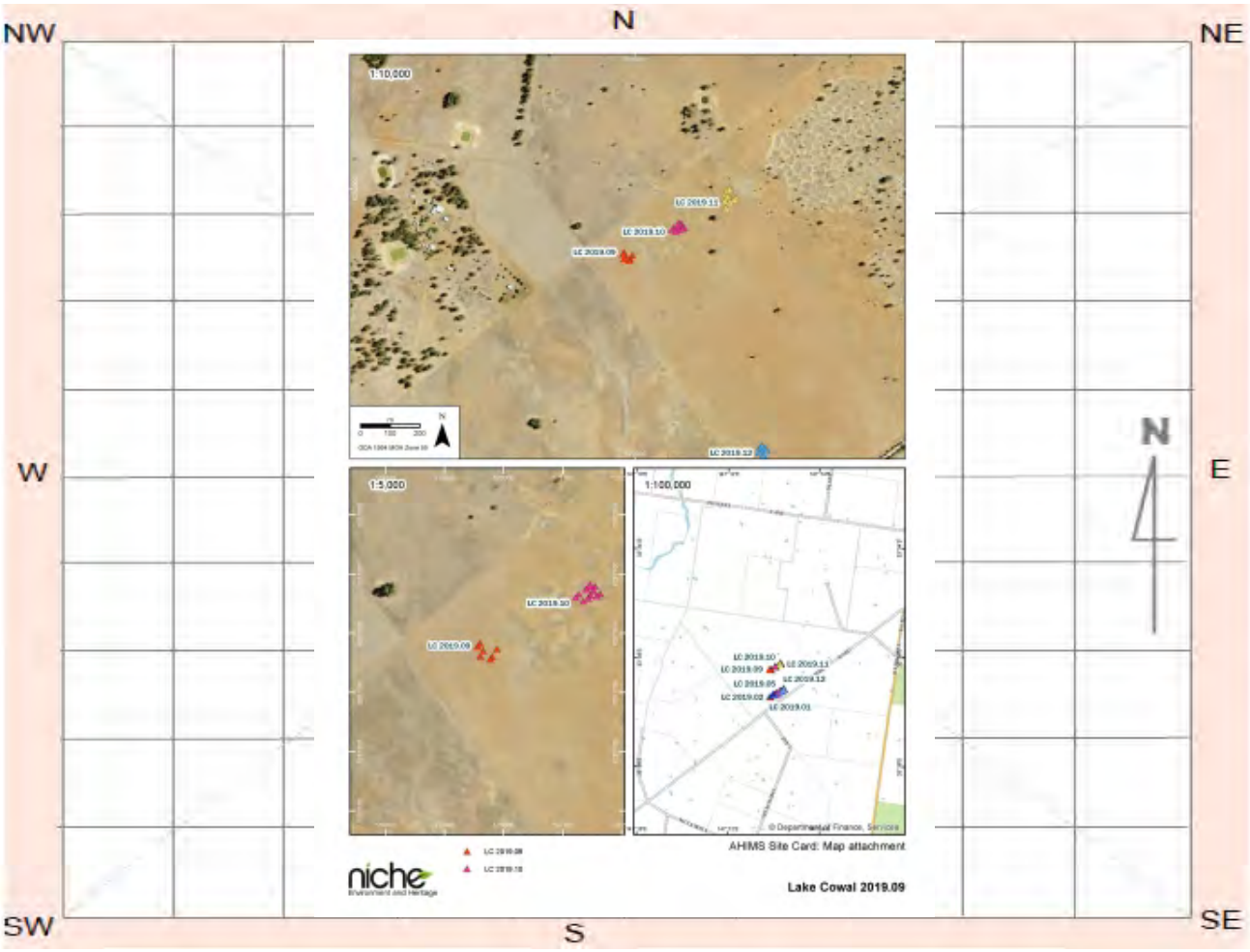
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	3	5	5				

Description:

3 artefacts

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	4	5	5				

Description:

Heat retainers at WPs 283, 286, 288, 290

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0097 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.10

Easting: 520146 **Northing:** 6281879 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

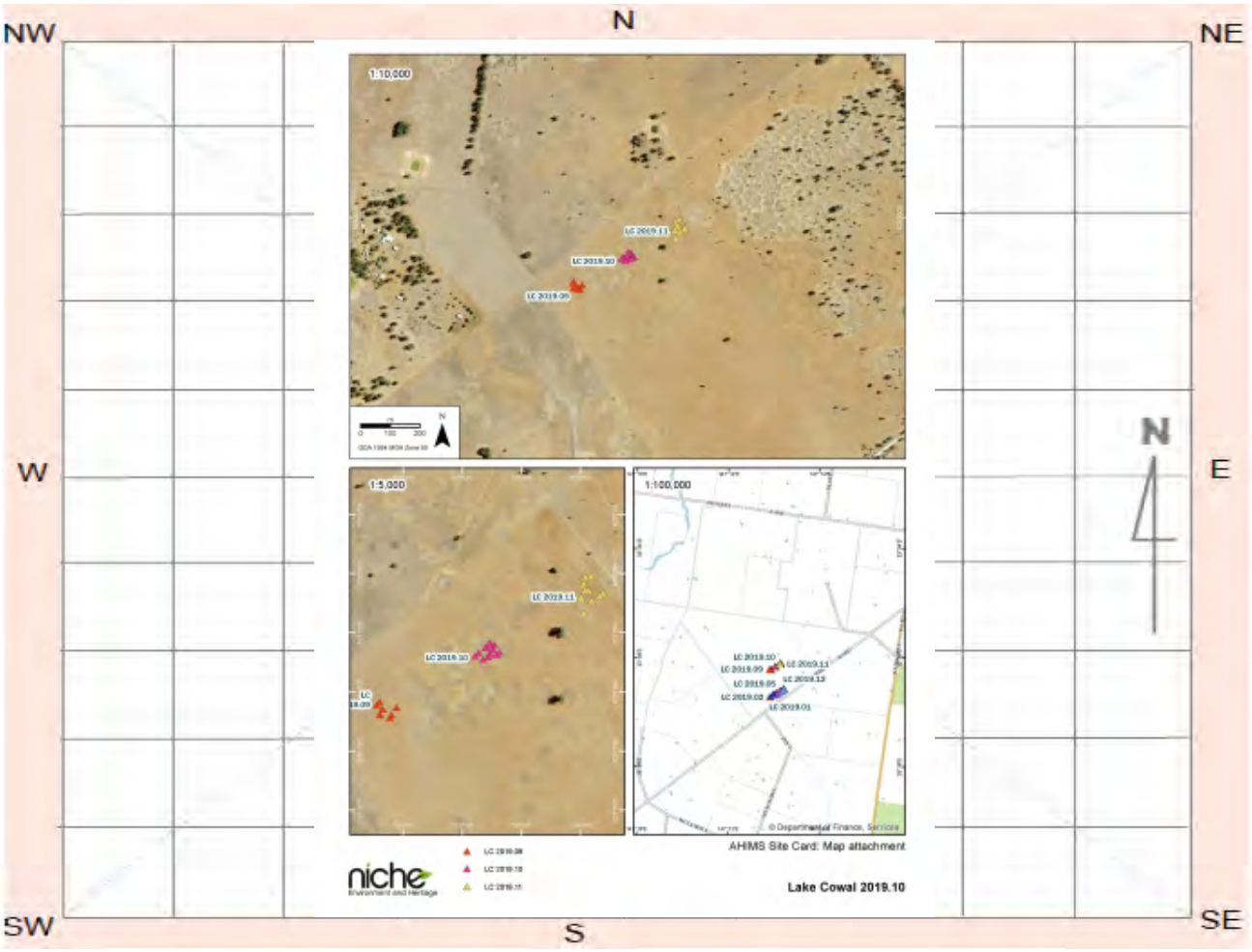
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	6	5	5				

Description:

6 artefacts - broken flake, complete tool, distal flake, Rsplit, angular frag

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2. Hearth	1	5	5				

Description:

Heat retainers at WPs 293-94, 297-300, 303, 305, 306

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0098 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.01

Easting: 519935 **Northing:** 6280829 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

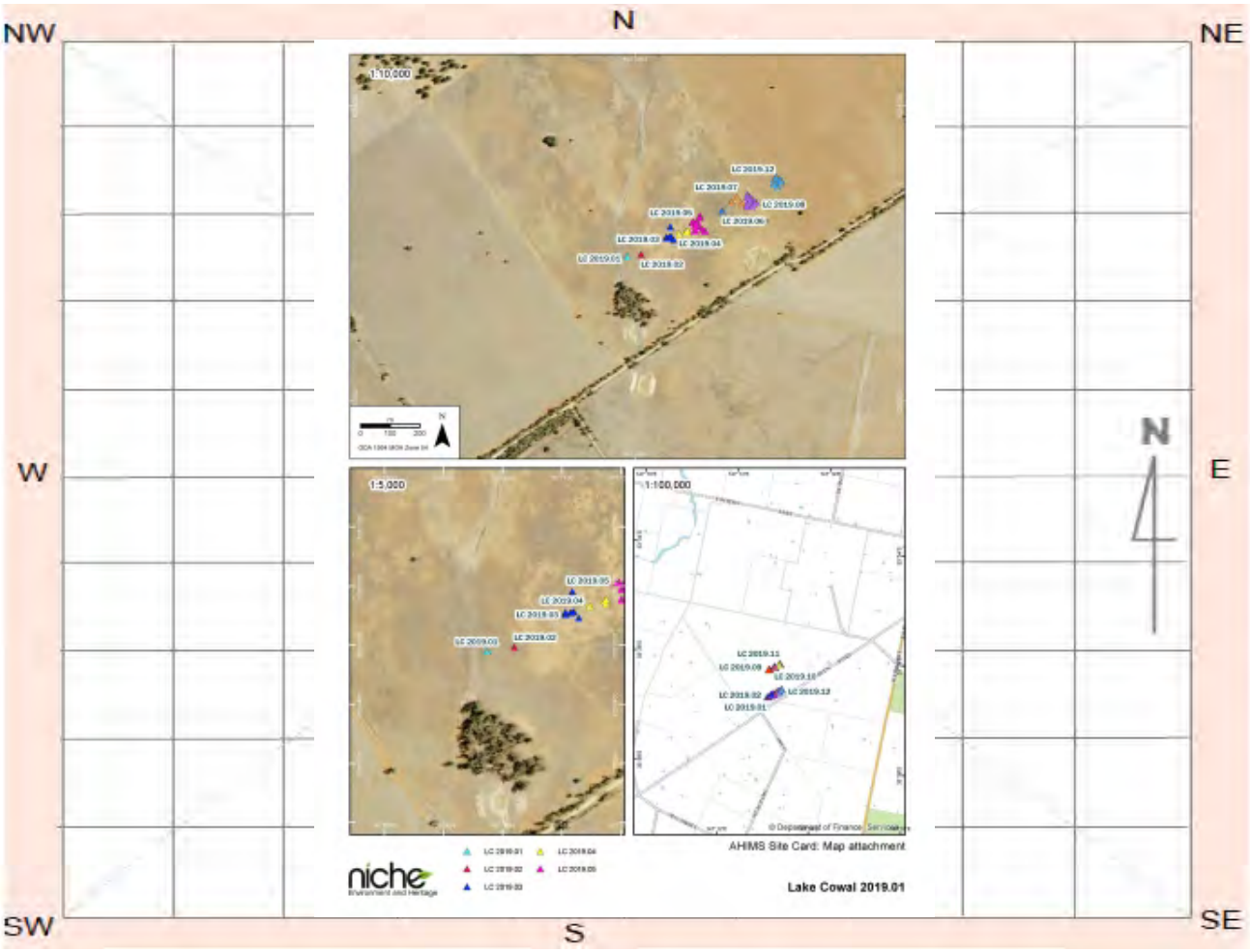
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	5	5				

Description:

1 artefact

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0099 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.06

Easting: 520250 **Northing:** 6281005 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

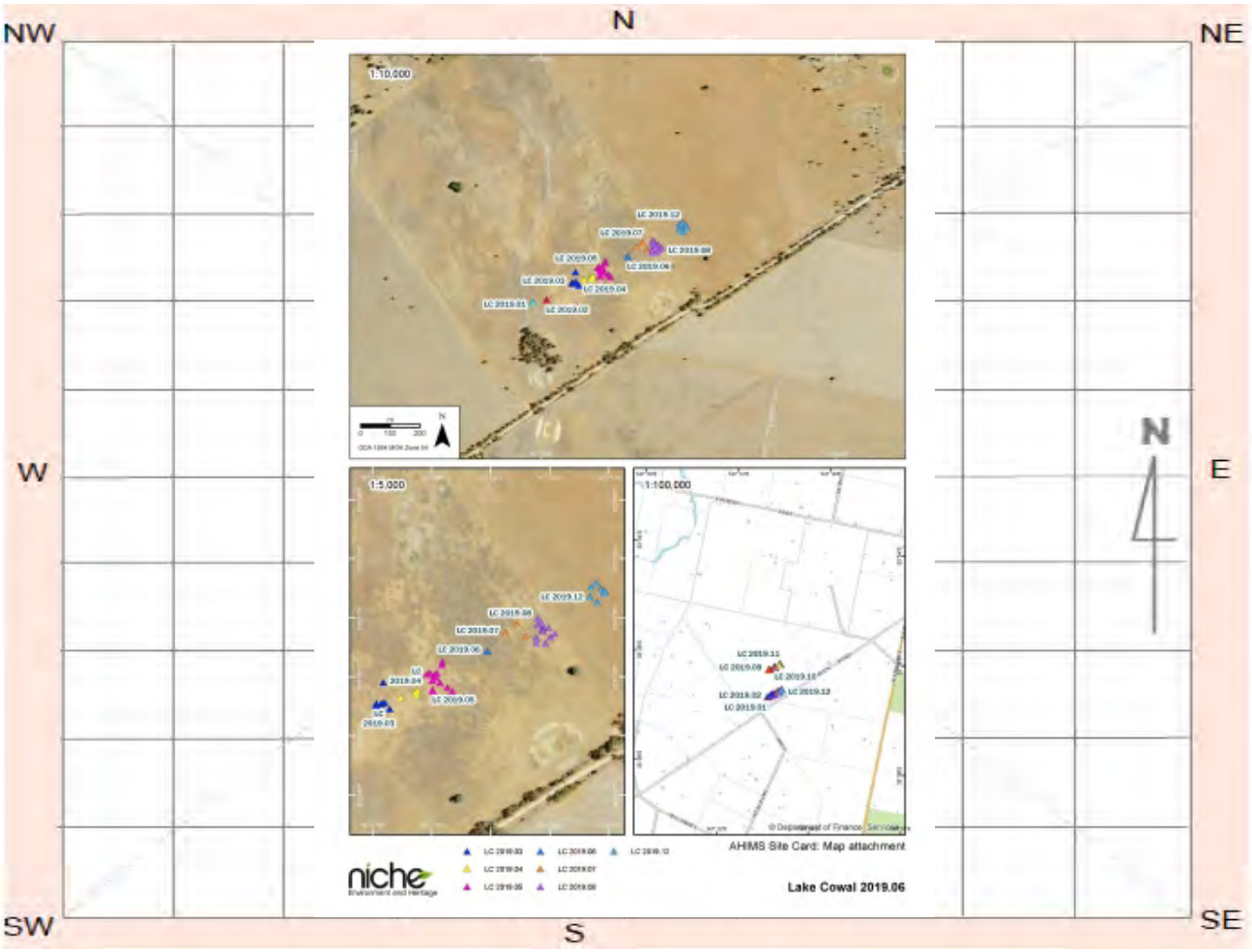
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	5	5				

Description:

Heat retainer identified - WP 265

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0100 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.05

Easting: 520165 **Northing:** 6280954 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

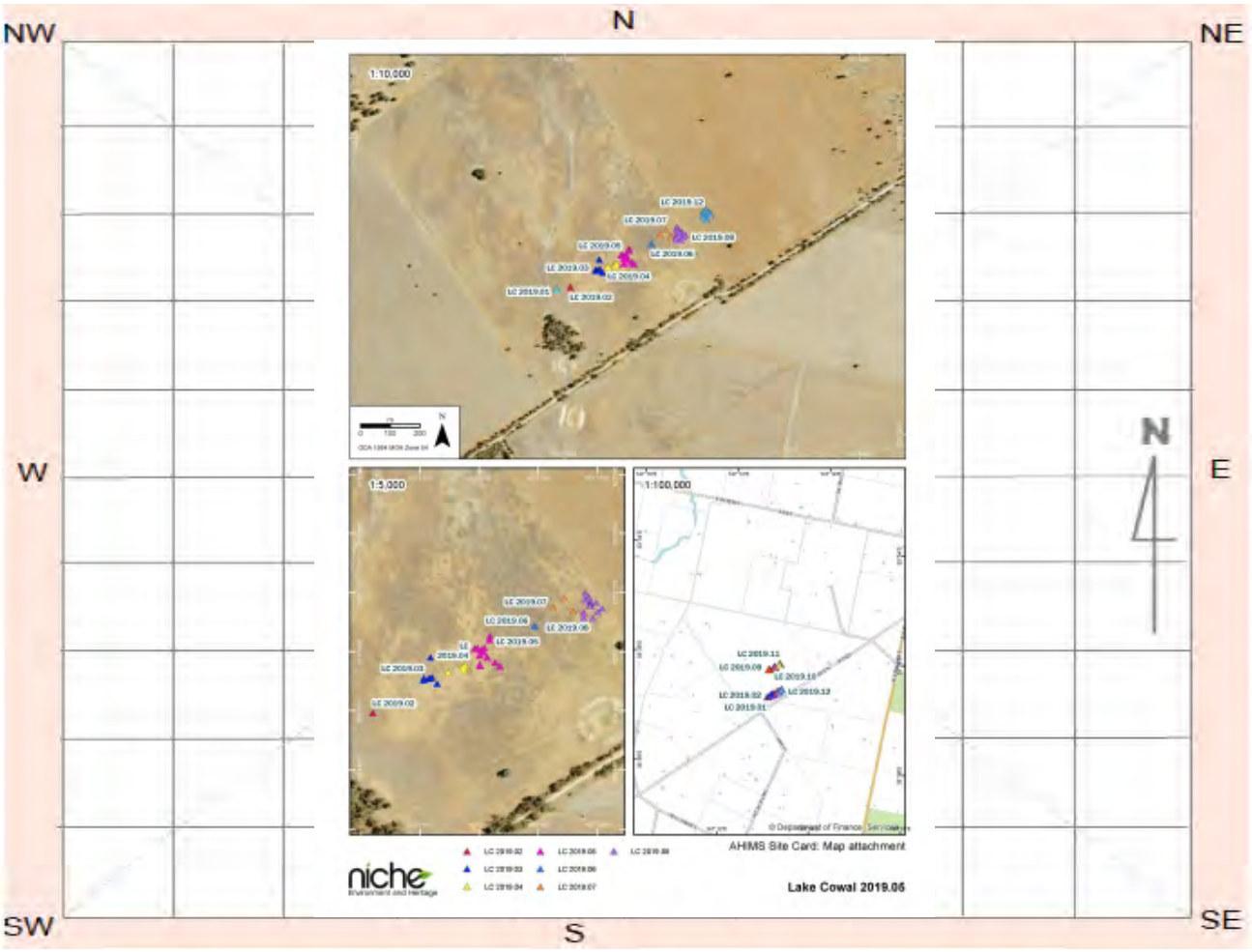
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Hearth	1	5	5				

Description:

Heat retainer identified - WPs 245, 247, 249-252, 254, 255

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

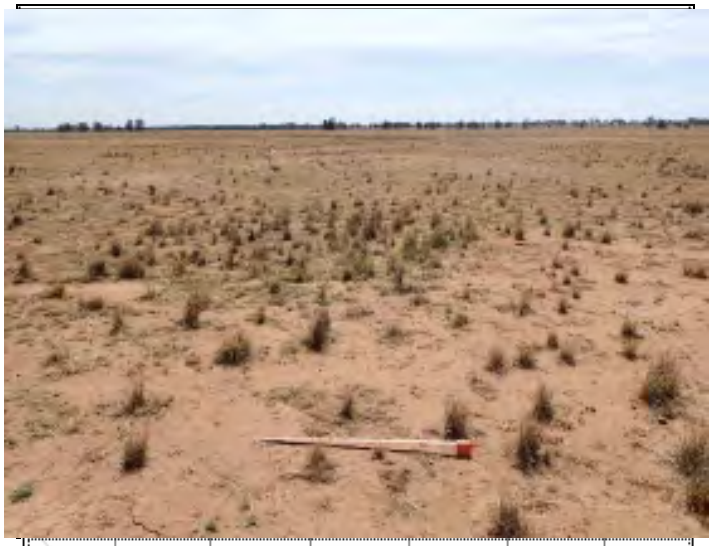
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs



Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0101 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.03

Easting: 520082 **Northing:** 6280905 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

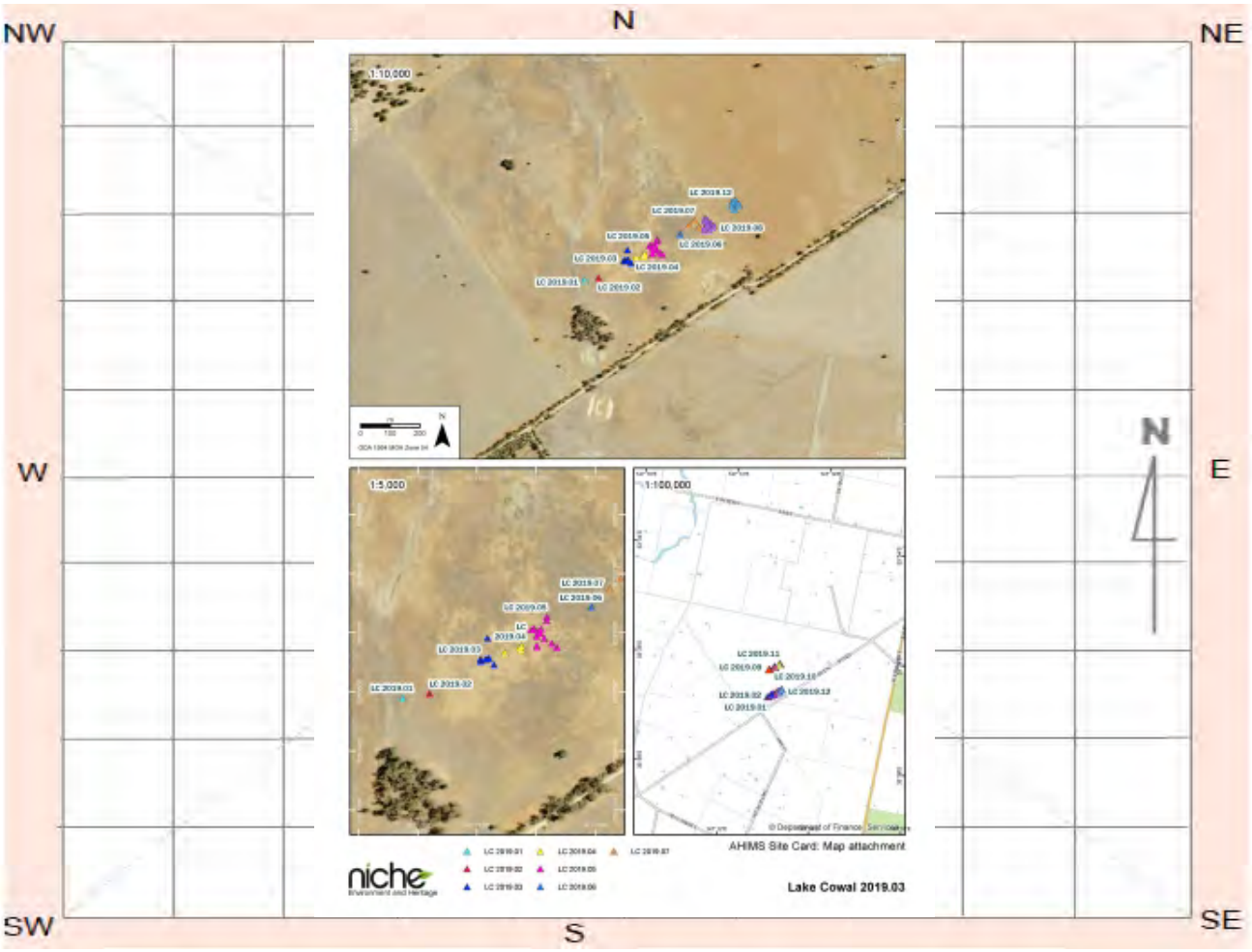
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

Artefacts WP 234,236, 262

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	1	5	5				

Description:

Heat retainers identified WPs 235, 237-239

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0102 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.02

Easting: 519993 **Northing:** 6280850 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

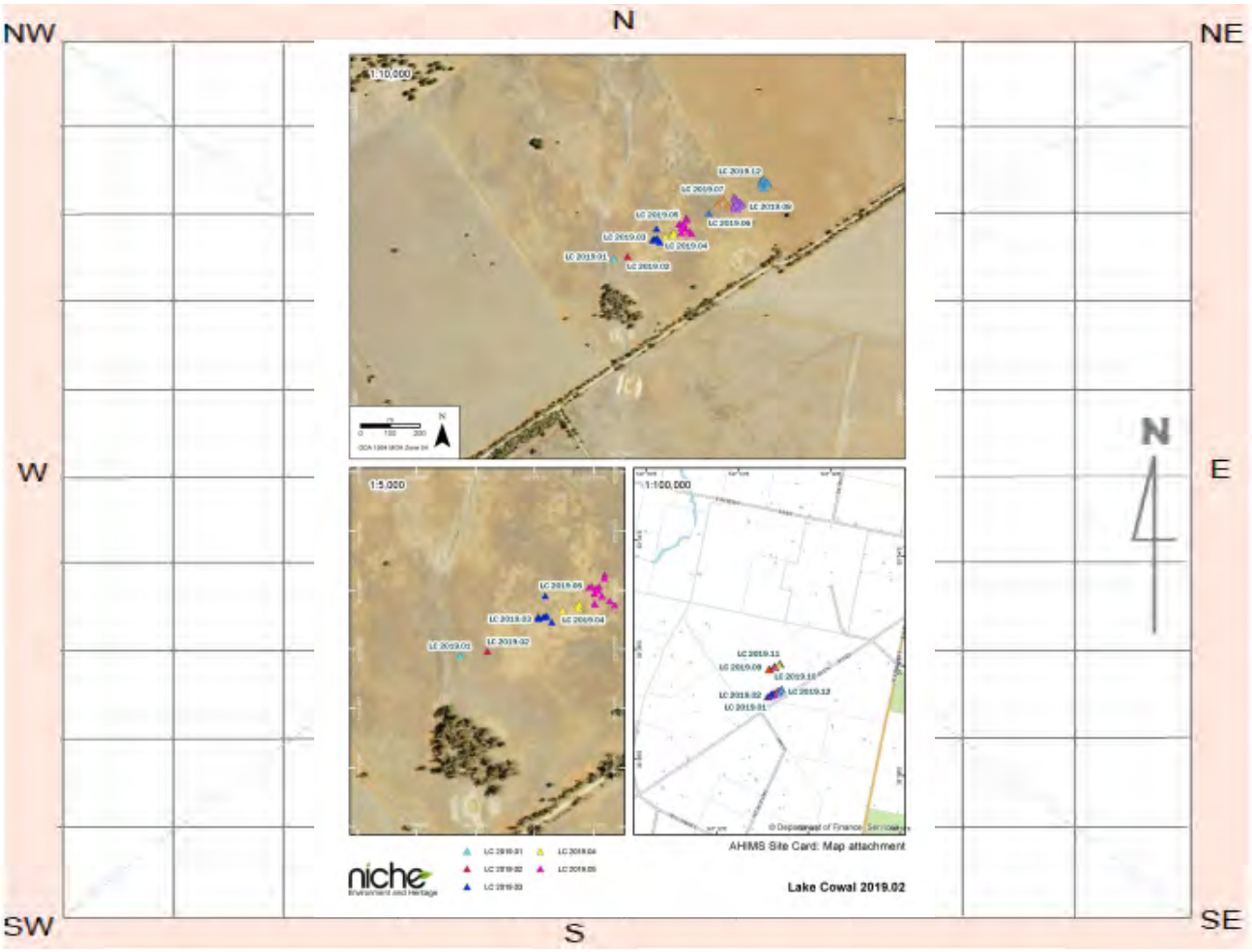
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	5	5				

Description:

Heat retainer identified to SW

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image 1 with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0103 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.07

Easting: 520292 **Northing:** 6281033 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

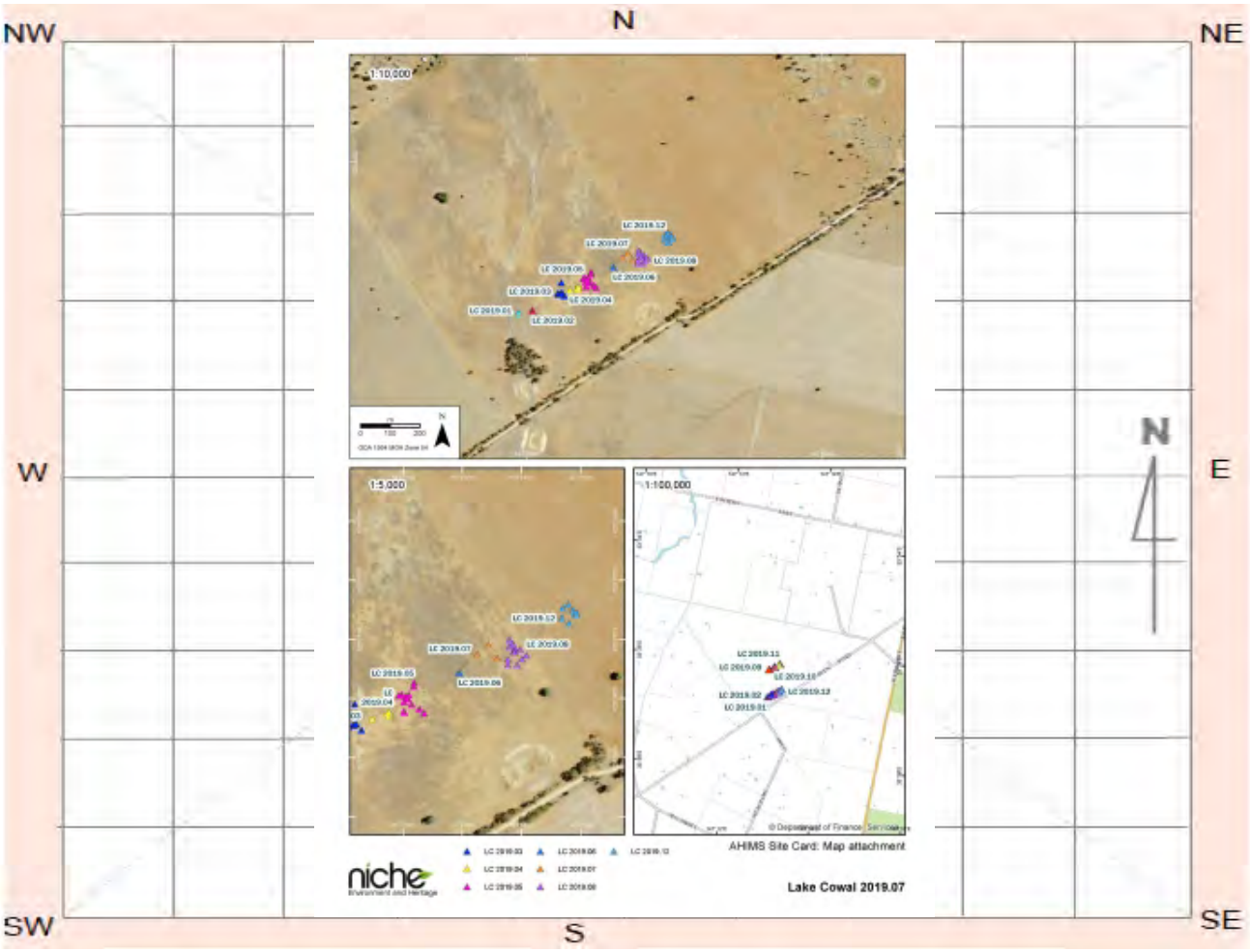
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: No Aboriginal artefacts identified 20m buffer Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	5	5				

Description:

1 artefact WP 266

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Hearth	1	5	5				

Description:

Termite nest heat retainers identified WPs 268-269

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

Features:

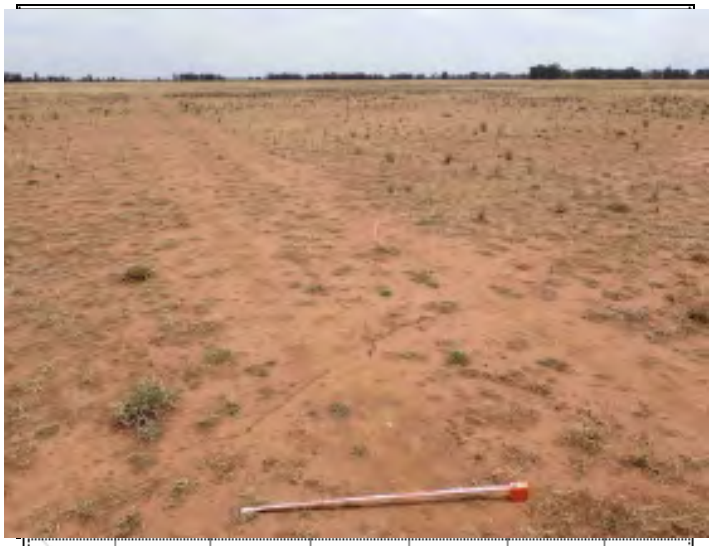
		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

Other Site Info: No Aboriginal artefacts identified 20m buffer Gilgai

Site plan

Site photographs



Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0104 **Date recorded:** 18-06-2019

Site Location Information

Site name: Lake Cowal 2019.04

Easting: 520122 **Northing:** 6280930 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 3

Zone: 55 **Location method:** Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Day	Katherine

Organisation: Niche Environment and Heritage

Address: PO Box 2443 North Parramatta NSW 1750

Phone: 0458000903 **E-mail:** kday@niche-eh.com

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

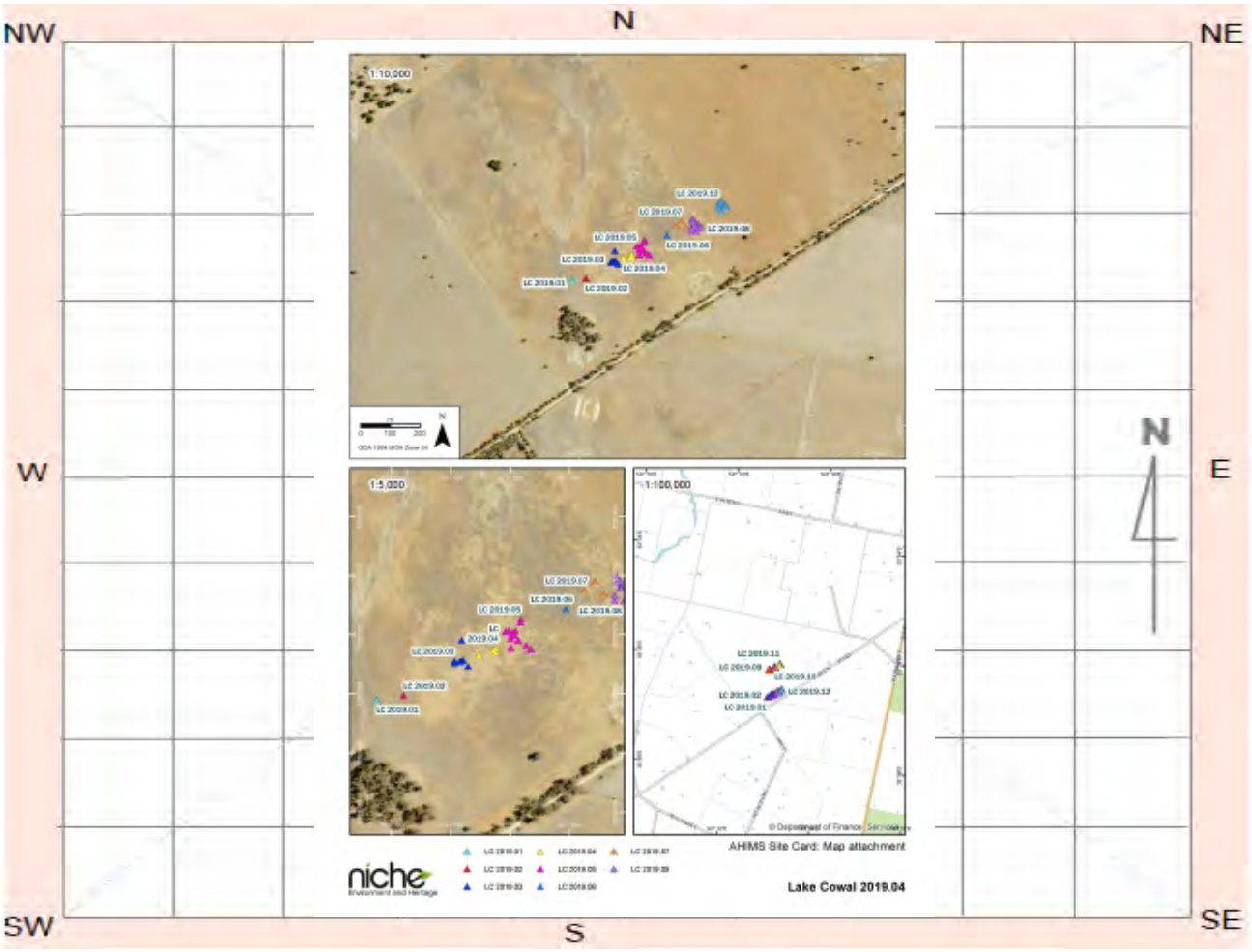
Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 200 **Primary Report:** Niche 2019 4887_CGO_DrillSitesEL8524_ACH_Due Diligence_unpublis

How to get to the site: Access site from the south

Other site information: Gilgai

Site location map



Site contents information

open/closed site: Open

Site condition: Erosion

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	5	5				

Description:

Heat retainers identified to the E and SE

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Gilgai

Site plan

Site photographs

Description: site image with scale

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0106 **Date recorded:** 25-09-2019

Site Location Information

Site name: Thornton Plains Grinding Stone

Easting: 531609 **Northing:** 6279883 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Undulating Plain **Land Use:** Mining

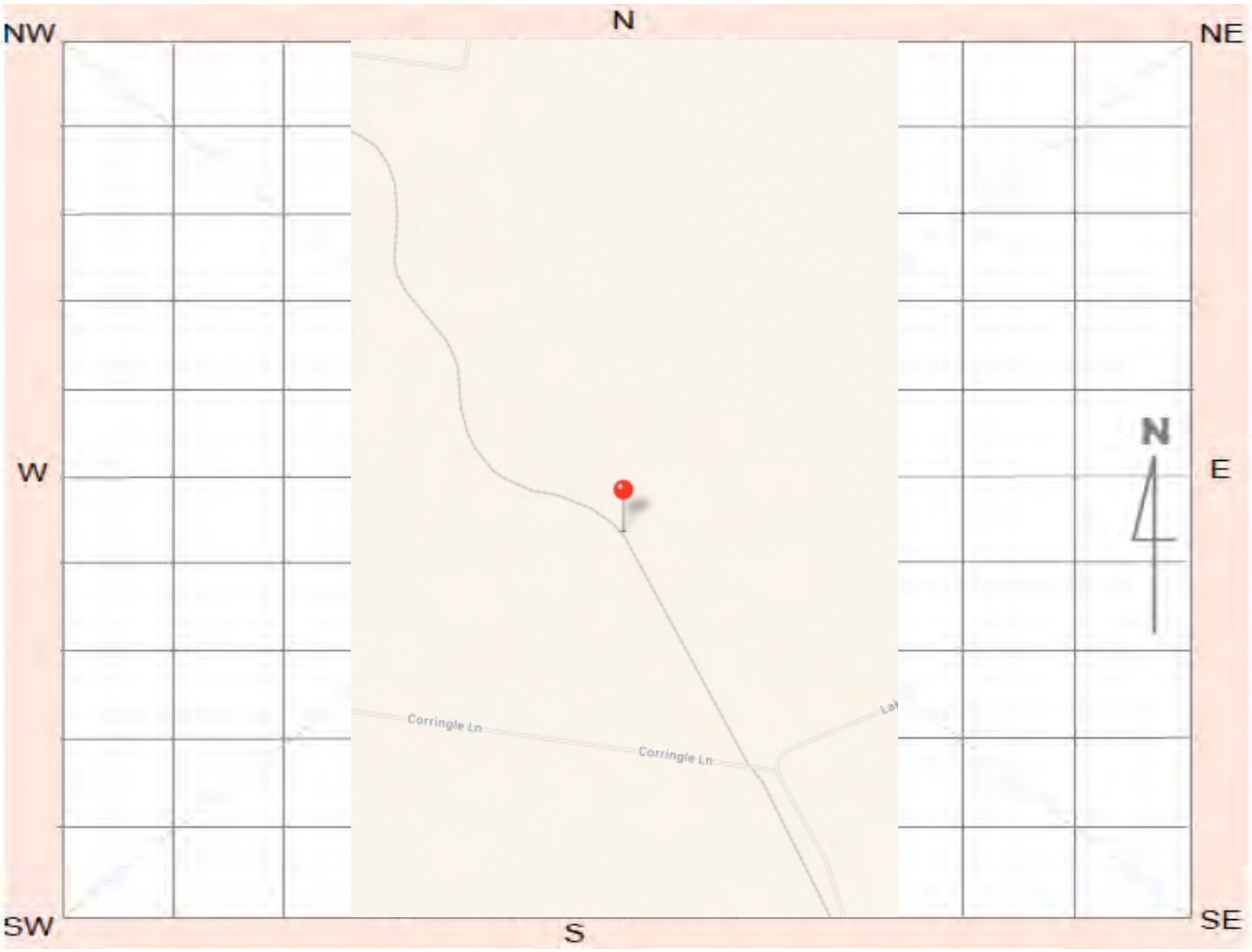
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 4000 **Primary Report:** Site card

How to get to the site: Evolution CGO office

Other site information: In windrow from recent grading of road sample sieve x2 no other objects

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	1	1				

Description:

Silcrete grinding stone

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: In windrow from recent grading of road sample sieve x2 no other objects

Site plan

Site photographs

Description: 1

Description: 1

Description: 2

Description: 4

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0107 **Date recorded:** 25-09-2019

Site Location Information

Site name: Thornton Gilgai Isolated Artefact

Easting: 532781 **Northing:** 6280207 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Mining

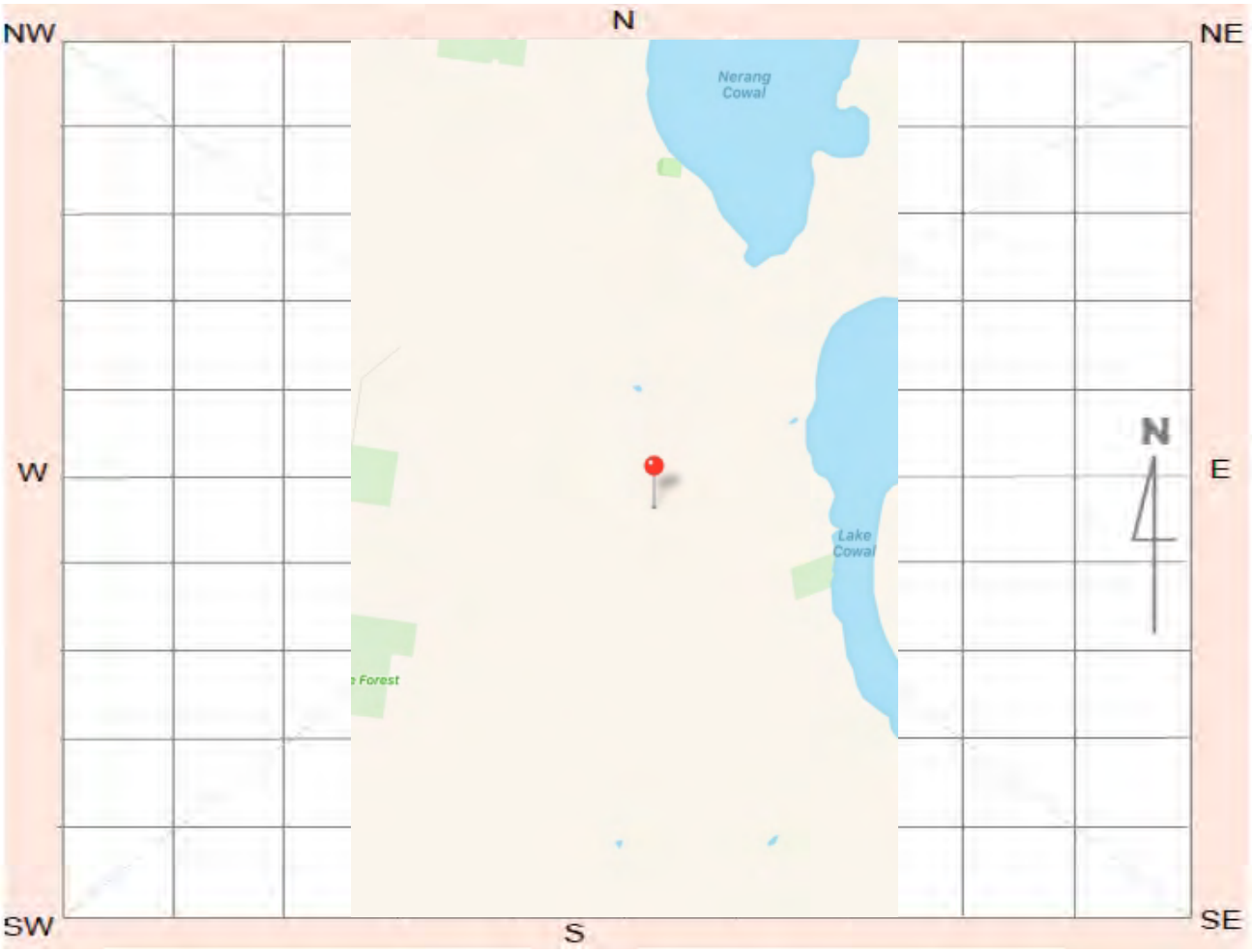
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 3 **Primary Report:** Site card

How to get to the site: Evolution CGO office

Other site information: Disturbed exposure in grader scrape. 2x sieve in adjacent windrow

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Artefact	1	1	1				

Description:

Isolated chert artefact in header scrape

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Description:

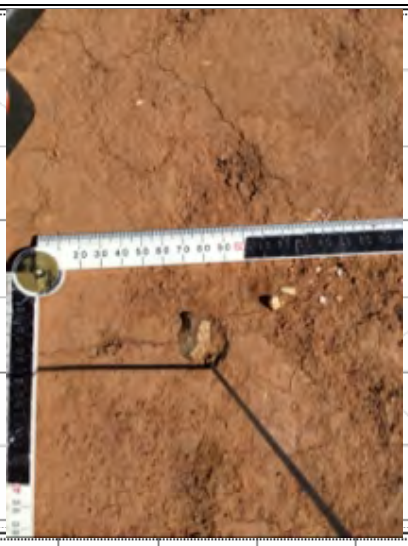
Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

Description:

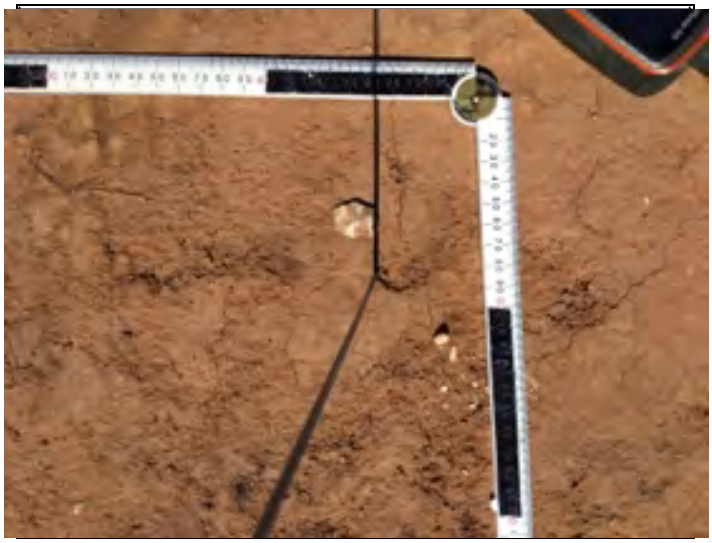
Other Site Info: Disturbed exposure in grader scrape. 2x sieve in adjacent windrow

Site plan

Site photographs



Description: 1



Description: 2

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0108 **Date recorded:** 25-09-2019

Site Location Information

Site name: Thornton Gilgai Scatter 25Sep19

Easting: 532987 **Northing:** 6280174 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Undulating Plain **Land Use:** Mining

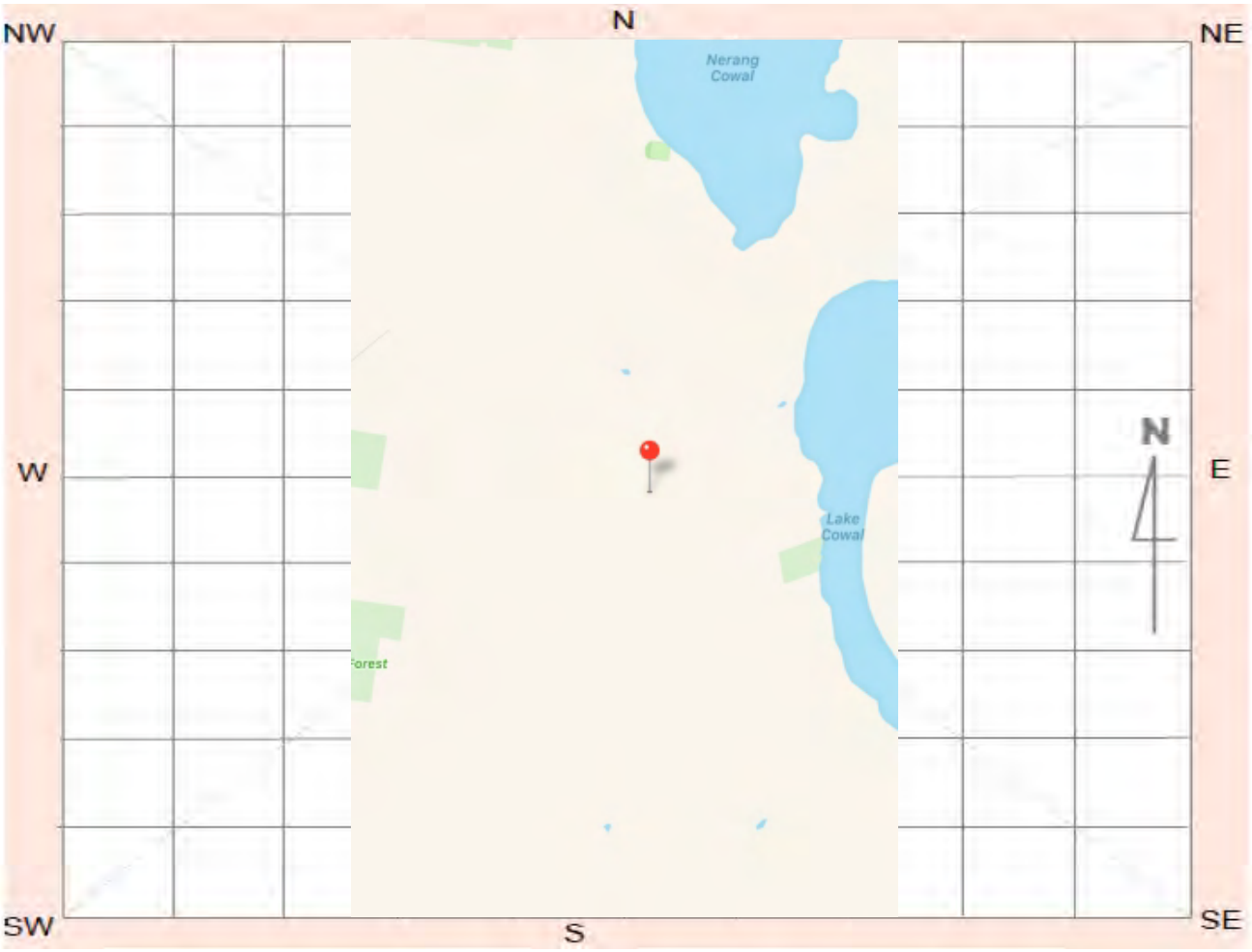
Land Form Unit: Plain **Vegetation:** Grasslands

Distance to Water (m): 3 **Primary Report:** AHIMS site card

How to get to the site: Via Evolution Cowal Gold Operation

Other site information: Disturbed by grading

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	2	10	50				

Description:

Low density artefact scatter in recently graded track

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

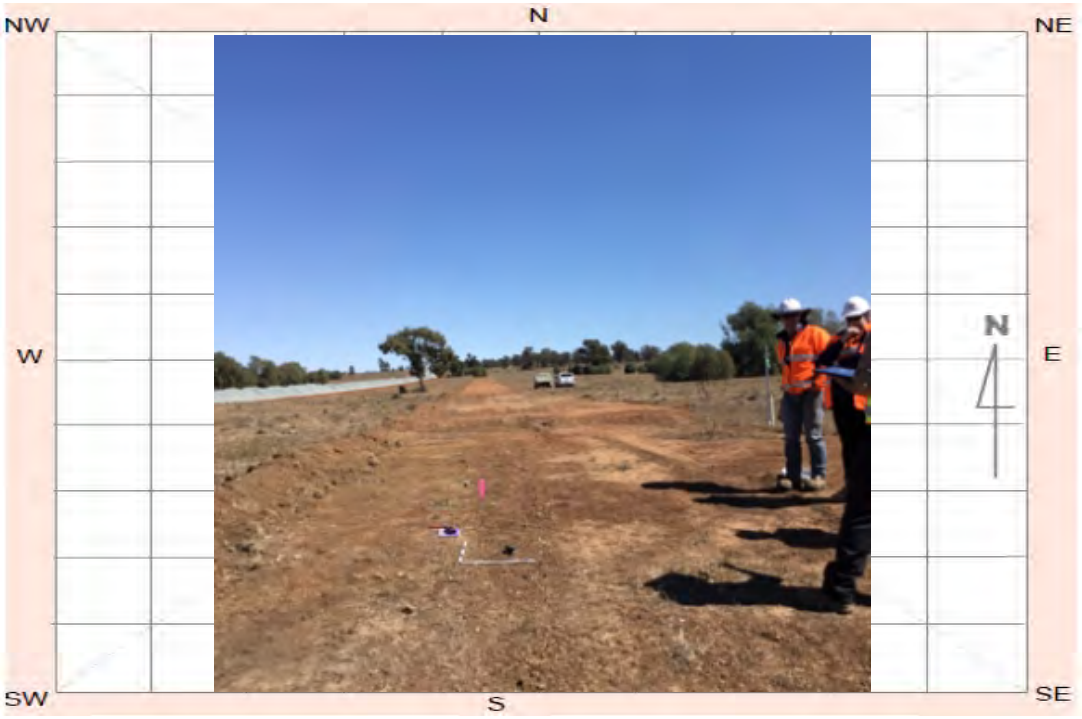
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Disturbed by grading

Site plan



Site photographs

Description: 1

Description: 2

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0109 **Date recorded:** 25-09-2019

Site Location Information

Site name: Thornton Gilgai Hearth 25Sep19

Easting: 533236 **Northing:** 6280138 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Undulating Plain **Land Use:** Mining

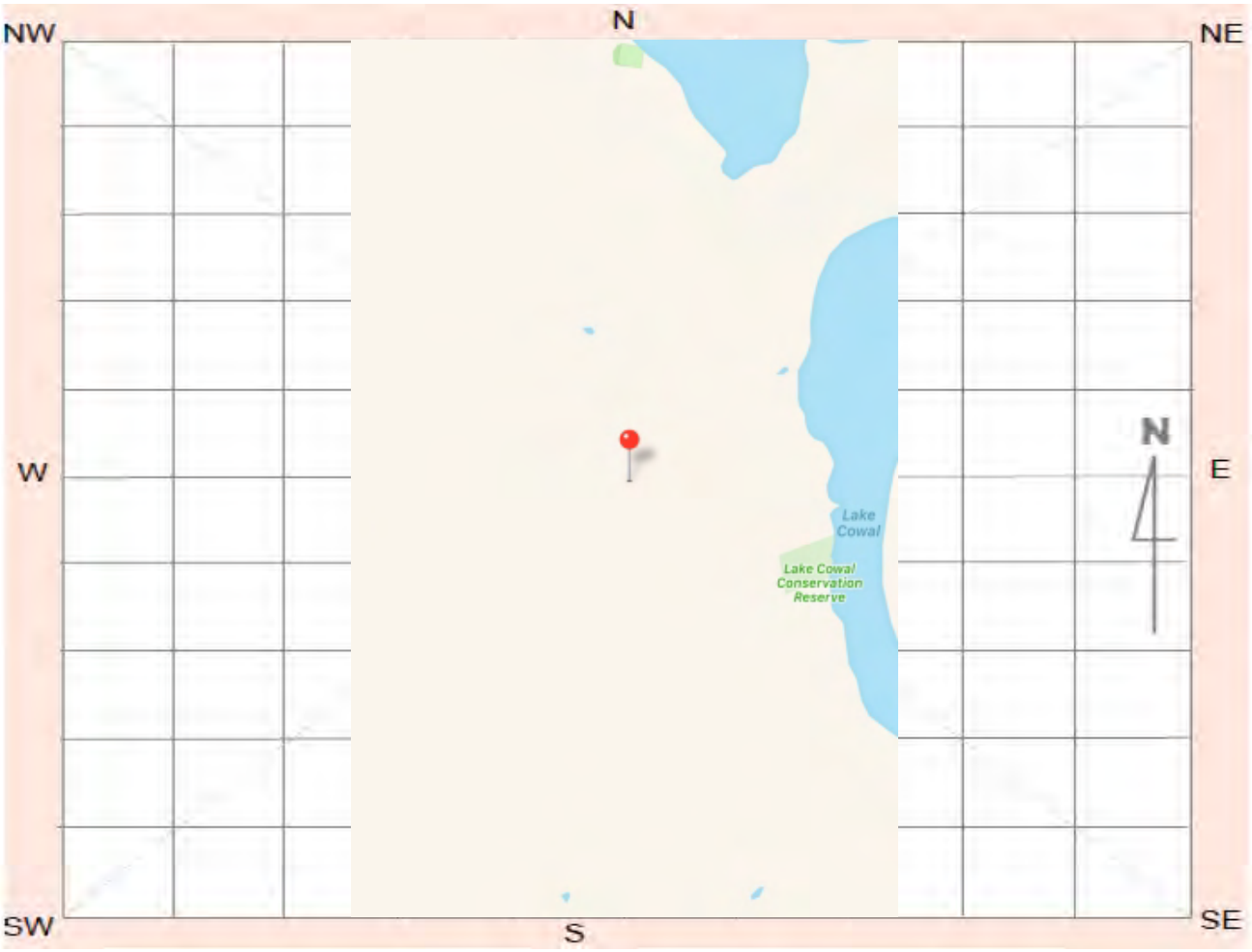
Land Form Unit: Plain **Vegetation:** Open Woodland

Distance to Water (m): 3 **Primary Report:** AHIMS site card

How to get to the site: Via Evolution Cowal Gold office

Other site information: Sample sieve x 2 (no material)

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Hearth	1	1	1				

Description:

In situ hearth, disturbed by recent grading

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Sample sieve x 2 (no material)

Site plan

Site photographs

Description: photo of in situ hearth

Description: photo of heatth material

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0110 **Date recorded:** 25-09-2019

Site Location Information

Site name: Thornton 25Sep19

Easting: 530812 **Northing:** 6280299 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Rolling Hills **Land Use:** Pastoral/Grazing

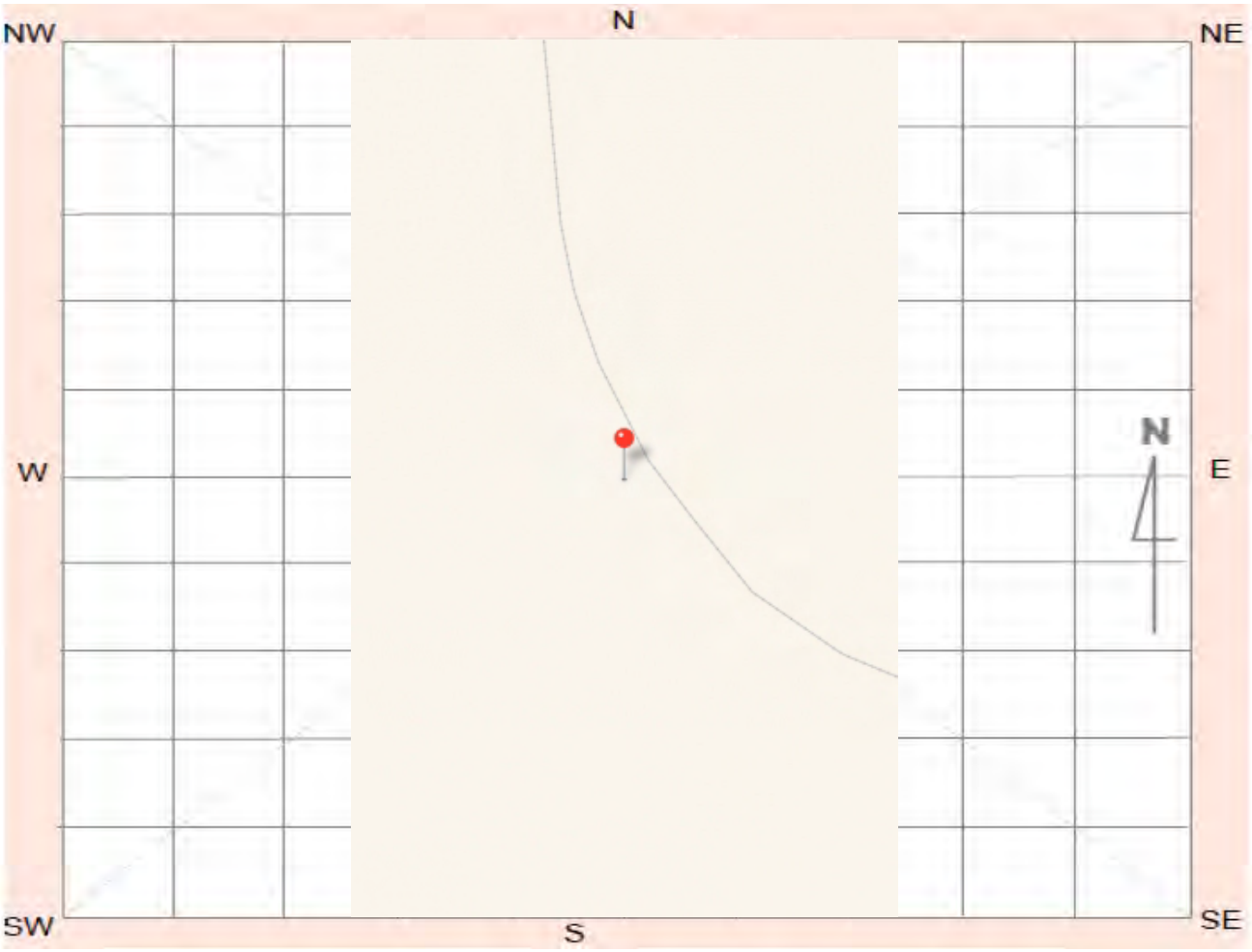
Land Form Unit: Slope **Vegetation:** Grasslands

Distance to Water (m): 4 **Primary Report:** AHIMS site card

How to get to the site: Via Cowal Gold Operations Office

Other site information: Hearth on road

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Hearth	1	15	15				

Description:

Several Hearth fragments on road

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.								

Description:

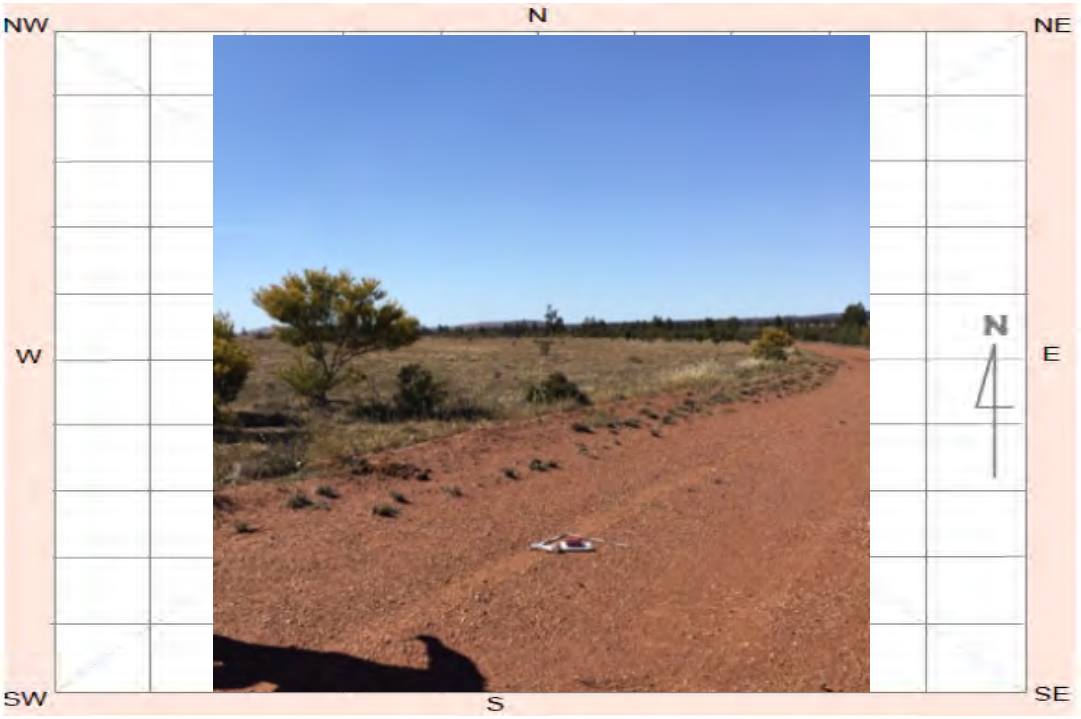
Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.								

Description:

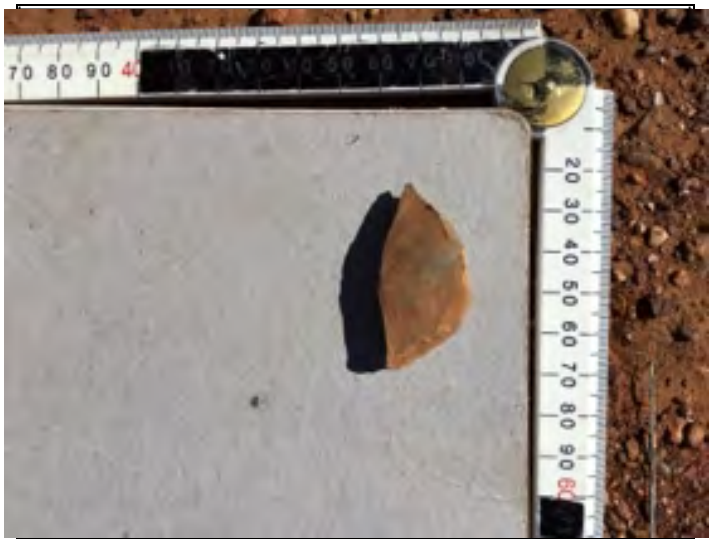
Other Site Info: Hearth on road

Site plan



Site photographs

Description: remnant hearth with object collected by Niche/CGO and in situ remnant



Description: round edge scraper with retouch and wdge damage (chert)

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0111 **Date recorded:** 24-09-2019

Site Location Information

Site name: Thornton

Easting: 530937 **Northing:** 6280190 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Gilding	John

Organisation: Office of Environment & Heritage

Address: 200 Yam il Street, Griffith 2680

Phone: 0419299558 **E-mail:** John.gilding@environment.nsw.gov.au

Site Context Information

Land Form Pattern: Rolling Hills **Land Use:** Pastoral/Grazing

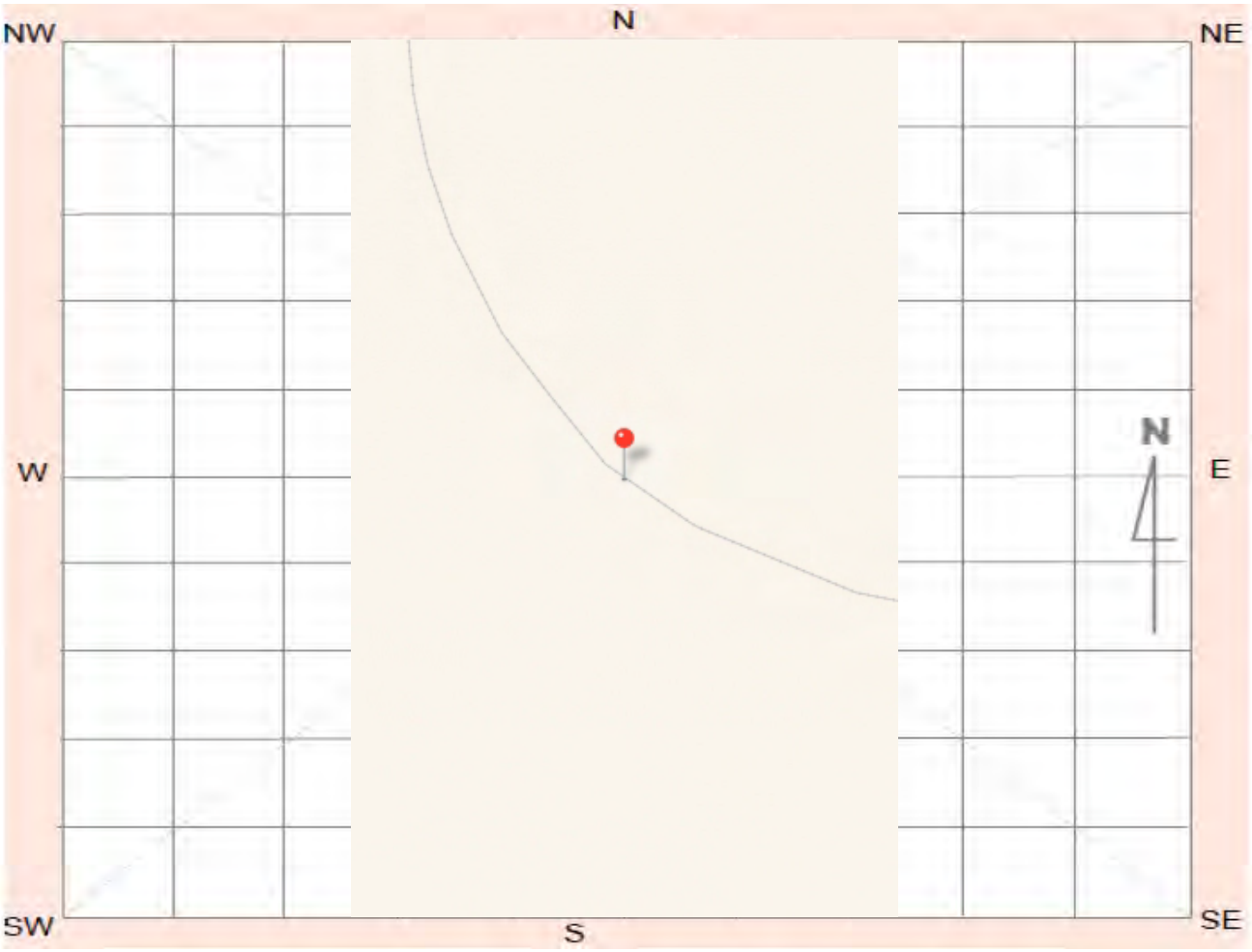
Land Form Unit: Slope **Vegetation:** Grasslands

Distance to Water (m): 4 **Primary Report:** Site Card

How to get to the site: Via avowal Operations Office

Other site information: Hearth remnants

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Hearth	1	5	5				

Description:

Several heat retainers. Termite mound remnant. Largest dimension approx 10cm

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

Features:

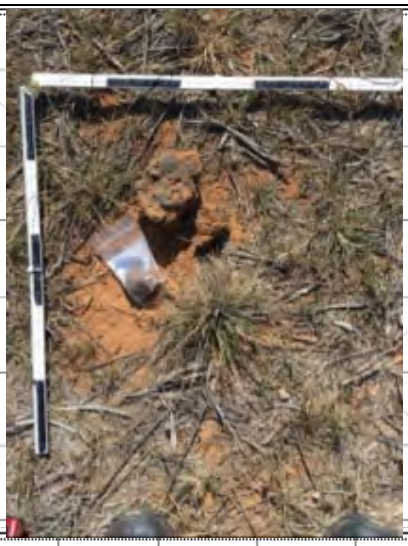
	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

Description:

Other Site Info: Hearth remnants

Site plan

Site photographs



Description: view of remnant hearth elements including collected fragment by Niche/CGO

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title	Surname	First name

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0124

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E40A OS

Easting 538011 Northing 6275979 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

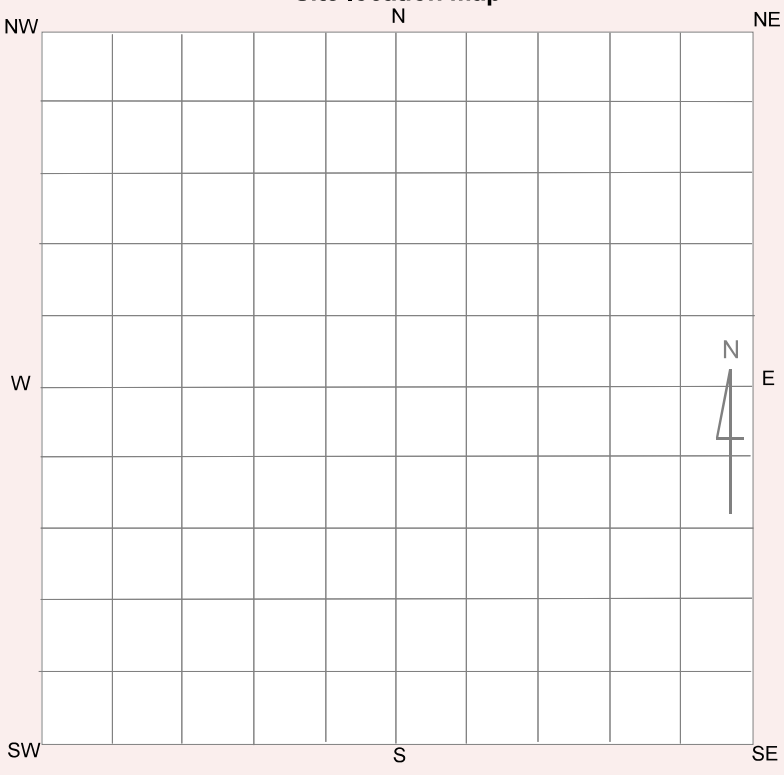
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	13 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

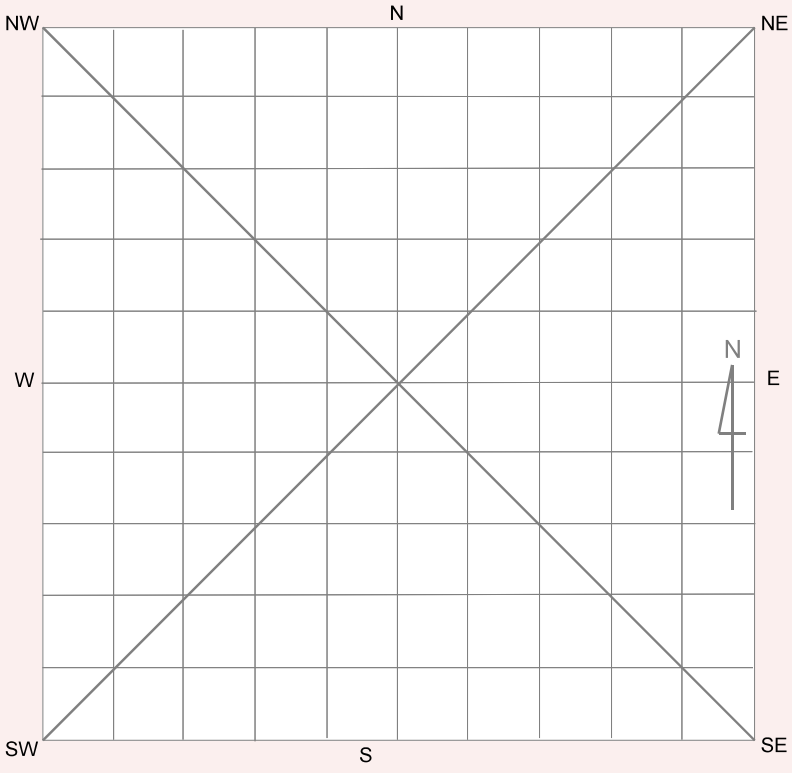
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [36] Total length of visible site
- [22] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E40A OS is a low-density artefact scatter consisting of 11 stone artefacts. Seven black chert flakes, one red silcrete flake, one silcrete blade flake, one grey silcrete flake and one crystal quartz flake.

E40A OS
Image © 2019 CNES / Airbus

8 cm

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 43-4-0140 **Date recorded:** 18-03-2020

Site Location Information

Site name: IWL South-ST1

Easting: 533143 **Northing:** 6277835 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Reid	Taylar

Organisation: EMM Consulting Pty Ltd

Address: 175 Scott Street

Phone: 0249074800 **E-mail:** treid@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Mining

Land Form Unit: Plain **Vegetation:** Cleared

Distance to Water (m): 1183 **Primary Report:**

How to get to the site: Private property, access required through Evolution Mining.

Other site information:

Site location map

Site contents information

open/closed site: Open

Site condition: Poor

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	150	20	20	0	Elongated	Box

Description:

Elongated scar on the south-east side of a dead Grey Box tree. Located on the back plains zone.

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

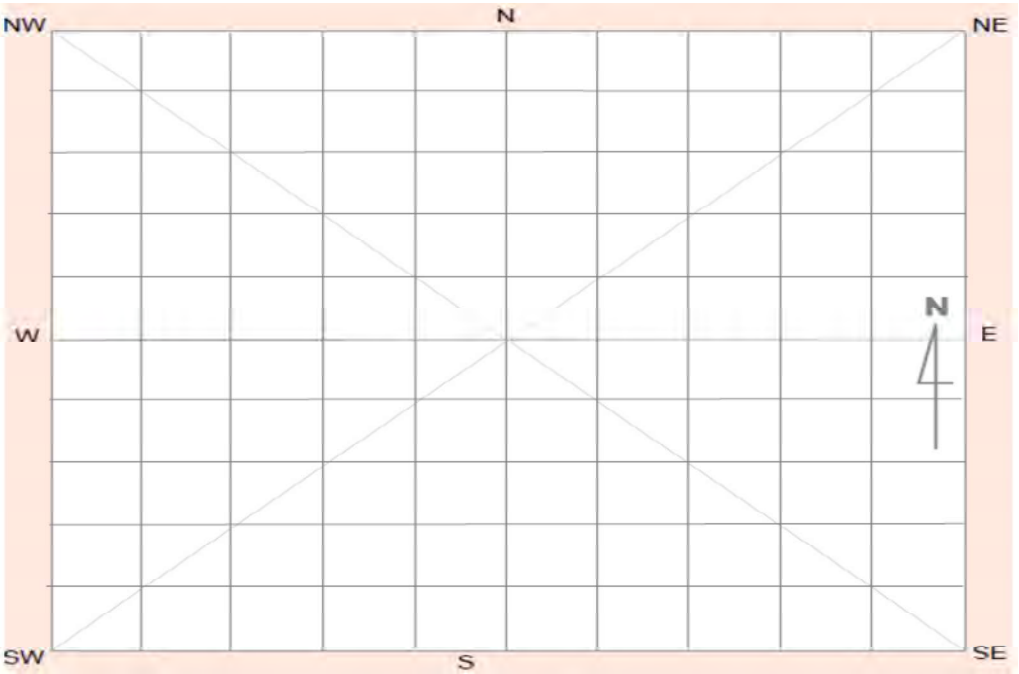
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

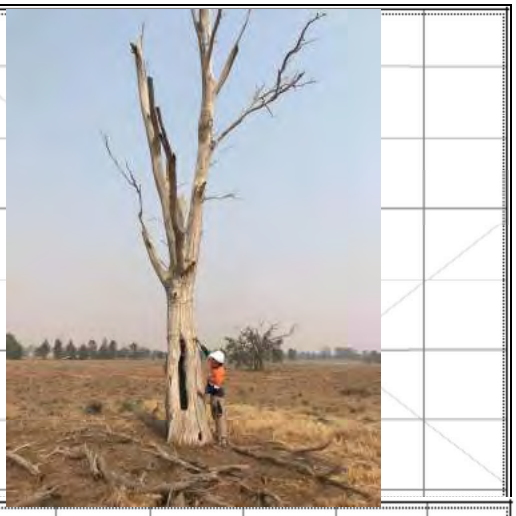
Description:

Other Site Info:

Site plan



Site photographs



Description: Context, view north-west

Description: Length, view north-west

Description: Width, view north-west

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0178 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_SC5

Easting: 542130 **Northing:** 6272881 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

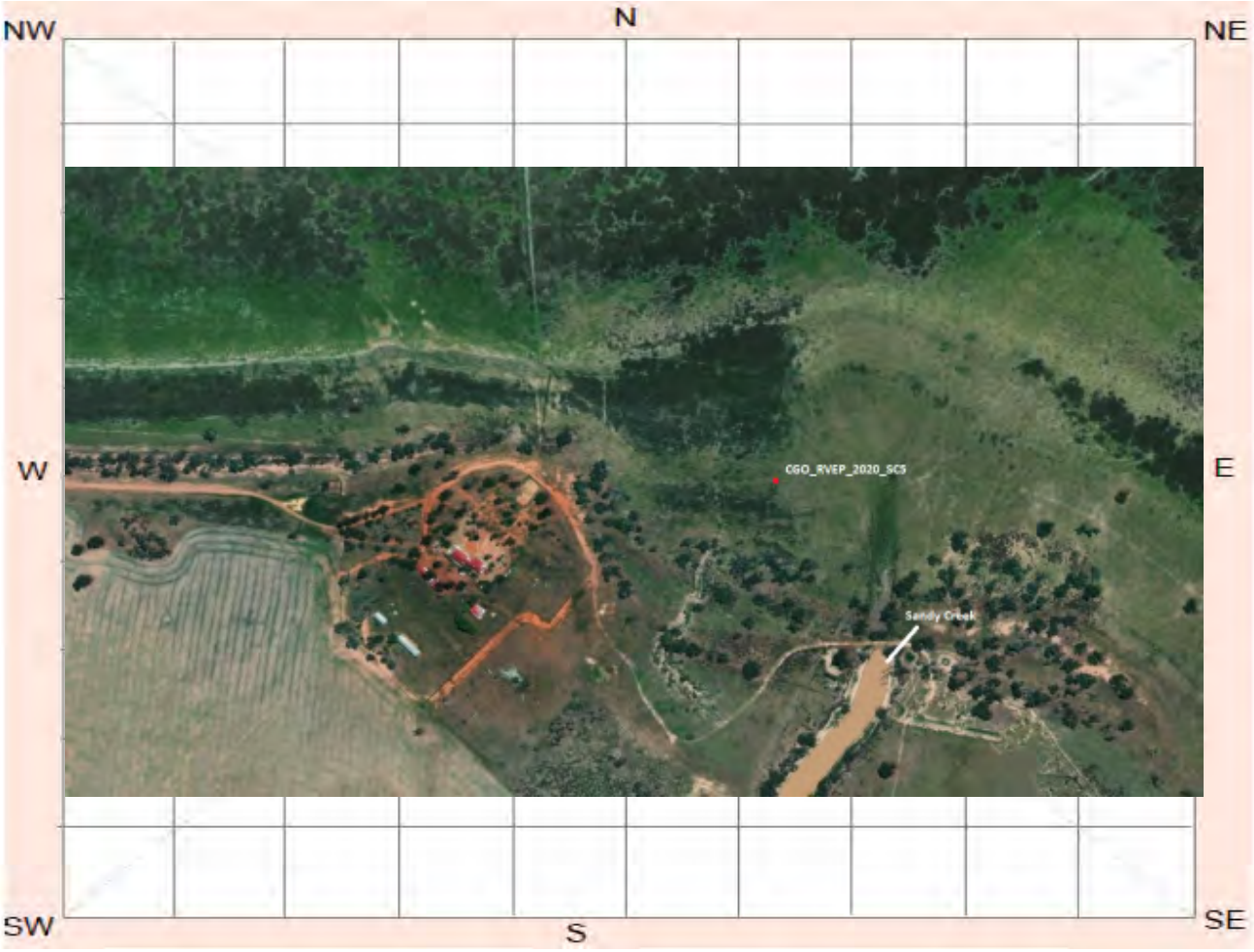
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 230 **Primary Report:**

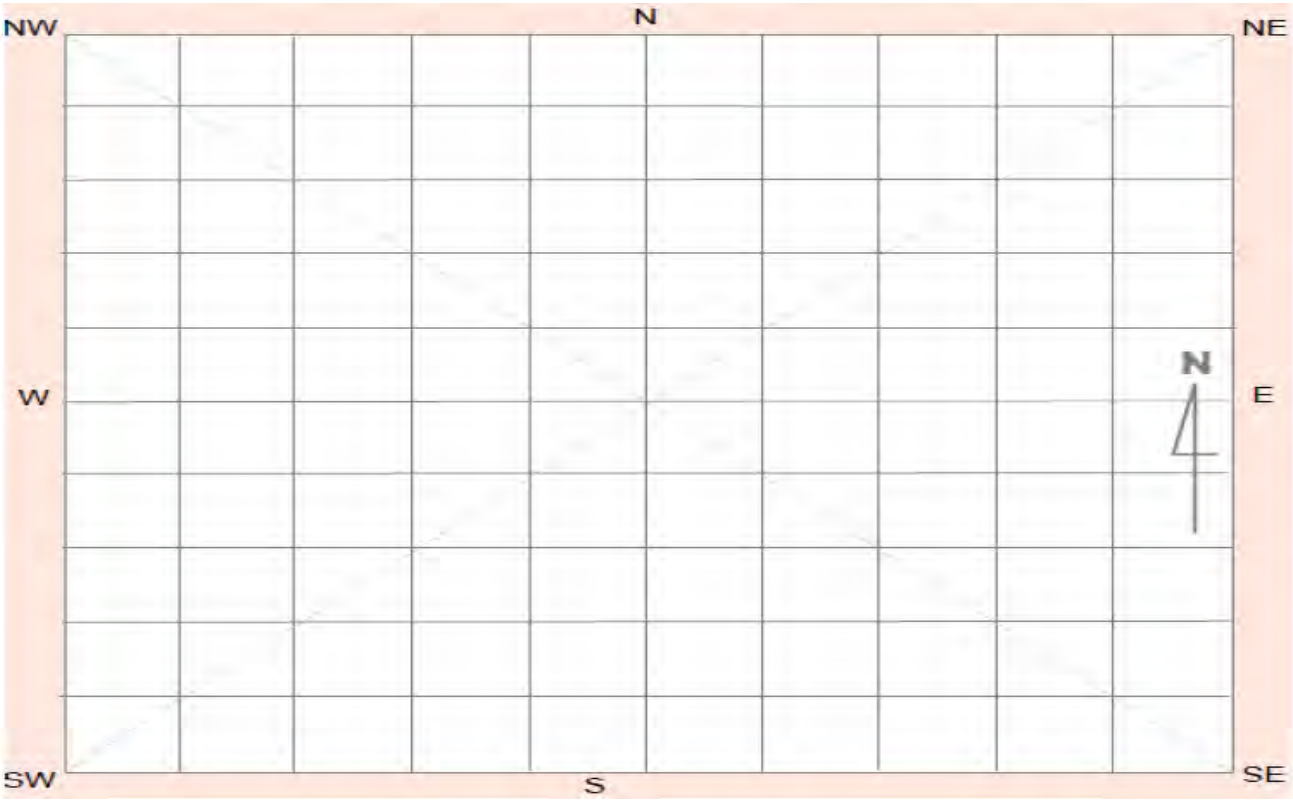
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Good

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Modified Tree	1	100	50	10	45	Oval	

Feature condition: Good

Description:

A mature eucalypt with an oval scar. The tree is dead but scar overgrowth and dry face are in good condition.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Feature condition:

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Other Eucalypt

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

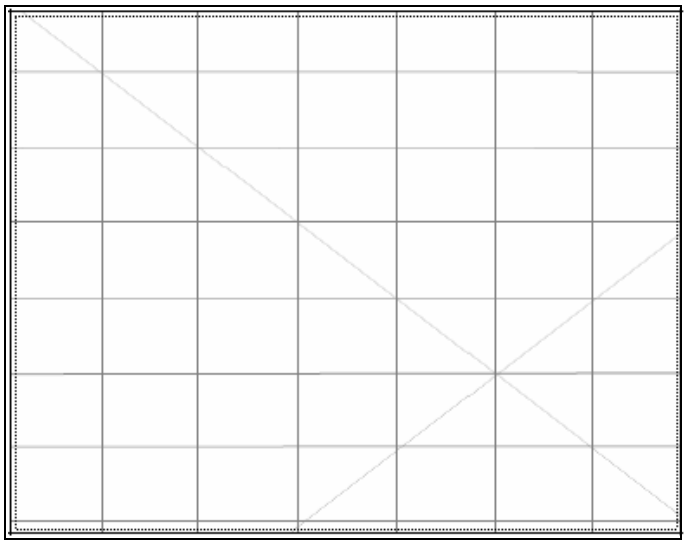
Feature condition:

Description:

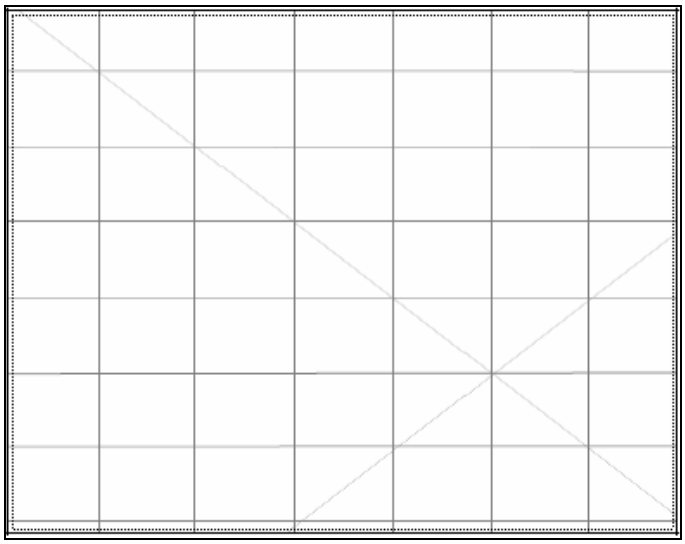
Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0179 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_IF2

Easting: 541854 **Northing:** 6272936 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

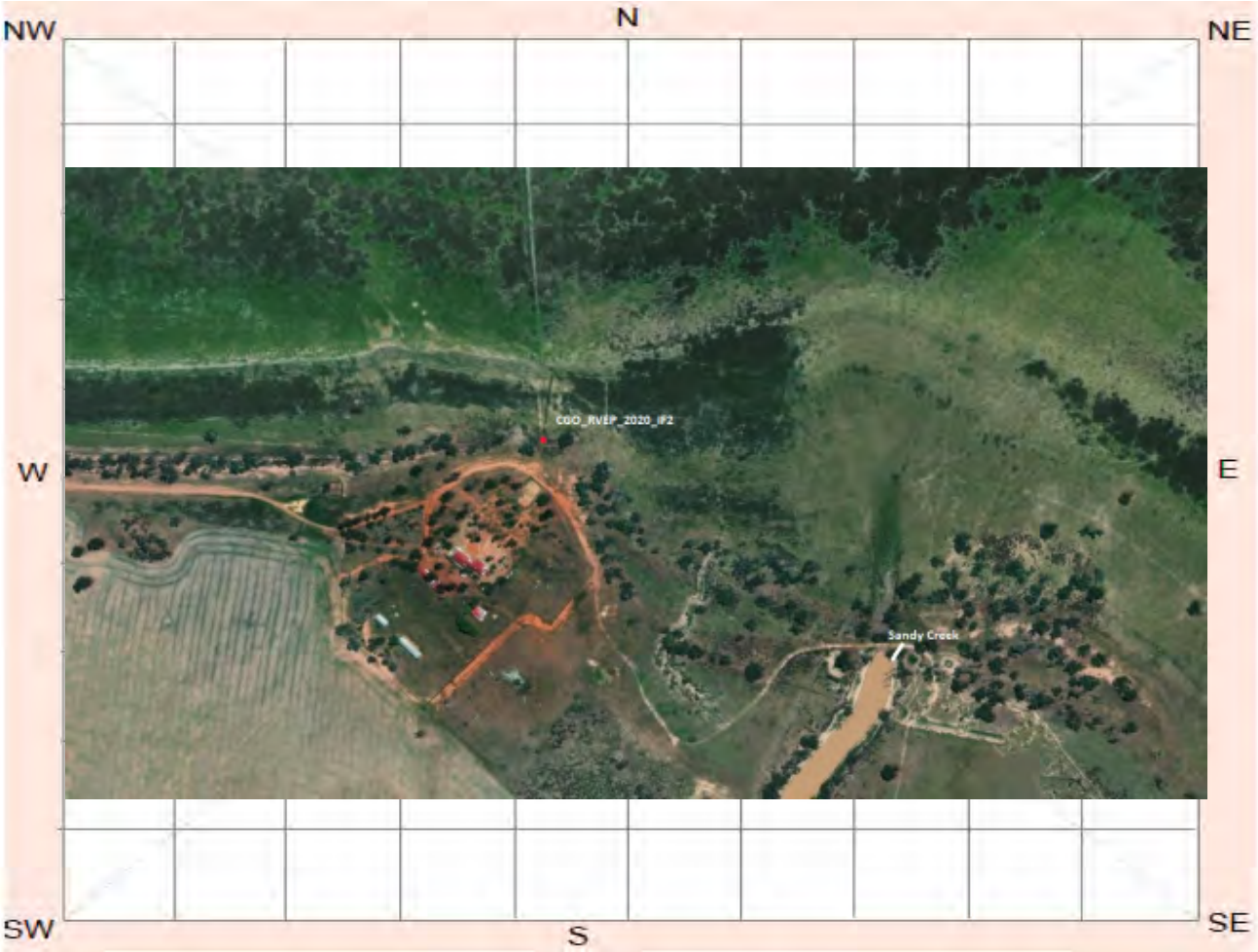
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 470 **Primary Report:**

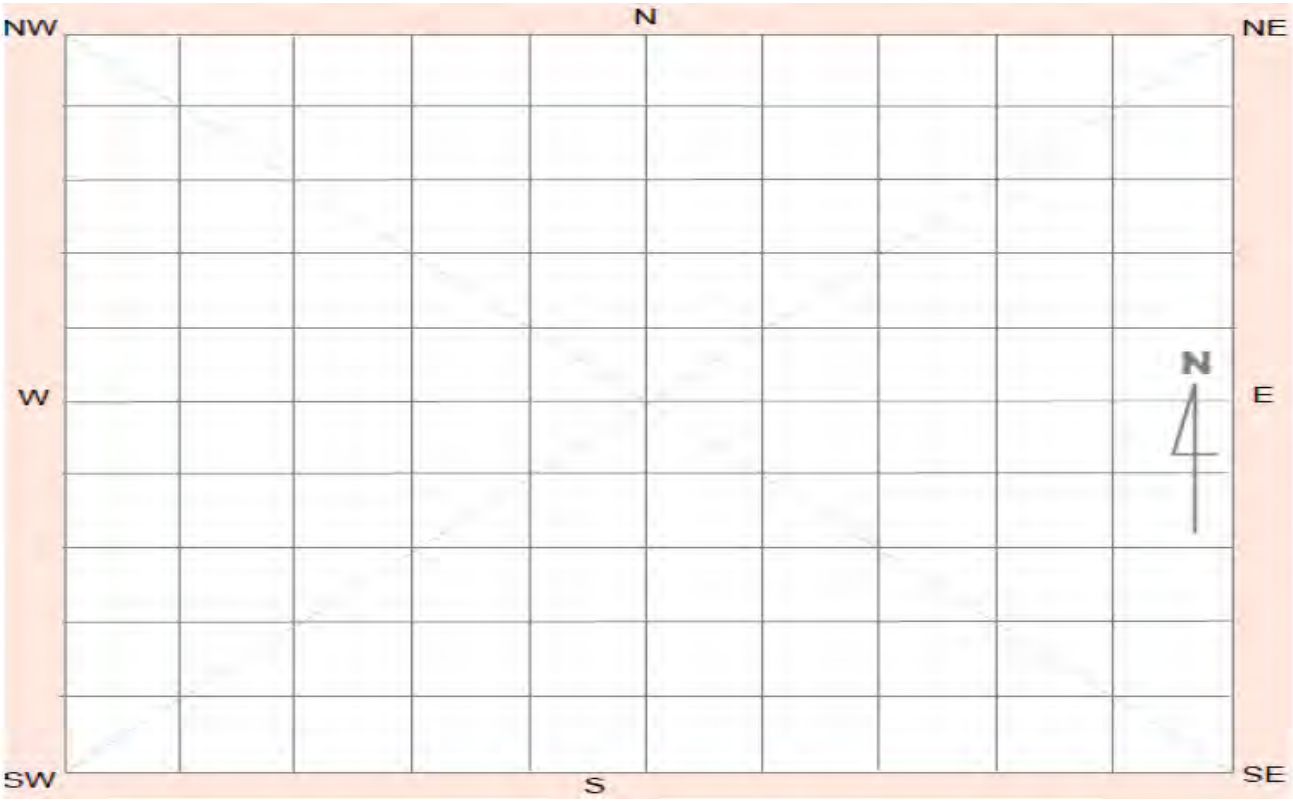
How to get to the site: Site is located on private property, access to site must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Artefact	1	1	1				

Feature condition: Disturbed

Description:

Isolated find comprising of a single grey chert identified in an existing vehicle track.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

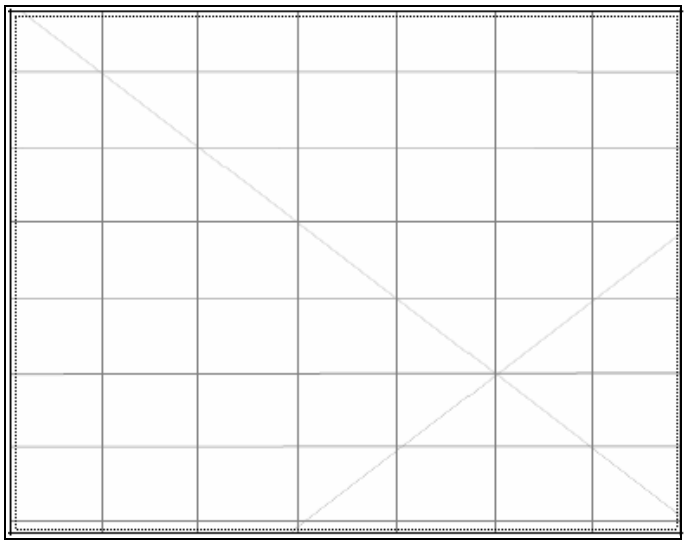
Feature condition:

Description:

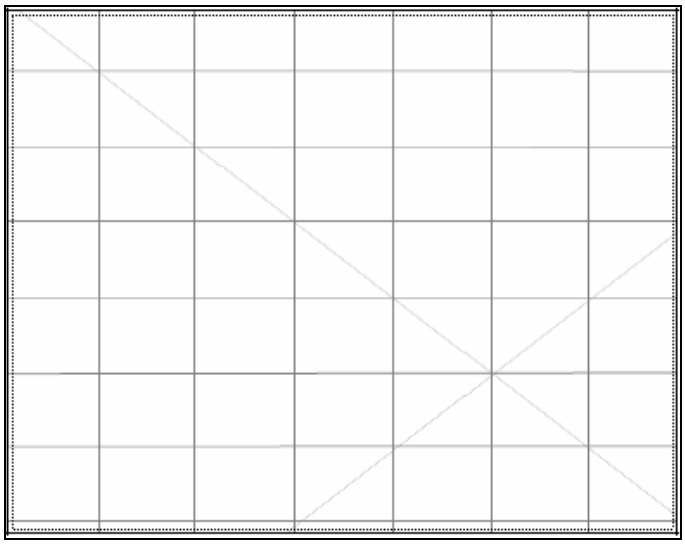
Site photographs

Description: Artefact found at Cowal Gold Mine on an existing vehicle track.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0180 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_OS2

Easting: 542290 **Northing:** 6272755 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

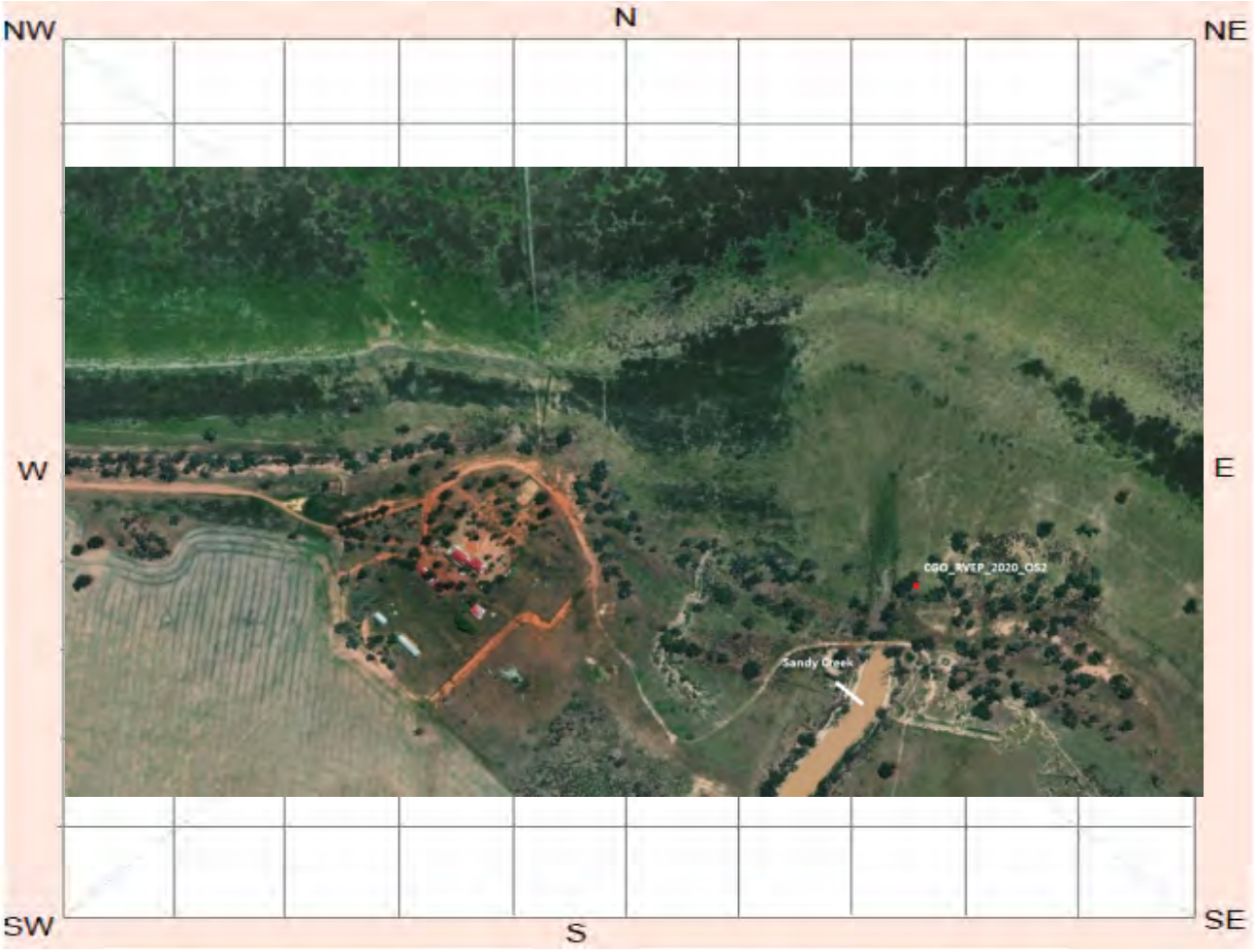
Land Form Unit: Lagoon **Vegetation:** Open Woodland

Distance to Water (m): 80 **Primary Report:**

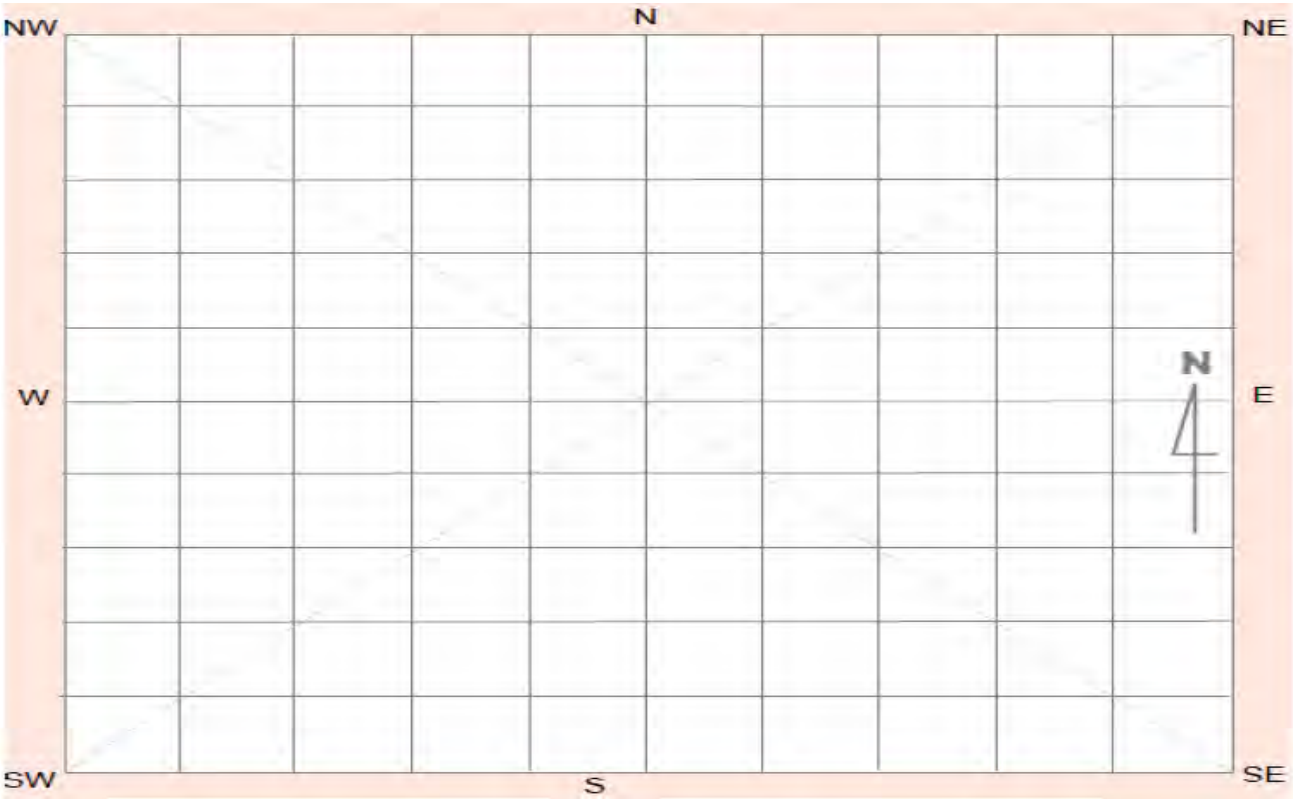
How to get to the site: Site located on private property, access should be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Exposed Archaeo

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	18	1	1				

Feature condition: Weathering

Description:

Artefact scatter comprises of 16 stone artefacts of various stone materials including quartz, chert, basalt and quartzite. The site includes a sandstone grind stone fragment and a basalt hammerstone.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.								

Feature condition:

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.								

Feature condition:

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.								

Feature condition:

Description:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.								

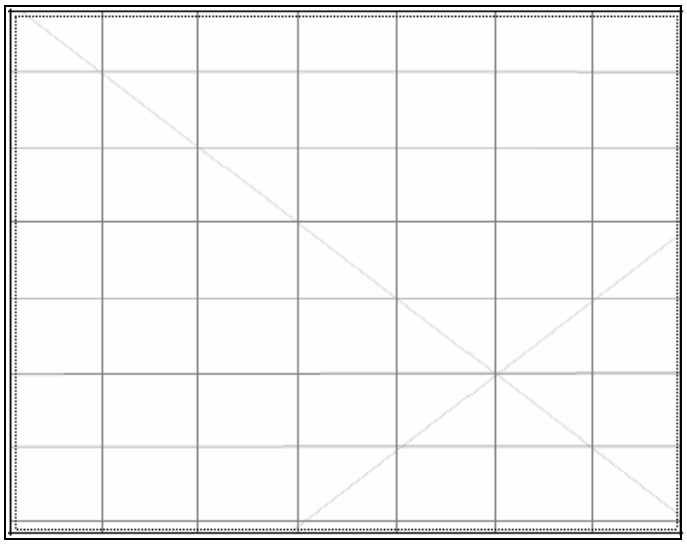
Feature condition:

Description:

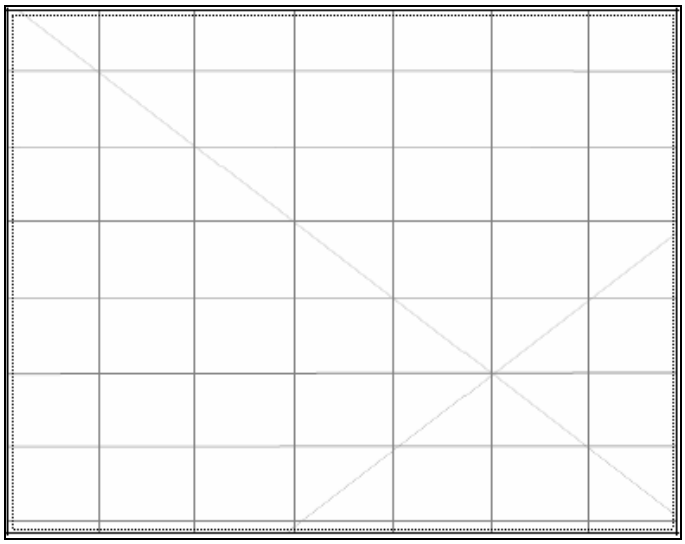
Site photographs

Description: Artefact scatter found at Cowal Gold Mine, site is centered around a scar tree.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0181 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_SC4

Easting: 542298 **Northing:** 6272765 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

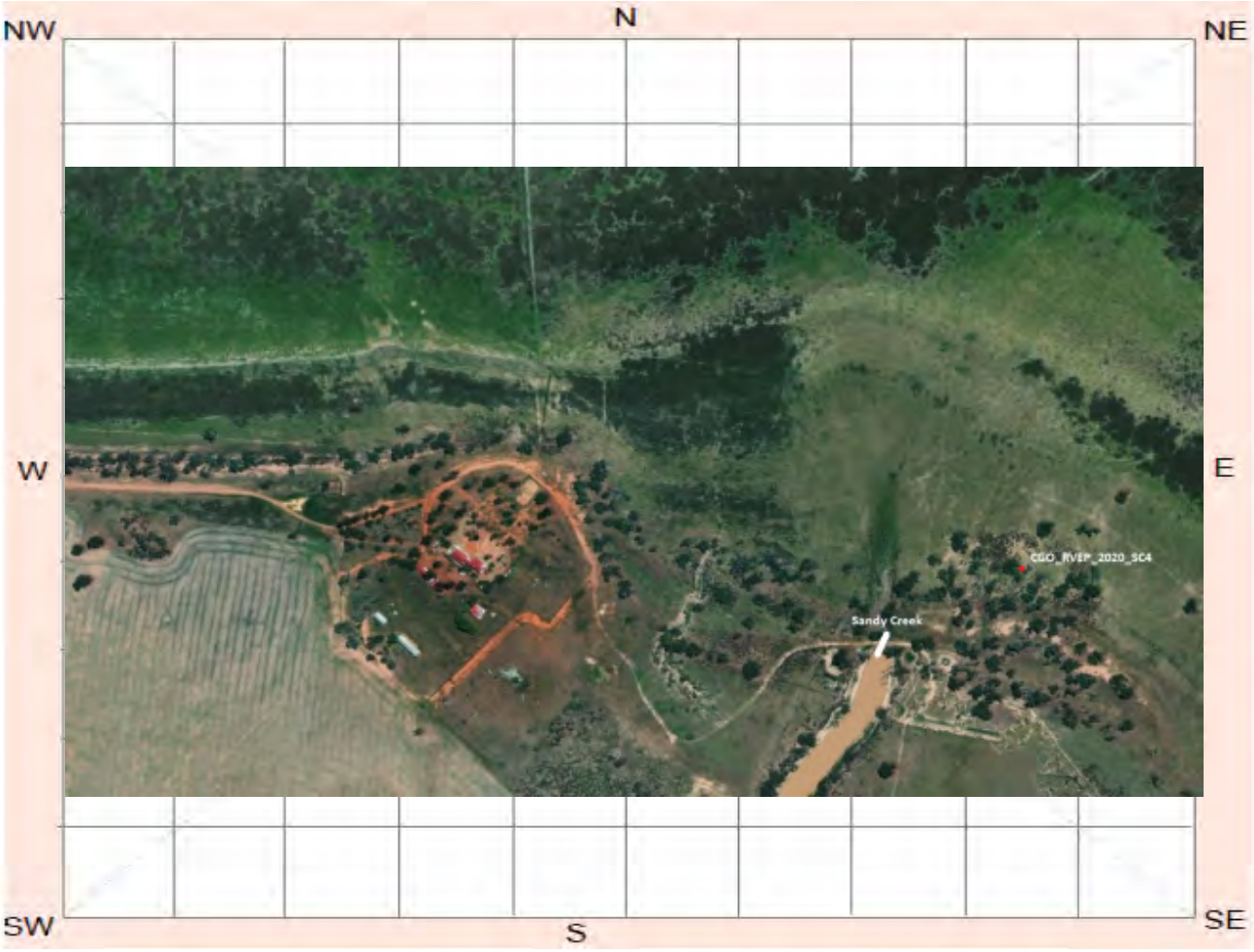
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 190 **Primary Report:**

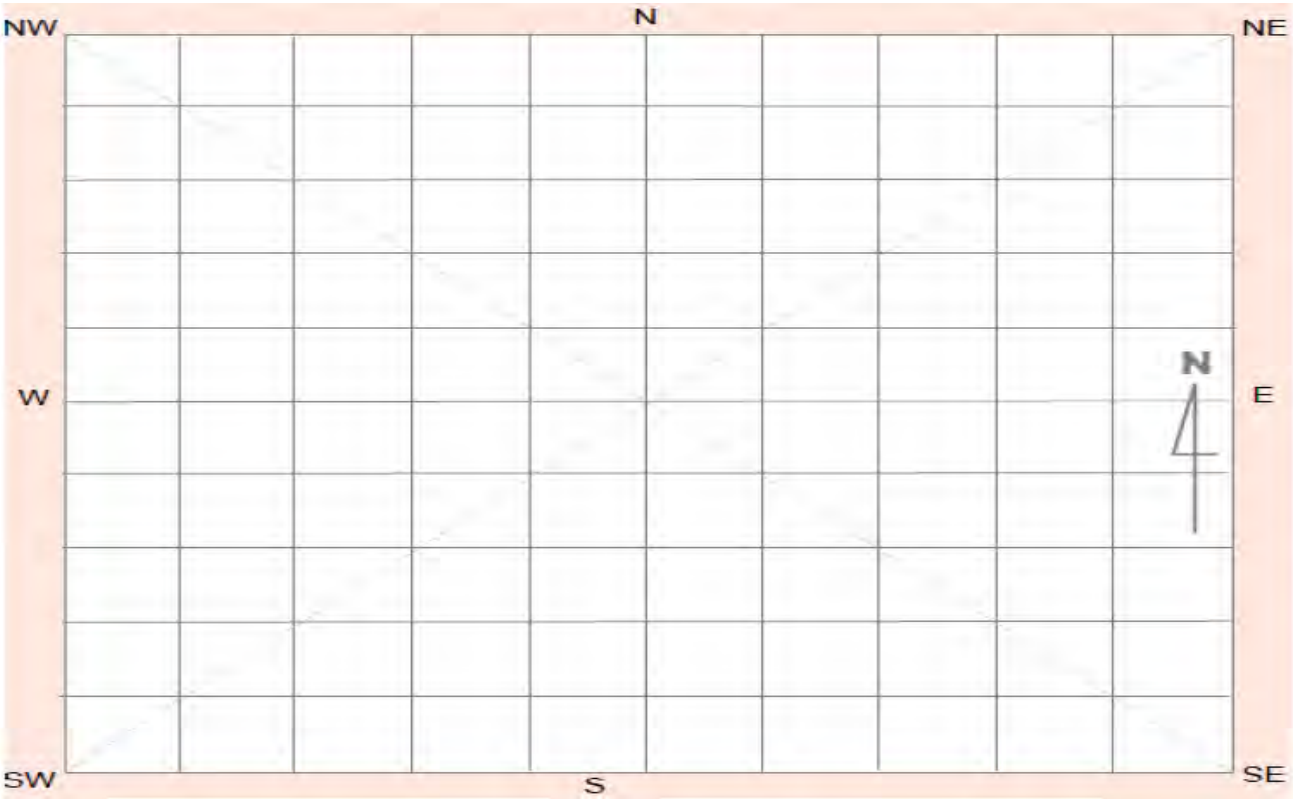
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Modified Tree	1	0	40	5	15	Oval	

Feature condition: Disturbed

Description:

A mature eucalypt with the remnants of an oval scar. The tree is partially fallen which has removed a significant portion of the original scar. The remaining scar has clearly defined overgrowth and a well-preserved section of dry face.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Other Eucalypt

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

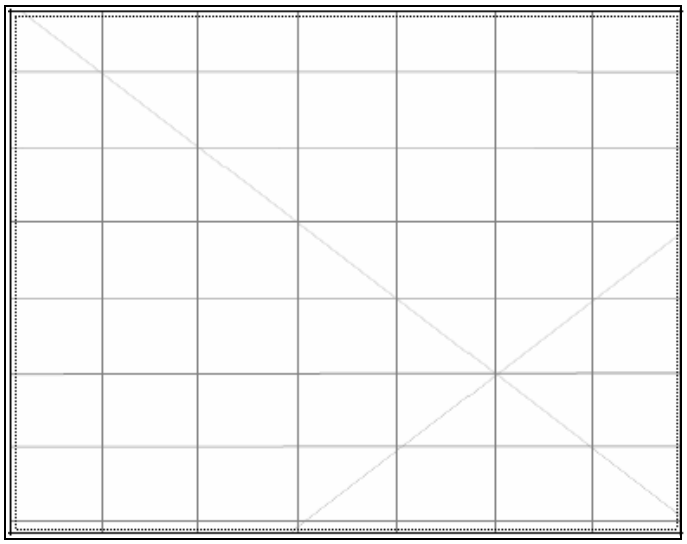
Feature condition:

Description:

Site photographs

Description: Scarred tree located a Cowal Gold Mine.

Description:



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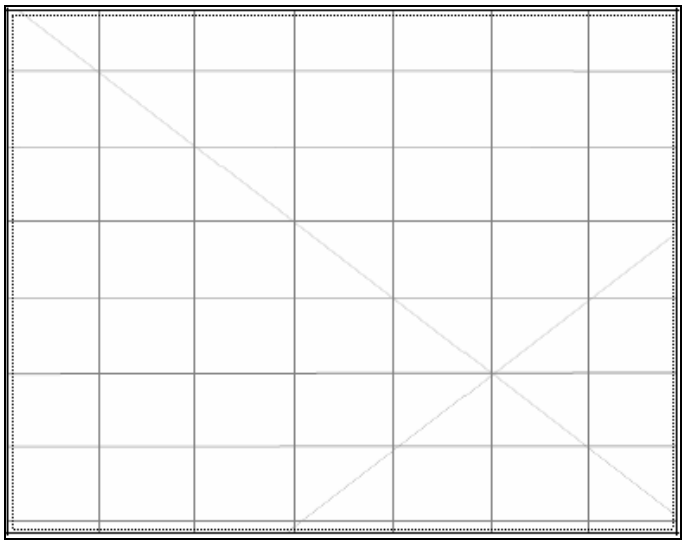


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0182 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_SC3

Easting: 542298 **Northing:** 6272765 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

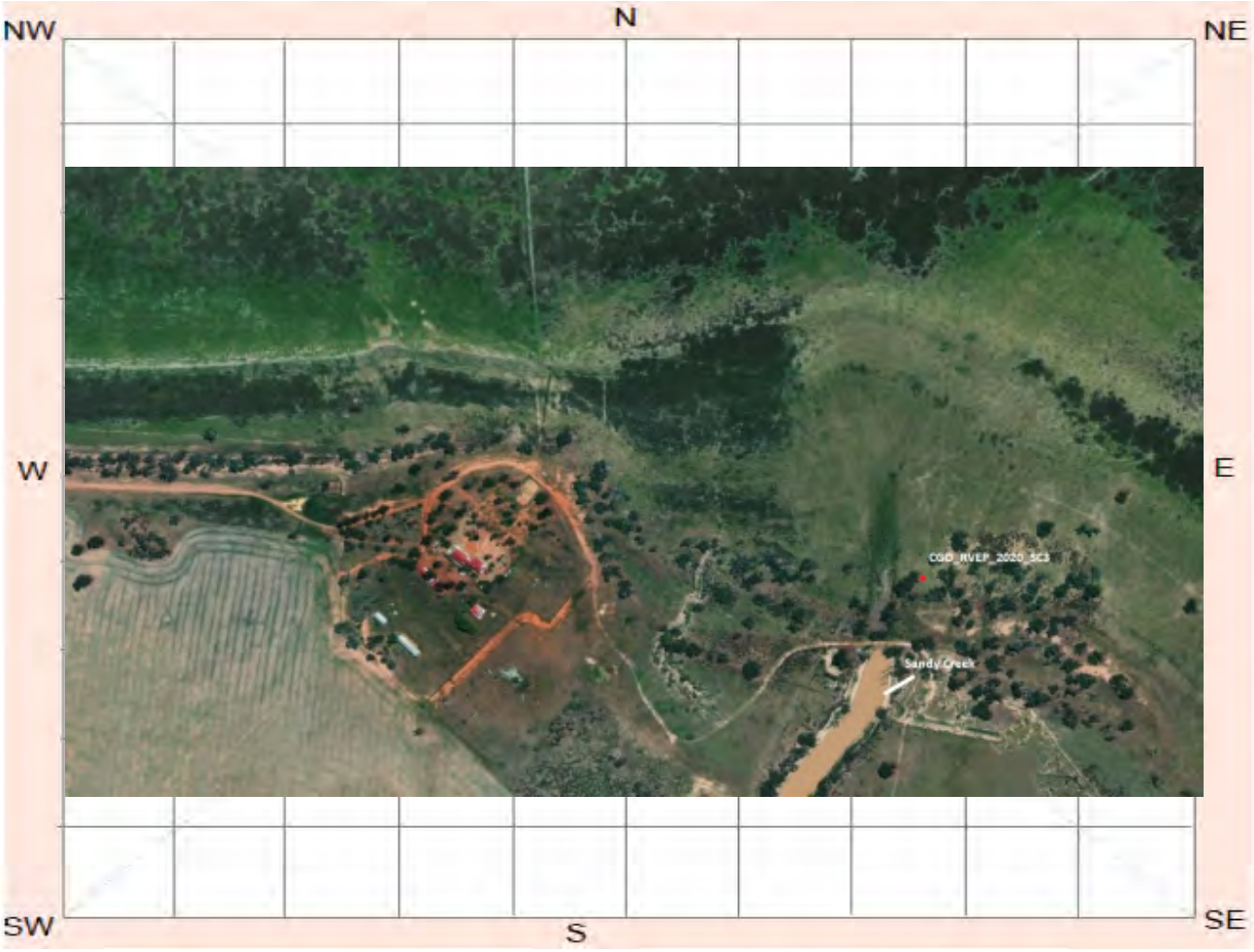
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 100 **Primary Report:**

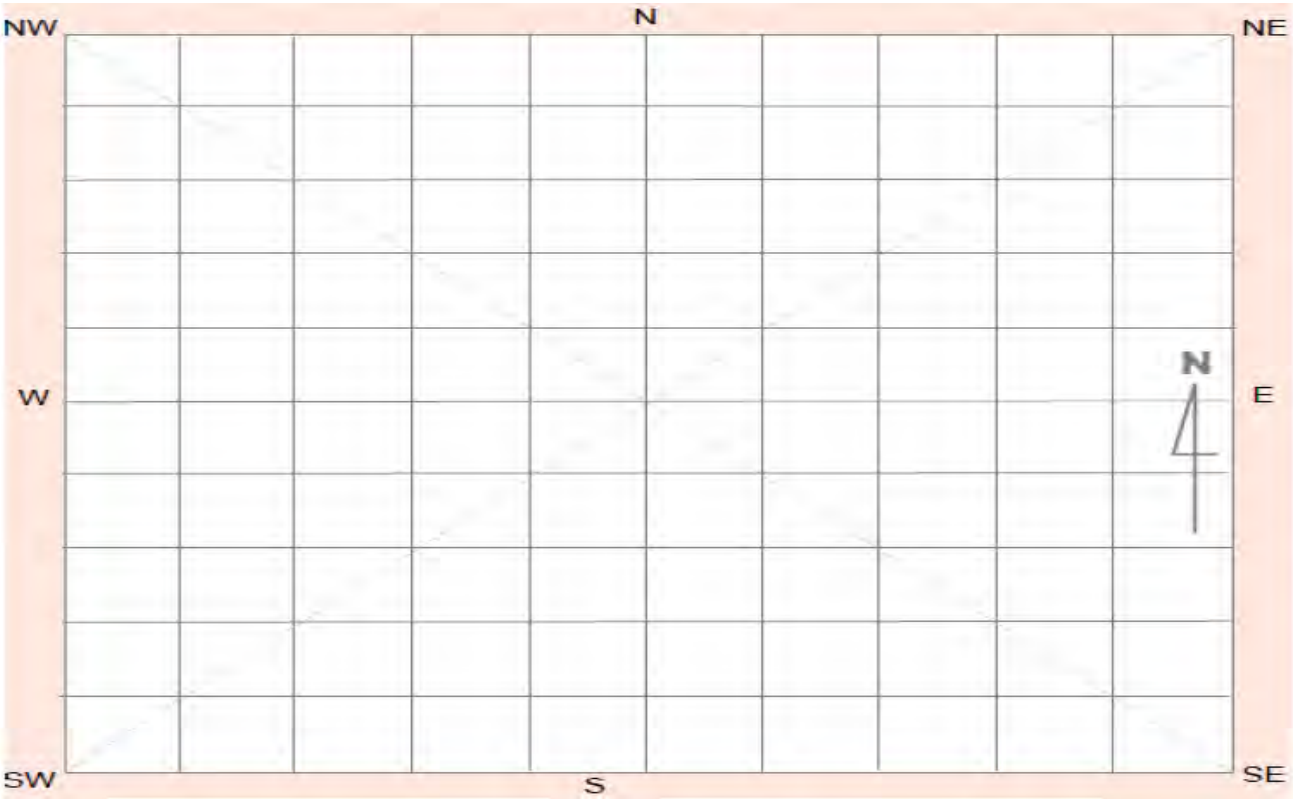
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Modified Tree	1	180	30	5	15	Oval	

Feature condition: Disturbed

Description:

The site is a mature red gum with an oval scar adhering to the typically curved pre-form bark removal scar type which are taken from the naturally curved profile of trees. Tree is standing and alive and dry face is largely intact but with some evidence of post-scarring of the dry face sapwood.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Red Gum

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

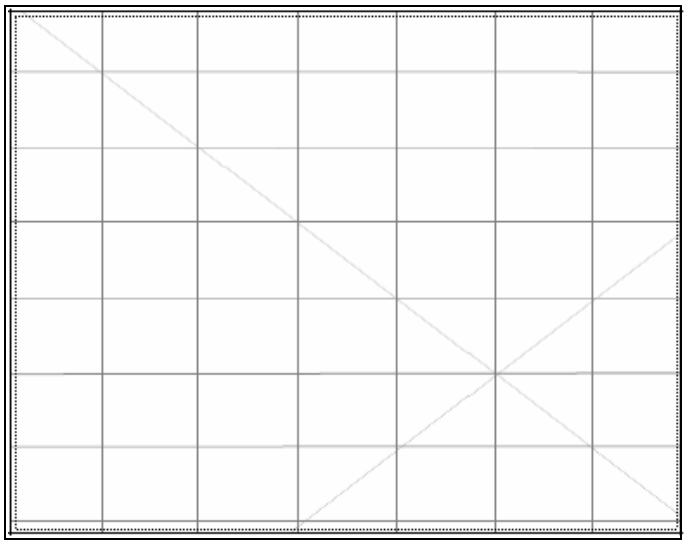
Feature condition:

Description:

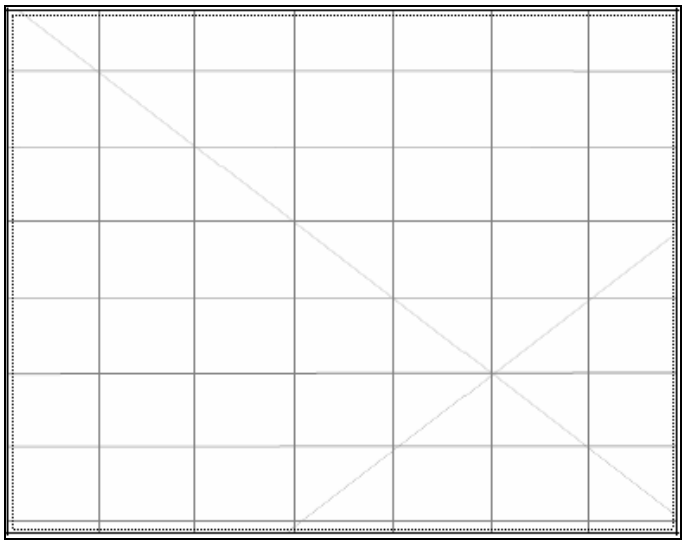
Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0183 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_OS1

Easting: 542514 **Northing:** 6272370 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

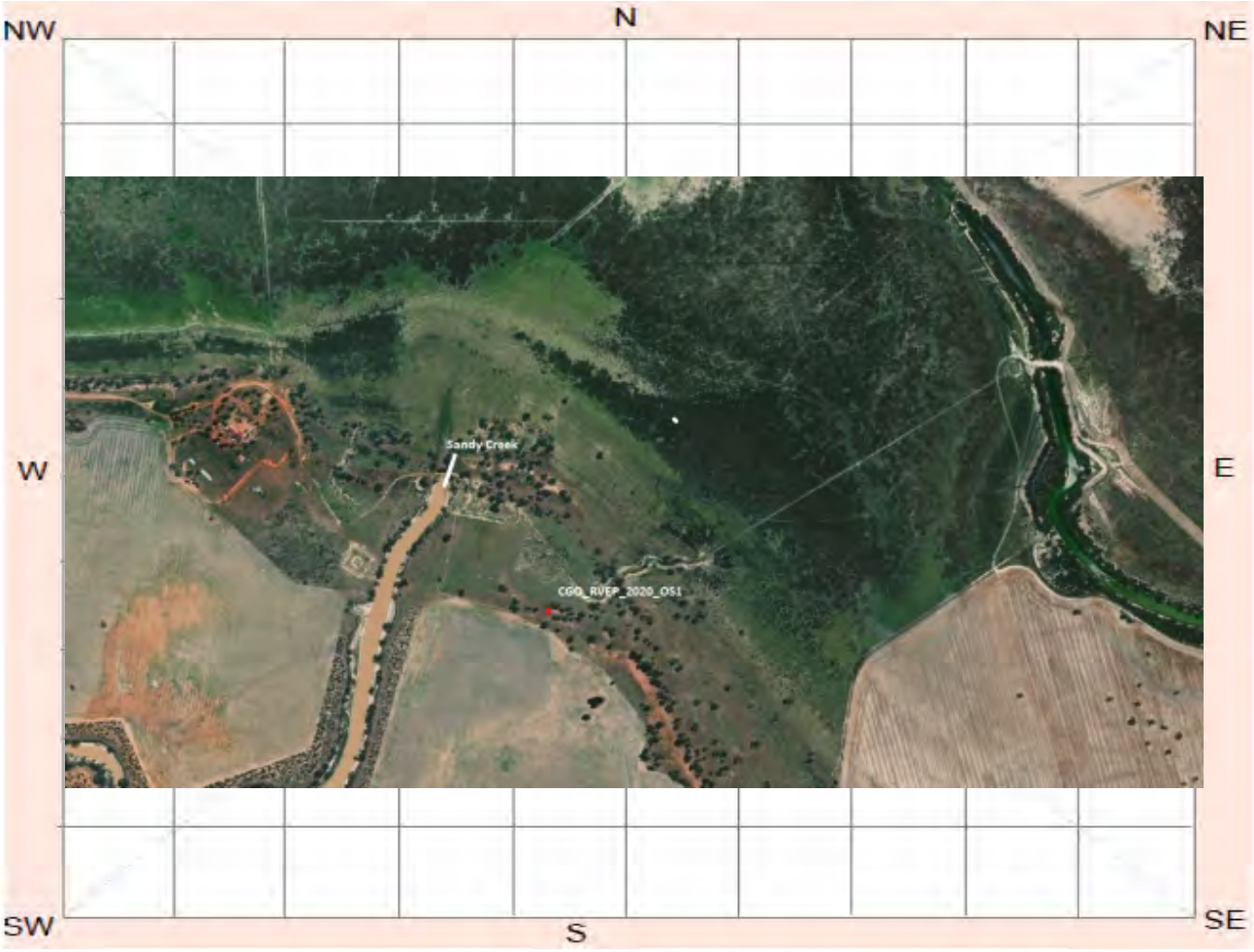
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 350 **Primary Report:**

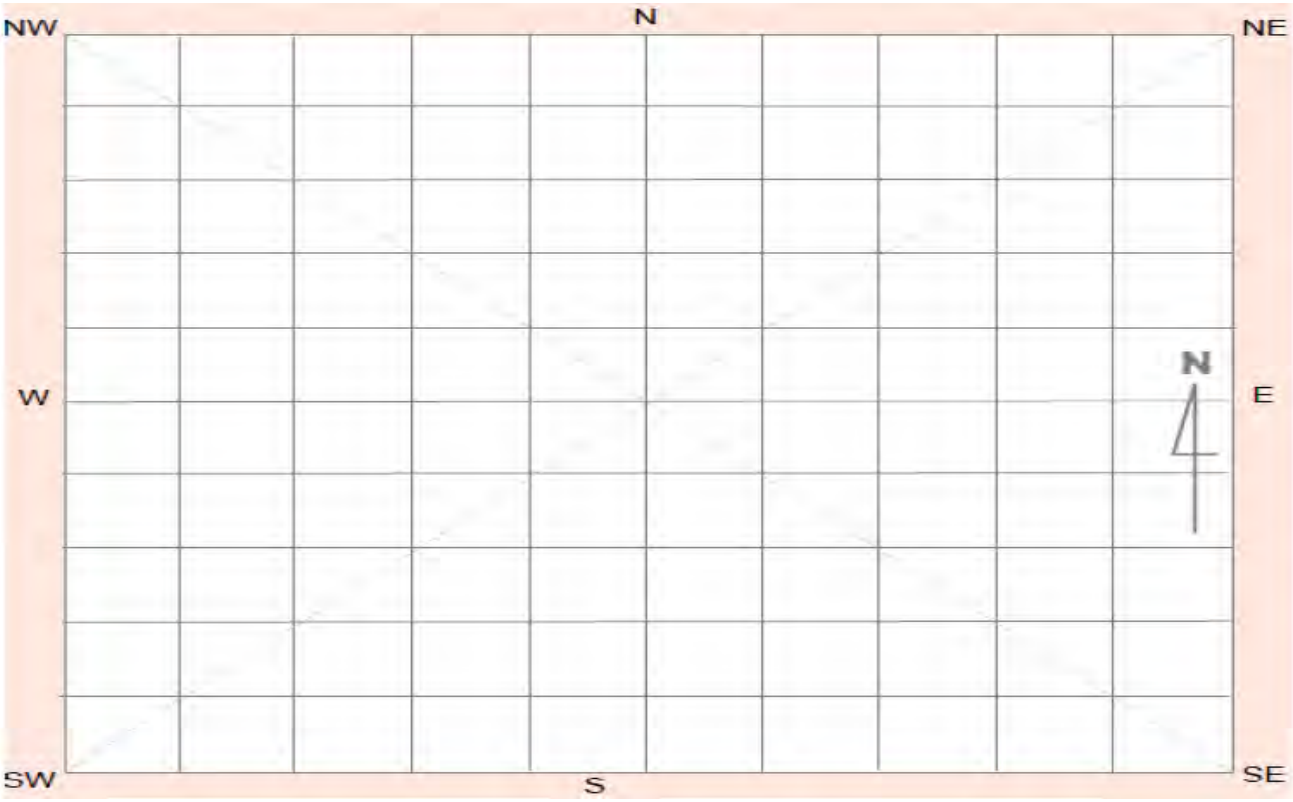
How to get to the site: Site is located on private property, access to site has to be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Disturbed

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Artefact	2	1	1				

Feature condition: Disturbed

Description:

Site comprised of a grey quartzite flake and a hammerstone of volcanic material. Hammerstone has fractured in two locations from direct force- possibly during knapping event.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

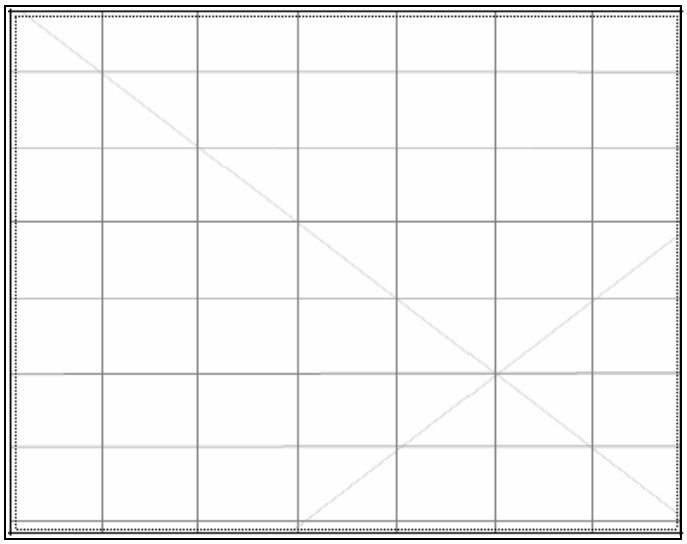
Feature condition:

Description:

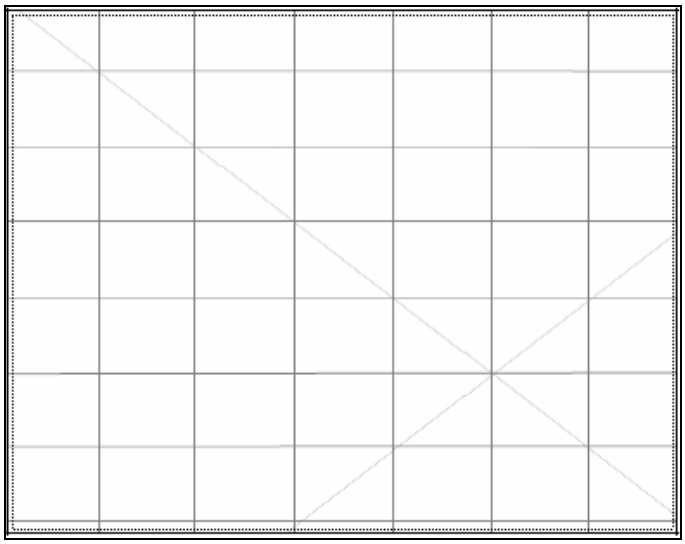
Site photographs

Description: Artefact scatter located on Cowal Gold Mine extending over a 5m x 5m salt scald.

Description:



Description:



Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0184 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_SC1

Easting: 542518 **Northing:** 6272355 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 380 **Primary Report:**

How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map

Site plan

Site contents information

open/closed site: Open **Site condition:** Weathering

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	100	20	25	10	Oval	

Feature condition: Weathering

Description:

The site is a mature red gum with an oval scar on the inside of one of the trees co-dominant stems. The scarred stem is dead while the other stem is living. Scar dry face is missing.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Red Gum

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

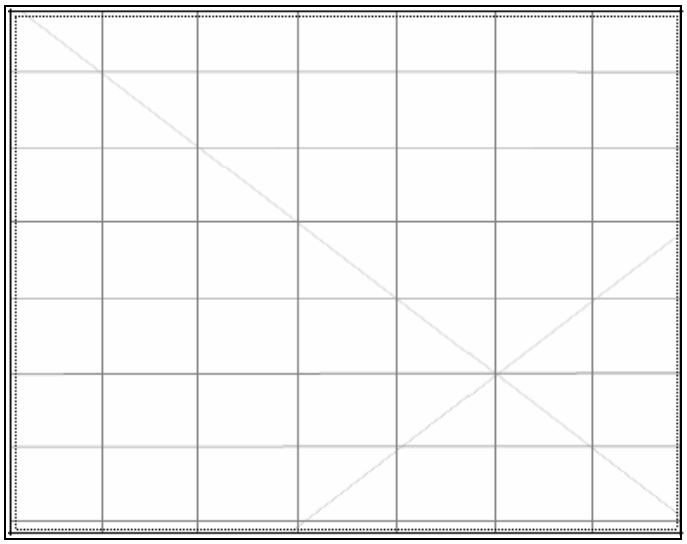
Feature condition:

Description:

Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description:



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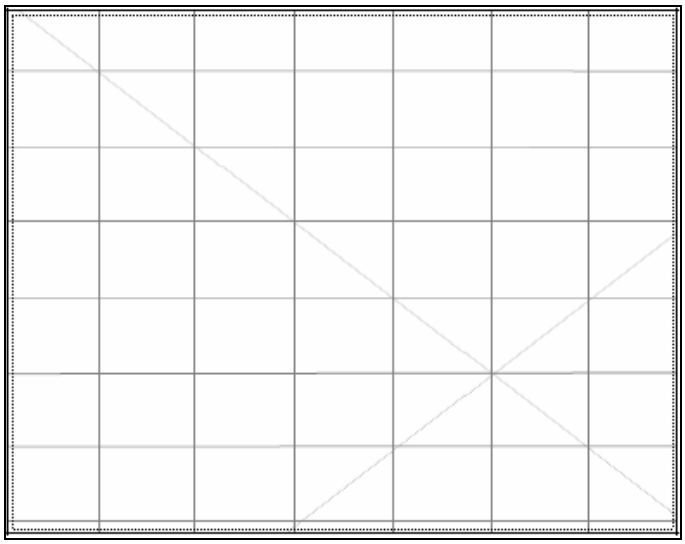


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0185 **Date recorded:** 02-02-2023

Site Location Information

Site name: CGO_RVEP_2020_SC2

Easting: 542650 **Northing:** 6272392 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Pastoral/Grazing

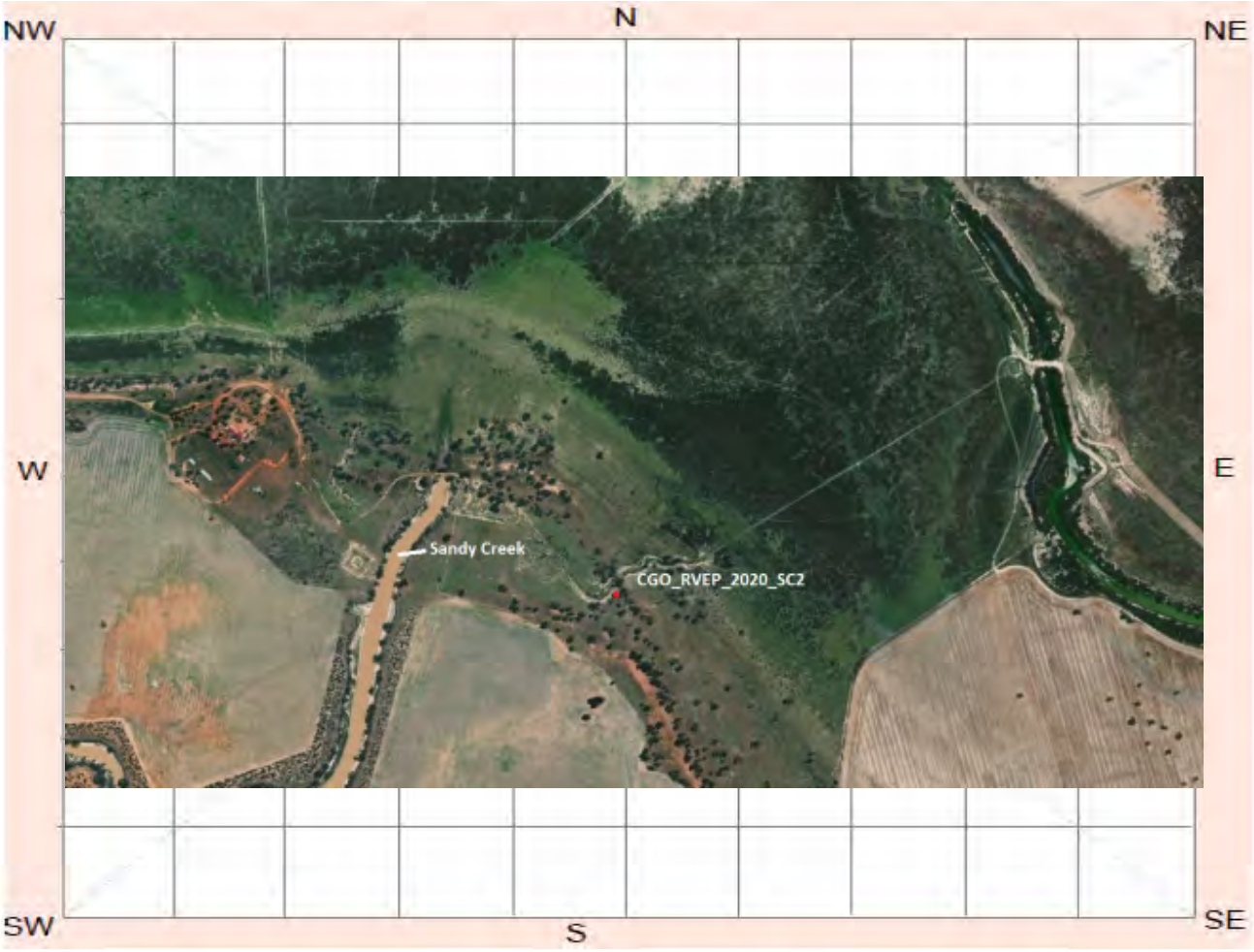
Land Form Unit: Flat **Vegetation:** Open Woodland

Distance to Water (m): 510 **Primary Report:**

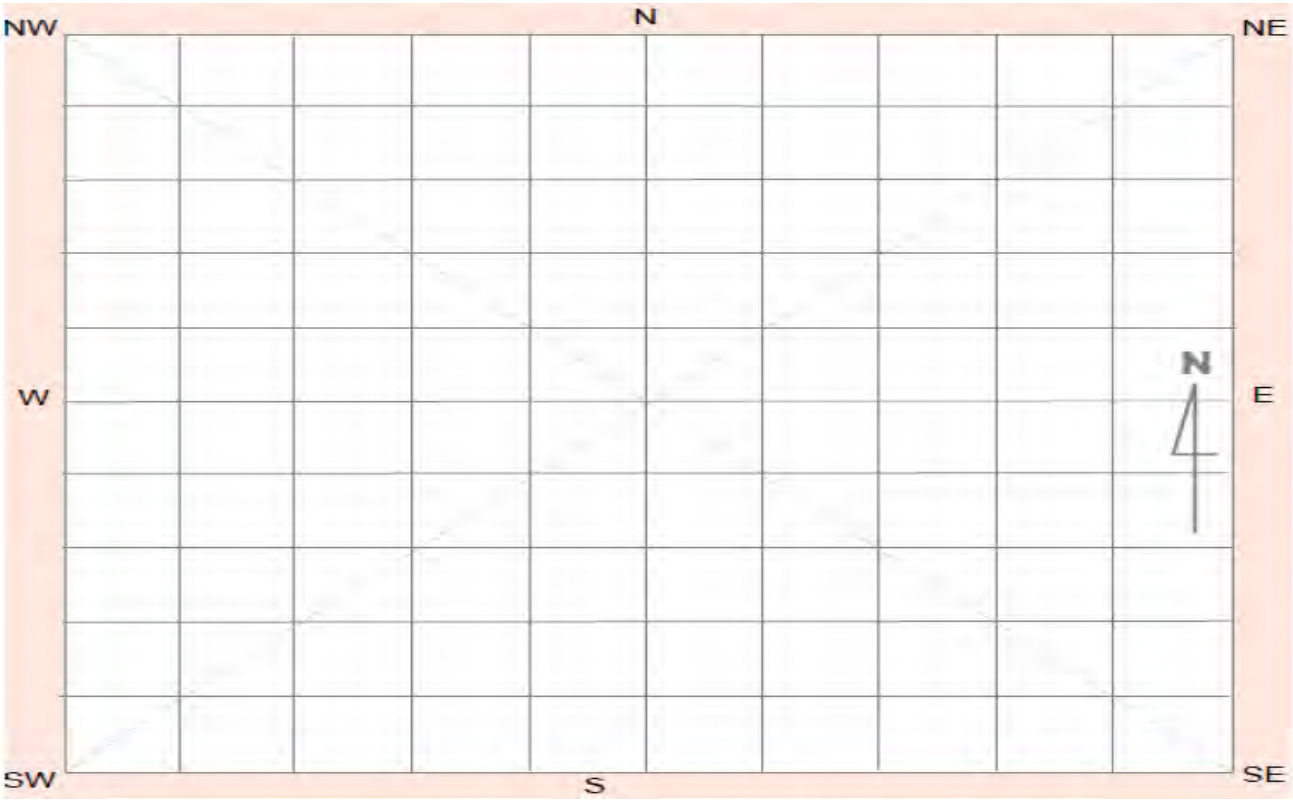
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Weathering

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	100	20	5	15	Oval	

Feature condition: Disturbed

Description:

A mature red gum with an oval scar on the inside of one of the trees co-dominant stems. Scarred stem is currently alive. Scar dry face is missing.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Red Gum

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

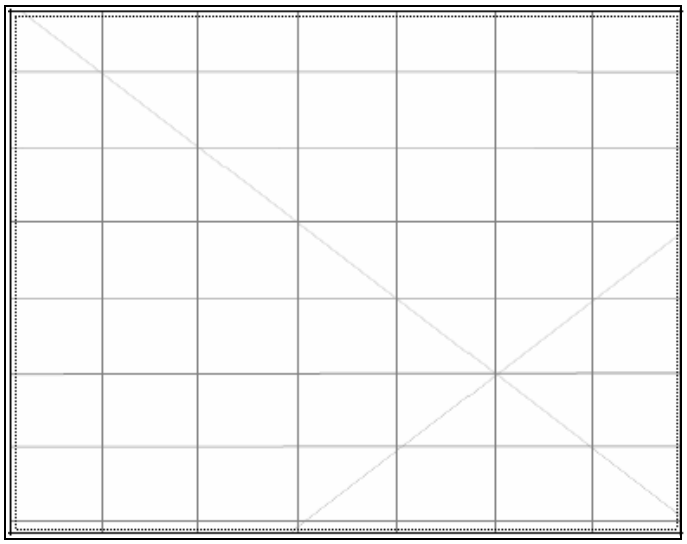
Feature condition:

Description:

Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description: Close up of scarred Tree located at CGO.



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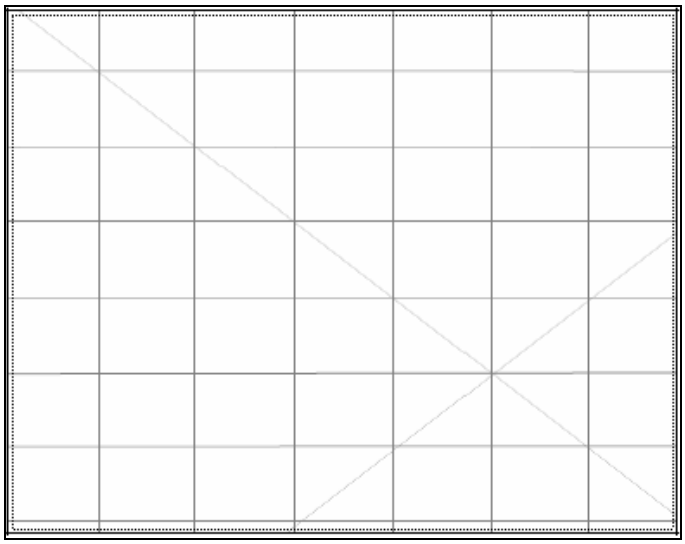


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0186 **Date recorded:** 06-02-2023

Site Location Information

Site name: CGO_Pipe_2019_ST1

Easting: 546370 **Northing:** 6281325 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

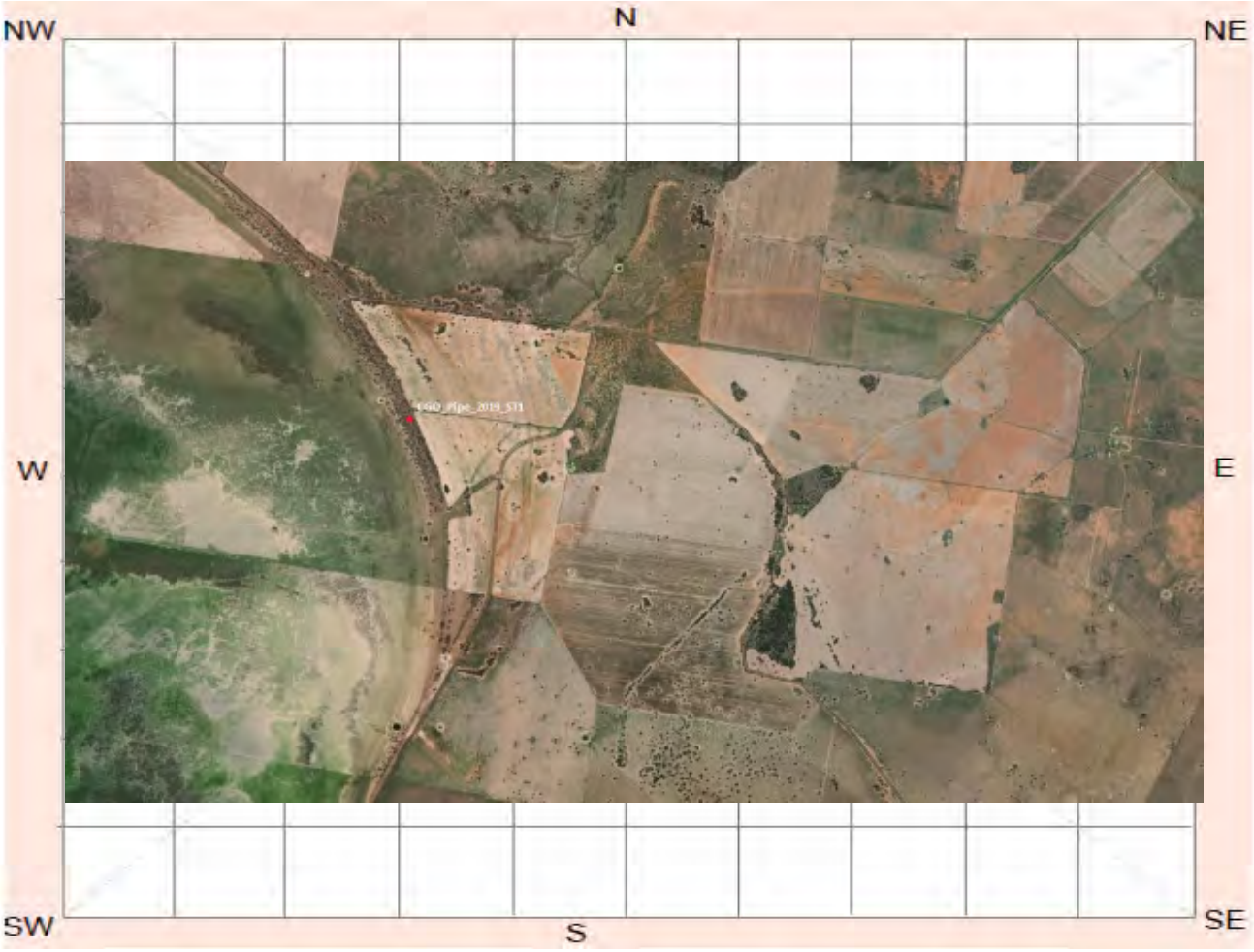
Land Form Unit: Beach **Vegetation:** Open Forest

Distance to Water (m): 140 **Primary Report:**

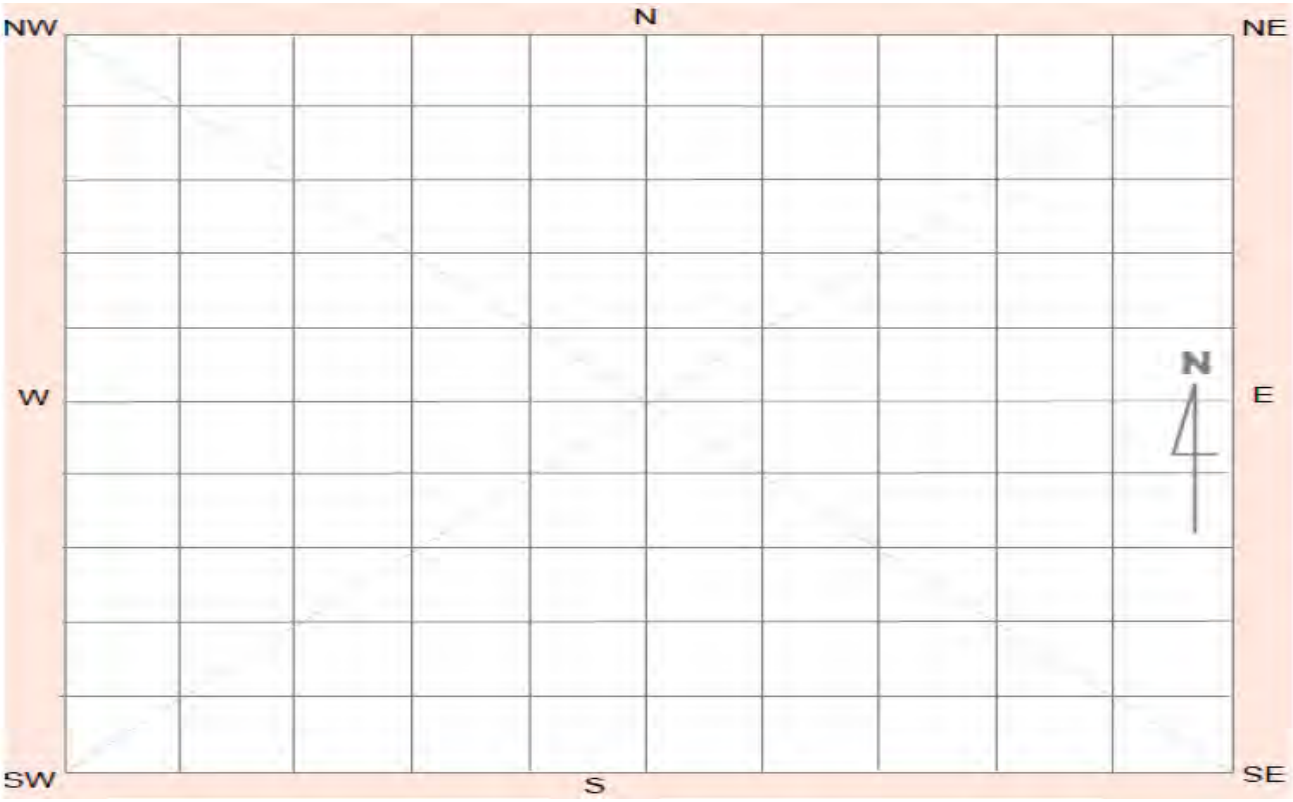
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Weathering

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	100	15	15	60	Rectangular	

Feature condition: Weathering

Description:

Living bimble box tree, with scar, dry face present but decayed, other scars show unsuitable knots but this one does not have suitable face.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

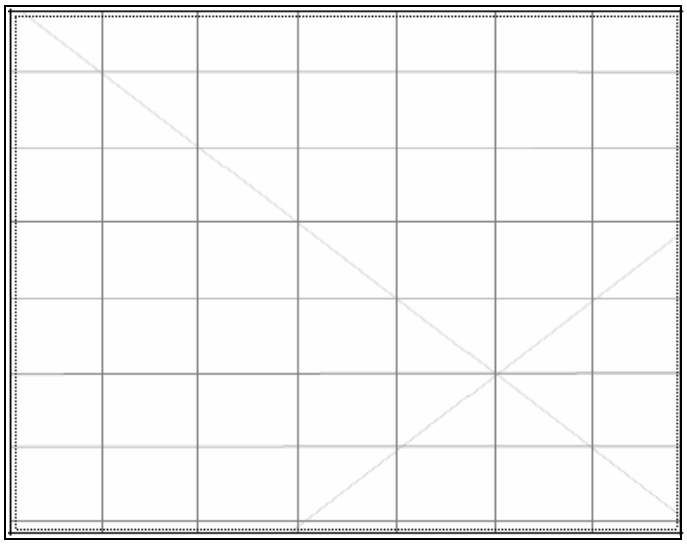
Feature condition:

Description:

Site photographs

Description: Scarred tree located at Cowal Gold Mine, taken from the East.

Description:



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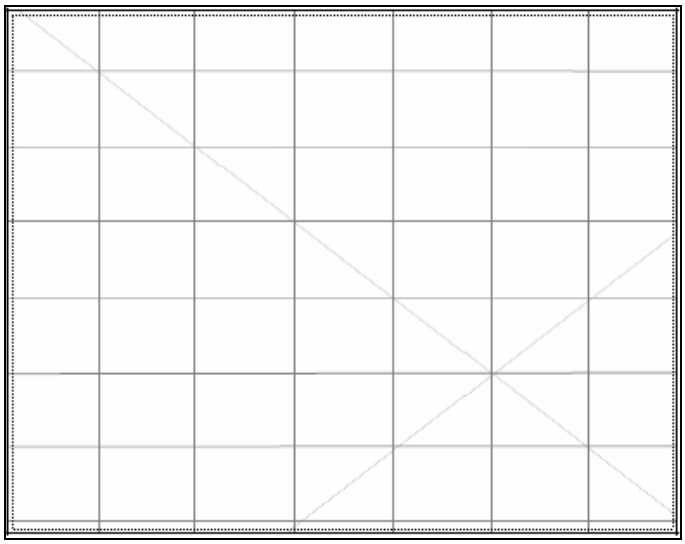


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0187 **Date recorded:** 06-02-2023

Site Location Information

Site name: CGO_Pipe_2019_ST2

Easting: 546307 **Northing:** 6281315 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

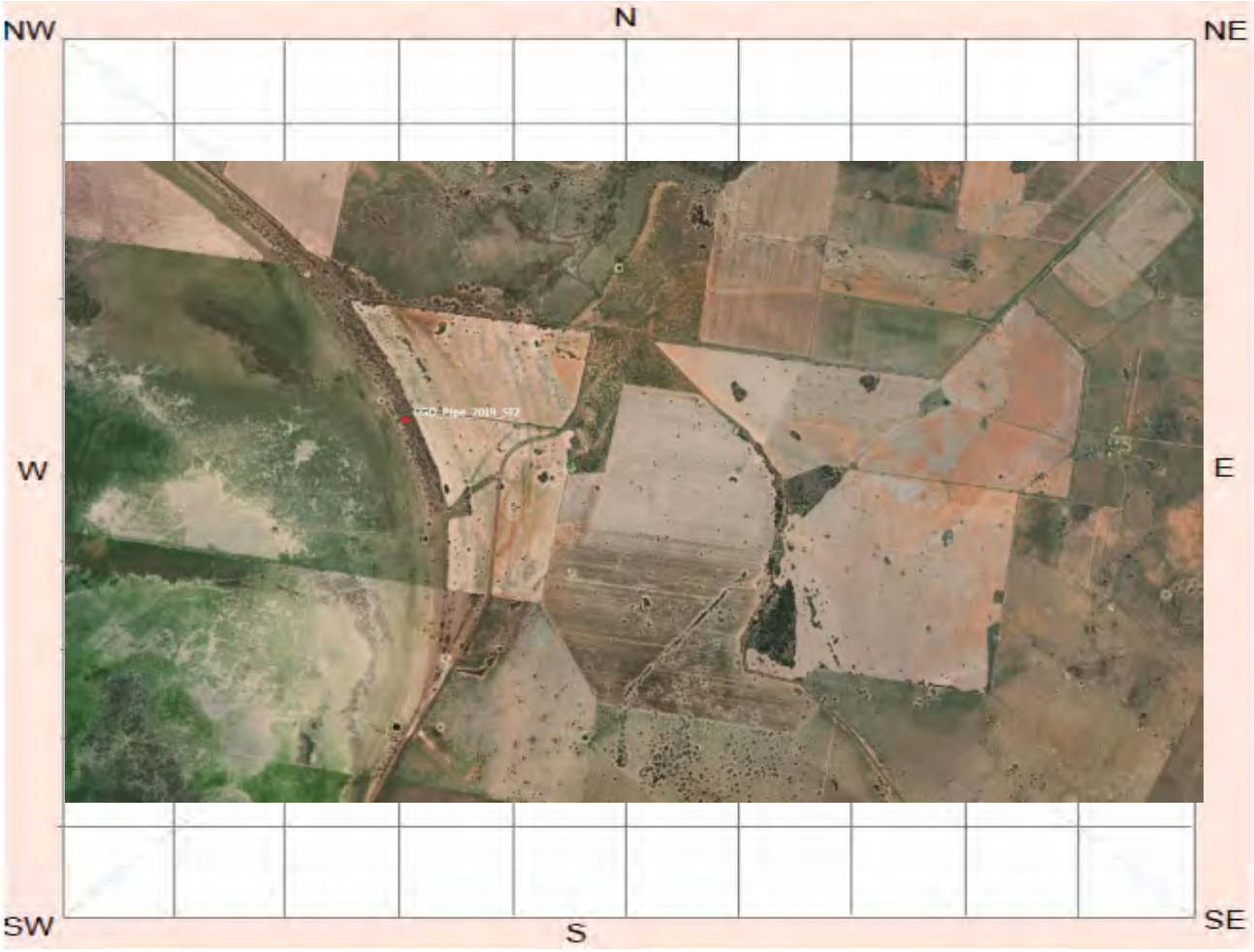
Land Form Unit: Beach **Vegetation:** Open Forest

Distance to Water (m): 80 **Primary Report:**

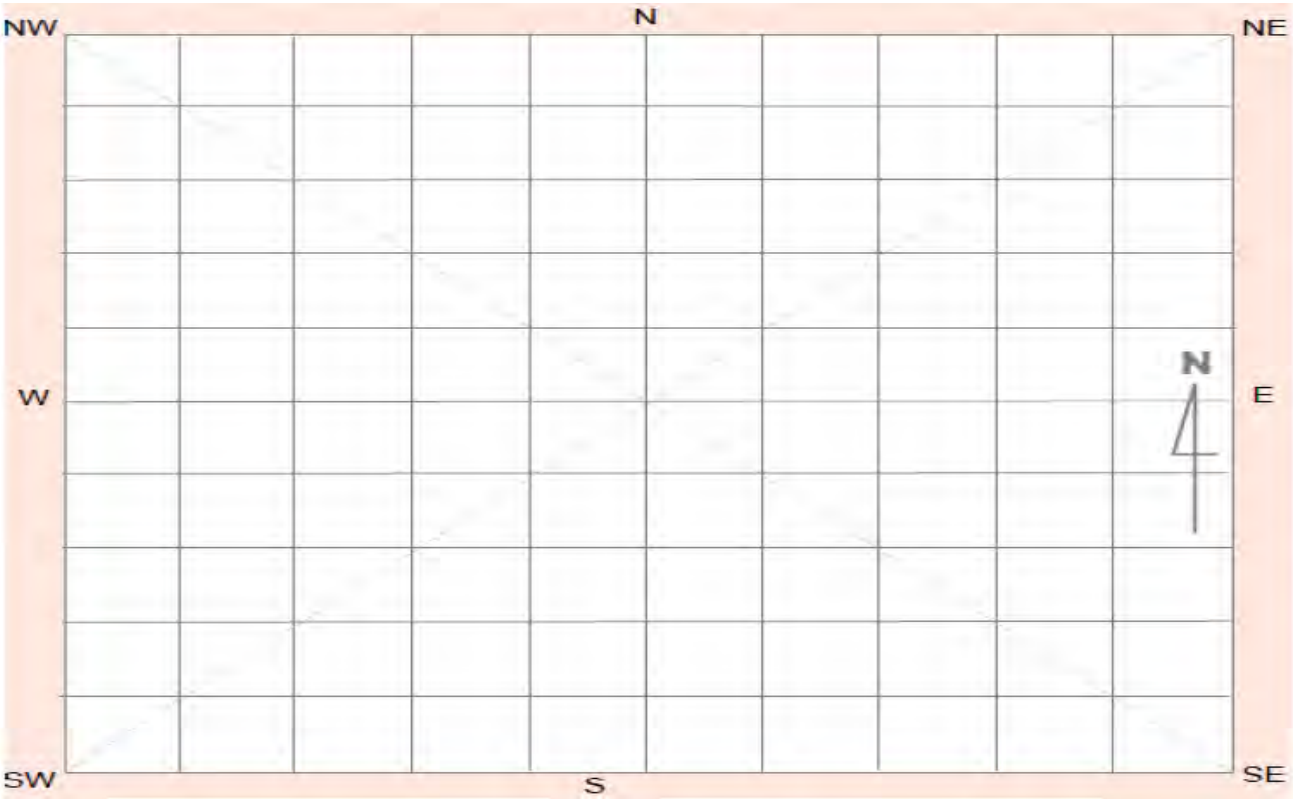
How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan



Site contents information

open/closed site: Open **Site condition:** Weathering

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	100	22	15	45	Elongated	

Feature condition: Weathering

Description:

Scar on dead tree, possible preform and potential shield shape.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Other Eucalypt

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

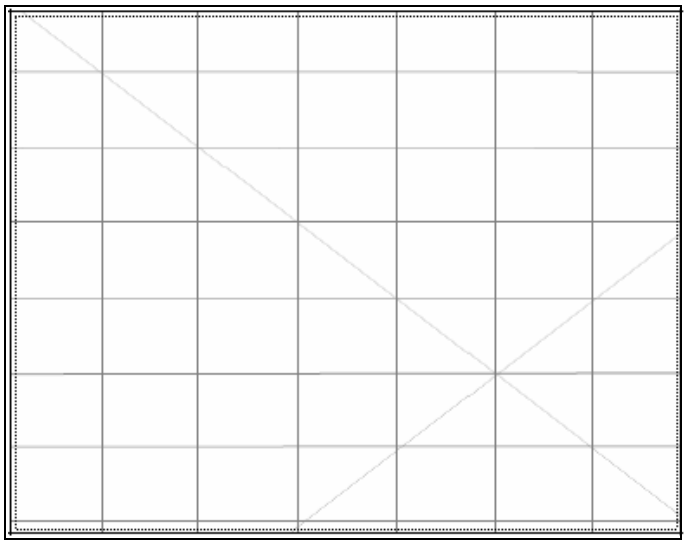
Feature condition:

Description:

Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description:



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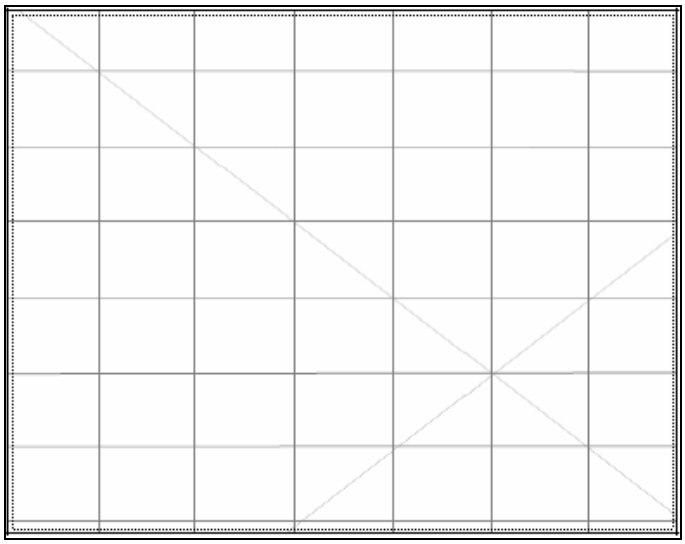


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Manager, Information Systems
Locked Bag 5020, Parramatta 2124 NSW

AHIMS site ID: 43-4-0188 **Date recorded:** 06-02-2023

Site Location Information

Site name: CGO_Pipe_2019_ST3

Easting: 526342 **Northing:** 6281328 **Coordinates must be in GDA94 (MGA)**

Horizontal Accuracy (m): 5

Zone: 55 Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	OBrienPounde	Phillipa

Organisation: EMM Consulting

Address: 20 Chandos St, St Leonards, NSW, 2065

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

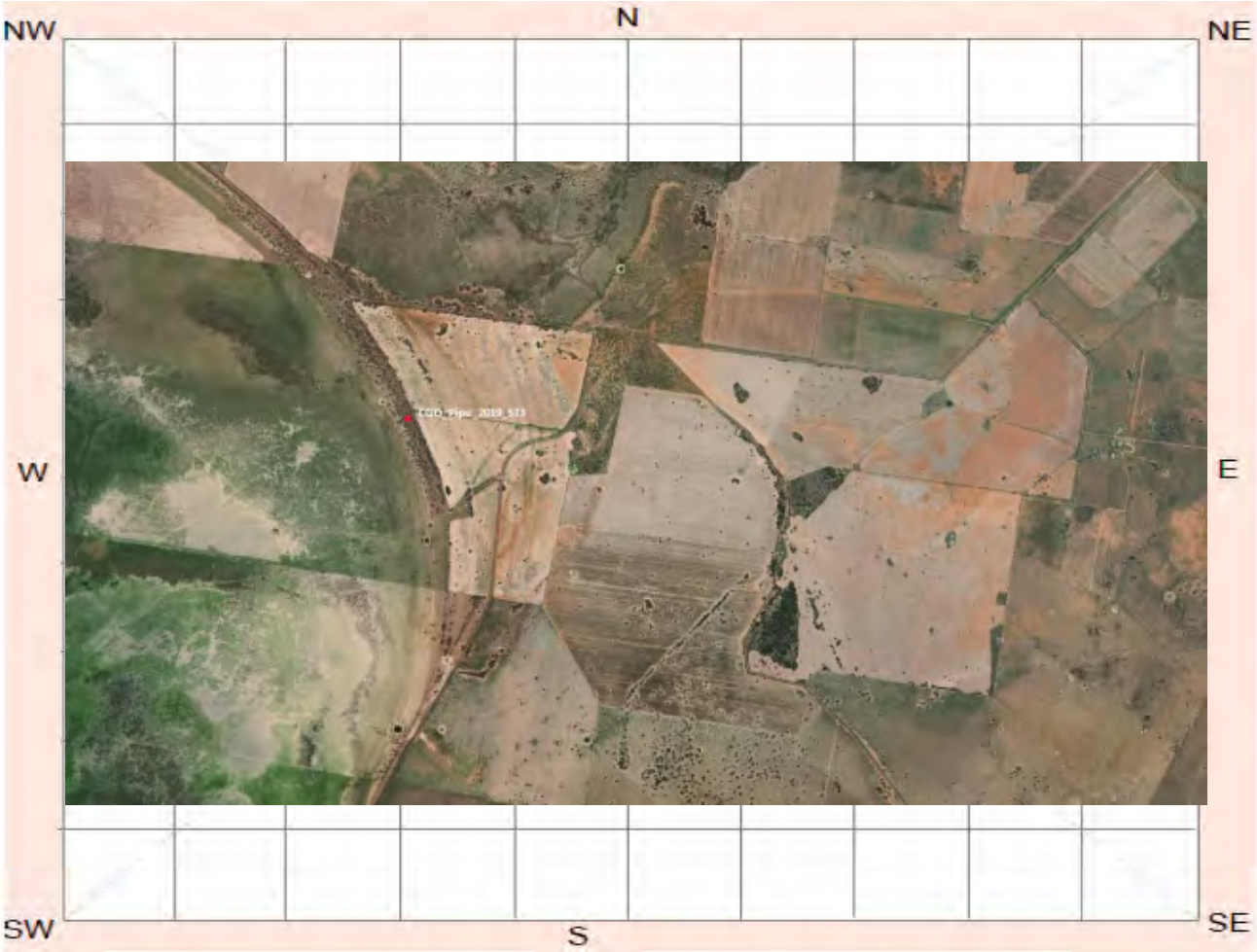
Land Form Unit: Beach **Vegetation:** Open Forest

Distance to Water (m): 110 **Primary Report:**

How to get to the site: Site is located on private property, access must be sought through Cowal Gold Mine.

Other site information: -

Site location map



Site plan

Site contents information

open/closed site: Open **Site condition:** Weathering

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1. Modified Tree	1	40	10	15	20	Oval	

Feature condition: Weathering

Description:

Relatively small scar on tree, dry face intact, possible form of a carrying container.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Feature condition:

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

Feature condition:

Other Eucalypt

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

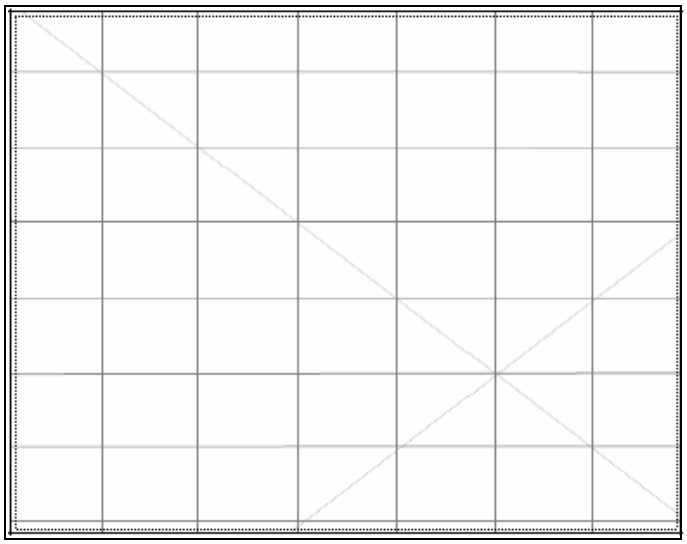
Feature condition:

Description:

Site photographs

Description: Scarred tree located at Cowal Gold Mine.

Description:



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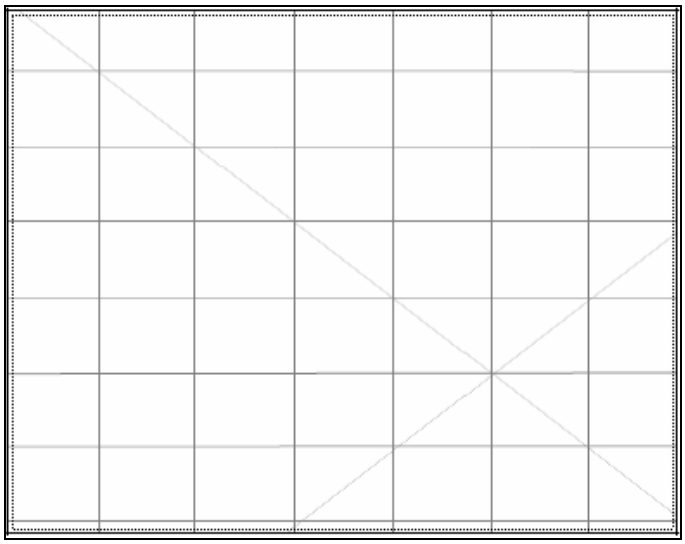


Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender: N/A | General | Location

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	O'Brien-Pounde	Phillipa

Organisation: EMM Consulting

Address: 14 Bishop Ave, West Pennant Hills, NSW, 2125

Phone: 0294939500 **E-mail:** pobrienpounde@emmconsulting.com.au

Site interpretation and community statement

-

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0127

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS W

Easting 536195 Northing 6281065 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 1200 metres

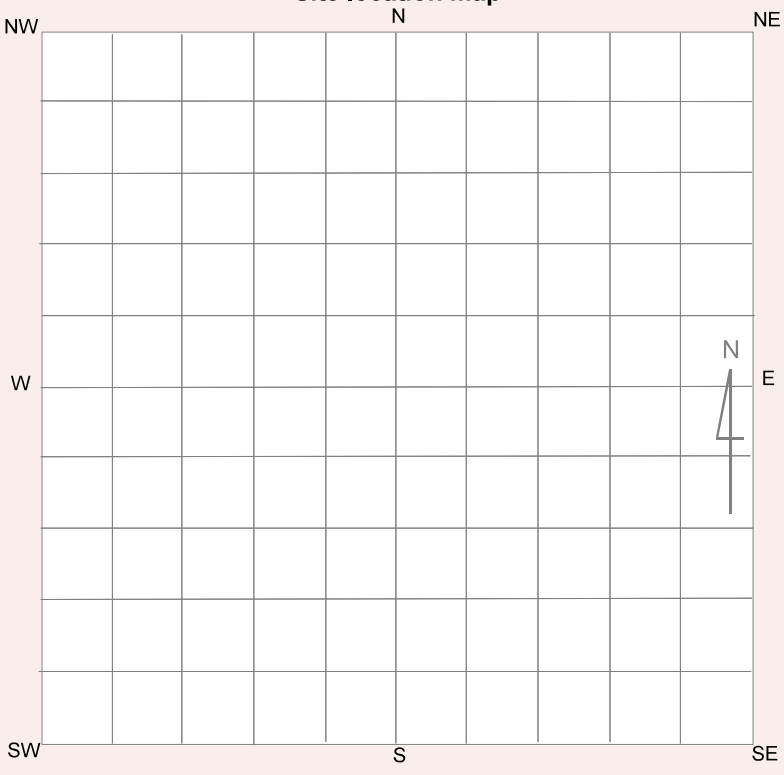
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

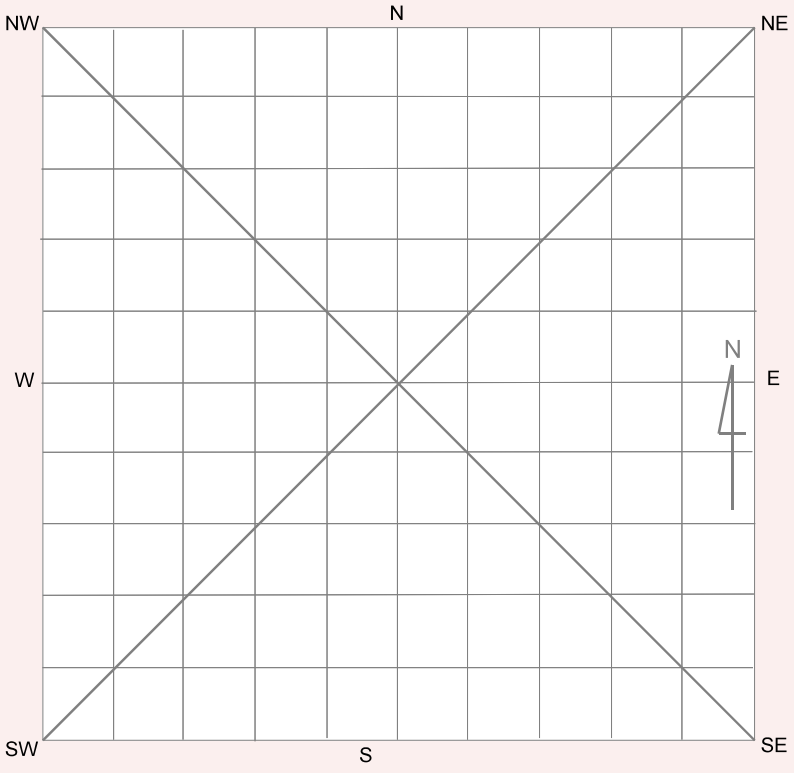
- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [15] Total length of visible site
- [13] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

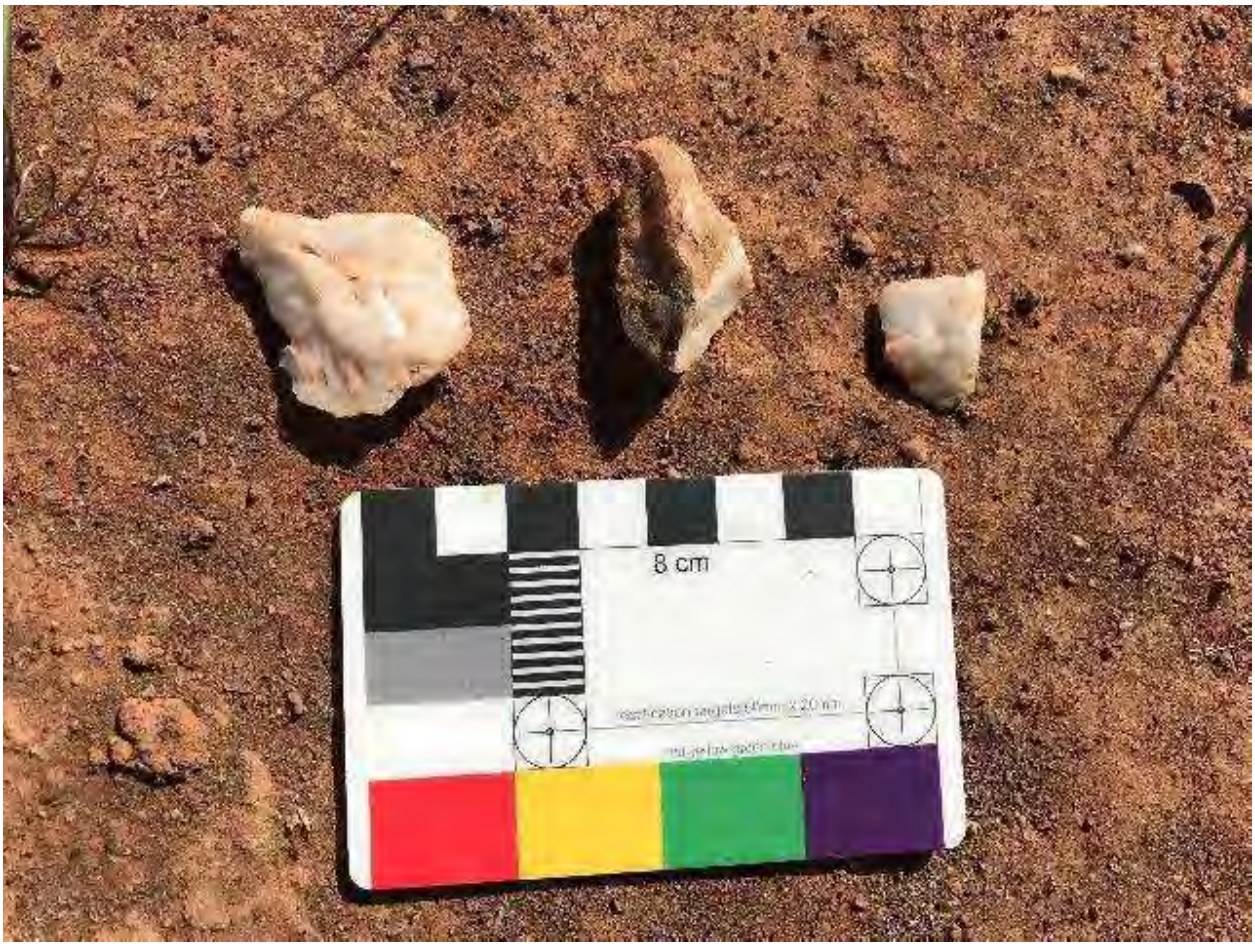
Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS W consists of three milky quartz flakes located on an erosion scald 10 m from the access track/firebreak.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google


8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0139

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 Addit IF N

Easting 536722 Northing 6282272 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- ☐ Mountainous
- ☐ Plain
- ☐ Rolling hills
- ☐ Steep hills
- ☑ Undulating plain

Slope

☐ degrees

Landform unit

- ☐ Beach
- ☐ Coastal rock platform
- ☐ Dune
- ☐ Intertidal flat
- ☐ Lagoon
- ☐ Tidal creek
- ☐ Tidal flat
- ☐ Cliff
- ☐ Crest
- ☐ Flat
- ☐ Lower slope
- ☐ Mid slope
- ☑ Upper slope
- ☐ Plain
- ☐ Ridge
- ☐ Tor
- ☐ Valley flat
- ☐ Levy
- ☐ Stream bank
- ☐ Stream channel
- ☐ Swamp
- ☐ Terrace
- ☐ Terrace flat

Vegetation

- ☐ Closed forest
- ☐ Grasslands
- ☑ Isolated clumps of trees
- ☐ Open forest
- ☐ Open woodland
- ☐ Scrub
- ☐ Woodland
- ☑ Cleared
- ☐ Revegetated
- ☐ N/A

Land use

- ☐ Conservation
- ☐ Established urban
- ☐ Farming-intensive
- ☐ Farming-low intensity
- ☐ Forestry
- ☐ Industrial
- ☐ Mining
- ☑ Pastoral/grazing
- ☐ Recreation
- ☐ Semi-rural
- ☐ Service corridor
- ☐ Transport corridor
- ☐ Urban expansion
- ☐ Residential

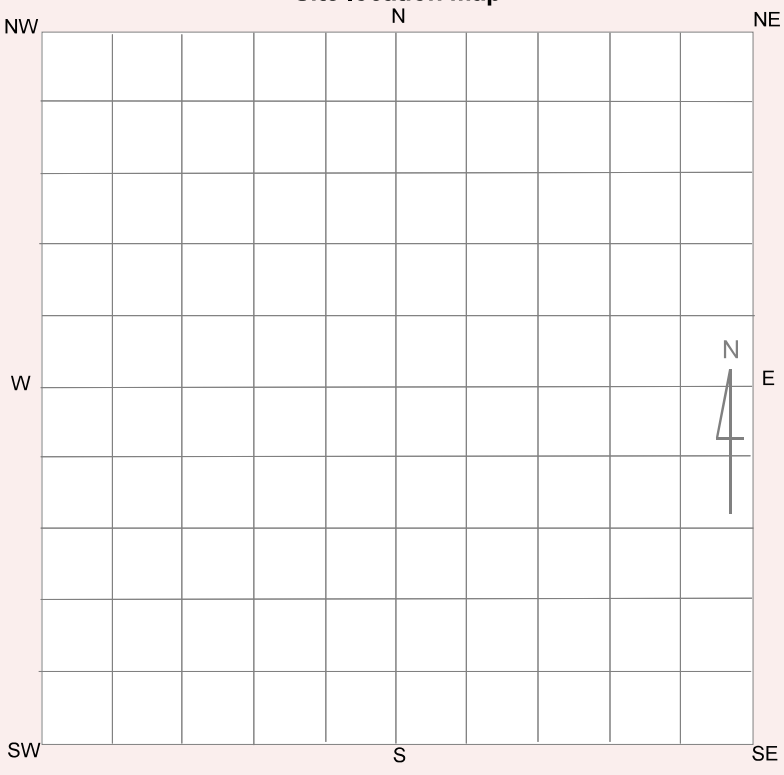
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	682 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- ☐ Public — National park/government department
- ☐ Private

Primary report

I.D. ☐ (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

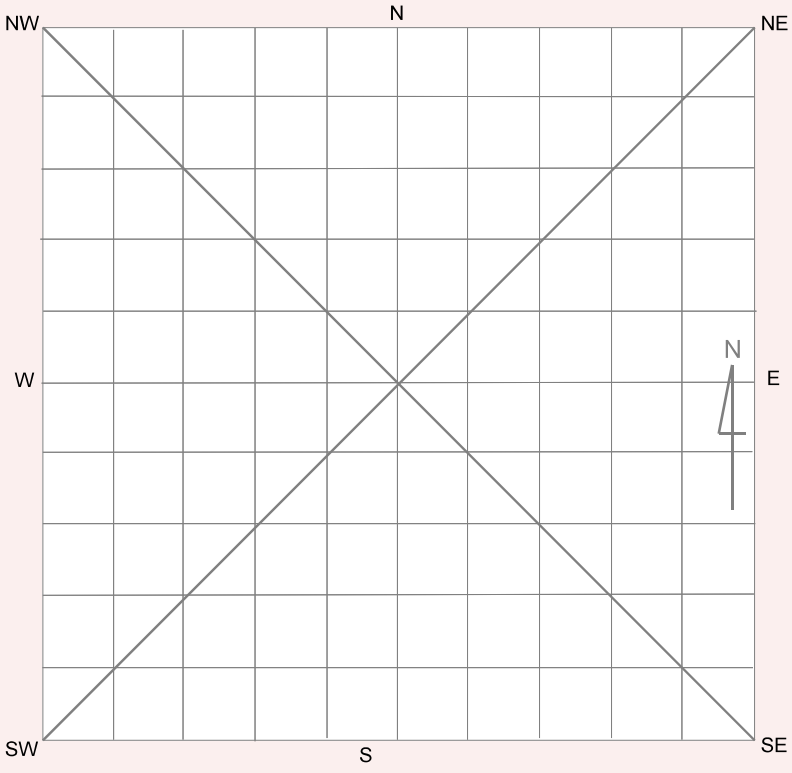
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 Addit IF N is a black chert terminal flake located on an access track.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0125

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 BH1

Easting 536782 Northing 6281322 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

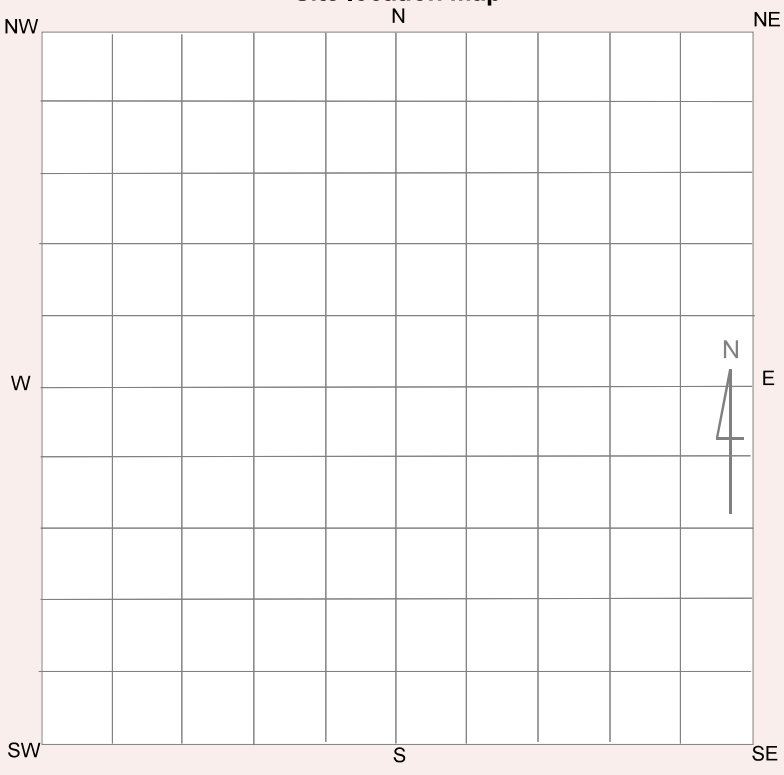
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	563 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

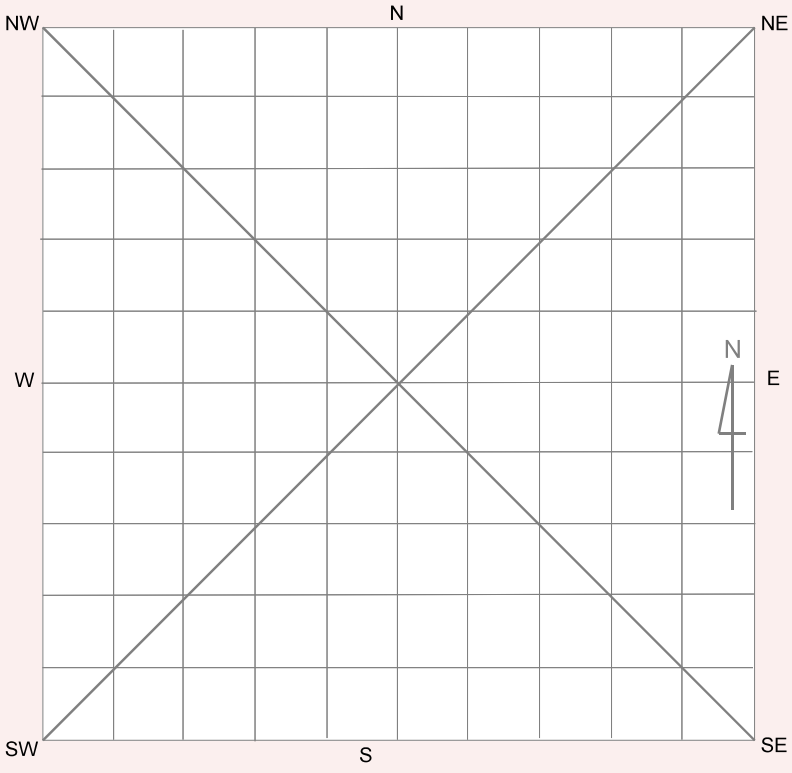
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [x] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [191] Total length of visible site
- [20] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 BH1 consists of over 50 stone artefacts. Primarily black chert flakes, several cores and several silcrete blade flakes on an exposed access track and firebreak.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0126

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 BH2

Easting 536701 Northing 6281432 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- ☐ Mountainous
- ☑ Plain
- ☐ Rolling hills
- ☐ Steep hills
- ☐ Undulating plain

Slope

☐ degrees

Landform unit

- ☐ Beach
- ☐ Coastal rock platform
- ☐ Dune
- ☐ Intertidal flat
- ☐ Lagoon
- ☐ Tidal creek
- ☐ Tidal flat
- ☐ Cliff
- ☐ Crest
- ☐ Flat
- ☐ Lower slope
- ☐ Mid slope
- ☑ Upper slope
- ☐ Plain
- ☐ Ridge
- ☐ Tor
- ☐ Valley flat
- ☐ Levy
- ☐ Stream bank
- ☐ Stream channel
- ☐ Swamp
- ☐ Terrace
- ☐ Terrace flat

Vegetation

- ☐ Closed forest
- ☐ Grasslands
- ☐ Isolated clumps of trees
- ☐ Open forest
- ☐ Open woodland
- ☐ Scrub
- ☐ Woodland
- ☐ Cleared
- ☐ Revegetated
- ☐ N/A

Land use

- ☐ Conservation
- ☐ Established urban
- ☐ Farming-intensive
- ☐ Farming-low intensity
- ☐ Forestry
- ☐ Industrial
- ☐ Mining
- ☐ Pastoral/grazing
- ☐ Recreation
- ☐ Semi-rural
- ☐ Service corridor
- ☐ Transport corridor
- ☐ Urban expansion
- ☐ Residential

Water

Distance to permanent water source	1300 metres
Distance to temporary water source	15 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

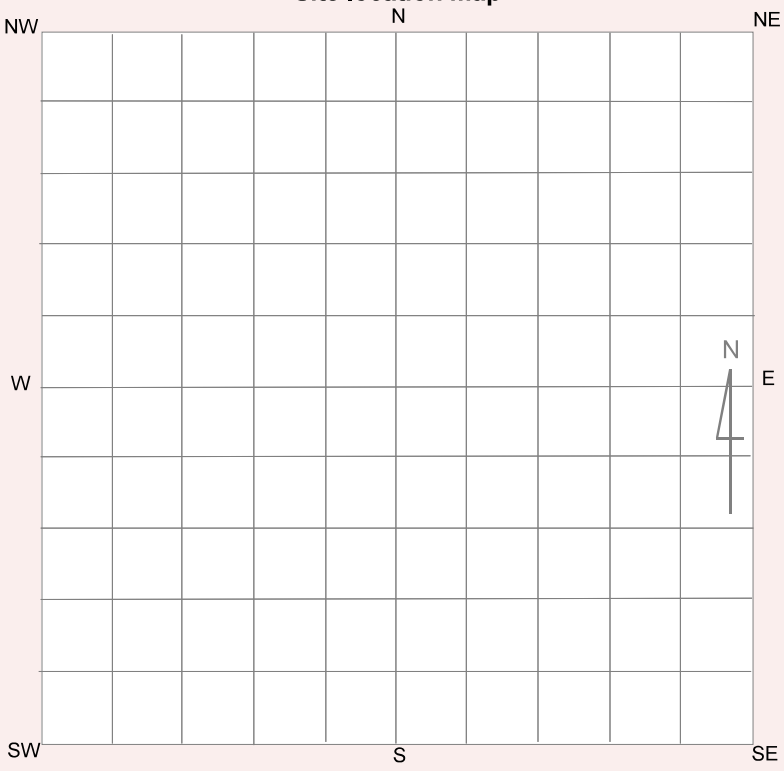
Current land tenure

- ☐ Public — National park/government department
- ☐ Private

Primary report I.D.

☐ (I.D. Office Use only)

Site location map



Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

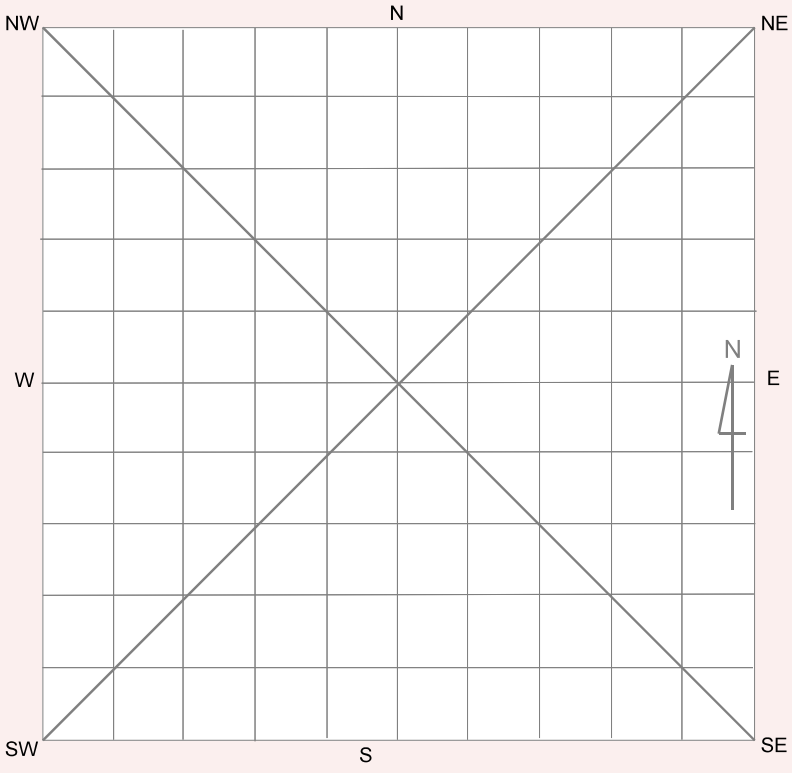
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [92] Total length of visible site
- [13] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 BH2 consists of 15 stone artefacts along the fire break/access track. Primarily black chert flakes. This site is likely associated with sites BH2 Gilgai and E46 OS4.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0128

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF

Easting 536239 Northing 6280974 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 1200 metres

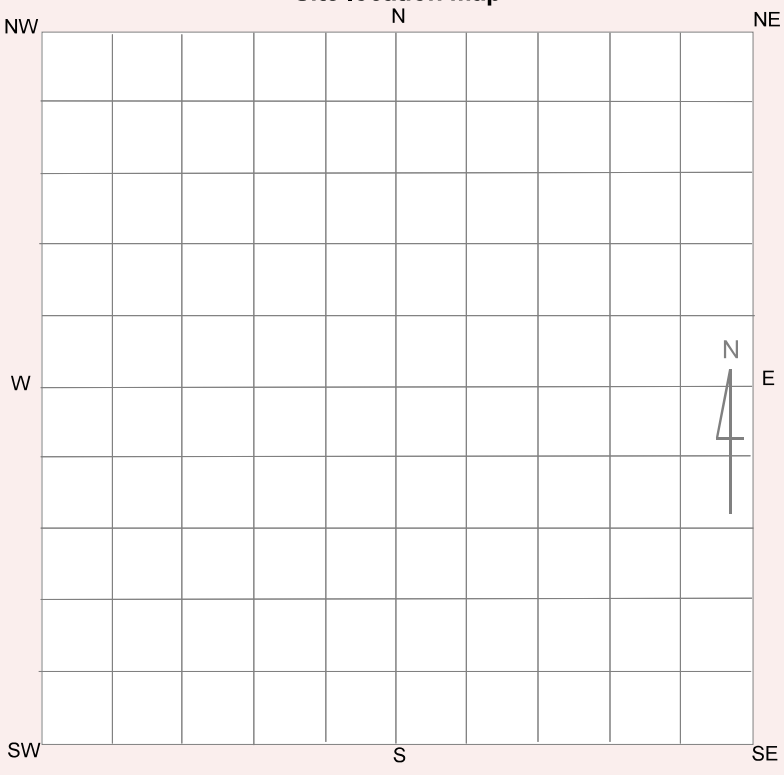
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

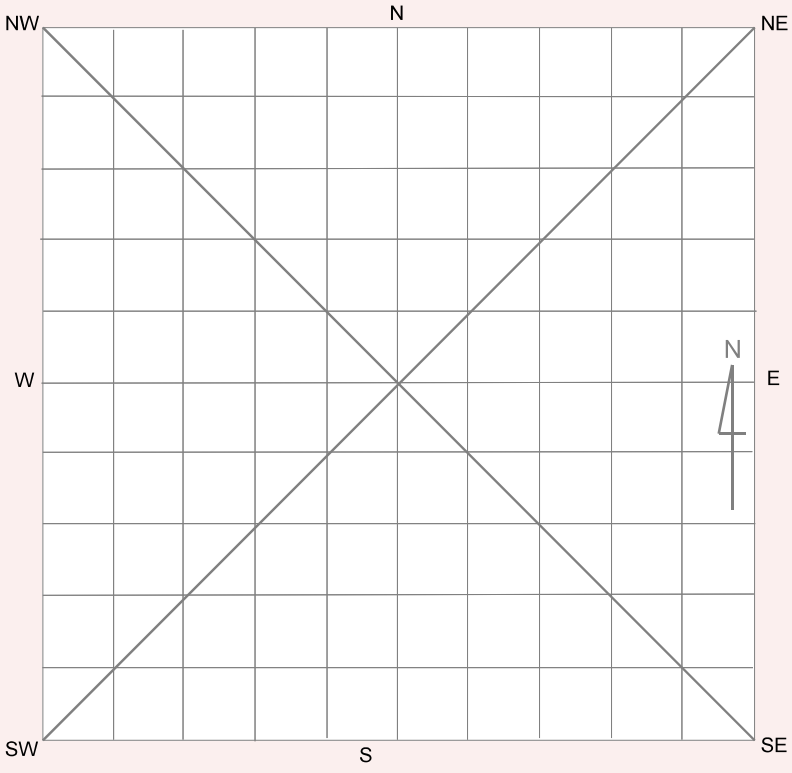
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF consists of one black chert blade flake located on the middle of the access track/firebreak intersection.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0129

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF2

Easting 536216 Northing 6280973 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 1200 metres

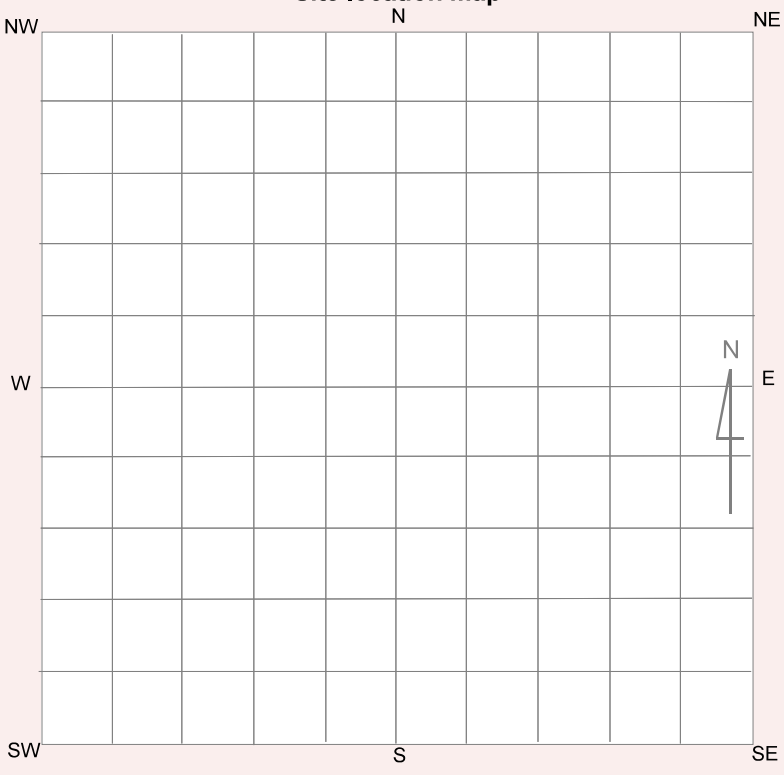
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

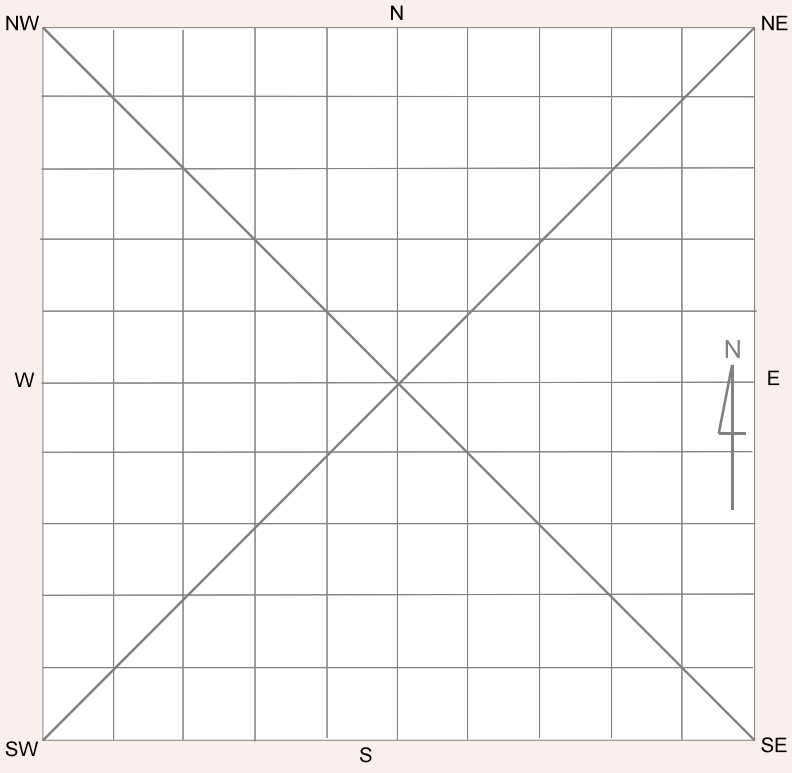
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF2 is a milky quartz flake located on an access track/firebreak, most likely associated with site E46 IF making it an open artefact scatter.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0130

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF3

Easting 536406 Northing 6281074 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 1200 metres

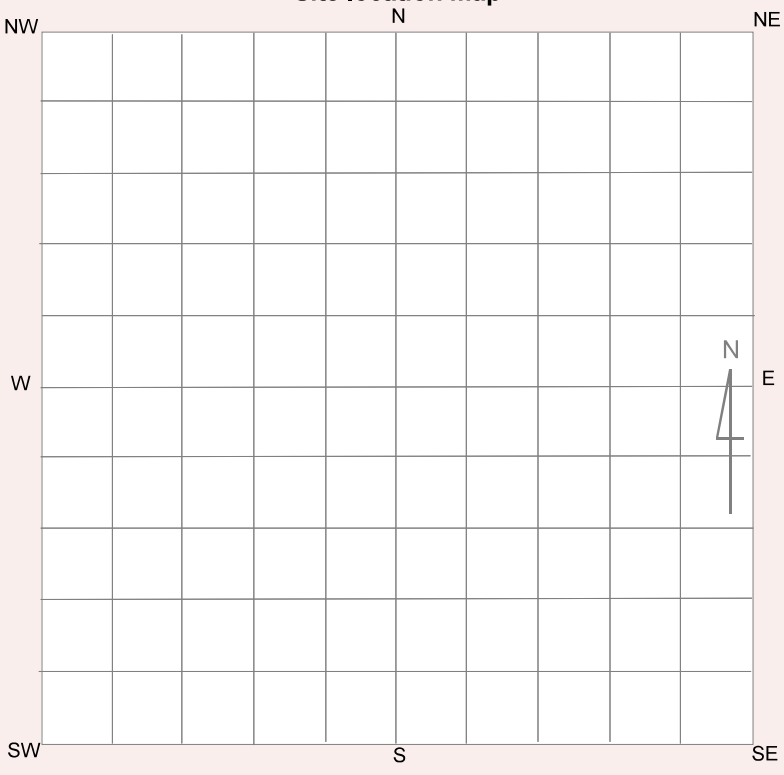
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

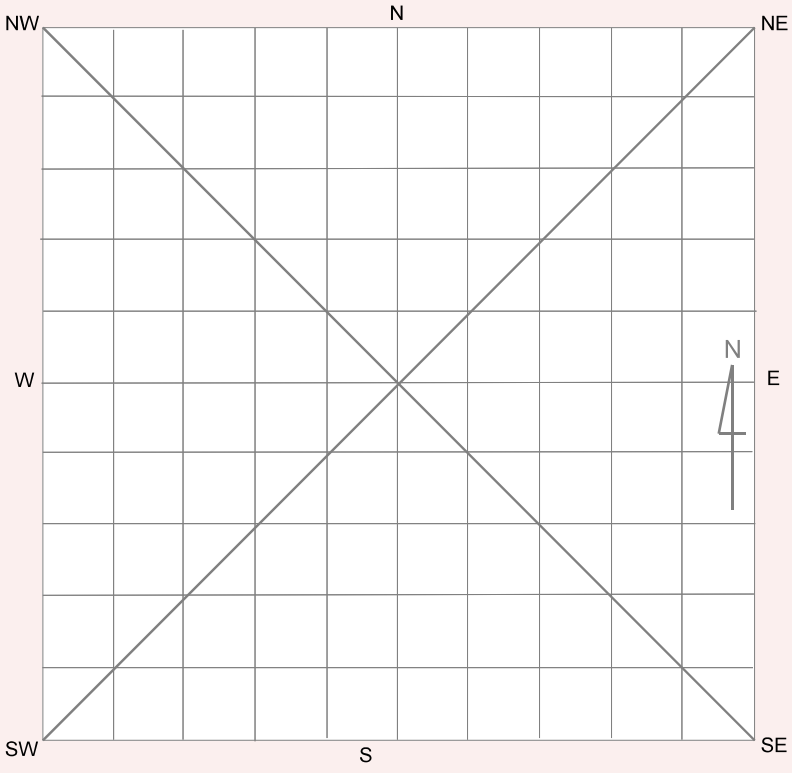
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF3 is a grey silcrete medial fragment located on an erosion scald.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 IF3
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

6 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0132

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF4

Easting 536333 Northing 6281078 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [x] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [x] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

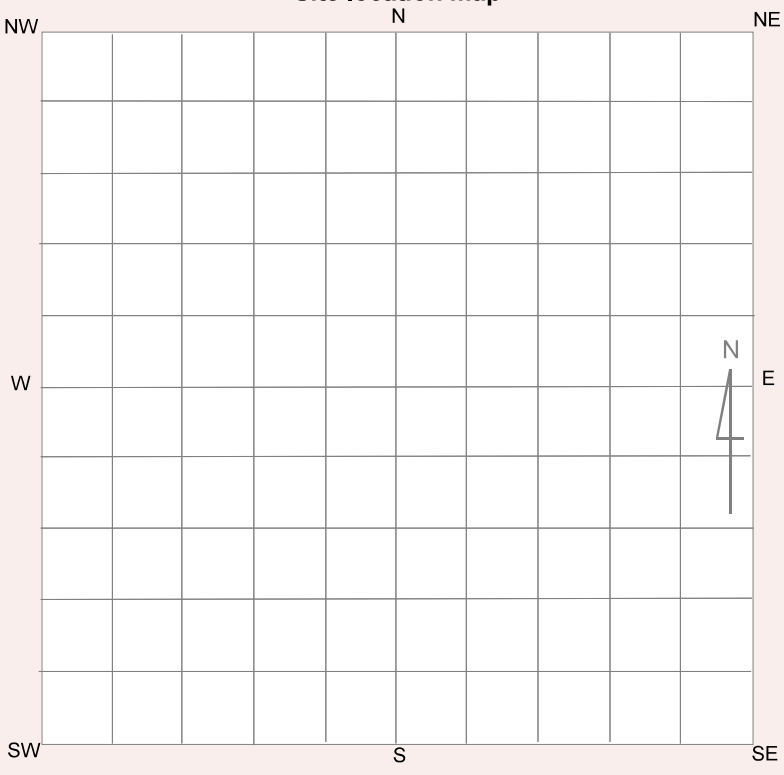
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	1112 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

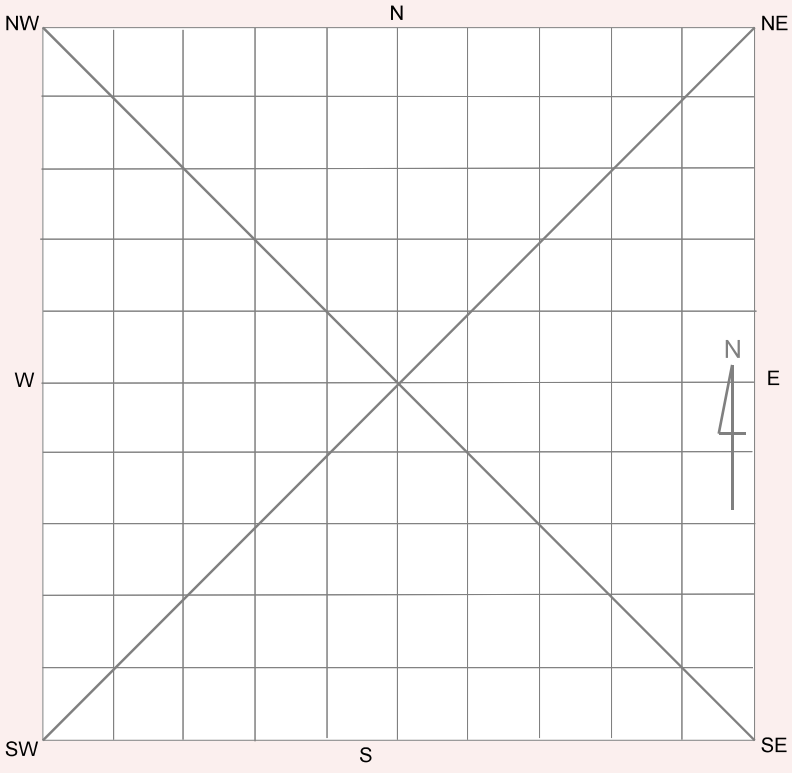
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF4 consists of a black chert core located next to an access track.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0133

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF5

Easting 536866 Northing 6282080 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 640 metres

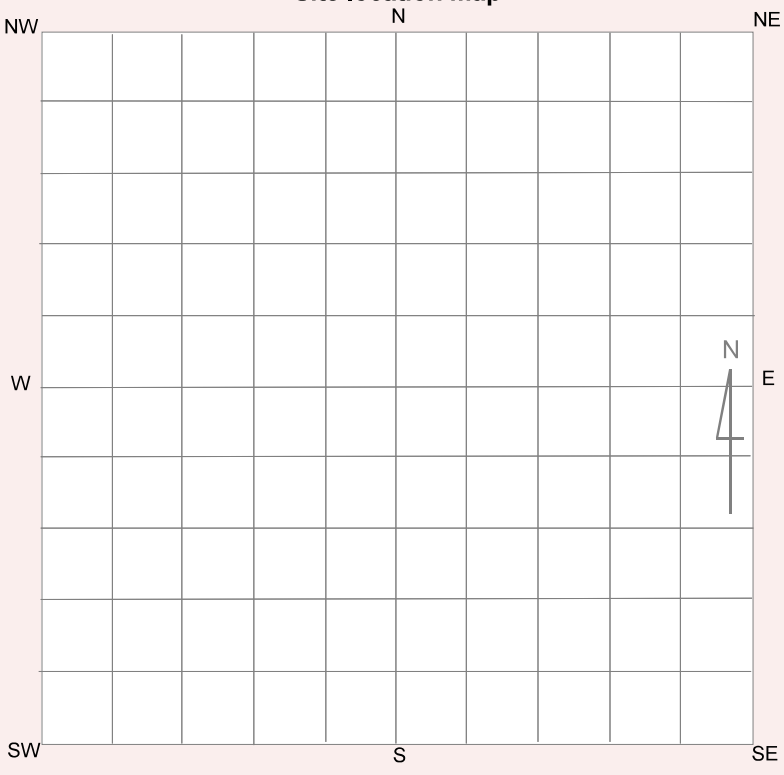
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

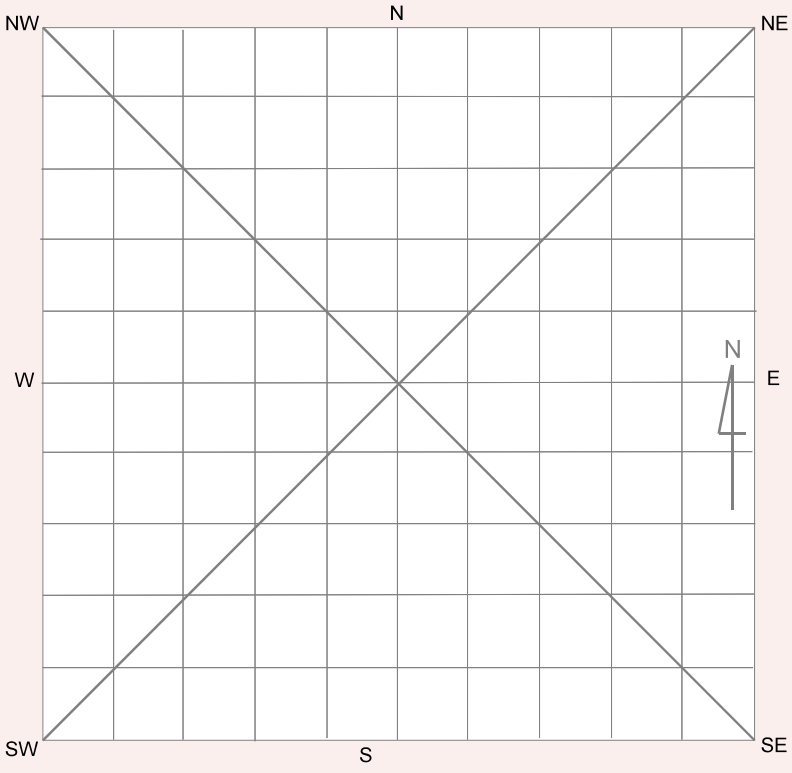
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF5 is a black chert flake located on an access track and exposed by emu scratching.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0134

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF6

Easting 537026 Northing 6282069 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

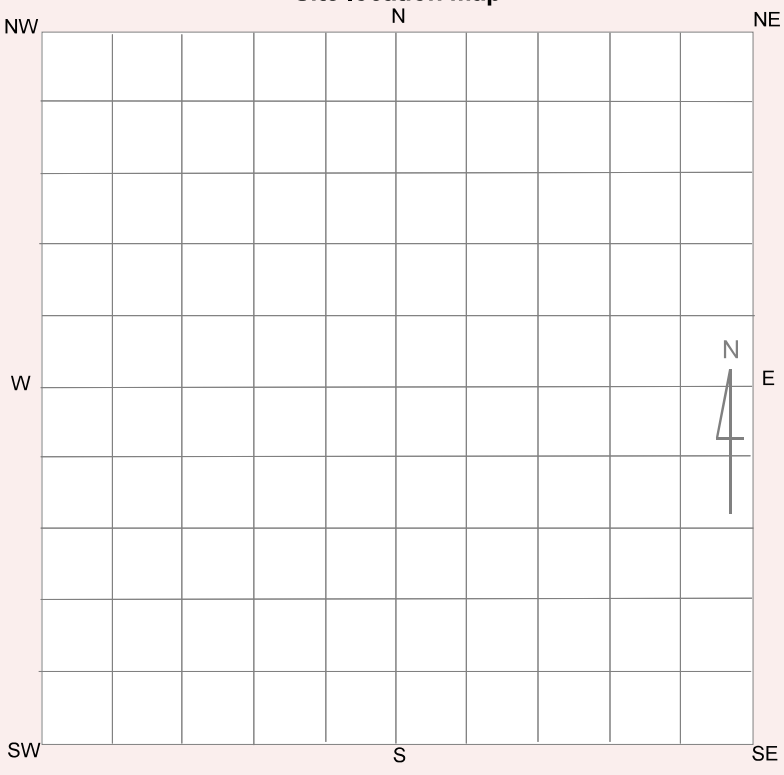
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	490 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

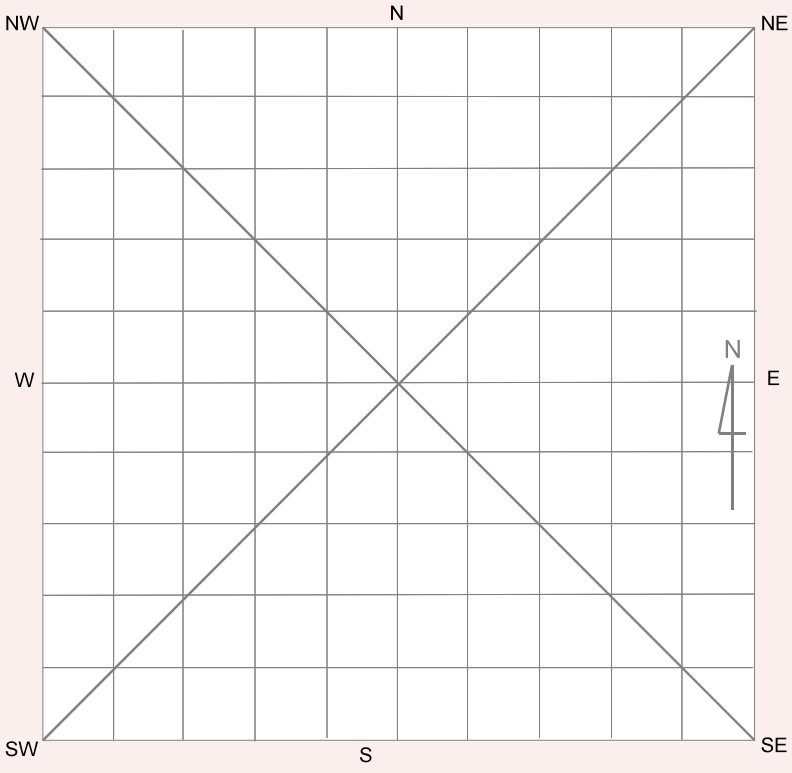
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF6 is a grey silcrete flake located on a vehicle track.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0135

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 IF7

Easting 536765 Northing 6282271 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

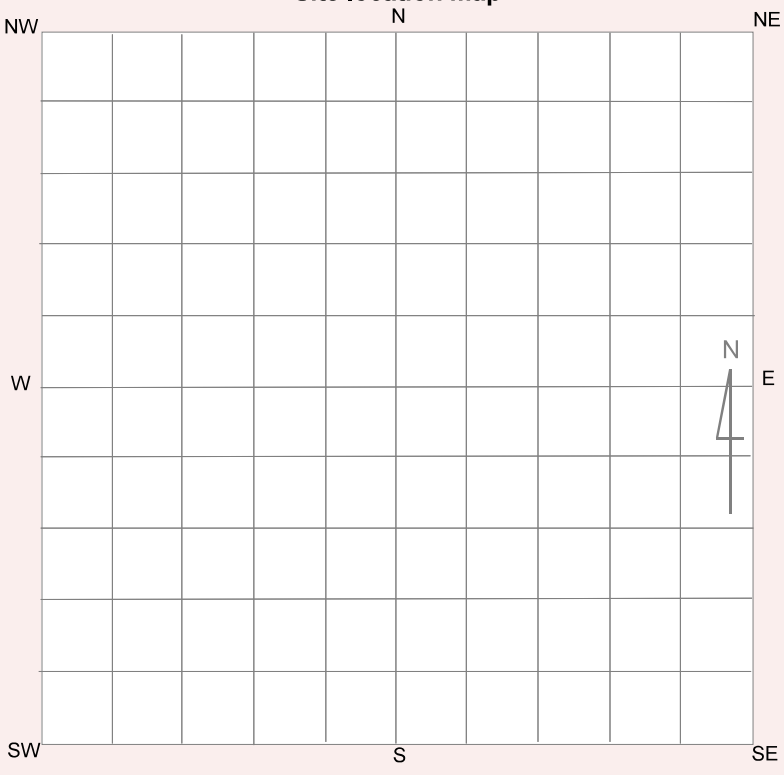
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	580 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

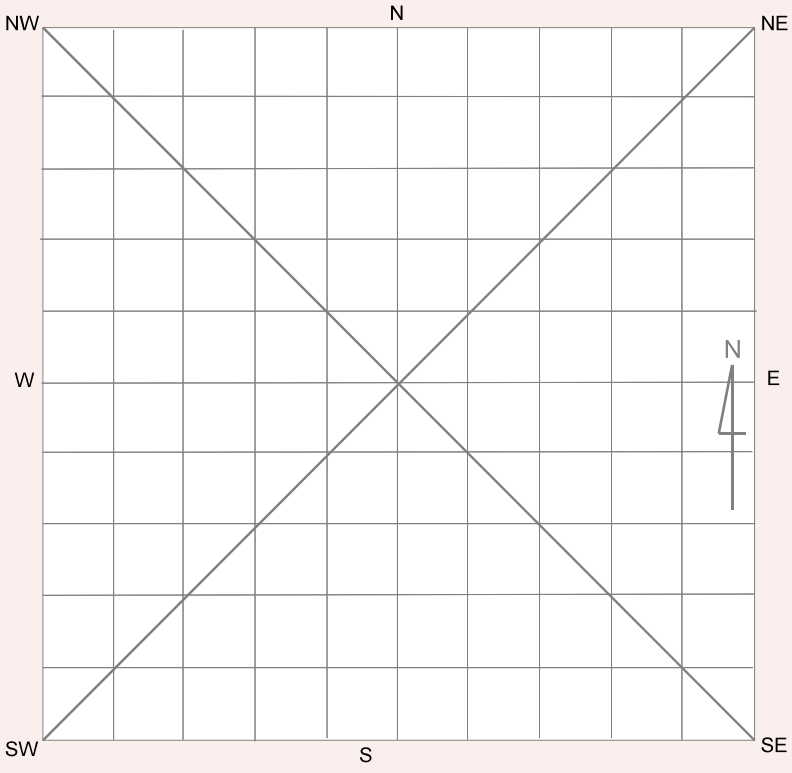
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open site dimensions (m)

- 1 Total length of visible site
- 1 Average width of visible site
- Estimated area of visible site
- Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 IF7 is a black chert flake located on an erosion scald.

9/6/2019 2:57 pm
E46 OS2
E46 IF7
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 IF3
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0136

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS E

Easting 536945 Northing 6281249 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [x] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

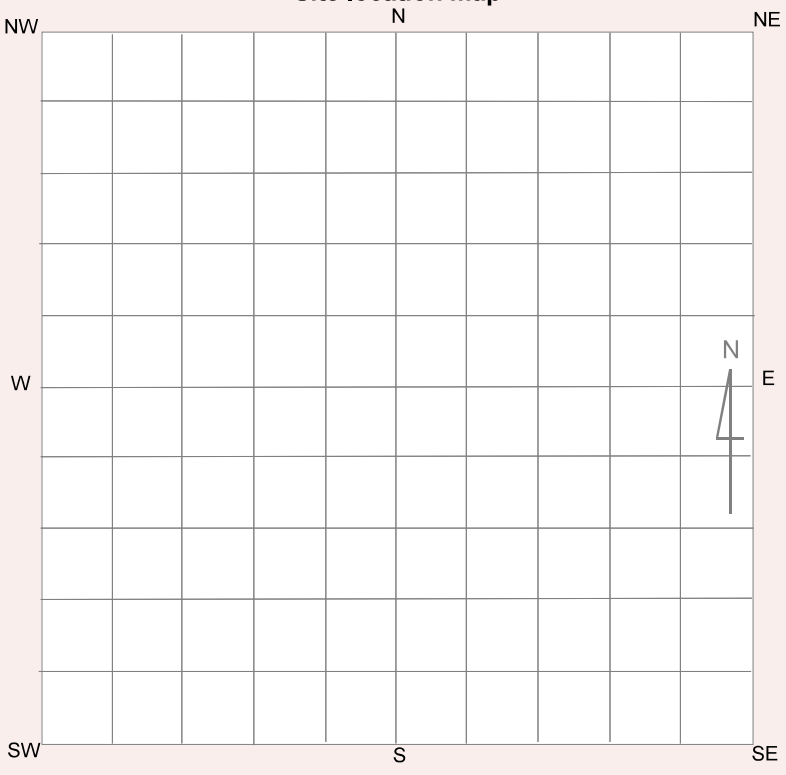
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	240 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

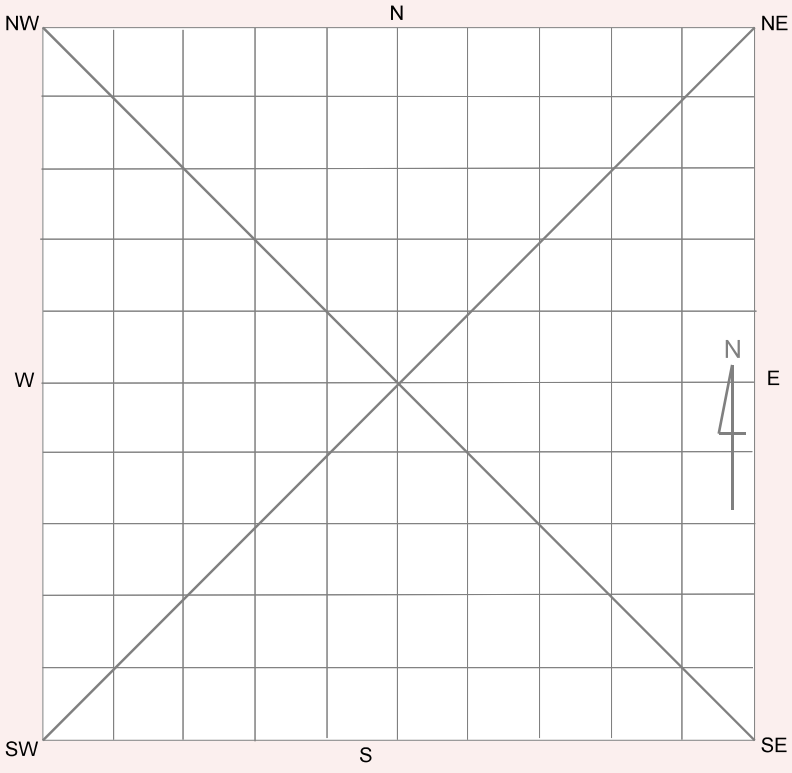
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [4] Total length of visible site
- [2] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS E consists of two black chert flakes located on a cattle track on the embankment of an ephemeral creek (dry at the time).

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0137

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS1

Easting 536721 Northing 6282111 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

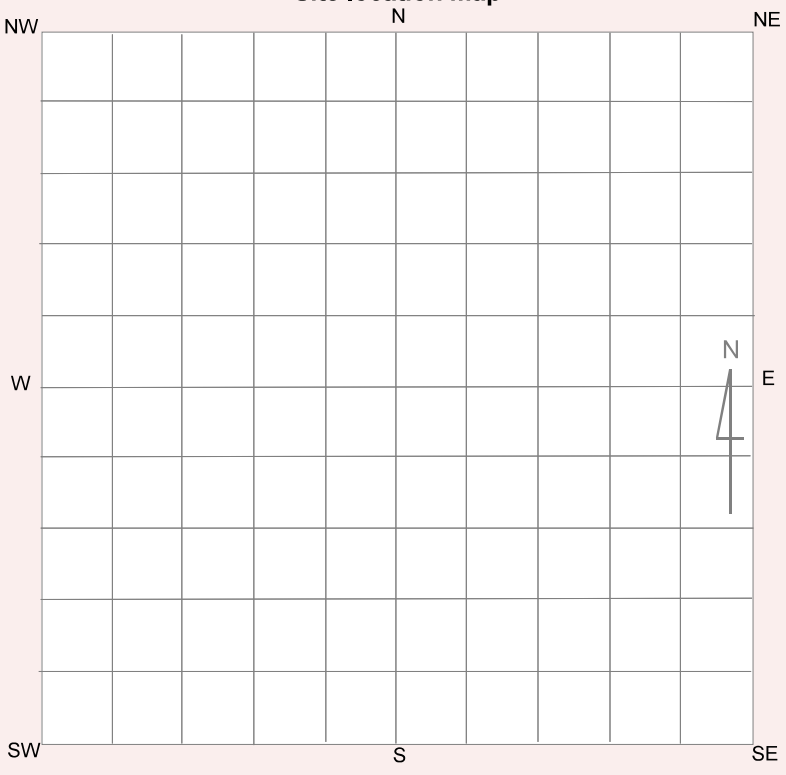
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	716 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

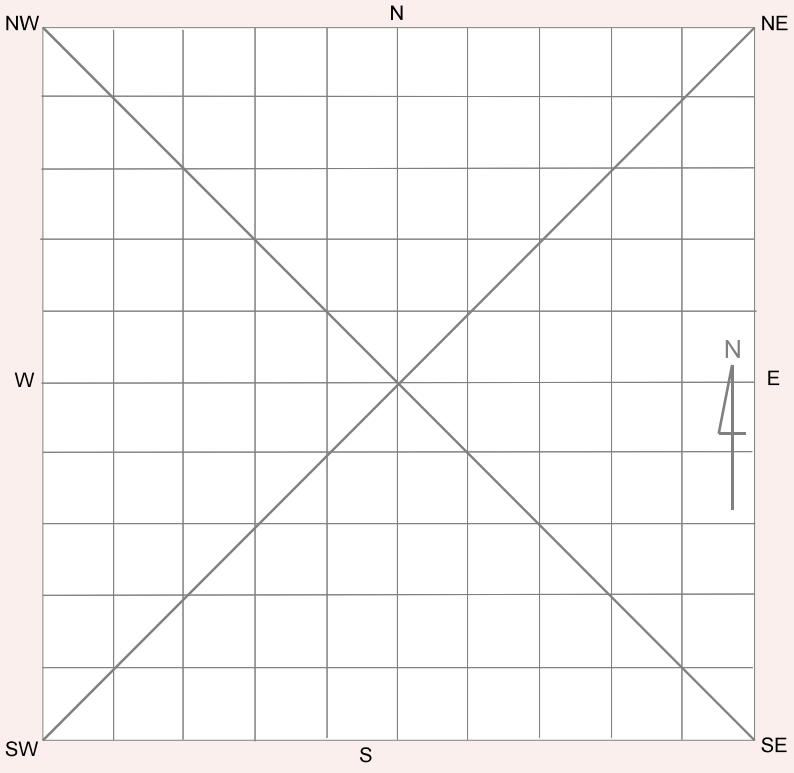
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [85] Total length of visible site
- [34] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS1 consists of 9 stone artefacts located along a vehicle track/erosion scald. One red silcrete core, one black chert core, and four silcrete flakes (milky white to brown).

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0138

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS2

Easting 536787 Northing 6282405 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

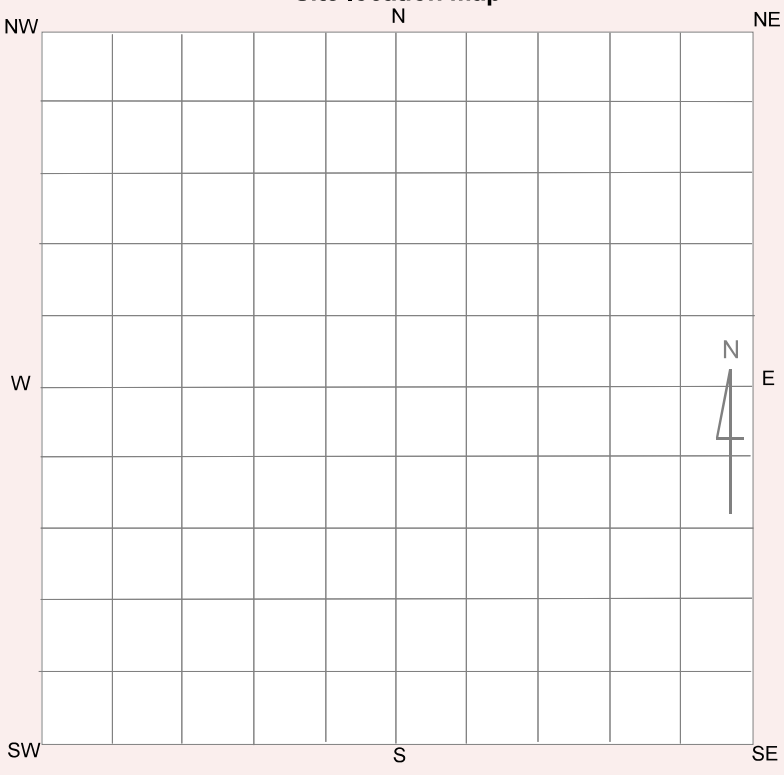
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	585 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

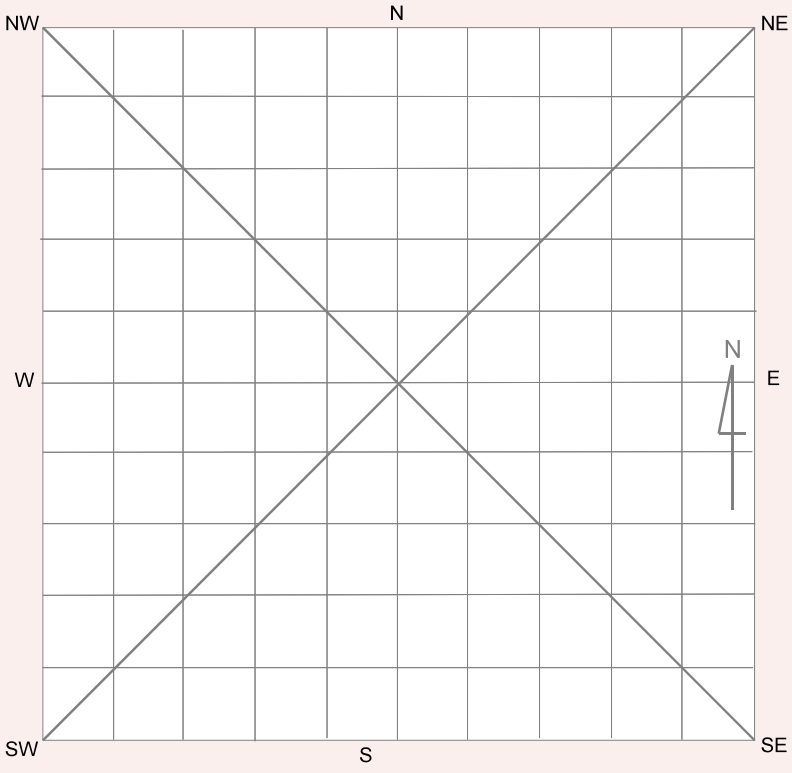
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [2] Total length of visible site
- [1] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS2 consists of a dark grey silcrete core and flake located on an erosion scald at the base of the slope.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0114

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS3

Easting 536727 Northing 6281882 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

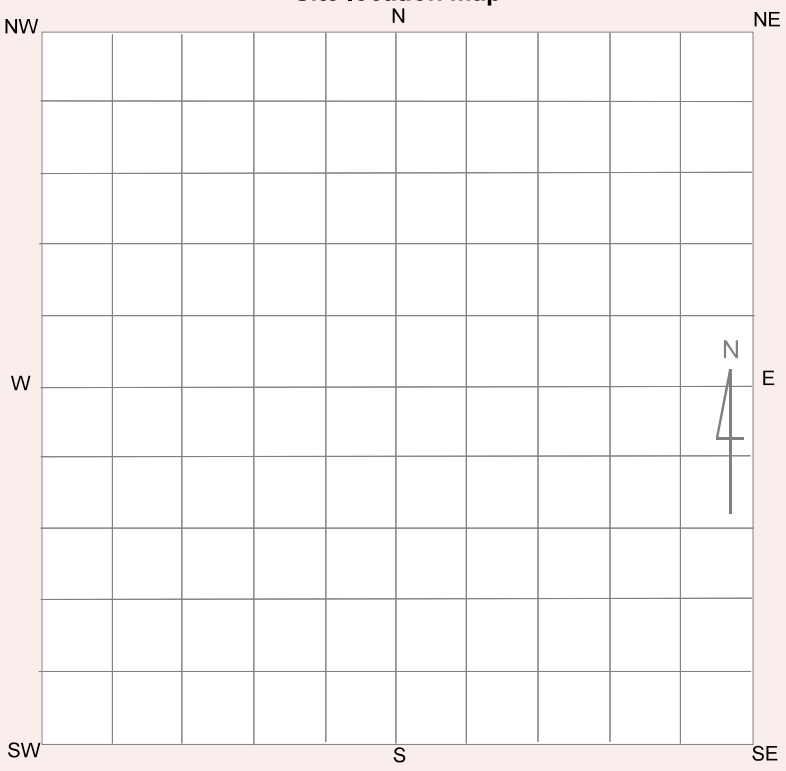
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	660 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

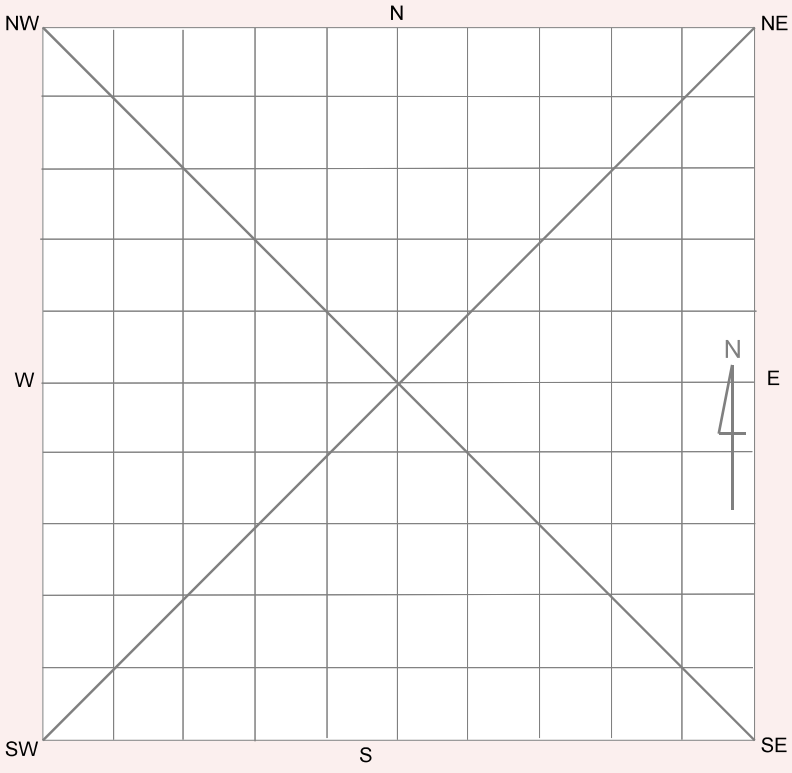
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [61] Total length of visible site
- [27] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS3 consists of one silcrete flake and two black chert flakes scattered on a vehicle track along the beach at the base of the slope.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0115

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS4

Easting 536741 Northing 6281468 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

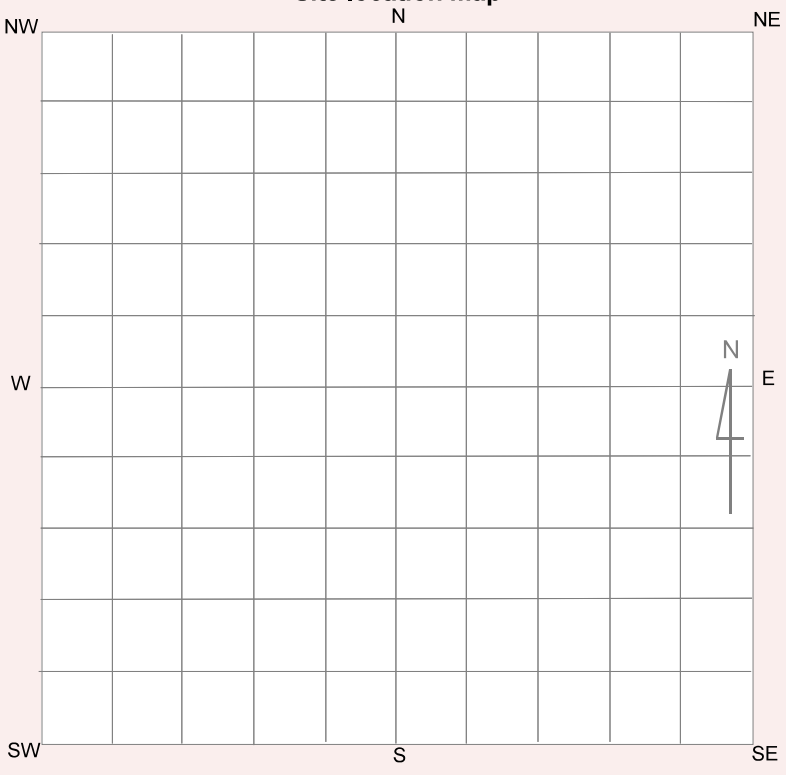
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	645 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

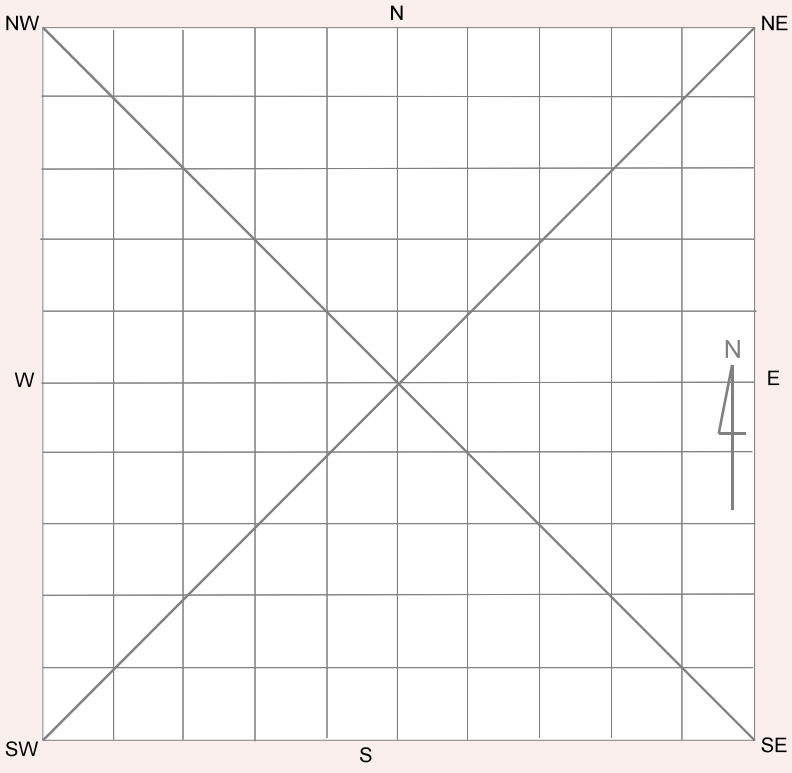
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [17] Total length of visible site
- [10] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS4 consists of two milky quartz flakes located on an erosion scald. This site is likely associated with sites BH2 Gilgai and E46 BH2.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

8 cm

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0116

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 OS5

Easting 536827 Northing 6281467 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

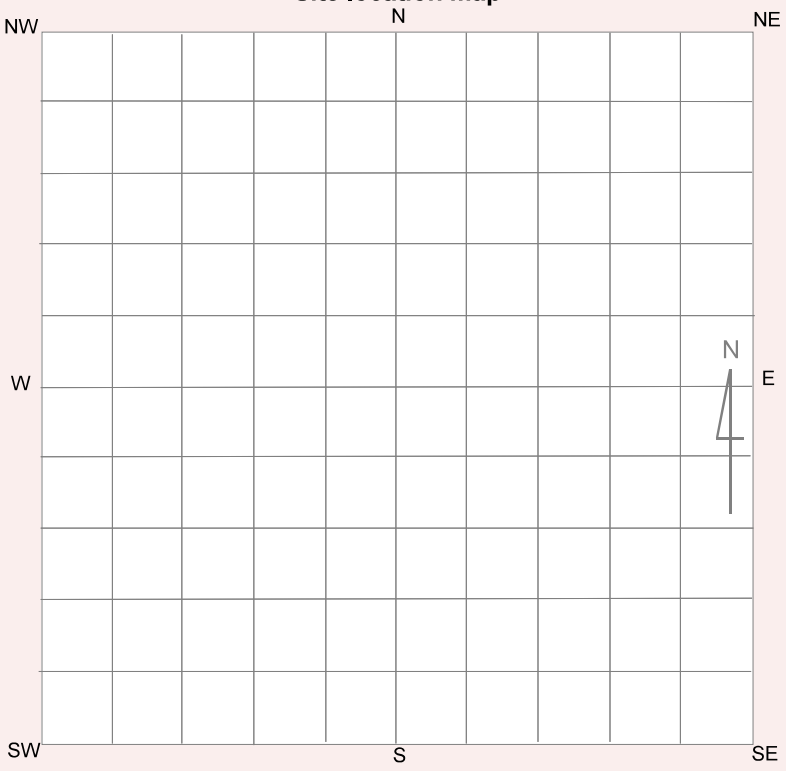
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	503 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report

I.D. [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

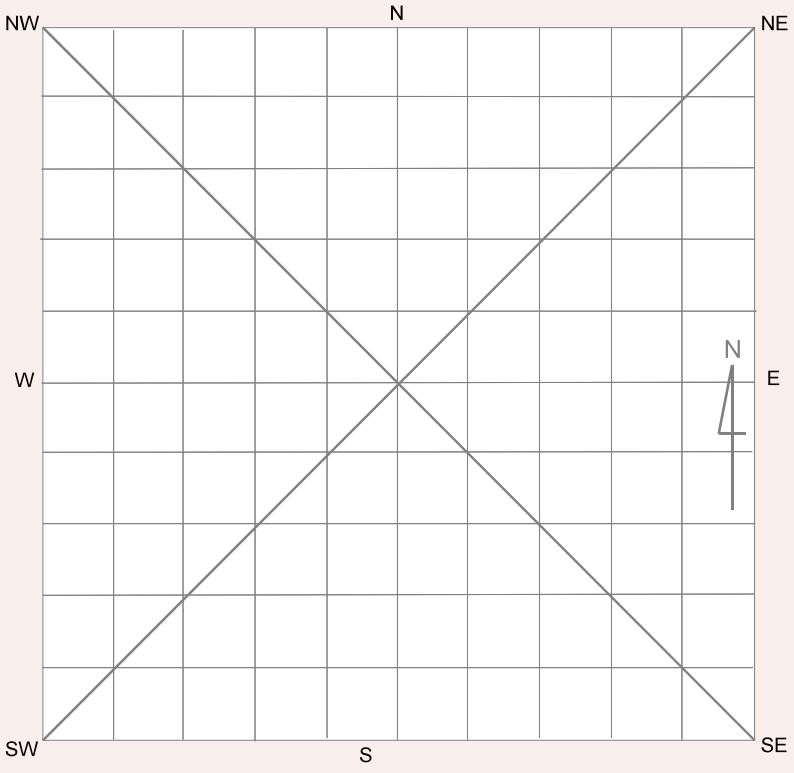
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [x] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [x] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [ ] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [20] Total length of visible site
- [36] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 OS5 consists of 4 artefacts along an erosion scar/vehicle access track. One milky quartz flake, one black chert blade flake, one black chert core and one brown core.

9/6/2019 2:57 pm
E46 OS2
E46 Addit IF N
E46 OS1
E46 IF5
E46 IF6
E46 OS3
BH2 gilgai
E46 OS4
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF
E46 IF2
Image © 2019 Maxar Technologies
© 2018 Google

8 cm

8 cm
red yellow green blue

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0117

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST1

Easting 537114 Northing 6280363 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

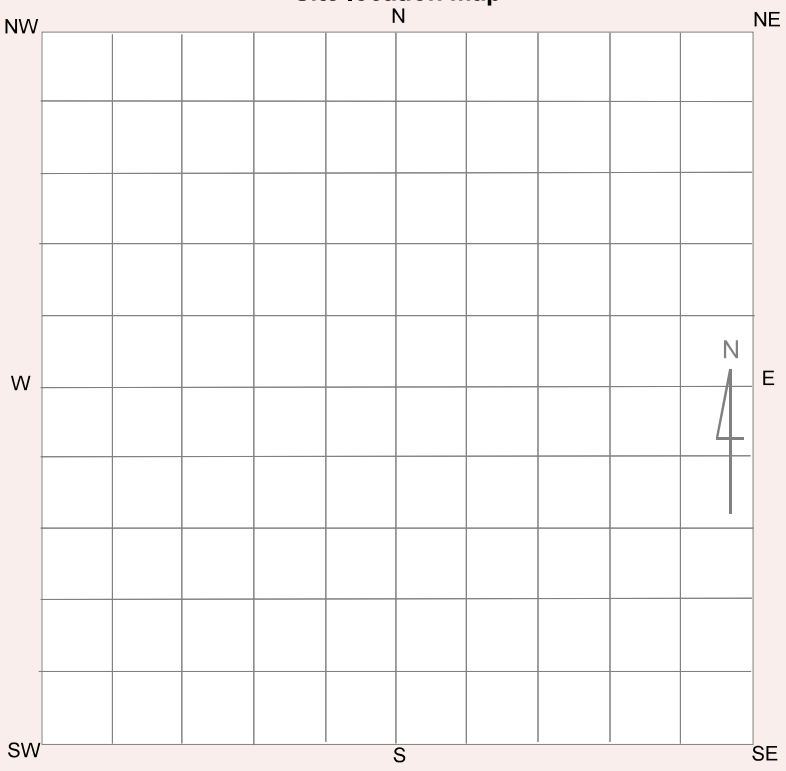
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	517 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

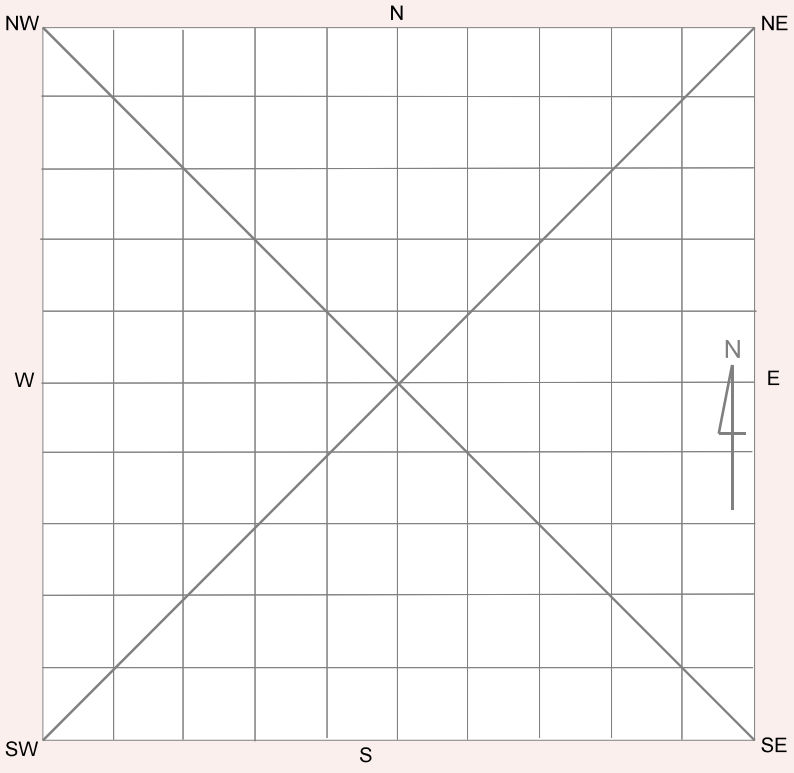
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [5] Total length of visible site
- [5] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

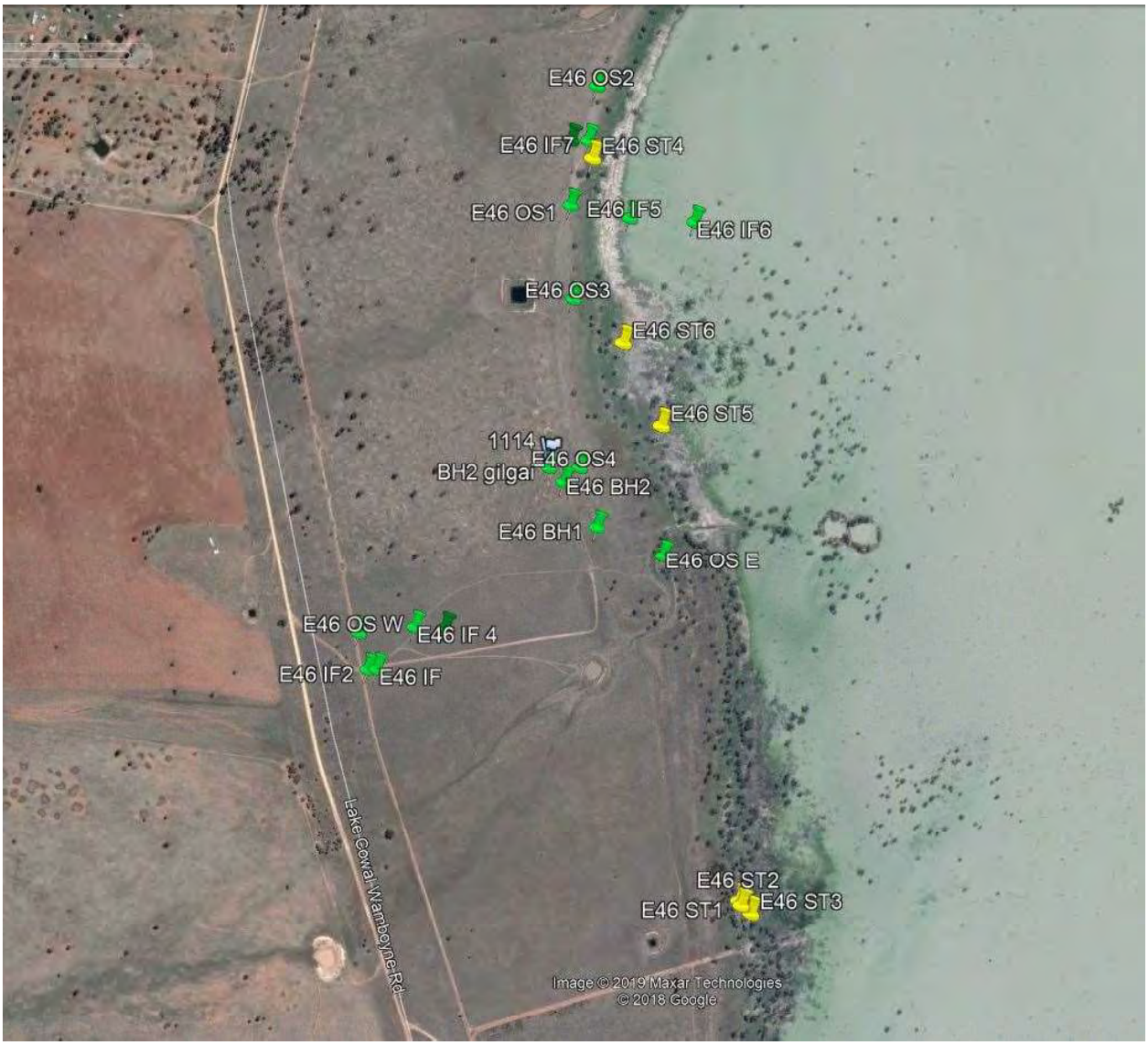
Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST1 is a potential scar tree, with scar roughly 1.4 m long and 70 cm wide, positioned roughly chest height off the ground. This site is located in proximity to sites E46 ST2 and E46 ST3. Scar is located on the western side of the tree.


E46 OS2
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5
1114
E46 OS4
BH2 gilgai
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF2
E46 IF
Lake Cowal Wamboyne Rd
E46 ST2
E46 ST1
E46 ST3
Image © 2019 Maxar Technologies
© 2018 Google

E46 ST1
E46 ST2
E46 ST3
Image © 2019 Maxar Technologies

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0118

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST2

Easting 537119 Northing 6280352 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

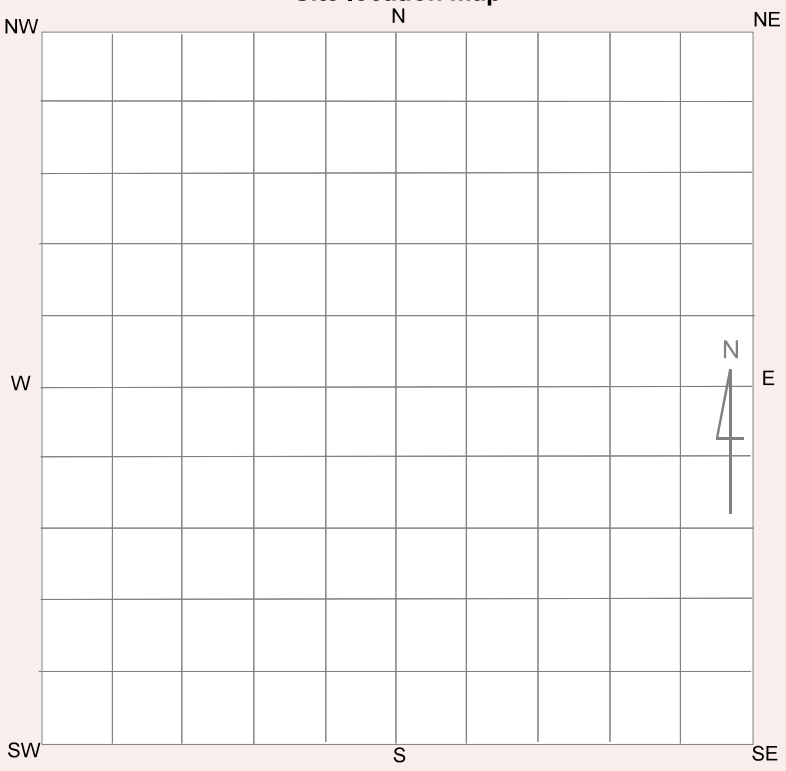
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	517 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

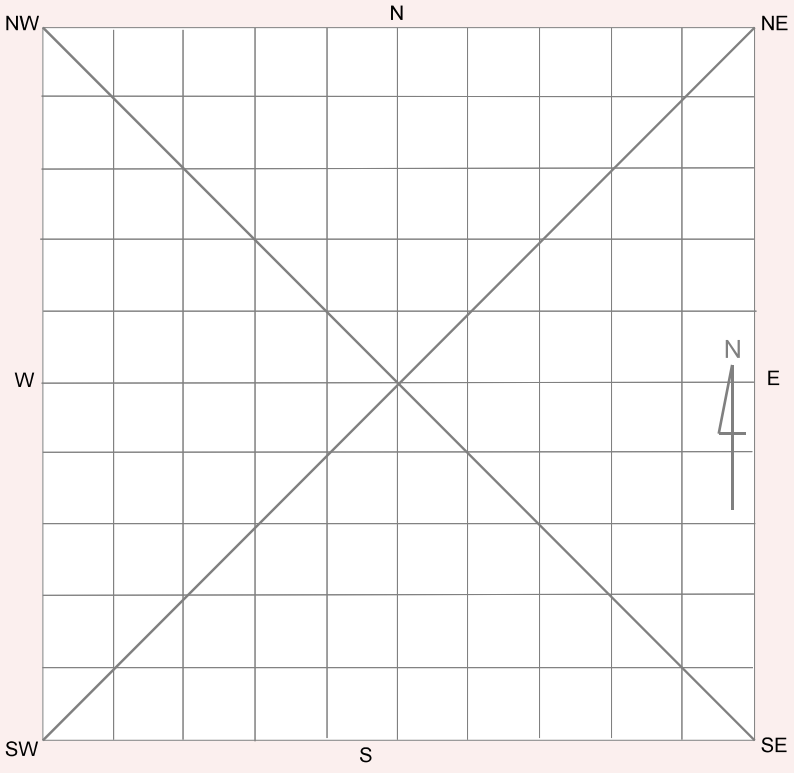
- [ ] N-S
- [ ] NE-SW
- [x] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [5] Total length of visible site
- [5] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

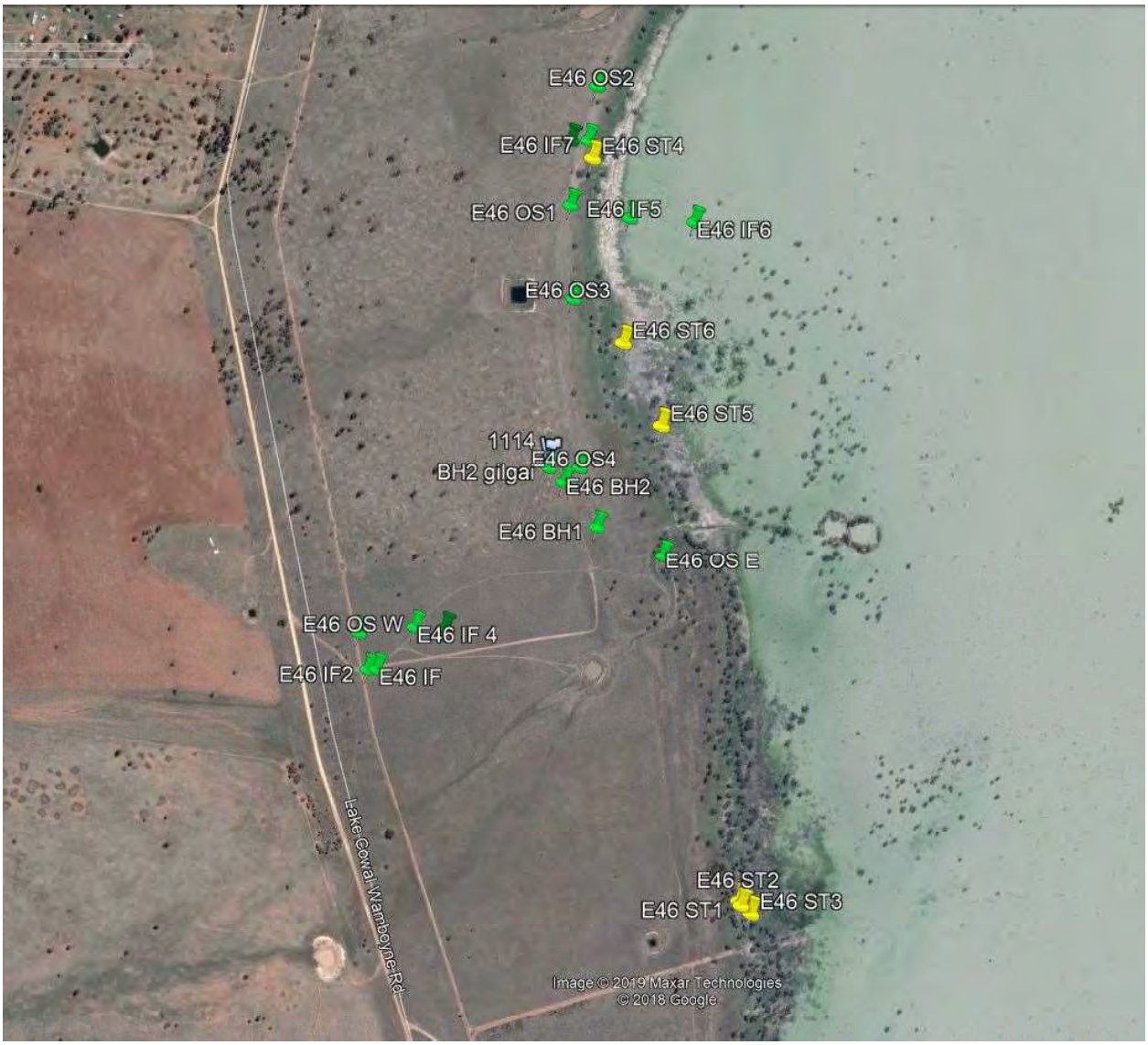
Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST2 is a potential scar tree, with scar roughly 1.3 m long and 50 cm wide, positioned roughly chest height off the ground. This site is located in proximity to sites E46 ST1 and E46 ST3. Scar is located on the western side of the tree.


E46 OS2
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5
1114
E46 OS4
BH2 gilgai
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF2
E46 IF
Lake Cowal Wamboyne Rd
E46 ST2
E46 ST1
E46 ST3
Image © 2019 Maxar Technologies
© 2018 Google

E46 ST1
E46 ST2
E46 ST3
Image © 2019 Maxar Technologies

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0119

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST3

Easting 537143 Northing 6280332 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

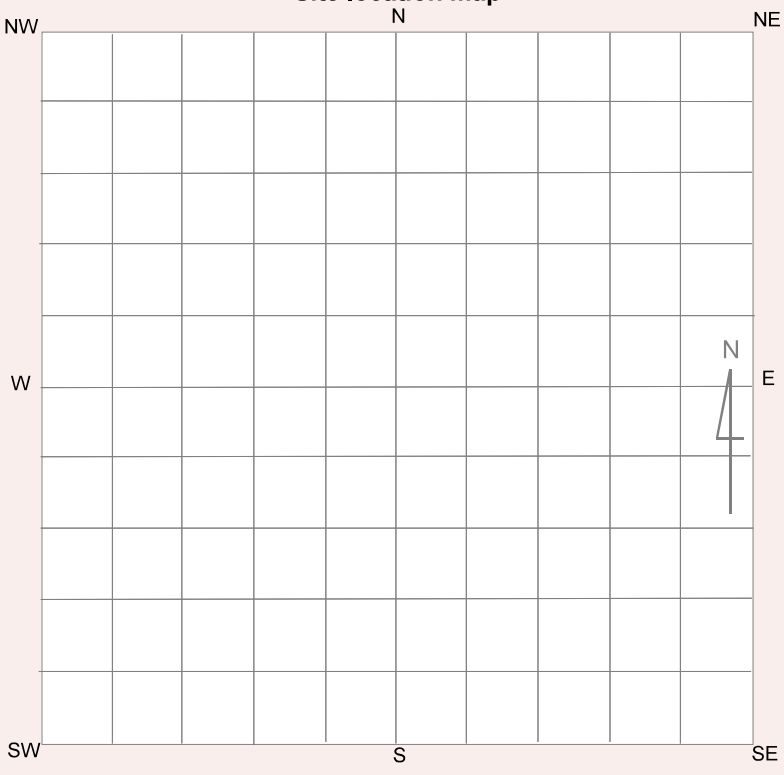
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	517 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report **I.D.** [ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

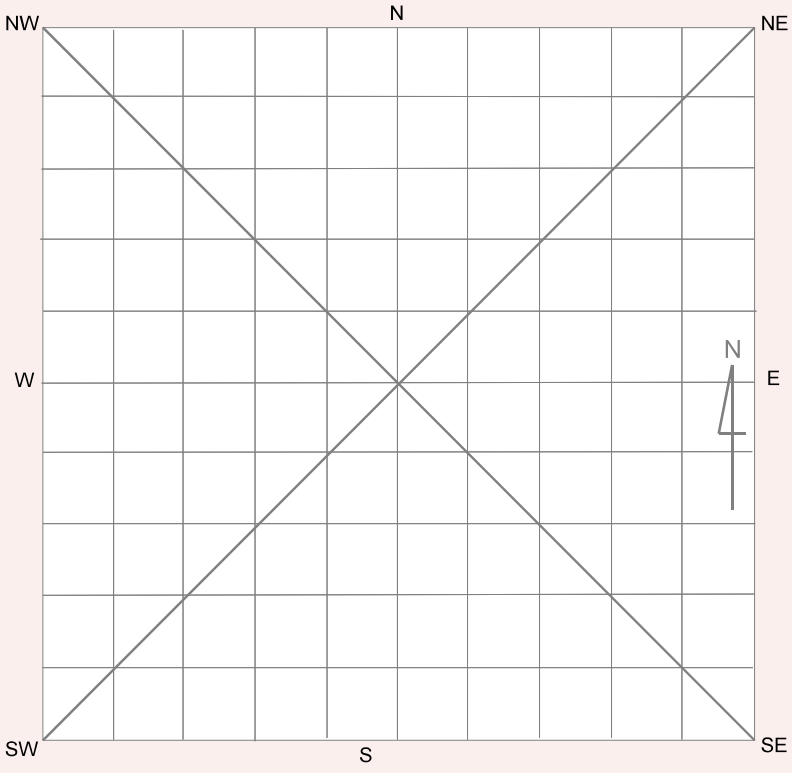
- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [5] Total length of visible site
- [5] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

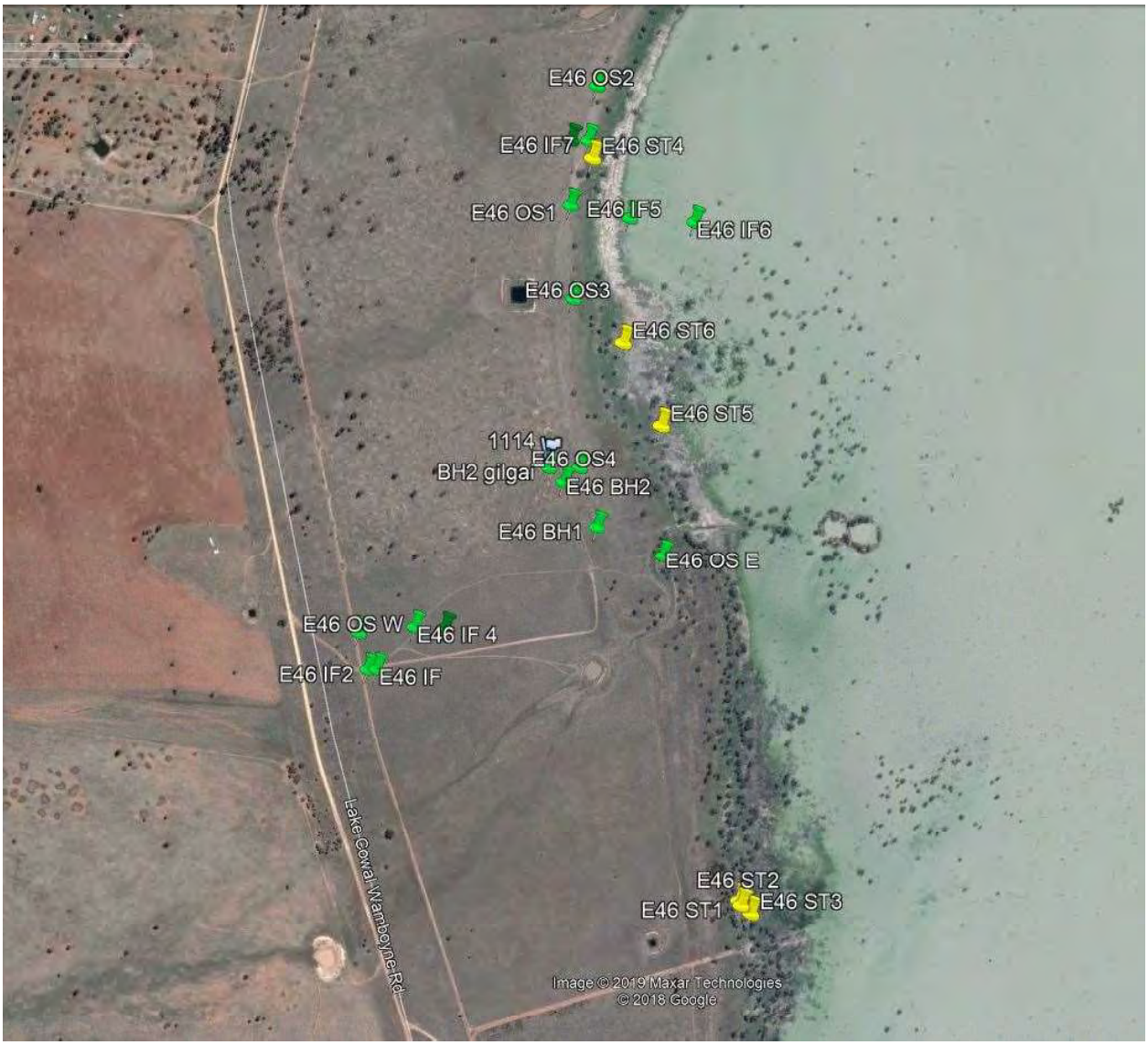
Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST3 is a potential scar tree, with scar roughly 1.5 m long and 45 cm wide, positioned roughly chest height off the ground. This site is in proximity to sites E46 ST1 and E46 ST2. Scar is located on the south-western side of the tree.


E46 OS2
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5
1114
E46 OS4
BH2 gilgai
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF2
E46 IF
Lake Cowal Wamboyne Rd
E46 ST2
E46 ST1
E46 ST3
Image © 2019 Maxar Technologies
© 2018 Google

E46 ST1
E46 ST2
E46 ST3
Image © 2019 Maxar Technologies

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0120

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST4

Easting 536760 Northing 6282188 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

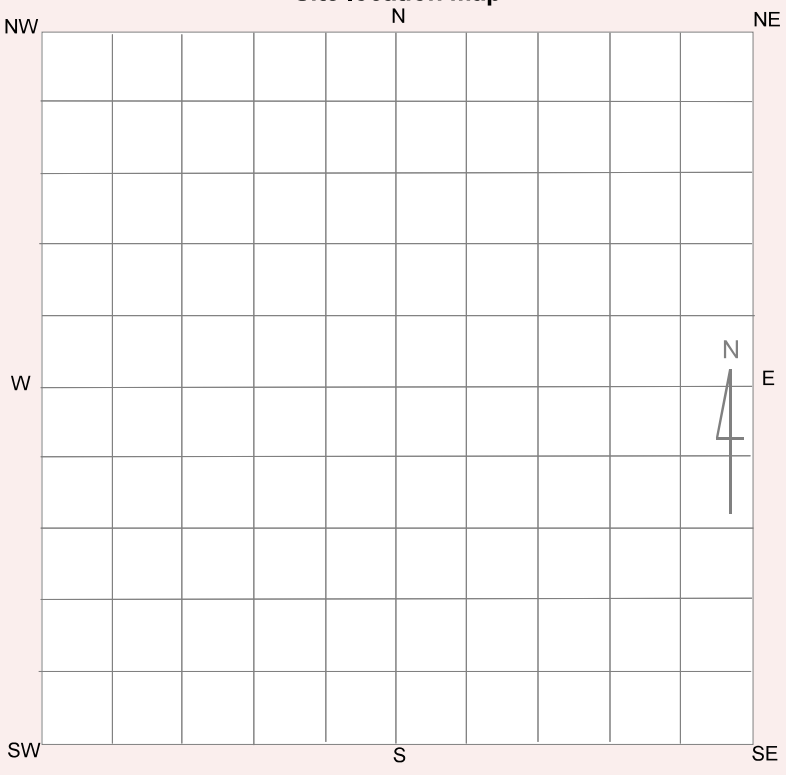
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	666 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

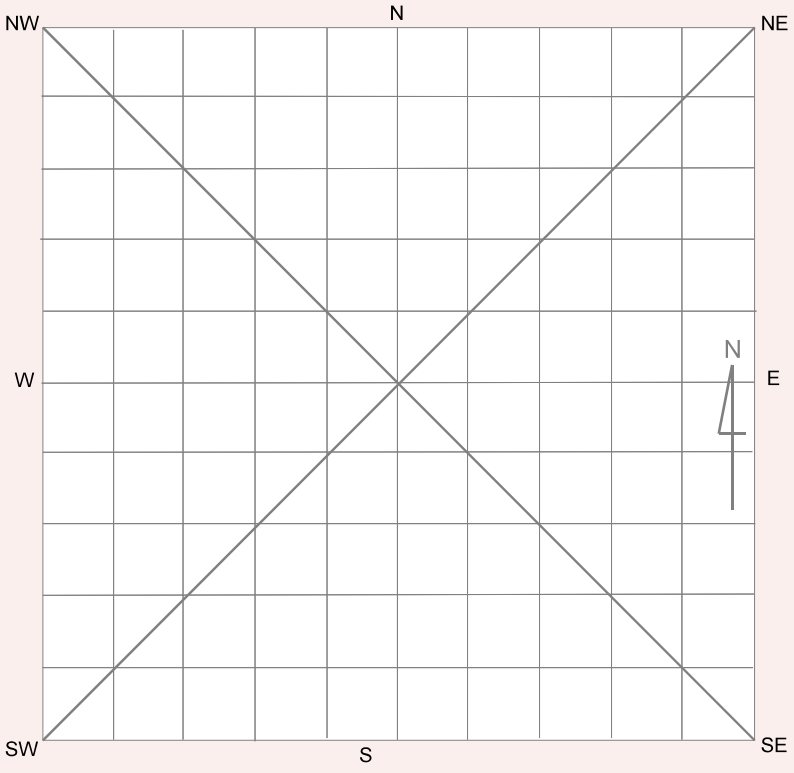
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [x] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [10] Total length of visible site
- [10] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

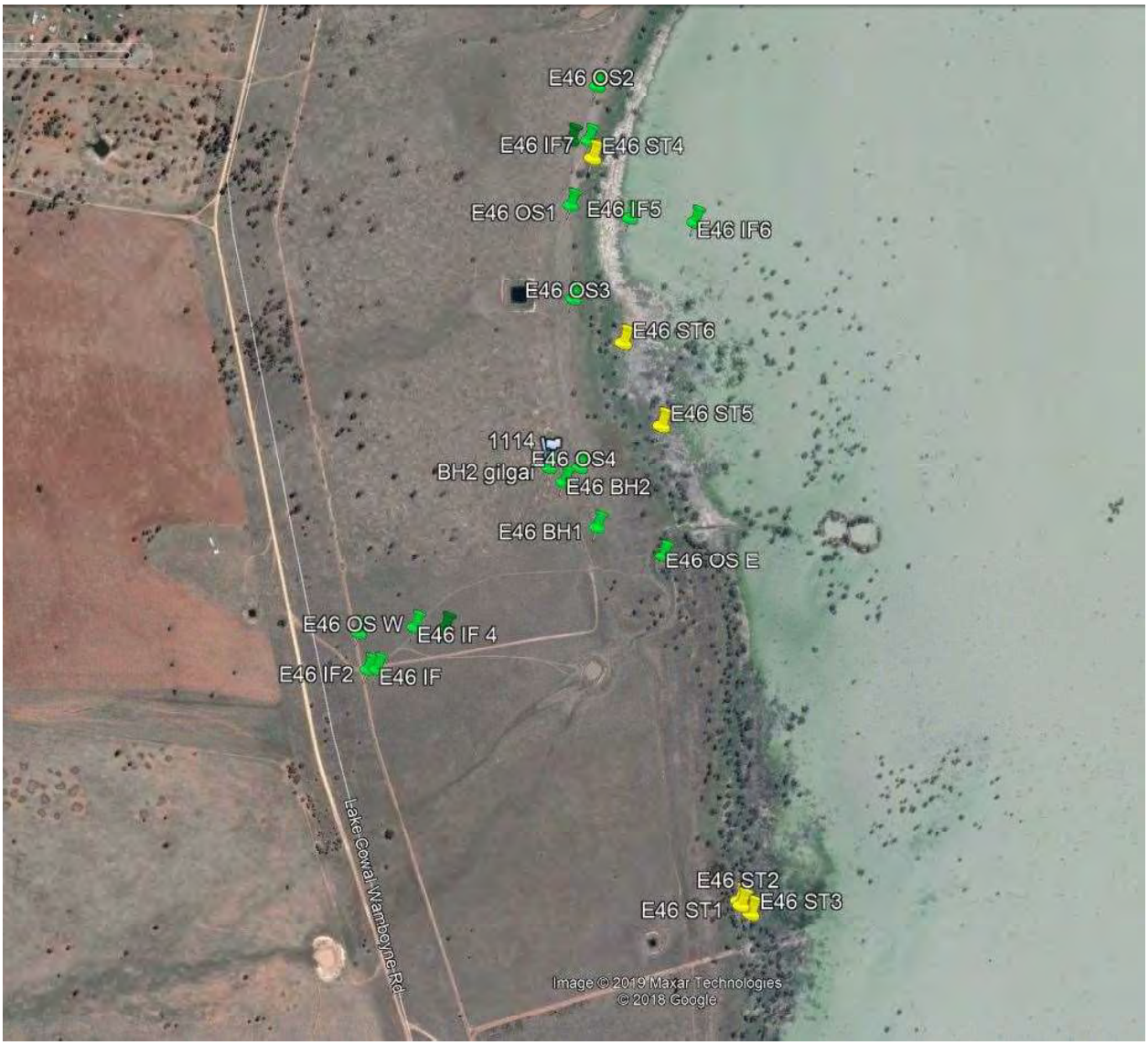
Phone number | Fax

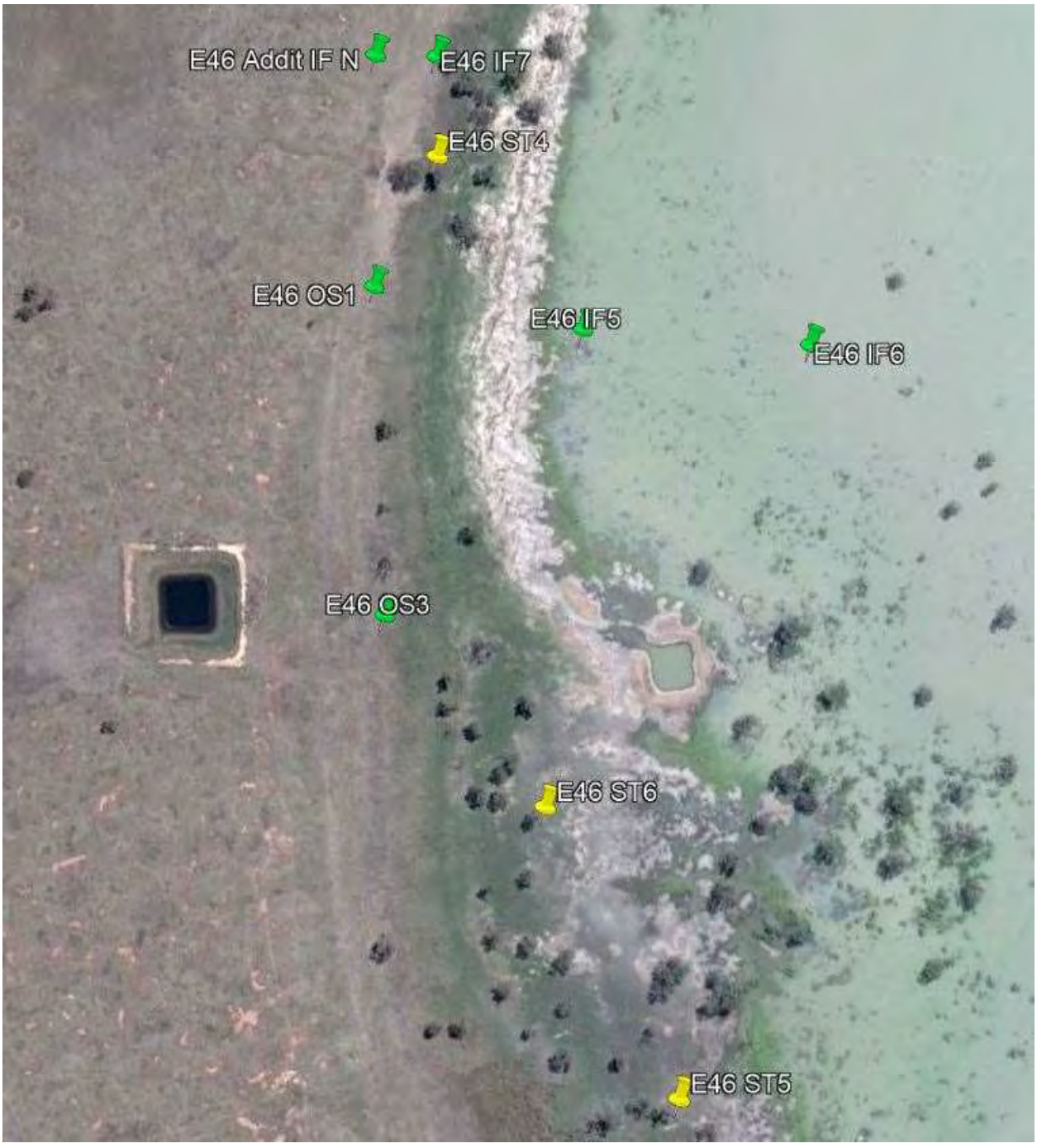
Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST4 is a potential scar tree, with scar roughly 1.2 m long and 60 cm wide, positioned above head height off the ground. The scar is located on the south-eastern side of the tree.


E46 OS2
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5
1114
E46 OS4
BH2 gilgai
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF2
E46 IF
Lake Cowal Wamboyne Rd
E46 ST2
E46 ST1
E46 ST3
Image © 2019 Maxar Technologies
© 2018 Google


E46 Addit IF N
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0121

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST5

Easting 536927 Northing 6281530 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Slope

[ ] degrees

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [x] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

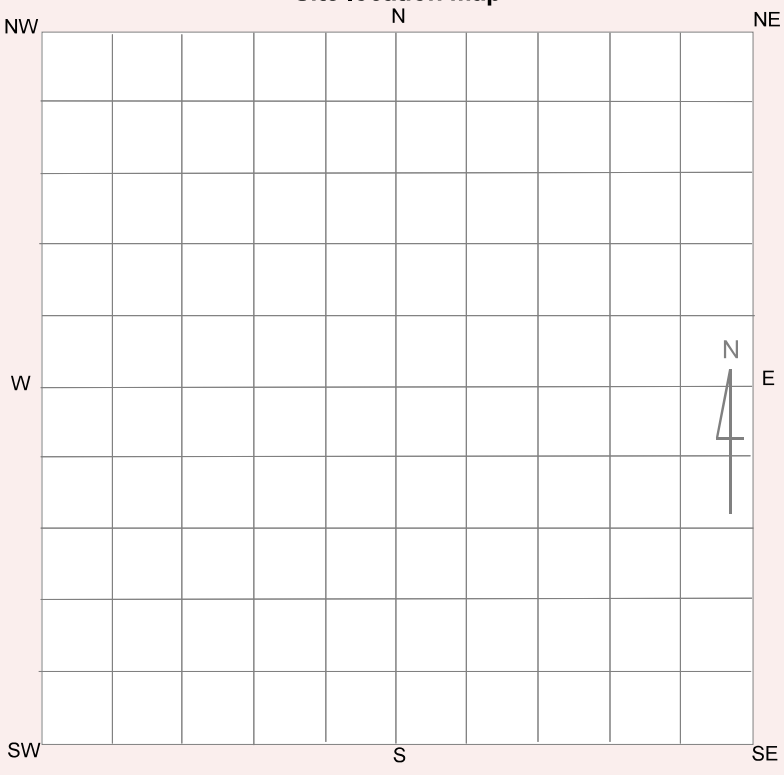
Water

Distance to permanent water source	1300 metres
Distance to temporary water source	465 metres
Name of nearest permanent water source	Bland Creek
Name of nearest temporary water	Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

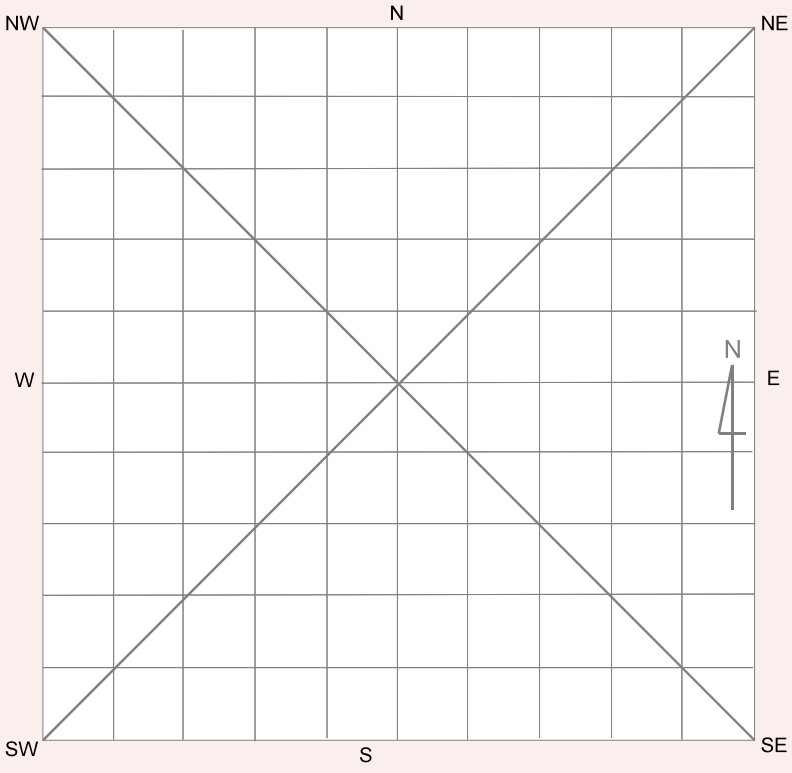
- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [5] Total length of visible site
- [5] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

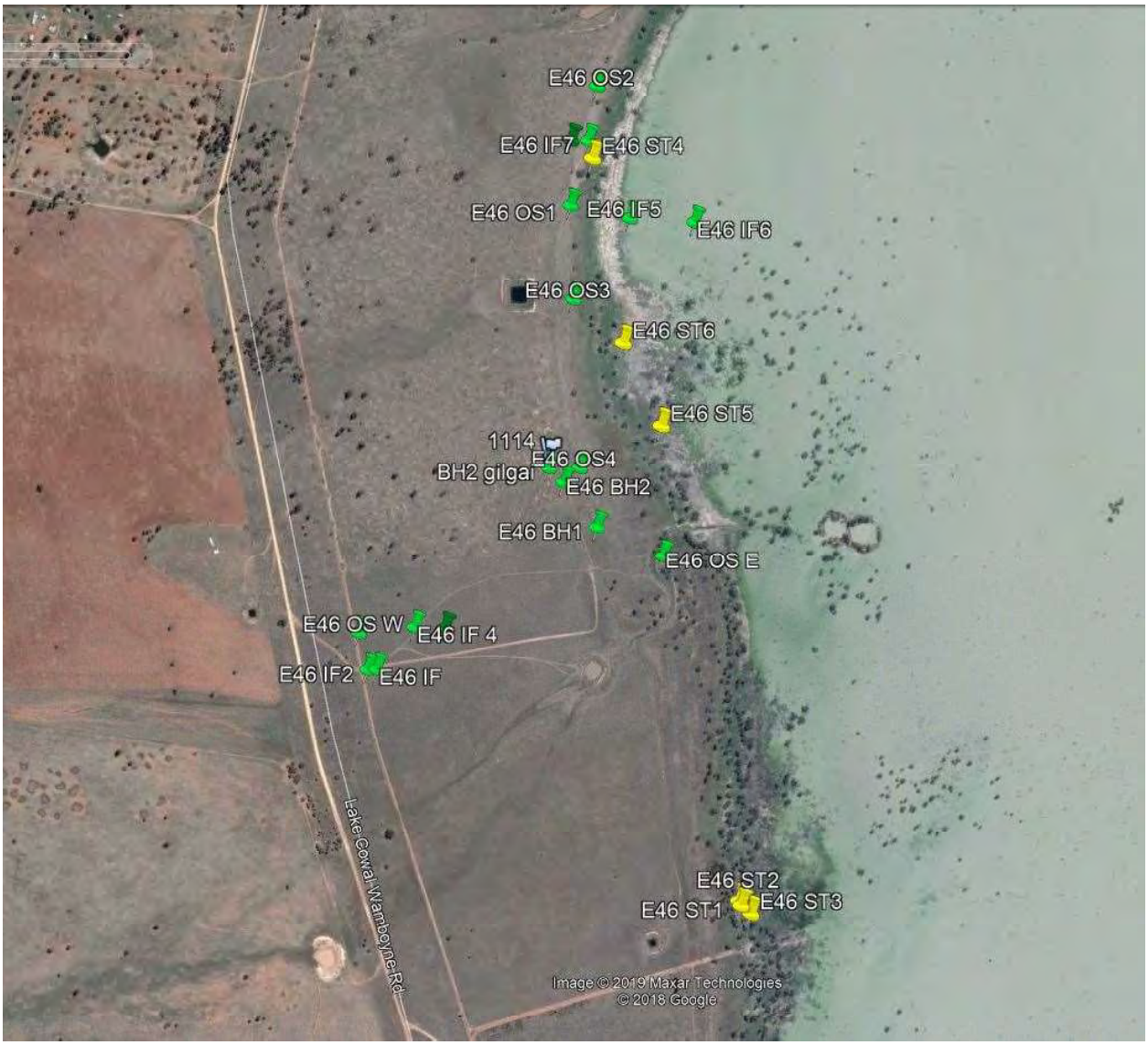
Phone number | Fax

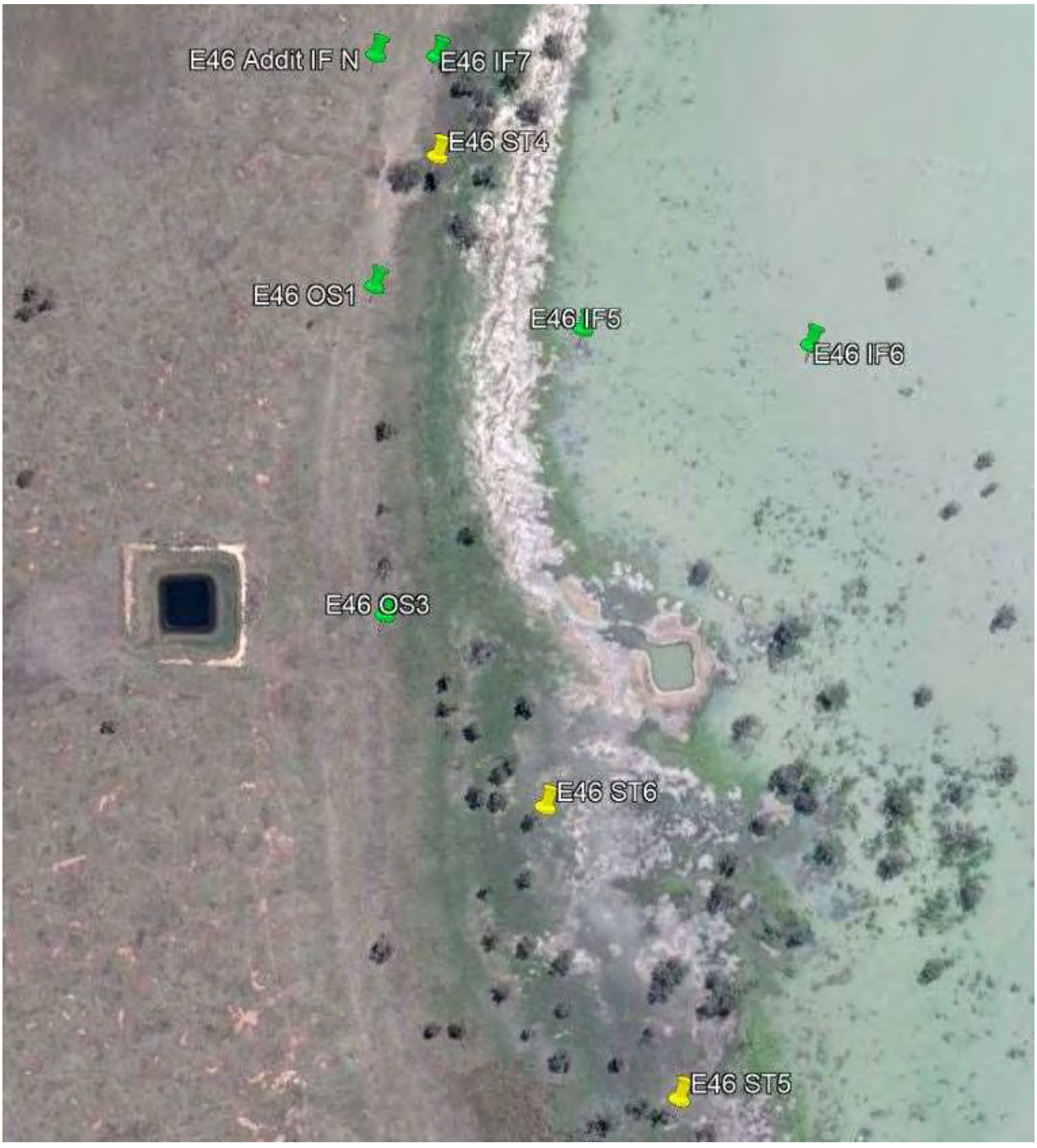
Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST5 is a potential scar tree, with scar roughly 1 m long and 50 cm wide, positioned roughly chest height off the ground.


E46 OS2
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5
1114
E46 OS4
BH2 gilgai
E46 BH2
E46 BH1
E46 OS E
E46 OS W
E46 IF 4
E46 IF2
E46 IF
Lake Cowal Wamboyne Rd
E46 ST2
E46 ST1
E46 ST3
Image © 2019 Maxar Technologies
© 2018 Google


E46 Addit IF N
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5

Aboriginal Site Recording Form

Senior Heritage Information Officer, Heritage Division, Locked Bag 5020, NSW 2124

Office Use Only

Site number 43-4-0122

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For further information contact:

☐ **Nominated Trustee**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☐ **Knowledge holder**

Title | Surname | First name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic location

Site Name E46 ST6

Easting 536834 Northing 6281734 AGD/GDA GDA

Mapsheet

Zone 55 Location method Non-Differential GPS

Other registration

Primary recorder

Title | Surname | First name | Initials

Reid | Taylar

Organisation EMM Consulting Pty Ltd

Address PO Box 506 Newcastle

Phone number | Fax

Date recorded 5/9/2019

Client on system ☐

Aboriginal site recording form - site information

Open/close site Open Site

Site context

Landform

- [ ] Mountainous
- [x] Plain
- [ ] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

Landform unit

- [x] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal creek
- [ ] Tidal flat
- [ ] Cliff
- [ ] Crest
- [x] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

Slope

[ ] degrees

Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [ ] Cleared
- [ ] Revegetated
- [ ] N/A

Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [ ] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

Water

Distance to permanent water source: 1300 metres

Distance to temporary water source: 622 metres

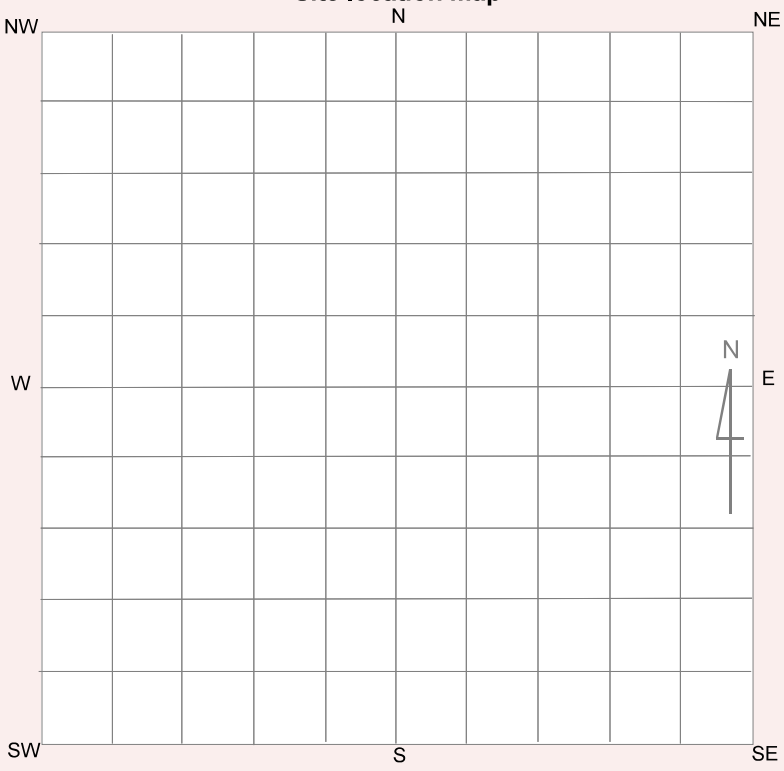
Name of nearest permanent water source: Bland Creek

Name of nearest temporary water: Lake Cowal

Directions for relocation

See attached figure

Site location map



Current land tenure

- [ ] Public — National park/government department
- [ ] Private

Primary report I.D.

[ ] (I.D. Office Use only)

Aboriginal site recording form - site information

General site information

Closed site

Shelter/cave formation

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

Rock surface condition

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Condition of Ceiling

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

Shelter Aspect

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

Open site

Site orientation

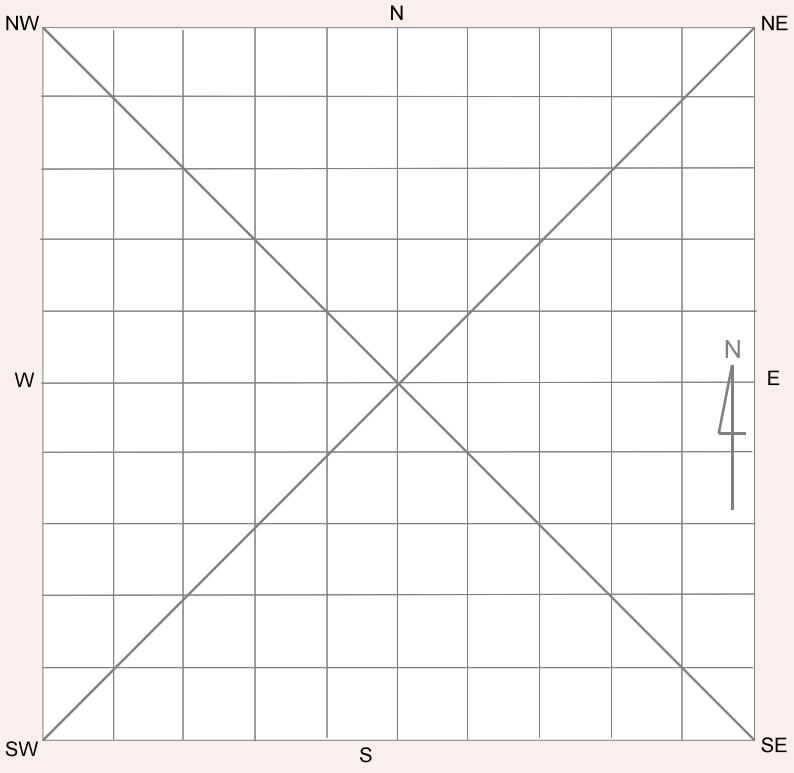
- [x] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

Features

- [ ] 1. Aboriginal ceremony and dreaming
- [ ] 2. Aboriginal resource and gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial ring
- [ ] 7. Conflict
- [ ] 8. Earth mound
- [ ] 9. Fish trap
- [ ] 10. Grinding groove
- [ ] 11. Habitation structure
- [ ] 12. Hearth
- [ ] 13. Non human bone & organic material
- [ ] 14. Ochre quarry
- [ ] 15. Potential archaeological deposit
- [ ] 16. Stone quarry
- [ ] 17. Shell
- [ ] 18. Stone arrangement
- [x] 19. Modified tree
- [ ] 20. Water hole

Site plan

Indicate scale, boundaries of site, features



Site dimensions

Closed site dimensions (m)

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

Open site dimensions (m)

- [5] Total length of visible site
- [5] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

Aboriginal community interpretation and management recommendations

Preliminary site assessment

Site cultural and scientific analysis and preliminary management recommendations

This section should only be filled in by the endorsees

Endorsed by: ☐ Knowledge holder ☐ Nominated trustee ☐ Native Title holder ☐ Community consensus

Title | Surname | First name | Initials

Organisation

Address

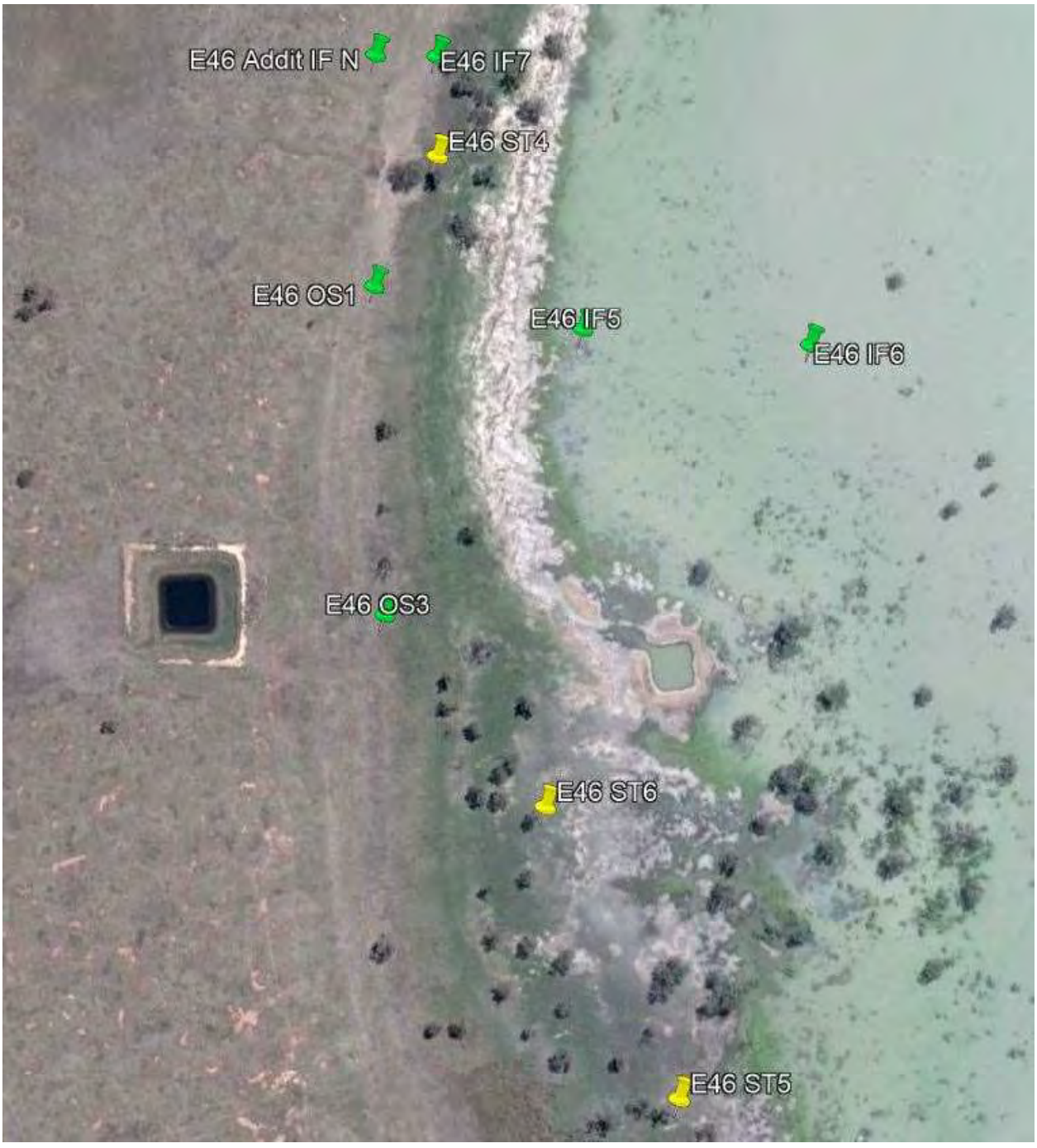
Phone number | Fax

Attachments (No.)

- ☑ A4 location map
- ☐ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

Comments

E46 ST6 is a potential scar tree, with scar roughly 1.5 m long and 50 cm wide, positioned roughly chest height off the ground. Possibly a natural scar.


E46 Addit IF N
E46 IF7
E46 ST4
E46 OS1
E46 IF5
E46 IF6
E46 OS3
E46 ST6
E46 ST5

SITE NAME: LAKE COWAL 2019A

Site Name:	*Lake Cowal 2019A*	Recorder:	*Peter Kuskie*
Site Type:	*Isolated Artefact*	MGA Grid Reference:	*531695:6280277*
Date Recorded:	*16/9/19*	Topographic Map:	*Wamboyne 8330-N*
Landform Element:	*Simple slope*	Vegetation:	*Cleared*
Slope:	*Gentle*	Ground Disturbance:	*Moderate*
Distance to Water:	*>50m*		

Visible Extent of Surface Exposures: Length (m)	Visible Extent of Surface Exposures: Width (m)	Visible Extent of Evidence: Length (m)	Visible Extent of Evidence: Width (m)	Visible Locus Area (m^2)	Mean Surface Visibility of Locus (%)	Mean Arch. Visibility of Locus (%)	Effective Locus Area (m^2)	# of Artefacts	# of Artefacts per m^2 of Effective Locus Area	Sub-Surface Deposit
50+	7	1	1	1	90%	90%	0.9	1	1.111	unlikely

Lithic Items:

Artefact #	Colour	Stone Material	Lithic Item Type	Size (mm)	Comments
1	red	silcrete	flake – proximal	30 x 25 x 9	distal end snapped

Additional Comments:

- Located during inspection of northern impacted area on 16 September 2019;
- Moderate disturbance from previous vegetation removal and pastoral use and recent grading of grass and upper 1-2 centimetres of soil along a narrow strip;
- Artefact estimated to be exposed 1-2 centimetres below original surface;
- Low potential for sub-surface deposit of research value.

Site Location: Lake Cowal 2019A (100 metre MGA grid).

Photograph: Lake Cowal 2019A (view west)

Photograph: Lake Cowal 2019A artefact #1 (scale in 5 millimetre increments).

Appendix F
Field investigation

EMM
creating opportunities

F.1 Survey transect information

Table F.1 Summary of each field survey transect undertaken

Transect #	Length (m)	Area (m²)	Landform	Exposure (%)	Visibility (%)	Effective coverage (m²)	Effective coverage (%)
CGO T1	884	152,576	Floodplain	10	10	1526	1
CGO T2	744	204,056	Floodplain	10	10	2041	1
CGO T3	1,068	200,886	Floodplain	10	10	2009	1
CGO T4	721	131,493	Floodplain	10	10	1315	1
CGO T5	814	195,862	Floodplain	10	10	1959	1
CGO T6	882	184,570	Floodplain	10	10	1846	1
CGO T7	614	83,211	Floodplain	10	10	832	1
CGO T8	1,517	104,932	Floodplain	10	10	1049	1
CGO T9	307	9,550	Floodplain	10	10	96	1
CGO T10	463	18,399	Floodplain	10	10	184	1
CGO T11	1,393	198,824	Floodplain	10	10	1988	1
CGO T12	1,389	233,334	Floodplain	10	10	2333	1
CGO T13	1,456	216,268	Floodplain	10	10	2163	1
CGO T14	1,800	321,695	Floodplain	10	10	3217	1
CGO T15	887	110,643	Floodplain	10	10	1106	1
CGO T16	985	189,438	Floodplain	10	10	1894	1
CGO T17	943	266,296	Floodplain	10	10	2663	1
CGO T18	961	178,674	Floodplain	10	10	1787	1
CGO T19	624	114,333	Hillslope	5	10	572	0.5
CGO T20	774	97,626	Floodplain	10	10	976	1
CGO T21	793	252,360	Hillslope	5	10	1262	0.5
CGO T22	801	154,295	Floodplain	10	10	1543	1
CGO T23	1,167	193,962	Floodplain	10	10	1940	1
CGO T24	831	90,440	Hillslope	5	10	452	0.5
CGO T25	501	37,345	Floodplain	10	10	373	1
CGO T26	1,228	186,563	Floodplain	10	10	1866	1
CGO T27	709	81,125	Floodplain	10	10	811	1
CGO T28	339	32,283	Floodplain	10	10	323	1
CGO T29	1,297	42,565	Floodplain	10	10	426	1

F.2 Photograph catalogue (field survey)

S

SW

W E

N E S

W E

S NW

Nw

N

N

SE N

N NE W

N SE

N

NE S W

E

S

SE

W

N

SE

SW

E

W

S

W

S

S

NW

E W

NW

N E

N

E

N SW

S W N

E

SE

SE

S

NE

SW W N

NE

SW E

SE

N W E

SE

Location N

Burnt clay

SW

SE

W

S N

E N

NE

S

E

Nw

E

S

N S NW E

Nw N

SE

SW N

S N

S SW Sw

S N SW exposure

NE

W

W

N

W E

E

SE

SE

SE NE

W E

S

S

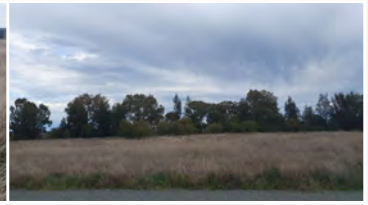
W

W W

W S

W S

E W



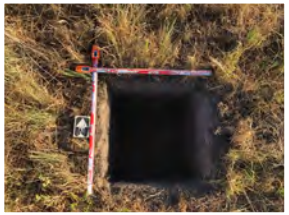
NW

W E

TP base NW E S W

E S SW N E

N pit W N E S



N wall

N wall far

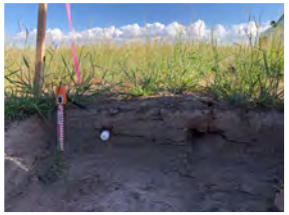
N wall

N wall

TP F new tube spot, moved W

N wamboyne

W to TP F



S

E

W no car

N

NE

E

SE

S

W

NW to TP B

SW

N

E

S

W

E again level

N wall

N wide

N

E to LC2

S

W

E to LC2 and lake | E | S | W | N

N | W | E | S

NE | E | S | W | N

N | NE | S | W

Site ID: CGO AS10

SW location

N

W

Site ID: CGO AS11

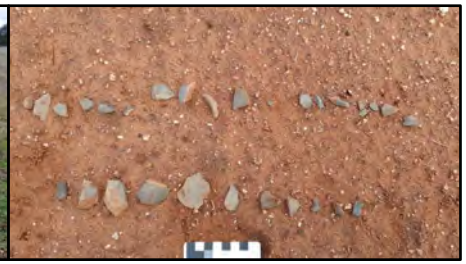
NE location with mtn w

Site ID: CGO AS12

Flake

Location

Artefact scatter



Detail point

Detail flake

Detail flake

Detail flake

Location E

Site ID: CGO AS13

Artefacts

Flake detail

Detail

Detail

Detail

Location S

Site ID: CGO AS15

Flakes	Location NE	Flake	Flakes

Site ID: CGO AS16

Basalt chert and silcrete(?) Flakes

Mudstone flake

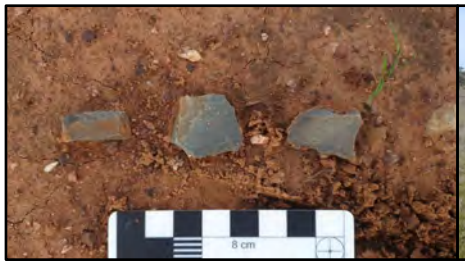
Location SE

Flakes

Detail

Site ID: CGO AS17

Flakes



Location S

Flakes

Orange flake, unsure of material

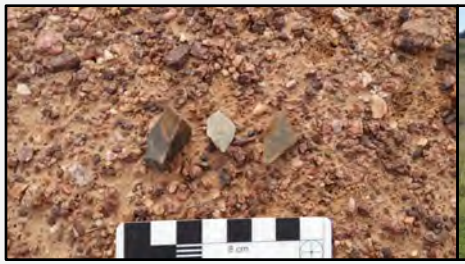
Orange detail

Location N

Scraper?

Scraper?

Site ID: CGO AS18

Flakes	Location NE		
			

Site ID: CGO AS19 grindstone?

Grindstone?	Gs2	Gs3	Gs and flake
Location NE			

Site ID: CGO AS20

Artefacts	Core detail	Core detail	Location SE

Site ID: CGO Hearth

Hearth

NE location

Site ID: CGO IF23

Flake	Flake	Location south	

Site ID: CGO IF24

Flake

Location S

Site ID: CGO IF28

Artefact	Art	Art	Location NE

Site ID: CGO IF29

Flake

Location N

Site ID: CGOAS22

Location E

Site ID: Not an aboriginal site - Ore processing site?

NW

N

E

E

N

E

S

Site ID: Part of CGO AS24

Artefact

Location S

Flake

Detail

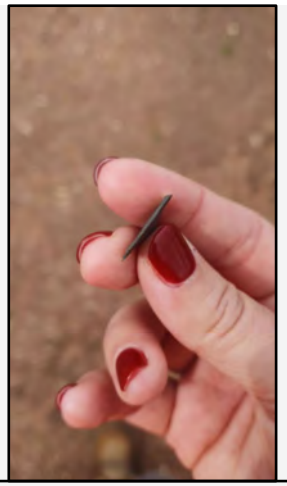
Detail

Location E

Site ID: Part of CGO AS24

Flake	Location W	Flake	Detail

Site ID: Part of CGO AS24



Flakes

Detail

Details

Location W

Site ID: Part of CGO AS24

F.3 Test pit information

Table F.2 Summary of excavated test pits

Test pit #	Mine area	Landform	Easting	Northing	Distance from lake shore (m)	Depth of test pit (cm below surface)	Area of excavation (m^2)	Number of artefacts (n)	Artefacts per m^2 (n)
1	MLS	Back plain	537601	6275803	527	10	0.25	0	0
2	MLS	Back plain	537700	6275872	413	10	0.25	0	0
3	MLS	Back plain	537723	6275984	362	10	0.25	0	0
4	MLS	Lake edge ridge	537818	6275979	271	10	0.25	0	0
5	MLS	Lake edge ridge	537927	6275962	170	10	0.25	0	0
6	MLS	Lake edge ridge	537931	6276039	147	10	0.25	0	0
7	MLS	Lake edge ridge	537933	6276149	116	10	0.25	0	0
8	MLS	Lake edge ridge	537836	6276056	235	15	0.25	0	0
1	NE	Lake edge ridge	536856	6279934	230	10	0.25	0	0
2	NE	Lake edge ridge	536968	6280020	111	20	0.25	0	0
3	NE	Lake edge ridge	536955	6279920	133	20	0.25	2	8
4	NE	Lake edge ridge	536941	6279821	158	20	0.25	0	0
5	NE	Lake edge ridge	536928	6279722	206	20	0.25	0	0
6	NE	Lake edge ridge	537054	6279907	36	10	0.25	0	0
7	NE	Lake edge ridge	537040	6279808	69	20	0.25	0	0
8	NE	Lake edge ridge	537027	6279709	120	20	0.25	0	0
9	NE	Lake edge ridge	537013	6279610	180	20	0.25	0	0
10	NE	Lake edge ridge	536999	6279511	252	10	0.25	0	0
11	NE	Lake edge ridge	537126	6279695	39	30	0.25	0	0

Table F.2 Summary of excavated test pits

Test pit #	Mine area	Landform	Easting	Northing	Distance from lake shore (m)	Depth of test pit (cm below surface)	Area of excavation (m^2)	Number of artefacts (n)	Artefacts per m^2 (n)
12	NE	Lake edge ridge	537112	6279596	110	20	0.25	0	0
13	NE	Lake edge ridge	537098	6279497	183	20	0.25	0	0
14	NE	Lake edge ridge	536913	6279983	169	20	0.25	0	0
15	NE	Lake edge ridge	537211	6279582	45	30	0.25	0	0
16	NE	Lake edge ridge	537198	6279483	133	10	0.25	6	24
17	NE	Lake edge ridge	536907	6279928	180	10	0.25	0	0
A	NE	Lake edge ridge	537299	6279476	81	10	0.25	4	16
B	NE	Lake edge ridge	537264	6279378	182	40	1	48	48
C	NE	Lake edge ridge	537169	6279379	235	15	0.25	0	0
D	NE	Lake edge ridge	537081	6279388	279	10	0.25	0	0
E	NE	Lake edge ridge	537172	6279291	305	10	0.25	2	8
F	NE	Lake edge ridge	537300	6279275	235	20	1	93	93
G	NE	Lake edge ridge	537371	6279262	178	10	1	53	53
K	NE	Lake edge ridge	537326	6279283	209	55	0.25	56	224
L	NE	Lake edge ridge	537288	6279306	223	50	0.25	26	104
M	NE	Lake edge ridge	537273	6279286	248	20	0.25	0	0
N	NE	Lake edge ridge	537276	6279342	205	40	0.25	6	24
1	SE	Lake edge ridge	537912	6275861	214	10	0.25	0	0
2	SE	Lake edge ridge	537911	6275756	249	15	0.25	0	0

Table F.2 Summary of excavated test pits

Test pit #	Mine area	Landform	Easting	Northing	Distance from lake shore (m)	Depth of test pit (cm below surface)	Area of excavation (m^2)	Number of artefacts (n)	Artefacts per m^2 (n)
3	SE	Back plain	537890	6275661	302	10	0.25	0	0
4	SE	Back plain	537884	6275561	348	10	0.25	0	0
5	SE	Back plain	537862	6275488	397	10	0.25	0	0
6	SE	Back plain	537803	6275856	319	10	0.25	0	0
7	SE	Back plain	537795	6275769	354	10	0.25	0	0
8	SE	Back plain	537780	6275671	401	10	0.25	0	0
9	SE	Back plain	537765	6275572	452	10	0.25	0	0
10	SE	Back plain	537759	6275483	493	10	0.25	0	0
11	SE	Back plain	537745	6275416	533	10	0.25	0	0
12	SE	Back plain	537700	6275781	441	10	0.25	0	0
13	SE	Back plain	537685	6275684	486	10	0.25	0	0
14	SE	Back plain	537662	6275576	545	10	0.25	0	0
15	SE	Back plain	537655	6275490	586	10	0.25	0	0
16	SE	Back plain	537642	6275389	638	10	0.25	0	0
17	SE	Back plain	537585	6275690	579	10	0.25	0	0
18	SE	Back plain	537572	6275596	622	10	0.25	0	0
19	SE	Back plain	537558	6275485	677	10	0.25	0	0
20	SE	Back plain	537545	6275399	723	10	0.25	0	0
21	SE	Back plain	537483	6275711	669	10	0.25	0	0
22	SE	Back plain	537473	6275612	710	10	0.25	0	0
23	SE	Back plain	537455	6275507	763	10	0.25	0	0
24	SE	Back plain	537436	6275434	809	10	0.25	0	0
25	SE	Back plain	537431	6275317	860	10	0.25	0	0
26	SE	Back plain	537517	6275307	785	20	0.25	0	0
27	SE	Back plain	537382	6275631	790	10	0.25	0	0
28	SE	Back plain	537353	6275523	852	10	0.25	0	0
30	SE	Back plain	537631	6275292	679	10	0.25	0	0
31	SE	Back plain	537510	6275214	812	10	0.25	0	0
32	SE	Back plain	537507	6275113	837	10	0.25	0	0
33	SE	Back plain	537489	6275002	881	10	0.25	0	0

Table F.2 Summary of excavated test pits

Test pit #	Mine area	Landform	Easting	Northing	Distance from lake shore (m)	Depth of test pit (cm below surface)	Area of excavation (m^2)	Number of artefacts (n)	Artefacts per m^2 (n)
34	SE	Back plain	537478	6274903	920	10	0.25	0	0
35	SE	Back plain	537465	6274804	961	10	0.25	0	0
36	SE	Back plain	537450	6274711	1,003	20	0.25	0	0
37	SE	Back plain	537434	6274612	1,056	10	0.25	0	0
38	SE	Back plain	537420	6274510	1,114	10	0.25	0	0
39	SE	Back plain	537317	6274528	1,197	10	0.25	0	0
40	SE	Back plain	537348	6274594	1,142	10	0.25	0	0
41	SE	Back plain	537347	6274716	1,099	10	0.25	0	0
42	SE	Back plain	537365	6274832	1,049	10	0.25	0	0
43	SE	Back plain	537377	6274910	1,014	10	0.25	0	0
44	SE	Back plain	537401	6275013	964	10	0.25	0	0
45	SE	Back plain	537400	6275114	941	10	0.25	0	0
46	SE	Back plain	537417	6275206	905	10	0.25	0	0
47	SE	Back plain	537335	6275328	944	10	0.25	0	0
48	SE	Back plain	537326	6275224	992	10	0.25	0	0
49	SE	Back plain	537303	6275142	1,029	10	0.25	0	0
50	SE	Back plain	537065	6275564	1,112	10	0.25	0	0
51	SE	Back plain	537162	6275557	1,022	10	0.25	1	4
52	SE	Back plain	537248	6275539	947	10	0.25	0	0
53	SE	Back plain	537250	6275437	979	10	0.25	0	0
54	SE	Back plain	537147	6275455	1,069	10	0.25	0	0
55	SE	Back plain	537041	6275461	1,167	10	0.25	0	0
56	SE	Back plain	536927	6275376	1,303	10	0.25	0	0
1	SW	Back plain	536844	6275390	1,377	10	0.25	0	0
2	SW	Back plain	536742	6275414	1,466	15	0.25	0	0
3	SW	Back plain	536652	6275431	1,545	10	0.25	0	0
4	SW	Back plain	536538	6275443	1,650	10	0.25	1	4
5	SW	Back plain	536439	6275461	1,738	20	0.25	0	0
7	SW	Back plain	536140	6275500	2,016	10	0.25	0	0
8	SW	Back plain	536056	6275517	2,093	10	0.25	0	0

Table F.2 Summary of excavated test pits

Test pit #	Mine area	Landform	Easting	Northing	Distance from lake shore (m)	Depth of test pit (cm below surface)	Area of excavation (m^2)	Number of artefacts (n)	Artefacts per m^2 (n)
9	SW	Back plain	535947	6275527	2,196	30	0.25	0	0
10	SW	Back plain	535850	6275542	2,285	20	0.25	0	0
12	SW	Back plain	535754	6275551	2,376	15	0.25	0	0
13	SW	Back plain	535659	6275553	2,467	10	0.25	0	0
14	SW	Back plain	535563	6275578	2,554	20	0.25	0	0
15	SW	Back plain	535456	6275595	2,654	10	0.25	0	0
16	SW	Back plain	535261	6275620	2,839	15	0.25	0	0
17	SW	Back plain	535138	6275648	2,952	10	0.25	0	0
18	SW	Back plain	535063	6275649	3,025	10	0.25	0	0
19	SW	Back plain	534970	6275661	3,113	10	0.25	0	0
20	SW	Back plain	534863	6275675	3,214	20	0.25	0	0
21	SW	Back plain	534764	6275687	3,309	35	0.25	0	0
Total	**-**	**-**	**-**	**-**	**-**	**-**	**29.75**	**298**	**610**
Average	-	-	-	-	*860*	*14*	-	*2.7*	*5.5*

F.4 Photograph catalogue (excavation)

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
IMG_0461-2	1	North-east	Lake edge ridge	10-Jan-23	Overview shot of backfilled pit.
IMG_0462	1	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0465	14	North-east	Lake edge ridge	10-Jan-23	Overview shot of backfilled pit.
IMG_0470	6	North-east	Lake edge ridge	10-Jan-23	Overview shot of backfilled pit.
IMG_0472	4	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0473	4	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0475	4	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0480	D	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0483	21	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0486	11	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0490	12	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0491	12	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0494	9	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0495	9	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0498	10	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0502	13	North-east	Lake edge ridge	10-Jan-23	Overview north view
MG_0505	16	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0506	16	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0510	15	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0511	15	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0513	A	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0514	A	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0518	A	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0520	N	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0521	N	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0524	N	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0528	I	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0530	I	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0531	I	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0535	E	North-east	Lake edge ridge	10-Jan-23	Context view north

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
IMG_0536	E	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0537	E	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0541	C	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0544	C	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0547	C	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0552	M	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0553	M	North-east	Lake edge ridge	10-Jan-23	Overview north view
IMG_0556	M	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0561	G	North-east	Lake edge ridge	10-Jan-23	Context view north
IMG_0566	G	North-east	Lake edge ridge	10-Jan-23	North section
IMG_0568	G	North-east	Lake edge ridge	10-Jan-23	Overview north view
P1110002	H	North-east	Lake edge ridge	11-Jan-23	Overview of pit 1x1m -north view
P1110003	J	North-east	Lake edge ridge	11-Jan-23	Overview of pit - north view
P1110004	H	North-east	Lake edge ridge	11-Jan-23	North section
P1110006	J	North-east	Lake edge ridge	11-Jan-23	North section
P1110014	J; H	North-east	Lake edge ridge	11-Jan-23	West overview of TP-J and TP-H
P1110017	J; H	North-east	Lake edge ridge	11-Jan-23	Context north view TP-H and TP-J
P1110020	J; H	North-east	Lake edge ridge	11-Jan-23	Context east view TP-H and TP-J
P1110022	J; H	North-east	Lake edge ridge	11-Jan-23	Context south view TP-H and TP-J
P1110028	F	North-east	Lake edge ridge	10-Jan-23	Context south view
P1110033	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	Overview of 1x1m pit - north view
P1110034	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	1x1m pit - north section
P1110038	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	1x1m pit - south section
P1110041	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	Overview of 1x1m pit - south view
P1110043	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	Context north view
P1110045	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	Context south view
P1110047	F; F1; F2; F3	North-east	Lake edge ridge	11-Jan-23	Context east view
P1120051	B; B1; B2; B3	North-east	Lake edge ridge	12-Jan-23	Overview of 1x1m pit - south view
P1120051	B3	North-east	Lake edge ridge	12-Jan-23	North section
P1120055	B	North-east	Lake edge ridge	12-Jan-23	North section
P1120070	B; B1; B2; B3	North-east	Lake edge ridge	12-Jan-23	Overview of 1x1m pit - north view

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1120078	B; B1; B2; B4	North-east	Lake edge ridge	13-Jan-23	Context - direction unknown
P1120079	B; B1; B2; B5	North-east	Lake edge ridge	13-Jan-23	Context - direction unknown
P1120085	1	South-east	Lake edge ridge	12-Jan-23	Overview north view
P1120089	1	South-east	Lake edge ridge	12-Jan-23	North section
P1120092	1	South-east	Lake edge ridge	12-Jan-23	Context view north
P1120099	2	South-east	Lake edge ridge	12-Jan-23	Context view north
P1120101	2	South-east	Lake edge ridge	12-Jan-23	Overview north view
P1120103	2	South-east	Lake edge ridge	12-Jan-23	North section
P1120109	3	South-east	Back plain	12-Jan-23	Context view north
P1120111	3	South-east	Back plain	12-Jan-23	Overview north view
P1120117	3	South-east	Back plain	12-Jan-23	North section
P1120121	4	South-east	Back plain	12-Jan-23	Overview south view
P1120125	4	South-east	Back plain	12-Jan-23	South section
P1120129	4	South-east	Back plain	12-Jan-23	Context view south
P1120131	5	South-east	Back plain	12-Jan-23	Overview south view
P1120137	5	South-east	Back plain	12-Jan-23	South section
P1120139	5	South-east	Back plain	12-Jan-23	Context - direction unknown
P1120144	11	South-east	Back plain	12-Jan-23	Overview north view
P1120149	11	South-east	Back plain	12-Jan-23	North section
P1120152	11	South-east	Back plain	12-Jan-23	Context view north
P1130002	10	South-east	Back plain	13-Jan-23	Context view north west
P1130004	10	South-east	Back plain	13-Jan-23	Overview north view
P1130007	10	South-east	Back plain	13-Jan-23	North section
P1130013	9	South-east	Back plain	13-Jan-23	Overview north view
P1130016	9	South-east	Back plain	13-Jan-23	North section
P1130019	9	South-east	Back plain	13-Jan-23	Context - direction unknown
P1130027	8	South-east	Back plain	13-Jan-23	Overview north view
P1130028	8	South-east	Back plain	13-Jan-23	North section
P1130033	7	South-east	Back plain	No date	Overview north view
P1130037	7	South-east	Back plain	No date	North section
P1130047	6	South-east	Back plain	13-Jan-23	Overview north view

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1130052	6	South-east	Back plain	13-Jan-23	North section
P1130056	6	South-east	Back plain	13-Jan-23	Context - direction unknown
P1130059	16	South-east	Back plain	13-Jan-23	Context view north
P1130062	16	South-east	Back plain	13-Jan-23	Overview north view
P1130071	16	South-east	Back plain	13-Jan-23	North section
P1130077	15	South-east	Back plain	13-Jan-23	Overview north view
P1130079	15	South-east	Back plain	13-Jan-23	North section
P1130082	15	South-east	Back plain	13-Jan-23	Context view north
P1130085	14	South-east	Back plain	13-Jan-23	Context view north
P1130092	14	South-east	Back plain	13-Jan-23	Overview north view
P1130094	14	South-east	Back plain	13-Jan-23	North section
P1130098	13	South-east	Back plain	13-Jan-23	Context view north
P1130102	13	South-east	Back plain	13-Jan-23	Overview north view
P1130105	13	South-east	Back plain	13-Jan-23	North section
P1130108	12	South-east	Back plain	13-Jan-23	Overview north view
P1130115	12	South-east	Back plain	13-Jan-23	North section
P1130121	17	South-east	Back plain	13-Jan-23	Overview north view
P1120125	17	South-east	Back plain	13-Jan-23	North section
P1130130	18	South-east	Back plain	13-Jan-23	Overview north view
P1130134	18	South-east	Back plain	13-Jan-23	North section
P1130137	19	South-east	Back plain	13-Jan-23	Overview north view
P1130141	19	South-east	Back plain	13-Jan-23	North section
P1130148	20	South-east	Back plain	13-Jan-23	Overview north view
P1130154	20	South-east	Back plain	13-Jan-23	North section
P1130158	20	South-east	Back plain	13-Jan-23	Context view north
P1130162	26	South-east	Back plain	13-Jan-23	Overview north view
P1130165	26	South-east	Back plain	13-Jan-23	North section
P1130170	26	South-east	Back plain	13-Jan-23	Context view north
P1130174	24	South-east	Back plain	13-Jan-23	Overview north view
P1130177	24	South-east	Back plain	13-Jan-23	North section
P1130179	24	South-east	Back plain	13-Jan-23	Context view north

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1130184	25	South-east	Back plain	13-Jan-23	Overview north view
P1130189	25	South-east	Back plain	13-Jan-23	North section
P1130190	25	South-east	Back plain	13-Jan-23	Context - direction unknown
P1130193	30	South-east	Back plain	13-Jan-23	Overview north view
P1130199	30	South-east	Back plain	13-Jan-23	North section
P1130203	28	South-east	Back plain	13-Jan-23	Overview north view
P1130205	28	South-east	Back plain	13-Jan-23	North section
P1130209	28	South-east	Back plain	13-Jan-23	Context - direction unknown
P1130212	27	South-east	Back plain	13-Jan-23	Overview north view
P1130219	27	South-east	Back plain	13-Jan-23	North section
P1130220	27	South-east	Back plain	13-Jan-23	Context view north
P1130225	22	South-east	Back plain	13-Jan-23	Context view north
P1130229	22	South-east	Back plain	13-Jan-23	Overview north view
P1130233	22	South-east	Back plain	13-Jan-23	North section
P1160235	23	South-east	Back plain	13-Jan-23	Overview north view
P1160241	23	South-east	Back plain	13-Jan-23	North section
P1160244	23	South-east	Back plain	13-Jan-23	Context view north
P1160249	21	South-east	Back plain	16-Jan-23	Context view north
P1160255	21	South-east	Back plain	16-Jan-23	Overview north view
P1160258	21	South-east	Back plain	16-Jan-23	North section
P1160269	31	South-east	Back plain	16-Jan-23	Overview north view
P1160276	31	South-east	Back plain	16-Jan-23	North section
P1160281	31	South-east	Back plain	16-Jan-23	Context view north
P1160284	32	South-east	Back plain	16-Jan-23	Overview north view
P1160289	32	South-east	Back plain	16-Jan-23	North section
P1160292	32	South-east	Back plain	16-Jan-23	Context - direction unknown
P1160297	33	South-east	Back plain	16-Jan-23	Context view north
P1160300	33	South-east	Back plain	16-Jan-23	Overview north view
P1160307	33	South-east	Back plain	16-Jan-23	North section
P1160310	34	South-east	Back plain	16-Jan-23	Context view north
P1160313	34	South-east	Back plain	16-Jan-23	Overview north view

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1160317	34	South-east	Back plain	16-Jan-23	North section
P1180578	35	South-east	Back plain	18-Jan-23	Overview north view
P1180583	35	South-east	Back plain	18-Jan-23	North section
P1180585	35	South-east	Back plain	18-Jan-23	Context view north
P1180591	36	South-east	Back plain	18-Jan-23	Context view north
P1180600	36	South-east	Back plain	18-Jan-23	North section
P1180601	36	South-east	Back plain	18-Jan-23	Overview north view
P1180605	36	South-east	Back plain	18-Jan-23	Section view
P1180610	37	South-east	Back plain	18-Jan-23	Overview north view
P1180611	37	South-east	Back plain	18-Jan-23	Context view north
P1180614	37	South-east	Back plain	18-Jan-23	North section
P1180617	38	South-east	Back plain	18-Jan-23	Context view north
P1180621	38	South-east	Back plain	18-Jan-23	Overview north view
P1180623	38	South-east	Back plain	18-Jan-23	North section
P1190681	39	South-east	Back plain	18-Jan-23	Overview north view
P1190689	39	South-east	Back plain	18-Jan-23	North section
P1190692	40	South-east	Back plain	19-Jan-23	Overview north view
P1190699	40	South-east	Back plain	19-Jan-23	North section
P1190700	40	South-east	Back plain	19-Jan-23	Context - direction unknown
P1190706	41	South-east	Back plain	19-Jan-23	Overview north view
P1190709	41	South-east	Back plain	19-Jan-23	North section
P1190712	41	South-east	Back plain	19-Jan-23	Context view east
P1190716	42	South-east	Back plain	19-Jan-23	Overview north view
P1190720	42	South-east	Back plain	19-Jan-23	North section
P1190724	43	South-east	Back plain	19-Jan-23	Overview north view
P1190727	43	South-east	Back plain	19-Jan-23	North section
P1190731	43	South-east	Back plain	19-Jan-23	Context view north
P1190734	45	South-east	Back plain	19-Jan-23	Overview north view
P1190738	45	South-east	Back plain	19-Jan-23	North section
P1190742	45	South-east	Back plain	19-Jan-23	Context view north
P1190747	44	South-east	Back plain	19-Jan-23	Overview north view

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1190751	44	South-east	Back plain	19-Jan-23	North section
P1190753	44	South-east	Back plain	19-Jan-23	Context view north
P1190758	48	South-east	Back plain	19-Jan-23	Overview north view
P1190765	48	South-east	Back plain	19-Jan-23	North section
P1190767	47	South-east	Back plain	19-Jan-23	Overview north view
P1190773	47	South-east	Back plain	19-Jan-23	North section
P1190779	10	South-west	Back plain	19-Jan-23	Overview north view
P1190783	10	South-west	Back plain	19-Jan-23	North section
P1190786	10	South-west	Back plain	19-Jan-23	Context view north
P1190791	9	South-west	Back plain	19-Jan-23	Context view north
P1190798	9	South-west	Back plain	19-Jan-23	Overview north view
P1190801	9	South-west	Back plain	19-Jan-23	North section
P1190806	8	South-west	Back plain	19-Jan-23	Context view north
P1190811	8	South-west	Back plain	19-Jan-23	Overview north view
P1190816	8	South-west	Back plain	19-Jan-23	North section
P1190829	7	South-west	Back plain	19-Jan-23	Overview north view
P1190831	7	South-west	Back plain	19-Jan-23	North section
P1190834	7	South-west	Back plain	19-Jan-23	Context view north
P1190840	49	South-west	Back plain	19-Jan-23	Overview north view
P1190848	49	South-west	Back plain	19-Jan-23	North section
P1190853	54	South-west	Back plain	19-Jan-23	Overview north view
P1190860	54	South-west	Back plain	19-Jan-23	North section
P1190867	51	South-west	Back plain	19-Jan-23	Overview north view
P1190872	51	South-west	Back plain	19-Jan-23	North section
P1190879	52	South-west	Back plain	19-Jan-23	Overview north view
P1190882	52	South-west	Back plain	19-Jan-23	North section
P1190887	53	South-west	Back plain	19-Jan-23	Overview north view
P1190894	53	South-west	Back plain	19-Jan-23	North section
P1200899	16	South-west	Back plain	20-Jan-23	Overview north view
P1200901	16	South-west	Back plain	20-Jan-23	North section
P1200908	16	South-west	Back plain	20-Jan-23	Context view north

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1200913	14	South-west	Back plain	20-Jan-23	Overview north view
P1200919	14	South-west	Back plain	20-Jan-23	North section
P1200930	14	South-west	Back plain	20-Jan-23	Section view
P1200933	14	South-west	Back plain	20-Jan-23	Context view north
P1200940	12	South-west	Back plain	20-Jan-23	Overview north view
P1200945	12	South-west	Back plain	20-Jan-23	North section
P1200946	12	South-west	Back plain	20-Jan-23	Context view north
P1200950	5	South-west	Back plain	20-Jan-23	Overview north view
P1200955	5	South-west	Back plain	20-Jan-23	North section
P1200960	5	South-west	Back plain	20-Jan-23	Context view north
P1200968	4	South-west	Back plain	20-Jan-23	Overview north view
P1200976	4	South-west	Back plain	20-Jan-23	North section
P1200977	4	South-west	Back plain	20-Jan-23	Context view north
P1200983	3	South-west	Back plain	20-Jan-23	Overview north view
P1200984	3	South-west	Back plain	20-Jan-23	Section view
P1120989	3	South-west	Back plain	20-Jan-23	Context view north
P1201003	21	South-west	Back plain	20-Jan-23	Overview north view
P1201012	21	South-west	Back plain	20-Jan-23	North section
P1201015	20	South-west	Back plain	20-Jan-23	Context view north
P1201025	20	South-west	Back plain	20-Jan-23	Section view
P1201026	20	South-west	Back plain	20-Jan-23	Overview north view
P1201032	18	South-west	Back plain	20-Jan-23	Overview north view
P1201036	18	South-west	Back plain	20-Jan-23	North section
P1201039	18	South-west	Back plain	20-Jan-23	Context view north
P1201043	19	South-west	Back plain	20-Jan-23	Overview north view
P1201047	19	South-west	Back plain	20-Jan-23	North section
P1201053	19	South-west	Back plain	20-Jan-23	Context view north
P1201056	17	South-west	Back plain	20-Jan-23	Context view north
P1201059	17	South-west	Back plain	20-Jan-23	Overview north view
P1201063	17	South-west	Back plain	20-Jan-23	North section
P1201069	15	South-west	Back plain	20-Jan-23	Context view north

Table F.3 Photographic log

Image #	Test pit #	Area	Cowal micro-environment	Date	Notes
P1201075	15	South-west	Back plain	20-Jan-23	Overview north view
P1201077	15	South-west	Back plain	20-Jan-23	North section
P1201086	2	South-west	Back plain	20-Jan-23	Context view north
P1201089	2	South-west	Back plain	20-Jan-23	Overview north view
P1201092	2	South-west	Back plain	20-Jan-23	North section
P1201099	1	South-west	Back plain	20-Jan-23	Context view north
P1201103	1	South-west	Back plain	20-Jan-23	Overview north view
P1201106	1	South-west	Back plain	20-Jan-23	North section
P1201112	50	South-east	Back plain	20-Jan-23	Context view north
P1201114	50	South-east	Back plain	20-Jan-23	Overview north view
P1201119	50	South-east	Back plain	20-Jan-23	North section
P1201122	55	South-east	Back plain	20-Jan-23	Context view north
P1201127	55	South-east	Back plain	20-Jan-23	Overview north view
P1201133	55	South-east	Back plain	20-Jan-23	North section
P1201137	56	South-east	Back plain	20-Jan-23	Context view north
P1201140	56	South-east	Back plain	20-Jan-23	Overview north view
P1201142	56	South-east	Back plain	20-Jan-23	North section

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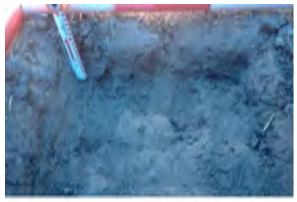
P1120092

P1120099

P1120101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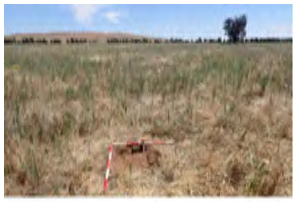
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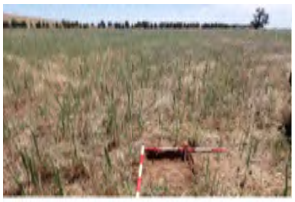
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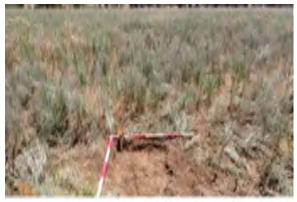
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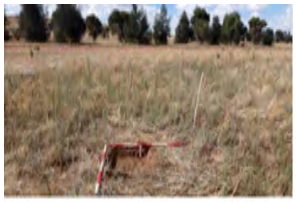
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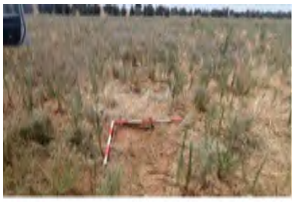
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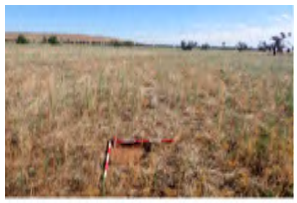
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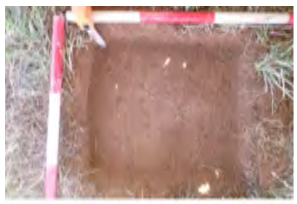
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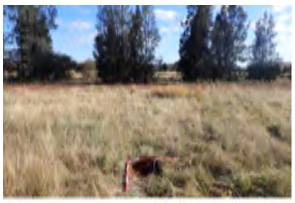
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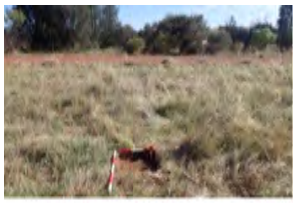
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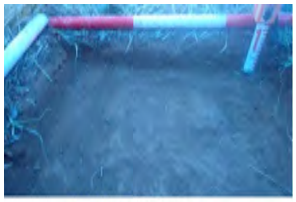
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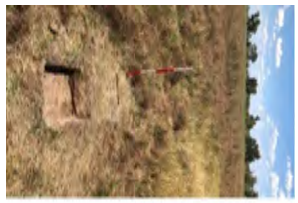
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F.5 Lithics analysis report

ARTEFACT ANALYSIS OF THE LITHIC ASSEMBLAGE

COWAL GOLD OPERATION

JANUARY 2022

Dr Trudy Doelman

Introduction

The analysis of the Cowal Gold Operations lithic assemblage follows a series of research questions which can broadly be divided into six main categories:

1. **Site occupation/chronology**. When was the area occupied? Was the assemblage the product of repeated occupations or a single event? Do the characteristics of the assemblage change with time seen in the sub-surface excavation? How intensive was the occupation? Is there potential for a Pleistocene occupation?

2. **Lithic Source Procurement**. Which raw material resources were used? What types of raw material sources were used (primary and secondary)? Does a preference for a raw material occur? Can we infer the distance from the sources based on artefact size and the frequency and amount of cortex?

3. **Stone reduction technology**. How were cores prepared and worked? Were systematic core reduction strategies employed? The analysis will be broken down into descriptions of the:

    a. Core attributes
    b. Flake attributes
    c. Tool attributes

4. **Site Function**. What types of activities occurred on-site/s? Do discrete areas of stone working occur? Can site function be related to environmental factors i.e. distance to sources?

5. This analysis includes comparisons of the artefact density by location, the assemblage composition (number of cores, complete flakes, split flakes, broken flakes, tools and other artefact types e.g. grinding stone, axes, hammerstones)

6. **Regional Comparisons**. How does this assemblage compare with others in the surrounding region?

7. **Spatial patterning** Data from the technological analysis allows a spatial analysis of the artefact attributes.

Analysis Methodology

The selection of the artefact attributes addresses the above research questions. The analysis will follow those relevant to a technological and/or spatial analysis (Table 1).

The attributes recorded for each artefact are dependent on the technological class (i.e., if a complete flake, core or tool etc). Artefacts such as cores and tool generally represent a small fraction of an assemblage but can offer the greatest amount of information. These additional attributes provide further information to examine the types of technological strategies used to prepare and reduce cores, the intensity of core reduction (curation) and can contribute to an understanding of the product/s manufactured, patterns of mobility and the transportation of artefacts (Table 1).

Attributes	
Technological class	Artefact type (e.g. core, complete flake, longitudinal split, flake fragmentation, retouch, angular fragments/lithic fragments, other (axe, grindstone etc)
Material	Raw Material type (silcrete tuff, chert, quartz, quartzite etc)
Translucency Quartz	Clear, translucent, opaque
Colour	Raw material colour
Silcrete	Grain/matrix-dominated, sorting, lustre
Cortex	Percentage of cortex (if on a flake – amount on the dorsal surface of a flake)
Cortex Type	Type of cortex (polished, weathered, rough/terrestrial, water-rolled)
Platform Type	unifacial, crushing/missing, Flaked (>2 flake scars), Facetted (3 or more small, systematic flake removals), Cortical (with cortex), crushed, missing, n/a
Termination Type	Feather, hinge, step, plunge, step, cortical, platform, abrupt
Tool Type	Select the type of tool – usewear, concave scraper, convex scraper, straight scraper, elouera (backed artefact), notched scraper, endscraper, saw, stepped scraper, drill, backed (generic), bondi point, thumbnail scraper, denticulate, burin, geometric microlith, nosed scraper
Maximum Dimension	All artefacts (in size groupings)
Length Complete Flake	Axial length of the complete flake/complete tool (in mm to 1 dp)
Weight	Weight of the artefact in grams to 1dp
Complete and Broken Flakes	
Form	Form of the flake – Indeterminate, Expanding, Block (angular Fragment), Blade, N/A, Platform Rejuvenation Flake (tablet), Bipolar, Errailure, Ridge straightening flake, elongated flake. These attributes reflect core reduction strategies.
Complete Flakes	Showing intensity of retouch or systematic core preparation
Overhang removal	Exterior platform preparation indicates systematic core reduction (complete flakes and proximal flakes)
Scar Direction	The direction of the dorsal flake scars – 1 (initiated from the platform only), 90 (initiated at right angles to the platform), 180 (initiated at the distal end of the flake), radial (initiated from 90 and 270 degrees from the platform)
Complete Tools	(examines measures of curation)
Retouch Edge	The number of retouched quadrants (on complete tools only)
Retouch Type 1, 2, 3, 4	Select the retouch type for quadrants 1, 2, 3 and 4
Cores	Identifying technological strategies and intensity of reduction
Core Type	Uni-, bi-, and multi-platform, prismatic, burin-blade core, test, bipolar, bifacial
Core Body	Core body form – block, flake, nodule, non-diagnostic
Core Section	Core cross section – square, rectangular, lenticular, conical, non-diagnostic
Scar Form	Primary scar form? – elongated, expanding, blade, mixed
Core Platform No.	Number of platforms on the core
Step Termination	Number of step terminations on the core
Hinge Termination	Number of hinge terminations on the core
Core scar Length	Length of the longest core scar
Core scar Width	Width of the longest core scar at maximum
Number of Core Scars	Number of core scars
Metrical Attributes	(in mm to 1 dp)
Maximum length	All artefacts
Length Complete Flake	Axial length of the complete flake/complete tool
Width	Maximum width of the complete flake/tool/core
Thickness	Maximum thickness of the complete flake/tool/core at mid-point
Core Length	Maximum length from the working platform
Platform width	Platform width – proximal and complete flakes and tools
Platform Thickness	Platform thickness – proximal and complete flakes and tools (and complete splits)
Weight	Weight of the artefact in grams to 1dp

Table 1 Artefact Attributes recorded for the Cowal Gold Operations assemblage

Artefacts were cleaned, sorted, individually analysed and entered into the software program E4 loaded with a configuration file written for this specific purpose. This program prompts the user to record all relevant attributes through a series of menus based on the artefact type (e.g. core, complete flake, complete tool etc) which is then stored in a Microsoft Access database. In this way a comprehensive typological, technological and metrical analysis of the excavated assemblage was undertaken. The location of the excavated artefacts was also recorded by site, spit/depth and excavation square. Analysis was aided by the use of a 10x hand lens and a standard digital vernier calliper. Measurements were made in millimetres to one decimal place (Appendix A). Individual weights of each artefact was also recorded in grams to two decimal places. A definition of the terms used for the artefact types and their attributes can be found in Appendix B of this report.

Assemblage Distribution

A series of test pits were excavated from three areas to the north and south of the mine (i.e., NE, SE and SW) (Table 2, Figure 1). The area to the NE is north of the mine and along the margins of Lake Cowal while SE, also located along the lake margin, and SW are south of the mine (Figure 1). A total of 298 artefacts were recovered from these locations. Most of the artefacts (n=296, 99.3%) were from NE with a density of 14.1 per metre square. Is this location a series of 21 test pits were excavated. TPK had the highest number (n=56, 18.8%) and weight (n=61.3 g, 22.7%) of artefacts. TPF2 and TPL also have higher numbers of artefacts while TPB1 has a higher weight of artefacts (Table 2). Only two artefacts were recovered from SE and SW with an artefact density of 60 and 20 per metre square respectively.

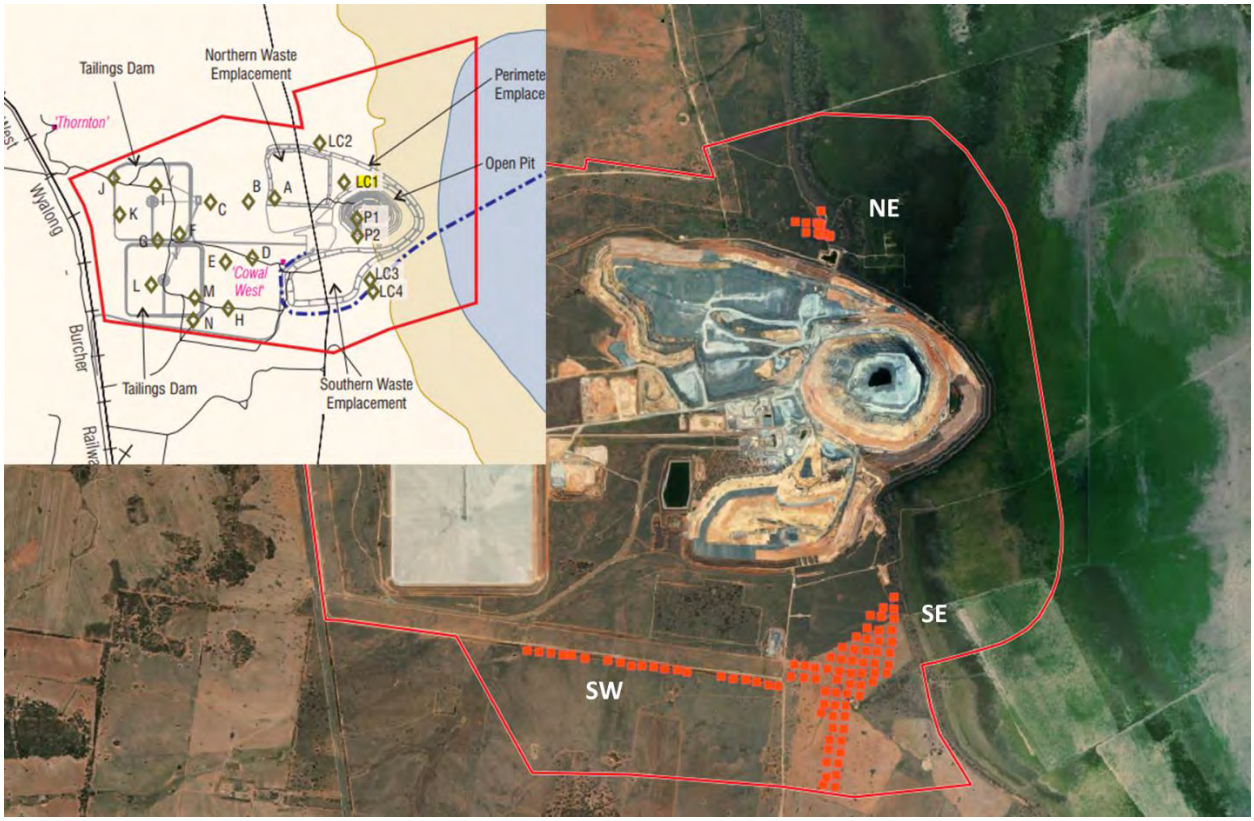

Figure 1. Location of the excavation areas at Lake Cowal Gold Operations (inset Pardoe 2013)

Site	*TP*	*Count*	*%*	*Weight (g)*	*%*
NE	16	6	2.0	10.59	3.9
	3	2	0.7	1.41	0.5
	4	1	0.3	2.46	0.9
	A	4	1.3	1.23	0.5
	B	8	2.7	9.12	3.4
	B1	19	6.4	35.75	13.2
	B2	9	3.0	5.11	1.9
	B3	12	4.0	13.38	5.0
	E	2	0.7	2.1	0.8
	F	20	6.7	10.68	4.0
	F1	21	7.0	8.82	3.3
	F2	44	14.8	19.76	7.3
	F3	8	2.7	10.34	3.8
	G	8	2.7	6.74	2.5
	H	9	3.0	13.36	4.9
	I	13	4.4	12.98	4.8
	J	23	7.7	12.7	4.7
	K	56	18.8	61.33	22.7
	L	26	8.7	28.28	10.5
	N	6	2.0	2.76	1.0
Sub-total		296	99.3	266.4	98.7
SE	51	1	0.3	1.02	0.4
SW	4	1	0.3	2.46	0.9
Total		298		269.9	

Table 2 Counts and weights of Artefacts by excavation square and area

Table 3 shows the number of artefacts from each spit. The highest concentration of artefacts occurs in spits 1 (n=95) and 2 (n=144). To establish whether size-sorting occurred the maximum lengths of the artefacts were compared between spits 3 and 4. The result shows no significant difference (t=1.296, df=44, p=0.2018). The total weight also shows the greatest mass of stone used to manufacture artefacts is in spit 2 (Table 3). A comparison of the maximum size of the complete flakes in spits 1, 2 and 3 using an ANOVA test shows no significant difference in size (p=0.5125). However, a significant difference was found between spits 3 and 4 (t=2.147, df=31, p=0.397). This result was influenced by the presence of a single, large complete flake of silcrete.

Spit	*Count*		*Maximum Length (mm)*	*Std Dev.*	*Mean Weight (g)*	*Std Dev.*	*Total Weight (g)*
1	95	31.9	15.2	7.2	0.8	1.7	77.7
2	144	48.3	14.2	7.5	0.7	2.2	103.7
3	26	8.7	15.4	7.0	0.9	1.9	24.4
4	20	6.7	12.6	7.6	0.8	2.2	15.3
5	13	4.4	21.8	16.8	3.8	5.5	48.8

Table 3 Counts and weights of artefacts by excavation square and area

Site Chronology/Occupation

A useful guide for assessing site age is the presence or absence of backed artefacts. These artefacts are typically only found in mid to late Holocene sites (<5000 years bp) throughout most of eastern Australia (Attenbrow 2002: 115-159*,* Hiscock 2008). The presence of backed artefacts is used to establish the timing of occupation in the project area (Table 4). Table 4 shows that 14 backed artefacts were found in five test pits with most in F2 (n=6). In general, the assemblage can be dated to a mid to late Holocene occupation. However, given the larger size of the artefacts in spit 4 it is worthwhile comparing these artefacts to the upper spits to assess any differences attributed to chronological change (Table 3).

Test Pit	*Spit*	*Count*
51	1	1
F	1	2
F2	1	4
G	1	1
Sub-total		8
B1	2	1
B3	2	1
F	2	2
F2	2	2
Sub-total		6

Table 4 Counts of backed artefacts by spit for the Cowal Gold Operations assemblage

A comparison of the material types and form of flakes in spit 2 and 4 show clear differences (Tables 5 & 6). In spit 4 there is a greater frequency of silcrete and milky quartz artefacts. However, as the quartz artefacts are very small these represent size-sorting i.e., a downwards movement of artefacts in profile. Equally, chert artefacts are also smaller in spit 4. The small standard deviation of these again suggests a downwards movement. The only exception in spit 4 is a single large flake of silcrete which is 39.1 mm in maximum length. When comparing the form of the flakes between the spits it also appears to show differences between the spits. However, again the size of the artefacts, independent of form, does show a size-sorting. These results suggest size-sorting rather than chronological differences.

Spit	*Material*	*Count*	*%*	*Maximum Length (mm)*	*Std Dev.*
2	Chert	95	66.0	14.4	8.1
2	Hornfels	1	0.7	30.4	
2	Milky quartz	19	13.2	10.2	3.5
2	Quartzite	11	7.6	19.0	7.0
2	Silcrete	16	11.1	13.0	5.0
2	Silicified wood	2	1.4	19.4	1.8
Sub-total		144			
4	Chert	5	25	11.0	3.1
4	Milky quartz	9	45	8.8	3.1
4	Silcrete	6	30	19.5	10.5
Sub-total		20	100		

Table 5 Raw material types and length in spits 2 and 4

Spit	*Form*	*Count*	*%*	*Maximum Length (mm)*	*Std Dev.*
2	Blade	7	5.1	17.1	8.5
2	Elongated	40	29.0	15.6	7.7
2	Expanding	28	20.3	15.2	6.2
2	Indeterminate	58	42.0	10.5	4.0
2	N/A	1	0.7	13.4	
2	Platform Rejuvenation	3	2.2	20.6	9.3
2	Point	1	0.7	27.7	
Sub-total		138			
4	Elongated	2	10.0	13.5	1.9
4	Expanding	7	35.0	12.5	6.0
4	Indeterminate	10	50.0	12.2	9.8
4	Platform Rejuvenation	1	5.0	14.5	
Sub-total		20			

Table 6 Form of flakes and length in spits 2 and 4

Stone Procurement

A wide variety of raw materials can be seen in the assemblage. Individual material types were also characterised by colour to potentially distinguish sources and/or individual cobbles. Firstly, a clear geoarchaeological context to establish the availability of raw material types is needed. The Forbes 1:250 000 Geological Sheet (S155-7) shows the closest location of chert sources to Lake Cowal (Figure 2, Raymond et al. 2000). Cherts are found in the Girilambone Group to the west of Lake Cowal. However, Pardoe (2013) describes a "silicified volcanic stone (tachylite) that is fine grained and of exceptional quality for flaking." In previous studies this same material was called a black chert (e.g., Cane 1995a; 1995b). Reeves (2018) also called this material a "silicified volcanic rock" or "fine-grained volcanic rock". Of course, depending on its formation the source location differs. However, the area is associated with the Cowal Igneous Complex which forms part of the Junee-Narromine volcanic belt (c.f. Leslie 2021) and is hence likely to be associated with hydrothermal micro and macrocrystalline quartzes.

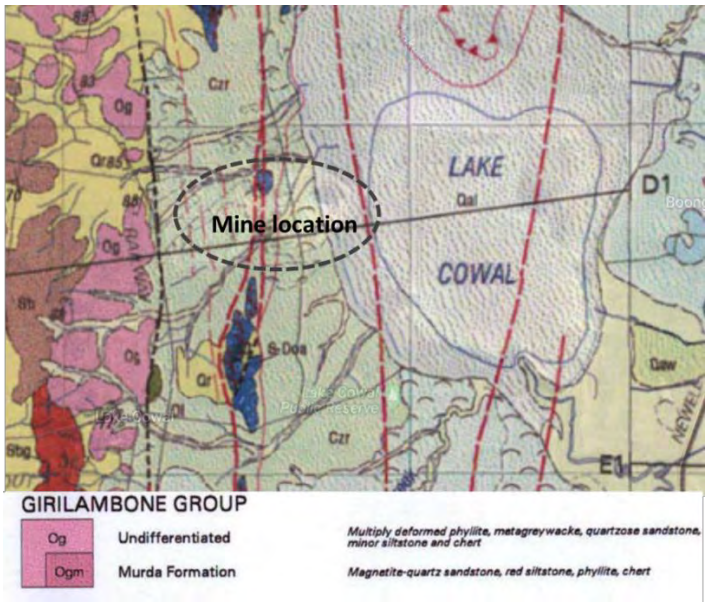

Figure 2 Insert of Forbes 1:250 000 NSW Geological Sheet SH/S155-7 showing the distribution of chert sources.

Microcrystalline & Cryptocrystalline Quartz

Quartz is a mineral composed of silicon dioxide (SiO_2) and is the second most abundant mineral in the Earth's crust (after feldspar); it is common in igneous, metamorphic, and sedimentary rocks (Lapidius 1990:429). Due to its abundance, hardness and often excellent flaking properties, quartz varieties are frequently found in archaeological sites throughout the world (Seong 2004:76-77).

Quartz can occur in small to very large crystal form (*crystalline)* or as a fine-grained material with crystals invisible to the unaided eye (*microcrystalline/cryptocrystalline quartz).* Crystalline quartz is extremely smooth and reflects enough light to have a vitreous lustre. The surface of microcrystalline quartz scatters more light and has a dull or sub-vitreous lustre. Microcrystalline quartz can be divided into a number of varieties distinguished by colour, banding or degree of translucency. Flint and chert, are names commonly used for opaque specimens of microcrystalline quartz although formed through different processes (Andrefsky 1998: 41; Odell 2004: 19). Other varieties are translucent e.g., agate, prase and carnelian. Chalcedony is a term used collectively to distinguish translucent, monochromatic varieties of microcrystalline quartz. Chalcedony is often used specifically to describe the white, grey, or blue translucent raw material. It has a porous structure which readily accepts impurities giving it a range of colours e.g. carnelian is a red/amber translucent variety of chalcedony.

Below is a useful way to classify crystalline and cryptocrystalline quartz varieties at the project area:

A) If it has a vitreous lustre on conchoidal surfaces, it is coarsely crystalline quartz (crystalline quartz)
B) If it has a dull lustre on conchoidal surfaces, it is a variety of microcrystalline/cryptocrystalline quartz.
C) If it is opaque, it is chert, a microcrystalline/cryptocrystalline quartz.
D) If it is translucent and banded, it is agate, a variety of chalcedony.
E) If it is translucent, and not banded, the name chalcedony is used.

These forms of crystalline and microcrystalline/cryptocrystalline quartz are formed in veins when SiO_2 carried in solution is precipitated in cracks in the bedrock. Often nodules/pebbles of water-rolled macrocrystalline (milky quartz) can also be found in waterways (alluvial) or eroded from sedimentary outcrops (colluvial).

As previously noted, previous studies in the area have called microcrystalline/cryptocrystalline quartz at Lake Cowal either chert (e.g., Cane 1995a; 1995b) or “silicified volcanic rock” (Reeves 2017). However, this material is translucent and more likely formed in veins through thermal transport and precipitation. Furthermore, fresh surfaces of heavily weathered (patina) artefacts of “silicified volcanics” indicate a more chert-like appearance. For consistency in this report these material types will be called a chert.

Silcrete

Silcrete is a brittle, very strongly cemented rock containing at least 85% SiO_2 (by weight). Silcrete forms by surface or near-surface low-temperature silicification of soil (groundwater silcrete) or unconsolidated sediments sometimes associated with basalts (Webb et al. 2013). It takes on the characteristics of the parent rock which may be a claystone, siltstone, sandstone, or conglomerate/breccia (Doelman et al. 2000, 2015), and this dictates the physical properties of silcrete and its classification. Silcrete is classified into four types according to the relative proportions of

detrital quartz grains, quartz cement, and microcrystalline matrix: grain-supported, matrix-supported, microcrystalline, and conglomeratic/breccia (Webb et al. 2013). The percentage, size and sorting of the quartz grains in a silcrete dictates the quality of the raw material. For example, matrix-dominated (supported) silcrete is associated with the manufacture of tula adzes and end-scrapers in western NSW (Doelman 2008, Doelman and Cochrane 2014, 2015).

The formation of silcrete in the landscape had a strong influence over access to sources. The silcretes of the central NSW region show a close spatial relationship to sandstones (Langford-Smith 1978). These silcretes are typically found in northwestern NSW (Doelman et al. 2008). These outcrops were eroded, with angular fragments transported in waterways and then redeposited in gravel bars or eroded to form gibber plains or paleo-channels. Subsequent weathering has formed a polished, gibber-like patina which differs from cortex found on cobbles in an active waterway (c.f. Dorn & Oberlander 1982). No mapped outcrops of silcrete are shown on the Forbes 1:250 000 NSW Geological Sheet SH/S155-7. The silcrete artefacts in the Cowal Gold Operations assemblage is high quality, matrix-dominated and transported considerable distances from the source.

Silicified wood

Silicified wood forms when plant remains are buried rapidly in wet sediments and saturated with dissolved minerals – i.e., silica. The lack of oxygen slows decay of the wood, allowing minerals to replace cell walls and to fill void spaces in the wood. The resulting mineral retains the plant's original structure i.e., tree rings.

Quartzite

Quartzite is contact metamorphic rock composed of cemented quartz grains formed through extreme heat and pressure making it an extremely hard and dense rock. Quartzite is usually white to grey in but depending on impurities can be a variety of colours (e.g., pink, red, or purple, green, yellow, brown). Its hardness makes it difficult to flake and its coarse texture, depending on the size of the quartz grains, makes it difficult to retouch.

The Assemblage in the Cowal Gold Operations Salvage Excavations

It is important to understand the influence of raw material availability on core reduction. The technological analysis will firstly focus on a comparison of raw materials to identify the types of sources used and their characteristics. Over 60% of the artefacts in the assemblage were made from chert (Table 6). This raw material type dominates by number and weight (Table 6). A variety of chert colours were found including brown, grey, light grey, cream, light yellow and red/grey. However, the most common was dark grey, almost black, which makes up 78.9% (n=153) of the chert assemblage. Examples also show the colour of chert grading from dark grey to brown, almost greenish colour or light grey indicating variation at the source (e.g., ids=211, 92). Milky quartz was the next most dominant material by count but not by weight (Table 6). Relatively high numbers of quartzite and silcrete artefacts were also found. Silcrete was also classified by matrix type (Table 6). Most of artefacts were made from matrix-dominated silcrete (n=27, 90%). A wide variety of silcrete colours were identified with most either light grey, mottled-grey or grey (n=25, 83.3%). The quartzite also

varies in grain size and colour (e.g., pink, grey, brown). Other raw materials (i.e., hornfels, rhyolite, chalcedony and silicified wood) account for only 2.6% of the assemblage.

Material	*Count*	*%*	*Maximum Length (mm)*	*Std Dev.*	*Total Weight (g)*
Chalcedony	1	0.3	20.2		0.7
Chert	194	65.1	14.4	7.8	158.7
Hornfels	1	0.3	30.4		3.1
Milky Quartz	39	13.1	12.1	6.0	20.2
Quartzite	27	9.1	19.3	9.9	44.6
Rhyolite	1	0.3	44.8		13.2
Silcrete	30	10.1	14.9	7.2	26.3
Silicified Wood	5	1.7	19.0	5.8	3.1

Table 6 Raw material types in the Cowal Gold Operations assemblage

The cortex (or weathered exterior of the parent rock) provides information about the type of stone sources used (i.e., a primary or secondary source). Artefacts with a rough (also called terrestrial) cortex were acquired from a primary source (or an *in-situ* outcrop). A polished and gibber cortex was included in the analysis to account for the presence of an often red, desert varnish. This type of cortex is also considered to be from a secondary source. Artefacts with a smooth or water-rolled cortex also originate from a secondary source (e.g. a cobble from a waterway, having a smoothed surface). Weathered cortex, indicating a colour change and/or chalkiness, is typically also associated with a primary source.

The amount of cortex on an artefact often indicates the distance artefacts were transported from the source (Hiscock and Mitchell 1993:12-17). A high percentage of cortex on an artefact indicates that the source of stone was nearby while artefacts with less cortex or no cortex were typically transported further from the source. Equally, as cores are transported away from the source they are reduced further and the resulting flakes are also smaller.

To understand the use of stone sources in the assemblage the raw material types and their characteristics were compared. Of the chert artefacts 158 (81.0%) have no cortex. Whereas the silcrete artefacts have less cortex with 70.0% (n=21) having no cortex. A comparison of the amount of cortex on artefacts shows that, independent of raw material type, most retains little cortex indicating the source/s were not readily accessible. Sources were also compared by cortex type to identify whether differences occur in the place of procurement. Silcrete, quartzite and chert artefacts have evidence of multiple types of cortex (rough, polished/gibber patina and/or water-rolled cortex) on their exterior. Chert artefacts usually have a rough to weathered/smooth cortex which is slightly rounded probably associated with an eroded vein exposure. This observation indicates that four types of sources were used. In contrast, milky quartz artefacts were only derived as small pebbles from a secondary source e.g., waterway/reworked colluvial.

The mean maximum lengths of the complete flakes for all the raw material types are relatively small. Only one complete flake made from silcrete and three of quartzite are larger than 30 mm. In contrast, nine chert artefacts are larger than 30 mm. Figure 3 shows that most chert artefacts fall between 5-

10 mm in axial length. The maximum lengths of the complete flakes by raw material types does suggest that sources were at distance and relatively scarce nearby (Table 7).

Material	*Count*	*%*	*Mean length (mm)*	*Std Dev.*	*Maximum Length (mm)*
Chalcedony	1	0.8	8.6		8.6
Chert	93	71.0	11.4	6.2	27.3
Hornfels	1	0.8	15.3		15.3
Milky quartz	8	6.1	11.5	4.2	17.4
Quartzite	13	9.9	16.4	8.3	30
Silcrete	13	9.9	15.2	8.8	36.4
Silicified wood	2	1.5	21.3	1.8	22.6
	131				

Table 7 Counts and maximums length of complete flakes by raw material type for the Cowal Gold Operations assemblage

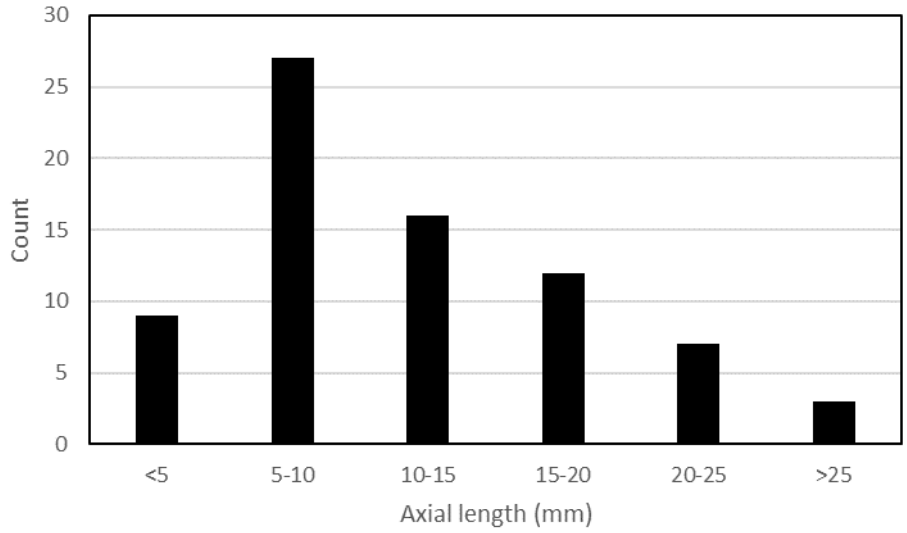

Figure 3 Axials lengths of complete flakes made from chert for the Cowal Gold Operations assemblage

Stone Reduction Technology

The types of artefacts and their characteristics are used to establish how sources were worked, used and discarded on-site. Artefacts were classified as cores or flakes, broken or complete and retouched or non-retouched tools (Table 8). Artefacts that were shattered through extreme heat/or weathering and could not be identified by type but had a flaked surface were called spalls. Spalls were included in the analysis as they represent post-depositional influences on the assemblage. By-products of flaking also include angular fragments (blocks).

Assemblage Composition

As the assemblage is considered mid-late Holocene comparisons will be made by raw material type to establish how quality and availability has influenced manufacture and discard.

The assemblage is dominated equally by complete flakes (Table 8). Broken flakes (unretouched proximal, broken and distal flakes) account for 35.6% (n=106) of the assemblage. The MNF (Minimum Number of Flakes) is 185 complete flakes in the assemblage. Of these, 128 (68.8%) were made from chert. Only three cores, including a core-tool, were found (Table 8). The tools account for 11.7% of the assemblage representing a high frequency of tools. A small number of angular fragments are also present in the assemblage.

Class	*Chert*		*Total*	
	Count	*%*	*Count*	*%*
Core	2	1.0	2	0.7
Core Fragment	3	1.5	3	1.0
Complete flake	93	47.9	131	44.0
Complete split	7	3.6	14	4.7
Broken Flakes				
Broken flake	20	10.3	40	13.4
Distal flake	28	14.4	45	15.1
Proximal flake	13	6.7	21	7.0
Sub-total	61	31.4	106	35.6
Tools				
Complete tool	16	8.2	24	8.1
Proximal tool	2	1.0	2	0.7
Distal tool	1	0.5	4	1.3
Broken tool	4	2.1	4	1.3
Core-tool	1	0.5	1	0.3
Sub-total	24	12.3	35	11.7
Spall	1	0.5	2	0.7
Angular fragment	3	1.5	5	1.7
	194		298	

Table 8 Composition of the Cowal Gold Operations assemblage

Cores

A total of only two cores, three core fragments and one core-tool (id=123) were found in the excavated assemblage (Table 9, Figure 4). All the cores were found in the North area in TPs B1, F3 and K and made from dark grey chert (n=63). Id=123 has been highly weathered from surface exposure resulting in a light grey, chalky patina. Id=123 and id=257 have a similar thick, weathered to rough cortex while id=123 has a more rounded surface. All cores are examples of systematic core reduction strategies, were anvil rested and used to manufacture blades or elongated flakes. Id=257 and 227 have overhang removal. All the cores have a relatively small in size indicating considerable reduction (Table 9).

id	Cortex	Cortex type	Core type	Core body	Scar form	Platform No.	Core prep.	Length (mm)	Weight (g)
123	26-50%	Weathered/ Smooth	ABBC	Flake	Elongated	2	na	51.2	23.8
227	1-25%	Weathered/ rough	multi-directional	unknown	Mixed	4	overhang	22.2	8.53
257	0%		Sub-prismatic	unknown	Blade	1	overhang	33.6	8.38

Table 9 Length and weight of cores by raw material type in the Cowal Gold Operations assemblage

Figure 4 Cores found in the Cowal Gold Operations salvage assemblage (scale 1 cm)Left, id=123, centre, id =227 right, id=257

Systematic Core Reduction Strategies

The analysis of the cores indicates that two strategies were employed to systematically prepare and reduce the cores. Evidence of systematic core reduction at the project area is seen by the presence of an atypical burin–blade core and a sub-prismatic core (Table 9).

The atypical burin-blade core was made on a flake. The cores show the deliberate removal of flakes along a lateral margin from the original platform. This technique is one way of manufacturing elongated flakes of the same length and width. Burin-blade cores are generally made on a large flake, typically one margin is prepared as a platform for the removal of flakes, usually across the termination of the original flake (Holdaway and Stern 2004: 205-206). Burin-blade cores have also been called the Redbank A Strategy in Hunter Valley assemblages (Hiscock 1993). The elongated flakes produced are typically retouched as backed artefacts. In contrast, atypical burin-blade cores from were usually made on cortical, angular fragments struck along a lateral margin. Large flakes, flaked in flexible ways, were also used as atypical burin-blade cores. These core types indicate innovations in the manufacture of elongated flakes.

If cores are flaked from single platform in a radial fashion they become conical/prismatic in profile (Holdaway and Stern 2004:206). As flaking progresses the core shape changes from sub-prismatic to prismatic. These cores typically have blade/elongated flake scars (Figure 4). Id=257 is an example of a sub-prismatic core.

Flakes

The characteristics of the complete flakes are used to support and further enhance the results of the core analysis.

The presence of complete split flakes (n=14) also shows that core reduction occurred on-site (Table 10). These types of flakes usually occur early in core reduction when the aim is to remove a large flake

but can also be considered a flaking error produced when the force used to strike the core is too great and it is hit at an incorrect angle. Table 15 shows the frequency of complete splits by raw material. Interestingly chert and milky quartz have a higher frequency of complete splits. Most of the complete splits (n=7) were made from chert.

Material	*Complete Splits*	*Complete Flakes*
Chert	7	93
Milky quartz	5	8
Quartzite	1	13
Silcrete	1	1
Chalcedony		1
Hornfels		1
Silicified Wood		2

Table 10 The frequency of complete splits and size of complete flakes by raw material type in the Cowal Gold Operations salvage assemblage

The form of the complete flakes is used to determine how cores were reduced and what was manufactured on site. Expanding (n=52) and intermediate flakes (n=36) dominate the assemblage (Table 11). However, a relatively large number of elongated flakes were also found (n=34) in keeping with the flake scars on the cores. The larger size from elongated complete flakes compared to the indeterminate and expanding flakes suggests that only the later stages of core reduction occurred on-site. The presence of three platform rejuvenation flakes, two made from chert, indicates that the uselife of these cores was extended on-site. Platform rejuvenation flakes (also known as a core rejuvenation flake) were used to both create a new platform and to limit flaking mistakes by reducing the angle of the striking platform thereby extending the life of a core (Odell 2003: 121).

Figure 3 shows the size distribution of the complete flakes made from chert. Of note, is the high number of complete flakes below 5 mm, most with an expanding form. These flakes are considered retouching flakes from tool manufacture.

A total of only 12 flakes (complete and broken) were defined as having a blade form in the assemblage, 11 of these were made from chert and one was made from silcrete. It is likely that flakes with these forms, blade or elongated, were either manufactured into backed tools or removed from the site for later use as replacement parts.

No ridge-straightening flakes were both found in the assemblage. These elongated flakes (also called a crested blades), with previous parallel flake removals from a single platform, were used to establish the parallel ridges on cores needed for blade removal. The low numbers of blades and absence of ridge-straightening flakes suggests limited blade manufacture occurred on-site.

Material	*Form*	*Count*	*Axial Length (mm)*	*Std. Dev.*	*Mean Width (mm)*	*Std. Dev.*
Chalcedony	Expanding	1	8.6		20.1	
Chert	Blade	6	21.2	4.9	8.0	2.1
	Elongated	23	15.0	5.8	6.8	2.3
	Expanding	37	8.1	4.2	13.1	7.2
	Indeterminate	25	10.1	5.3	8.3	3.9
	Platform Rejuvenation	2	17.6	0.8	21.3	10.7
Hornfels	Platform Rejuvenation	1	15.3		30.7	
Milky Quartz	Elongated	2	9.2	2.1	5.3	1.3
	Expanding	3	10.4	6.1	14.5	3.8
	Indeterminate	3	14.1	2.4	10.7	0.8
Quartzite	Elongated	3	18.4	10.8	8.6	6.2
	Expanding	8	13.7	7.3	20.4	12.5
	Indeterminate	2	24.6	5.2	22.8	9.1
Silcrete	Elongated	4	20.8	5.1	9.9	3.9
	Expanding	3	9.2	3.3	12.9	2.6
	Indeterminate	6	14.4	10.9	10.3	9.1
Silicified Wood	Elongated	2	21.3	1.8	11.0	0.6

Table 11 Form of the complete flakes by material type in the Cowal Gold Operations salvage assemblage

Chert

Within the chert assemblage 12 (12.9%) complete flakes have hinge terminations and seven (7.0% have step terminations (Table 12). These types of terminations are usually the result of a steep platform angle generally produced at the end of a core's uselife (Holdaway and Stern 2004:130).

Distal End	*Count*	*%*
Abrupt	6	6.5
Cortical	3	3.2
Feather	65	69.9
Hinge	12	12.9
Step	7	7.5
Platform Type		
Cortical	5	5.4
Crushed	22	23.7
Facetted	3	3.2
Flaked	7	7.5
Missing	6	6.5
Unifacial	50	53.8
Exterior Platform		
No	80	86.0
Yes	13	14.0
Dorsal Scar Direction		
0	63	67.7
180	5	5.4
90	22	23.7
Radial	3	3.2

Table 12 Characteristics of complete flakes made from silcrete in the Cowal Gold Operations assemblage

Few facetted platforms occur on the complete flakes while more crushed platforms occur on the complete flakes of silcrete. The crushed platforms show attempts were made to remove thin flakes and either conserve material or extend the uselife of a core using a bipolar technique. Bipolar reduction with anvil resting is more commonly seen in an assemblage as the core size decreases or raw material is scarce.

Core rotation is shown by the dorsal scars of the complete flakes (Table 12). Rotation is seen in the relatively high frequency of flake scars from 90 and 180 degrees or radial in direction (n=30). This result is not reflected in the proportion of flaked platform types made from silcrete (n=13, 6.6%) and suggests that core rotation produced crushed platforms due to the small size of the cores, the need to ration raw material and manufacture elongated flakes. Some platform preparation occurred in the assemblage shown by the presence of overhang removal and facetted platforms (Tables 12).

Tools

A total of 35 tools were found in the excavated areas (Table 13). Most of these tools were made on complete flakes (n=26, 68.6%) with 16 made on chert. The complete tools are larger than the unretouched complete flakes indicating a selection for size (complete flakes=12.5±6.8 mm, complete tools=19.1±7.5 mm; t=4.302, df=153, p<.0001). One tool is considered a core tool. This core was recycled and used as a straight-edged scraper.

A high frequency of backed artefacts was found in the assemblage (n=16, 45.4**%**). The backed artefacts are complete, broken or unfinished Bondi points and geometric microliths (Figures 5 & 6). A small number of broken flakes (n=4) occur with backing retouch and appear to be broken during manufacture or use. Two proximal flakes, possibly a broken Bondi points of chert, appear to have been broken during manufacture as the butt has been fashioned (id=214 and 131). A complete Bondi point, also made from chert, is missing a tip (id=239) and also appears to be broken during use. Other backed artefacts include three geometric microliths, which were made from quartzite (n=1) or chert (n=2). One geometric microlith, id=298, was found in the SW area and has use damage. A chert scraper was found in the SE area. These two tools represent the only artefacts found in these areas and appear to be accidental losses. Most of the backed artefacts were found in TPF2 (n=6).

Tool Type	*Chert*	*Milky Quartz*	*Quartzite*	*Silcrete*	*Rhyolite*	*Total*	*%*
Backed	4		1	1		6	17.1
Bondi	6					6	17.1
Geometric microlith	3		1			4	11.4
Sub-total	13		2	1		16	45.7
Convex-Scraper	2			2		4	11.4
End-scraper	2					2	5.7
Step-Scraper	1		1			2	5.7
Straight-Scraper	2			2		4	11.4
Thumb-nail	1					1	2.9
Sub-total	8		1	4		13	37.1
End-notch				1		1	2.9
Notch	1					1	2.9
Sub-total	1			1		2	5.8
Utilised	2	1			1	4	11.4
Total	24	1	3	6	1	35	
%	68.6	2.9	8.6	17.1	2.9		

Table 13 Tool type by raw material type in the Cowal Gold Operations assemblage

Figure 5 Bondi points in the Cowal Gold Operations salvage assemblage. A. id=27, B, id=28, C. id=239, D. id=99, E. id=46, F id=131, broken during manufacture (scale 1 cm)

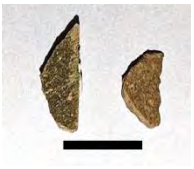

Figure 6 geometric microliths in the Cowal Gold Operations salvage assemblage. Left Id=35, right id=100 (scale 1 cm)

The assemblage also has a variety of scrapers (n=13) and notched artefacts (n=2) (Table 13). The scrapers often had only two or more retouched edges (n=5). It is likely that these tools were brought to the sites as large flakes, rather than made on-site, and then discarded after intensive use (e.g., id=253). Of note is the presence of a thumb-nail scraper (Figure 7, F.) and two convex scrapers of silcrete (Figure 7, D & E). Figure 7 also shows a step-scraper retouched in all four quadrants (C), an end-scraper (A) and B which has step retouch on a lateral margin and may have been hafted as a burren.

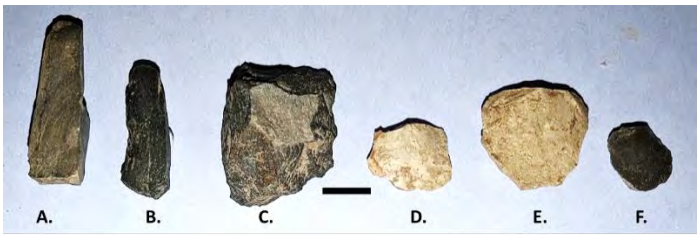

Figure 7 Examples of scrapers in the Cowal Gold Operations assemblage (scale 1 cm). A id=139, B. id=144, C. id=253, D. id=203, E. id=166, F. id=252

Conjoin Analysis (Refitting)

Conjoining (or refitting artefacts) was not systematically undertaken across the assemblage but sometimes recognised during the analysis. Only one set of conjoining artefacts were observed in the assemblage. These artefacts were found in spit 1 of TPJ. They are both core fragments of dark grey chert (ids=105 & 106).

Spatial Distribution and Site Function

To examine whether spatial differences in reduction activities occur in the Cowal Gold Operations excavations the location of the cores, tools, raw material colour and flake form were compared in area

NE. Artefacts in areas SW and SE can be considered background accidental discards from transient movement and activities.

NE - Occupation Area & Tool Manufacture

The artefacts from this area are typified by a higher artefact density coupled with a higher frequency of cores and tools. A high diversity of tool types and raw material types were also identified. While chert dominates the assemblage other raw material types occur in a higher frequency i.e., silcrete. The tools, at times, were intensively used indicating not only more time at place but the distance from the sources. Platform rejuvenation flakes and complete splits were also present in the assemblage. The presence of processing tools was also identified, typical of occupation sites e.g., scrapers and notched tools. Evidence for blade manufacture and backed artefact production was found including systematic cores and backed artefacts. The richness and diversity of an assemblage is usually associated with a longer time at place (Shott 1997).

A comparison between the densest excavation squares (TPs F, F1, F2 & TPs K, L) within Area NE shows clear spatial differences (Figure 8). The assemblage in TPs F, F1 & F2 is dominated by chert, has more backed artefacts and blades/elongated flakes. This location shows evidence of 'gearing-up' in the manufacture and maintenance of hunting weaponry. In contrast, TPs K, L have a variety of raw material types including more milky quartz and silcrete artefacts, fewer elongated/blades and no backed artefacts. The tools in this location are either scrapers or have usewear damage, associated with processing activities more typical of an occupation.

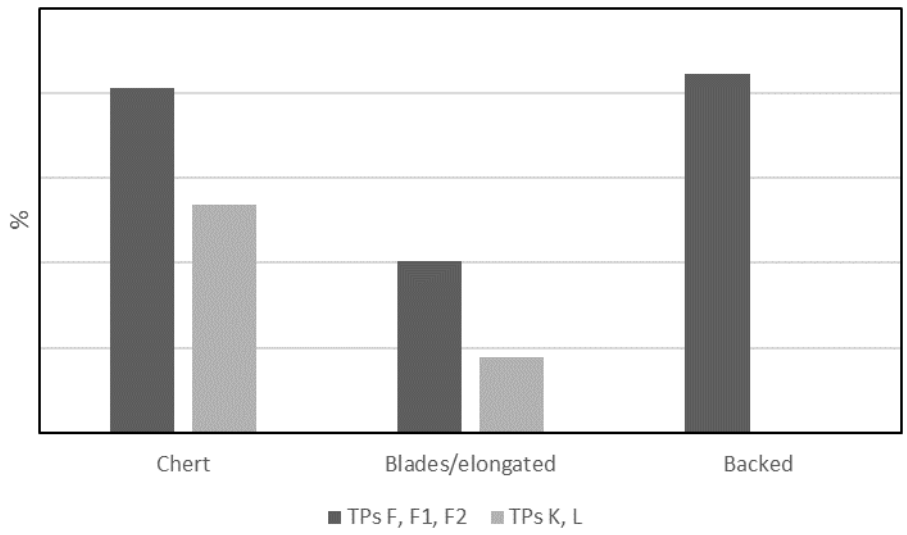

Figure 8 Characteristics of the artefacts in TPs F, F1, F2 & TPs K, L

Archaeological Potential and Comparative Analysis

The results from the excavations are compared against similar sites within the vicinity. In 2013 Colin Pardoe undertook an assessment of the Cowal Gold mine. He relocated two surface sites LC1 and LC2 located to the northeast of the mine (Figure 1). LC1 was considered a "men's site" by Cane (1995a)

with a high number of cores, adzes, backed artefacts and the absence of grinding implements. This area was located on the lake's edge and dominated by black chert artefacts (>70%). In contrast, LC2 was considered a "base-camp", located close to a stream and associated with grinding implements and processing tools. This site has fewer artefacts made from black chert (~60%).

Summary

It is now possible to return to the questions posed in the research design.

- ***Site chronology***. When was the site occupied? Was the assemblage the product of repeated occupations or a single event? Does any spatial patterning occur in the assemblage?

The site was occupied between 5000BP to contact based the raw material, core and tool types i.e., the presence of blades, burin-blade cores and backed artefacts. Different areas of artefact density, tool use, artefact colours and raw material types which represent different activities within Area NE.

Source Information. Which raw material resources were used?

The assemblage was dominated by small, chert artefacts. Four types of raw material sources were used: primary, exposures of outcrops (rough), and vein cortex and secondary from an active waterway (smooth cortex) or gibber sources (seen in the highly polished, often red surfaces). This patina is shared by silcrete, quartzite and chert artefacts. The small size of the artefacts suggests raw material sources were located at distance from the site/s. It is likely that the chert was found in the Girlilambone Group, located west of the mine but was probably found in waterways draining wet. Silcrete artefacts were acquired from an unknown, at distance, source.

Stone reduction technology. How was the stone worked and used? Can the function of the site be inferred from the artefact assemblage?

No evidence occurs for initial core acquisition, preparation or reduction in the Cowal Gold Operations salvage assemblage. The cores and complete flakes were very small indicating a lack of available stone resources. Small cores represent a late-stage failure and discard.

Some evidence for 'systematic' preparation and reduction of cores occurred in the assemblage (i.e. the manufacture of elongated/blade flakes from prepared cores). The presence of an atypical burin-blade cores represents a systematic core reduction similar to the Redbank A strategy observed by Hiscock (1993) in the Hunter Valley. This strategy was also indicated by a number of other artefact characteristics e.g., facetted platforms, overhang removal and flakes with a blade/elongated form. A sub-prismatic blade core was also found. These cores were used to make elongated flakes for geometric microliths and Bondi points.

The tools are dominated by backed artefacts including geometric microliths, Bondi points and broken, backed fragments. Processing tools (e.g., scrapers and notched tools) were also found. The backed artefacts were generally discarded after breakage or during manufacture but random losses were also identified in the SE and SW areas. Occasionally cores were also used as tools.

Smaller (<5 mm), complete flakes are expanding in form and are either retouching flakes used to manufacture a working edge of a scraper or from overhang removal on a core. It is possible these were also made during backing.

- ***Site Function.*** *What types of activities occurred on-site/s? Do discrete areas of stone working occur? Can site function be related to environmental factors i.e. distance to sources?*

The higher frequency of processing tool types (e.g. usewear, notched and scraper), coupled with a higher artefact density indicates that in the area around TPs K & L, was a longer term "base-camp" occupation. Whereas in other locations to the SE and SW of the mine artefacts show a background discard/loss and transient movement across the landscape. In contrast, around TPs F, F1 & F2 a working area for the manufacture of weaponry was identified.

- ***Regional Comparative Analysis*.** How does this site compare with others in the surrounding region?

The analysis of this assemblage has added to our understanding of the archaeology of the region. Similar spatial patterns of core reduction and tool use in were found to the north of the mine to Pardoe (2013) and Cane (1995a, 1995b).

- ***Post-depositional influences*.** What post-depositional influences have impacted on the assemblage?

Any surface assemblage is subject to a number of post-depositional influences (e.g. breakage/trampling, water movement and size sorting) (Boot 1987, Richardson 1992). One set of conjoins, showing some degree of spatial integrity, were identified but this was found in spit 1.

The small size of the artefacts probably reflects the post-depositional downwards movement in a soil profile. A size comparison of surface and excavated artefacts elsewhere show significant differences in assemblage composition and artefact size (Doelman 2017). For example, LC2 (Pardoe 2013: 9) was considered a men's area to manufacturing weaponry only 3.5% of the assemblage was backed. Whereas in the NE assemblage 5% was backed and this number increases to 12.9% if only including TPs F, F1 & F2. As backed artefacts are small, with geometric microliths in this assemblage smaller than 17 mm, they are more likely to be incorporated in the sub-soil or moved through surface wash.

The low number of artefacts found in excavated contexts in the SE and SW indicates that the majority of artefacts were found in surface contexts. This difference may be reflective of time at place i.e., with more time spent in the NE. The formation of a patina on some artefacts may indicate, not only that these artefacts were exposed on the surface, but potentially exposed on the surface for a considerable amount of time before burial.

Conclusion

The assemblage from the Cowal Gold Operations assemblages shows considerable spatial variation within NE and also between the excavated areas. Different activity areas were seen in NE which may coincide spatially with the surface collections made by Pardoe (2013) and Cane (1995a, 1995b). The

presence of backed artefacts, blade cores and blades does suggest that occupation within the last 5000 years. There is no evidence of initial core reduction or preparation in the assemblage. It is likely prepared cores were brought to the area and further worked. Cores were carefully worked to maximise flake production and indicating a scarcity of raw material in the vicinity. Once cores were prepared and then transported to Lake Cowal they were often worked until exhausted.

This report provides some understanding of site chronology, raw material selection, core preparation and reduction strategies and tool manufacture that contributes to understanding the archaeology of Lake Cowal.

Recommendations:

- Size and assemblage comparisons between surface and sub-surface collections.
- Find location of silcrete and chert sources

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