

# Appendix 9

## Historic Heritage Assessment Report

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***Historic Heritage Assessment Report  
Avoca Tank Project  
Environmental Impact Statement***

***Tritton Resources, Girilambone,  
Bogan Shire NSW 2831***

**A report prepared for  
RW Corkery & Co Pty Limited  
Geological and Environmental Consultants  
and Tritton Resources Pty Ltd**

**May 2014**

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## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY.....</b>	<b>3</b>
INTRODUCTION .....	3
OBJECTIVES, SCOPE AND METHODOLOGY .....	3
HERITAGE MANAGEMENT OVERVIEW .....	5
STATUTORY CONSIDERATIONS.....	5
HERITAGE MANAGEMENT RECOMMENDATIONS.....	6
<b>1.0 INTRODUCTION .....</b>	<b>8</b>
1.1 OVER VIEW OF THE AVOCA TANK PROJECT .....	8
1.2 OBJECTIVES OF THE HISTORIC HERITAGE ASSESSMENT.....	10
1.3 SCOPE AND METHODOLOGY .....	10
1.4 STATUTORY CONTROLS.....	12
1.5 REPORT STRUCTURE.....	12
1.6 BACKGROUND TO THIS HISTORIC HERITAGE ASSESSMENT .....	13
1.7 PERSONNEL AND AUTHORSHIP .....	13
<b>2.0 HISTORICAL CONTEXT .....</b>	<b>15</b>
2.1 MINING AREAS IN NEW SOUTH WALES.....	15
2.3 PASTORAL AREAS IN NEW SOUTH WALES .....	17
2.4 INDIGENOUS REGIONAL HISTORY .....	18
2.1 LATER 20TH CENTURY LAND USE .....	23
<b>3.0 HERITAGE SIGNIFICANCE ASSESSMENT .....</b>	<b>25</b>
3.1 INTRODUCTION .....	25
3.2 ASSESSMENT OF HERITAGE SIGNIFICANCE.....	25
3.2.1 Assessment Criteria.....	25
3.2.2 Degree of significance .....	26
3.2.3 Level of Significance .....	27
3.2.4 Condition and Integrity .....	27
3.3 ASSESSMENT OF HERITAGE IMPACT .....	29
<b>4.0 INVENTORY SEARCHES .....</b>	<b>31</b>
4.1.1 State Heritage Register and State Heritage Inventory.....	31

4.1.2	Bogan Local Environmental Plan 2011 .....	32
4.1.3	The Australian Heritage Database.....	32
<b>5.0</b>	<b>SURVEY METHODOLOGY AND RESULTS .....</b>	<b>33</b>
5.1	SURVEY METHODOLOGY .....	33
5.2	RESULTS .....	34
5.3	SITE DESCRIPTIONS .....	37
5.3.1	<i>Avoca Tank 4</i> .....	37
5.3.2	<i>Avoca Tank 6</i> .....	41
5.3.3	<i>Avoca Tank 7</i> .....	42
<b>6.0</b>	<b>HERITAGE MANAGEMENT.....</b>	<b>44</b>
6.1	OVERVIEW OF STUDY RESULTS AND DISCUSSION.....	44
6.2	HERITAGE MANAGEMENT OVERVIEW .....	44
6.3	STATUTORY CONSIDERATIONS .....	45
6.4	HERITAGE MANAGEMENT RECOMMENDATIONS .....	45
<b>7.0</b>	<b>REFERENCES.....</b>	<b>47</b>

## APPENDICES

1. Historic Parish Maps
2. Heritage Inventory Search Results

## EXECUTIVE SUMMARY

### INTRODUCTION

R.W. Corkery and Co is preparing an Environmental Impact Statement (EIS) for Tritton Resources Pty Ltd (the Applicant) to undertake mining activity at an identified resource to the north of its Girilambone Copper Mine, currently referred to as the Avoca Tank Project (the Proposal). On Site Cultural Heritage Management Pty Ltd (On Site CHM) has been engaged by RW Corkery and Co Pty Limited and Tritton Resources to prepare an Historic Heritage Assessment to inform the EIS about the management of historic heritage places and values within the Avoca Tank Project Site.

The information presented in this Historic Heritage Assessment has built upon the assessment (On Site CHM 2013) originally prepared for the exploration phase and Review of Environmental Factors (REF) that preceded the EIS. The survey and assessment processes and to inform the Proposal was undertaken in a two stage assessment process between March and August of 2012 and September 2012 and January 2013.

The results and recommendations of that assessment (On Site CHM 2013) were considered in the final design of the Proposal which has avoided all identified historic heritage places and values. This report describes the historic heritage assessment processes undertaken by On Site CHM for the Avoca Tank Project and provides management strategies to ensure the conservation of identified historic heritage places within the Avoca Tank Project Site during the development and operation of the Proposal.

The Avoca Tank Project Site is located approximately 4 kilometres northwest of Girilambone NSW 2831 along the Mitchell Highway within the Bogan Shire NSW 2831. The Project Site covers an area of 1846 ha (18.46 km<sup>2</sup>) and the Proposed Disturbance Footprint covers an area of 33.6 ha (0.336 km<sup>2</sup>). Proposed extraction will occur underground meaning that the Proposed Disturbance Footprint will only cover a small percentage (1.8%) of the entire Project Site. The Avoca Tank Project Site occurs across Lots 135 and 144 (DP 751315) and part Lots 10 (DP 751315) and part Lot 3 (DP 751342). The Project Site is situated on the Coolabah 8235 1:100,000 map sheet.

### OBJECTIVES, SCOPE AND METHODOLOGY

The objectives of this Study are to provide information about the historic (non-Aboriginal) archaeological, historical and physical aspects of the study area so as to provide:

- An understanding of the heritage values and the potential archaeology of the study area;
- An assessment of the historical heritage and archaeological values of identified sites within the study area;

- The identification for impact by the proposed project, and of the potential for triggering the relics provisions and statutory permit requirements according to the *NSW Heritage Act 1977*; and
- Appropriate heritage and archaeological management options and strategies

The scope of works and methodology adopted for the project as per the proposal included:

- Historical research of the study area;
- Field survey investigation;
- Assessment of identified heritage and archaeological sites;
- A statement of heritage impact, where applicable, for individual sites;
- The provision of recommendations to avoid, minimise or mitigate against any impact; and
- The identification of any legislative requirements under the *NSW Heritage Act 1977*.

This Historic Heritage Assessment study is based around investigations of the archaeological, historical and physical contexts of the project components. Each context has been investigated individually and the information drawn together and analysed with reference to established guidelines of the Office of Environment and Heritage (OEH). These investigations have been carried out in three stages:

**Stage 1:** included a desktop study consisting of investigation into the archaeological and historical contexts to inform Stage 2.

**Stage 2:** included investigation of the physical context through a field survey of the study area and documented by photography and documentation of individual sites as appropriate.

**Stage 3:** involved reporting and formal assessment of identified heritage and potential archaeological sites in accordance with the standard requirements of the NSW Heritage Manual endorsed by the NSW Heritage Council.

## OVERVIEW OF STUDY RESULTS

The heritage inventory searches and desktop investigations conducted for Stage 1 of the methodology did not identify any particular areas of historical activity or target areas for the field survey investigation. The historic heritage survey was therefore conducted in conjunction with the Aboriginal heritage survey to provide coverage across the survey area.

The total length of all survey transects walked across the Avoca Tank Study Area (18.62km<sup>2</sup>) was 63.5 kms. Based on the 100 metres wide survey transect it is estimated that 6.35km<sup>2</sup>, or 34.1% of the Avoca Tank Study Area was surveyed during the investigations. Approximately 66% of the Proposed Disturbance Footprint was also subject to survey.



The desktop research into the Study Area identified that the subject land was part of the 'Bogan Gold Fields'. It was therefore considered likely that the Study Area was not only used for grazing purposes, but also for mining or at the very least mineral prospecting. Neither the research nor survey of the Study Area identified any localities or definitive evidence of mining activities.

This study has identified a total of three historic heritage places within the Avoca Tank Study Area and all of these items are considered to result from pastoral activity. Avoca Tank 4 consists of a scar tree, historic artefacts near a modified waterhole. The site has been interpreted as an Aboriginal stockman's camp and it is quite probable that the isolated glass artefacts at Avoca Tank 6 and 7 were also deposited by Aboriginal stockmen, although this remains conjecture.

This study has shown that historic heritage sites and artefacts are sparsely distributed across the Avoca Tank Project Site and no foci points of historic activity were located. From this perspective the historic potential of the Project Site and Proposed Disturbance Footprint to contain further historic sites and artefacts, is considered to be low.

#### HERITAGE MANAGEMENT OVERVIEW

There are three important principles to consider in regard to the management of heritage within a planning and development process:

1. The legislative obligations under NSW law to take appropriate action to manage heritage items.
2. Heritage significance is based on established assessment criteria. If the value of a heritage item is not clear, a precautionary approach should be adopted until a definitive assessment can be made.
3. Management of an item should be based on the significance of the item and practical realities for its conservation. Management does not preclude adaptive reuse or the installation of modern facilities. It does not preclude demolition where there is no feasible alternative.

#### STATUTORY CONSIDERATIONS

The *NSW Heritage Act 1977* (Section 4) defines "environmental heritage" to mean those places, buildings, works, relics, moveable objects, and precincts, of historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value that are assessed as significant to the State of New South Wales, significant within the local area.

Avoca Tank 4 has been assessed as significant at the local level, may contain relics and is considered subject to the provisions of the *NSW Heritage Act 1977*. This site was also identified in the Aboriginal Cultural Heritage Assessment (On Site CHM 2014) and is being

managed and conserved under the *NSW National Parks and Wildlife Act*. Given the site will not be disturbed by the Proposal however the relics provision (s139) will not be triggered and no approvals will be required.

Avoca Tank 6 and 7 being isolated glass artefacts are considered to have a low level of significance. None of these places and items will be impacted upon by the Proposal.

## HERITAGE MANAGEMENT RECOMMENDATIONS

Management recommendations are provided for each site in **Section 5.0** and a summary of identified sites and their management is provided below in the **Executive Summary Table**.

This study has also been undertaken with a focus upon the elimination and/or reduction of negative impact upon any archaeological and/or heritage values need for additional detailed study and the potential for triggering the relic's provisions of the *NSW Heritage Act 1977*.

The objective of management recommendations is to provide a reasonable, balanced and precautionary approach that will appropriately address the potential for the exposure of archaeological resources (relics), and to trigger a due diligence heritage management response as a consequence of the Proposal.

In this instance the potential for the exposure of archaeological resources (relics) is considered to be low. The application of statutory considerations to the Proposal, with reference to the definitions contained in Section 4 of the *NSW Heritage Act 1977* is considered below:

1. The proponent should consider preparing a due diligence heritage management response strategy to respond the low possibility of exposing relics during earthworks or locating further items within the Project Site. As well as detailing response protocols, the strategy should include information to be transmitted to site personnel as part of any inductions so they are aware of the possibility and protocols.
2. Due diligence heritage management and the *NSW Heritage Act 1977* requires that if unexpected **relics** are exposed during any project works, that work is suspended and appropriate heritage personnel consider the need to inform the Heritage Branch of the NSW Office of Environment and Heritage. In this case, additional archaeological assessment and approvals may be required.

**Executive Summary table for identified historic sites within Avoca Tank Project Site,  
assessed significance, impacts and recommendations**

Site Name	Site Features	Cultural Significance	Impacts of Proposed Disturbance	Summary of mitigation strategy
Avoca Tank 4	Historic Scar Tree and Aboriginal Stockman's camp	Moderate / Local Significance	None	Upgrade existing fencing. Develop and implement appropriate conservation management strategies and incorporate into relevant management systems and documents. Undertake specific conservation management planning to mitigate the risk of fire (See Aboriginal Cultural Heritage Assessment – On Site CHM 2014).
Avoca Tank 6	Historic glass fragment	Low	None	Location will be avoided. Develop and implement appropriate management strategies. Incorporate into relevant management systems and documents.
Avoca Tank 7	Historic glass bottle (1939)	Low	None	Location will be avoided. Develop and implement appropriate management strategies. Incorporate into relevant management systems and documents.

## 1.0 INTRODUCTION

R.W. Corkery and Co is preparing an Environmental Impact Statement (EIS) for Tritton Resources Pty Ltd (the Applicant) to undertake mining activity at an identified resource to the north of its Girilambone Copper Mine, currently referred to as the Avoca Tank Project (the Proposal). On Site Cultural Heritage Management Pty Ltd (On Site CHM) has been engaged by RW Corkery and Co Pty Limited and Tritton Resources to prepare an Historic Heritage Assessment to inform the EIS about the management of historic (non-Aboriginal) heritage places values within the Avoca Tank Project Site.

The information presented in this Historic Heritage Assessment has built upon the survey originally undertaken for the exploration phase and Review of Environmental Factors (REF) that preceded this EIS. The baseline survey and assessment process undertaken for the exploration phase extended across the entire Avoca Tank Project Site including the Proposed Disturbance Footprint described in **Section 1.1** and displayed in **Figures 1.1** and **1.2**. The results of that survey were considered in the final design of the Proposal which has avoided all identified historic and values.

This report describes the historic heritage assessment processes undertaken by On Site CHM for the Avoca Tank Project and provides management strategies to ensure the conservation of identified Aboriginal places within the Avoca Tank Project Site during the development and operation of the Proposal.

### 1.1 OVER VIEW OF THE AVOCA TANK PROJECT

The Avoca Tank Project Site is located approximately 4 kilometres northwest of Girilambone NSW 2831 along the Mitchell Highway within the Bogan Shire NSW 2831. The Avoca Tank Project Site covers an area of 1846 ha (18.46 km<sup>2</sup>) and the Proposed Disturbance Footprint covering an area of 33.6 ha (0.336 km<sup>2</sup>) (See **Figure 1.1** and **1.2**). Proposed extraction will occur underground meaning that the Proposed Disturbance Footprint will only cover a small percentage (1.8%) of the entire Project Site.

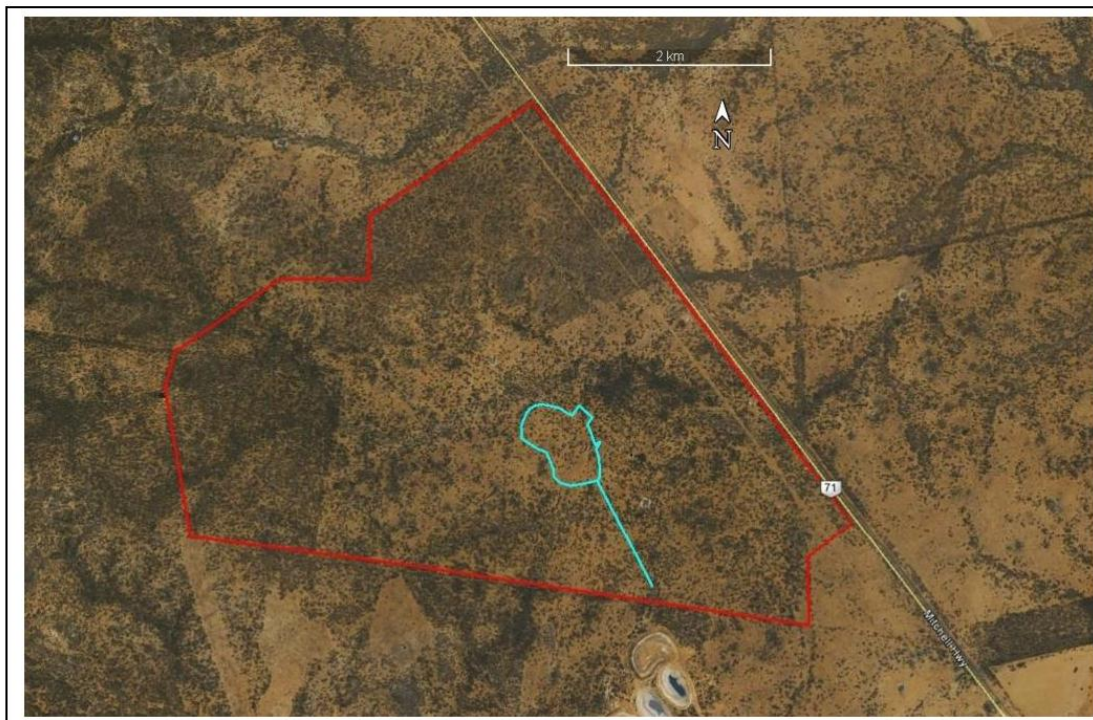
The Avoca Tank Project Site occurs across Lots 135 and 144 (DP 751315) and part Lots 10 (DP 751315) and part Lot 3 (DP 751342). The Project Site is situated on the Coolabah 8235 1:100,000 map sheet.

The Proposal would include the following Key Components (**Figure 1.2**):

- Construction and use of a boxcut, portal, decline, underground workings and two rises (one equipped as an emergency egress and the other with a ventilation fan at surface).
- Extraction of the economically recoverable copper-gold-silver resources to a depth of approximately 500m below surface using bench stoping and long hole open stope mining techniques.

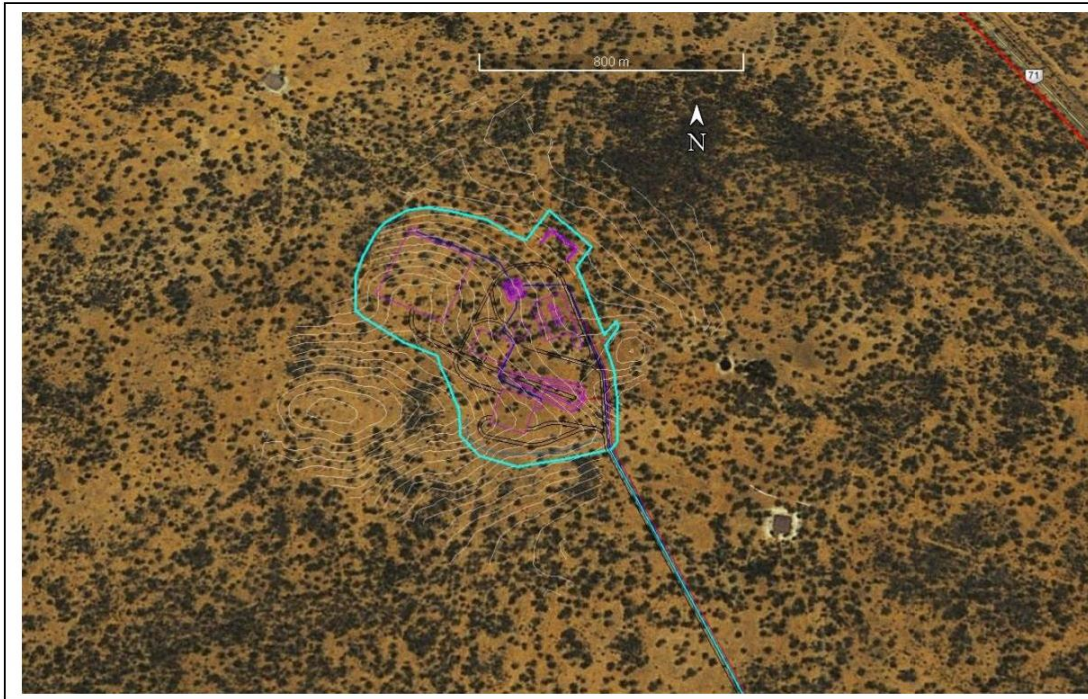
- Transportation of ore material to the Tritton Copper Mine for processing using road registered road trains via a combination of a private haul road and Yarrandale Road.
- Establishment of a temporary surface waste rock emplacement for storage of waste rock extracted during construction of the boxcut and initial sections of the decline and mine workings.
- Establishment of surface infrastructure, including a mine water pond, run-of-mine (ROM) pad, laydown area, fuel store and refuelling bay and a hardstand area comprising a workshop, mobile plant parking area, wash down bay and transportable offices, crib room and ablution facilities.
- Extension of infrastructure from the North East Open Cut, including a site access road, water pipeline and transmission line.
- Establishment of ancillary infrastructure.
- Construction and rehabilitation of a final landform that would be geotechnically stable and suitable for a final land use of intermittent agriculture and nature conservation.

**Figure 1.1: Avoca Tank Project Site. Project Site Boundary shown in red outline and Proposed Disturbance Footprint, including the proposed haul road are shown by the light blue line.**





**Figure 1.2: Proposed Disturbance Footprint and proposed haul road shown by the light blue line. Project components described in Section 1.1 shown within light blue line.**



## 1.2 OBJECTIVES OF THE HISTORIC HERITAGE ASSESSMENT

The objectives of this study are to provide information about the historic (non-Aboriginal) archaeological, historical and physical aspects of the study area so as to provide:

- An understanding of the heritage values and the potential archaeology of the Study Area;
- An assessment of the historical heritage and archaeological values of identified sites within the Study Area;
- The identification for impact by the proposed project, and of the potential for triggering the relics provisions and statutory permit requirements according to the *NSW Heritage Act 1977*; and
- Appropriate heritage and archaeological management options and strategies

## 1.3 SCOPE AND METHODOLOGY

The scope of works and methodology adopted for this Study as per the proposal included:

- Historical research of the Study Area;
- Field survey investigation;

- Preliminary assessment of identified heritage and archaeological sites (built, landscape and sub-surface);
- A statement of heritage impact, where applicable, for individual sites;
- The provision of recommendations to avoid, minimise or mitigate against any impact; and
- The identification of any legislative requirements under the *NSW Heritage Act 1977*.

This historic heritage assessment study is based around investigations of the archaeological, historical and physical contexts of the project components. Each context has been investigated individually and the information drawn together and analysed with reference to established guidelines of the Office of Environment and Heritage (OEH). These investigations have been carried out in three stages. In brief, the proposed methodology has included:

**Stage 1:** included a desktop study consisting of investigation into the archaeological and historical contexts. Research of the historical context was drawn from primary and secondary historical accounts (including historical maps and plans) and through additional research of historical newspapers, and other local sources and archives. Research of the archaeological context was compiled from records and reports of available heritage and archaeological studies, and from statutory and non-statutory databases such as State and Local inventory listings including relevant Local Environmental Plans. The preparation of the historical and archaeological contexts of the report guided the field survey process and provided an indication of target areas (if any) for inspection during Stage 2.

**Stage 2:** included investigation of the physical context through a field survey of the study area and documented by photography, documentation and mapping of individual sites as appropriate. The site survey was guided by the results of Stage 1 (as appropriate) whereby identified target areas were inspected and recorded to the degree required for assessment. The survey was recorded by photography and where required, identified heritage sites were recorded by location and extent, and by preliminary surface survey. The need to investigate sub-surface features and the need for any additional investigation would form part of the recommendations of the report.

**Stage 3:** involved reporting and formal assessment of identified heritage and potential archaeological sites in accordance with the standard requirements of the NSW Heritage Manual endorsed by the NSW Heritage Council.

## 1.4 STATUTORY CONTROLS

### *Relic's provisions – NSW Heritage Act 1977*

Archaeological relics fall within the definition of *environmental heritage* which is protected under the *NSW Heritage Act 1977*. The act provides that environmental heritage may be places, buildings, works, relics, moveable objects, and precincts of State or local heritage significance. The Act further provides measures for the protection and management of the different types of environmental heritage, and this is dependent upon the type of item under investigation.

The entire *Act* serves to protect heritage but historical archaeological remains are additionally protected from being moved or excavated through the operation of the *relic's* provisions. These provisions protect unidentified relics which may form part of the environmental heritage in NSW, but which may not have been listed on statutory registers or databases.

Section 4(1) of the *NSW Heritage Act 1977* defines a relic as:

Any deposit, artefact, object or material evidence that:

*relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance.*

According to the Act no disturbance or excavation may proceed that may expose or discover relics except with an Excavation Permit and that an excavation permit is required, if a relic is:

*listed on the State Heritage Register, pursuant to s60 and s63 of the Act; and  
not listed on the State Heritage Register, pursuant to s140 and s141 of the Act.*

In circumstances where there is little likelihood that relics exist or that such relics are unlikely to have heritage value, and/or that disturbance will result in a minor impact and/or where excavation involves removal of fill only, the Act makes provision for the granting of an exception to an excavation permit under s139 (4).

Works that would result in negative impact to heritage values may require statutory approval under the *NSW Heritage Act 1977* and any other item that is suspected to be a "relic" must be managed under the Act.

## 1.5 REPORT STRUCTURE

**Section 2** provides a historical context study. This has been prepared from the review of existing reports, investigation of current statutory and non-statutory heritage databases and historical research.



**Section 3** gives an overview of the heritage assessment process and the way in which heritage values (significance) are derived. **Section 4** provides and discusses the results of inventory searches.

**Section 5** presents the results of site survey. It provides an individual site description and some interpretation of the results where possible. Based on the synthesis of the contextual studies, together with the survey results, a assessment of heritage significance and Statement of Heritage Impact (SOHI) assessment is provided.

**Section 6** focuses on the management of the heritage values of the study area by considering the relevant legislative requirements, the heritage issues that may arise in the event of disturbance or of unknown sites, and through the recommendation of appropriate management strategies.

## 1.6 BACKGROUND TO THIS HISTORIC HERITAGE ASSESSMENT

The Historic Heritage survey and assessment processes documented in this report were conducted in two stages (Stage 1 and Stage 2) and were conducted concurrently with the Aboriginal Cultural Heritage Assessment processes.

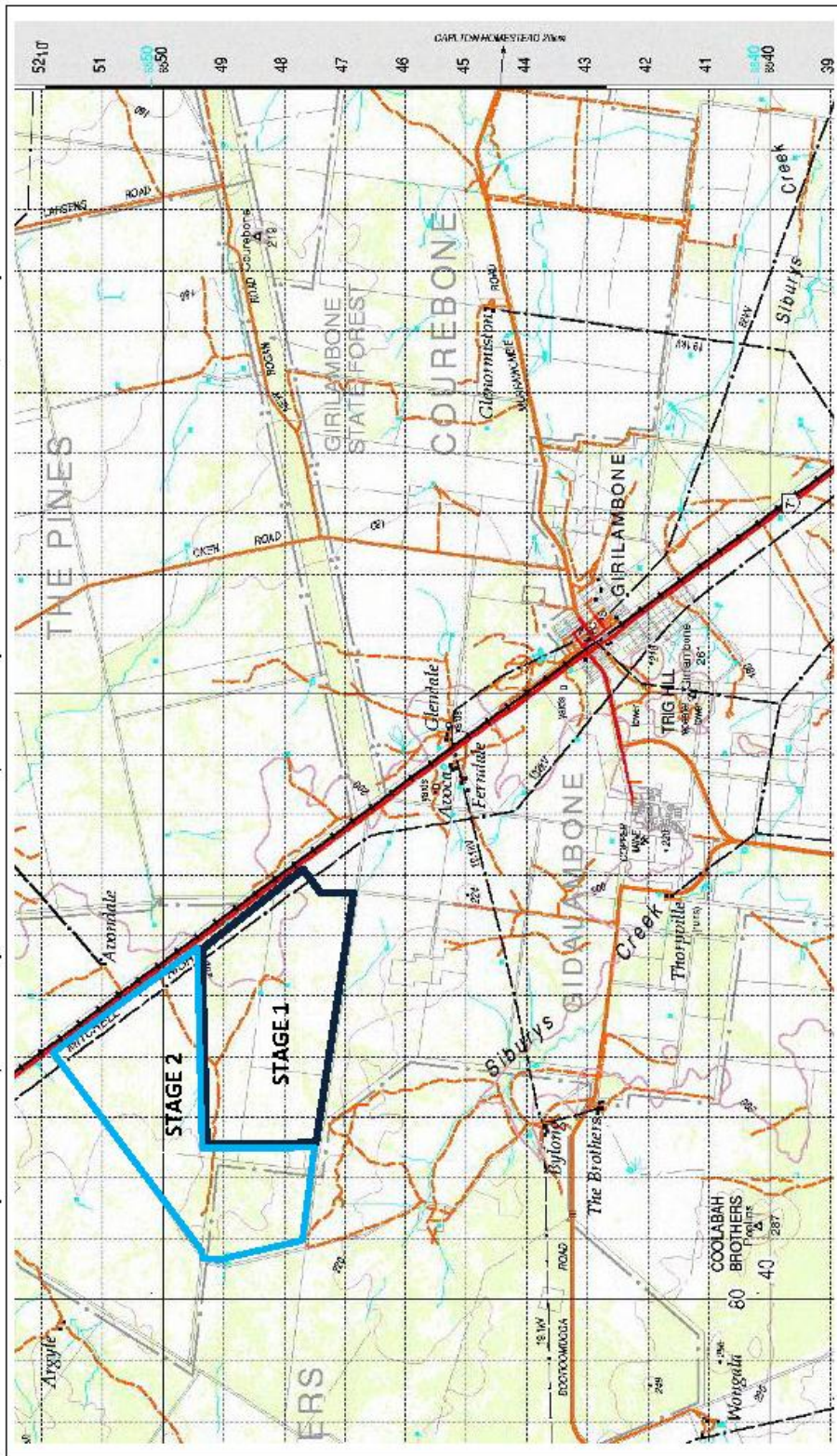
The survey and assessment for the Stage 1 assessment area occurred between March and August of 2012 and Stage 2 was undertaken between September 2012 and January 2013. The results of the Stage 1 and Stage 2 assessments have been combined to produce a single assessment report for the current Avoca Tank Project Site and to inform the EIS. Some of the assessment processes undertaken by On Site CHM for Stage 1 and 2 are still described separately within some sections of this report to demonstrate and explain the survey process.

At the time of the surveys, the combined assessment areas of Stage 1 and 2 was 18.62km<sup>2</sup>, slightly more than the current Project Site described in **Section 1.1** and shown in **Figure 1.1**. The Stage 1 Avoca Tank assessment area covered approximately 8.72km<sup>2</sup> across part of Lots 10, 135 and 144 (DP 751315) and the Stage 2 assessment area covered approximately 9.90 km<sup>2</sup> across part of Lot 3 (DP 751342), Lots 10 and 135 (DP 751315). The Avoca Tank assessment areas (Stages 1 and 2) are situated on the Coolabah 8235 1:100,000 map sheet and a map showing their location is shown in **Figure 1.3**.

## 1.7 PERSONNEL AND AUTHORSHIP

Gerard Niemoeller Principal Heritage Consultant of On Site CHM managed the project and led the research, fieldwork and preparation of this assessment report. Craig Reid, Assistant Archaeologist OSCHM assisted in the field work for Stage 1 and, Kate Duca Assistant Archaeologist On Site CHM assisted in the field work for Stage 2. David Tutchener, Archaeologist of On Site CHM undertook the majority of background historical and archival research and prepared sections of this report.

Figure 1.3: Avoca Tank assessment area (18.62km<sup>2</sup>) assessed by On Site CHM (Stages 1 and 2). Stage 1 assessment area (8.72km<sup>2</sup>) across part of Lots 10, 135 and 144 (DP 751315) is shown in the dark blue polygon. The Stage 2 assessment area is shown in the light blue polygon (9.90 km<sup>2</sup>), across part of Lot 3 (DP 751342), Lots 10 and 135 (DP 751315) on the Coolabah 8235 1:100,000 map sheet.



## 2.0 HISTORICAL CONTEXT

This historical context has been compiled through the combined research of primary source material, secondary source literature. The history of the Study Area falls within the broader historical context of the mining and pastoral history of NSW. The impact of both industries on the development of the region and the Study Area is therefore discussed. In overview, the elements considered relevant to the historical context of the Study Area:

- Mining areas in New South Wales;
- General patterns of settlement in a mining district;
- Pastoral areas in New South Wales;
- Aboriginal regional history;
- Regional history;
- Site history;
- Later 20th Century land use

### 2.1 MINING AREAS IN NEW SOUTH WALES

The impact of the 19th Century mining boom in NSW was complex and went well beyond the economic ramifications. Mining changed the landscape of early NSW, as forests were cleared, rivers and streams were silted over and heavy metals were introduced during the refinement process (McGowan, 2001). The early mining boom was also responsible for the clearing of land for agricultural purposes in order to feed the miners and the creation and growth of small towns across NSW. These towns provided services and supplies to the miners and many towns took on a multicultural composition due to the influx of immigrants from all over the world who came to work the goldfields.

Copper mining began in Australia in the 1840s, when copper was discovered in NSW at Copper Hill near Molong (1844-1845), and at other sites in the Bathurst area. Gold and copper have been continuously mined around Orange since the early 1850s. Further north, the region of Gunnedah has been mined continuously since the 1870s. Cobar in the north west of NSW has also been a stronghold of mining since the 1870s with the discovery of copper, followed by gold, lead, zinc and silver (NSW Mineral Council, 2012). There are three important mining belts in the Cobar area, the 'Cobar belt', 'Canbelego belt' and 'Girilambone belt'. The area's current two major mines, Elura and CSA, are both within the Cobar belt. The first mineral exploration in the region was to the north of Cobar, and was by prospecting parties financed by businessmen based in Bourke, prior to the discovery of copper and the establishment of a town in Cobar. Uneconomical gold traces were early discovered near Gongolgon and there is also recorded to have been an early gold search in the Billagoe ranges, probably in 1866 (NSW DPI, 2007). General settlement of the area followed soon after workable deposits were discovered.

The years 1906-1907 were ones of peak exploration activity in terms of tenement grant numbers. This followed discovery of rich ore at CSA mine in 1905; and in 1906 several

important developments including the recapitalisation of the Great Cobar Mine in England, the re-vitalisation of the Girilambone copper mine, and establishment of the Budgery copper mine (NSW DPI, 2007).

The mining boom and great surge in prospecting at that time soon came to a halt upon the fall of copper prices in 1908. The 1920s-1950s included some particularly difficult and lean times for mining, but also a strong revival of gold demand during the 1930s general economic depression. What followed was a quiet period for the industry between 1952 and 1965, when none of the large mines in the Cobar area operated.

## 2.2 GENERAL PATTERNS OF SETTLEMENT IN A MINING DISTRICT

McGowan (1992) identified the general pattern of settlement associated with mining districts. The establishment of ore processing facilities and residential areas closely followed this phase. Associated with this first phase were the establishment of some public facilities and the arrival of private enterprise such as hotels and shops.

The second phase of settlement development arose from the further development of community cohesion and involved the establishment of more substantial institutions such as schools, churches, meeting halls and cemeteries. Public facilities such as schools, churches, post offices, halls, hotels, picnic and recreation grounds are important indicators of community. Mining leases were often re-worked many times over and hence there was a cycle of abandonment and re-establishment at the majority of mining sites.

Decline was the final phase with the cessation and or removal of public infrastructure and departure of the population, due to the decline in productivity. When the mining leases were abandoned, some mining townships were also abandoned. Other townships survived and thrived to become commercial centres.

An important aspect of the heritage and history of mining sites is the aspect of community and the relationship between the separate settlements associated with both alluvial and reef mining. Individual settlements were spread over a considerable distance of rugged and broken terrain. McGowan (1992), however, identified that these isolated settlements were in fact linked through the movement of people, equipment and on occasion buildings that were moved between them. McGowan reasonably asserts such settlements cannot be viewed in isolation but rather, as part of a wider community.

Also according to McGowan (1992), the remnant material evidence alone does not provide a clear indication of the links between the mining settlements and that it is only through the investigation of archival documents that these links became apparent (Niemoeller et al, 2012).

### 2.3 PASTORAL AREAS IN NEW SOUTH WALES

Although resource mining in NSW has been important to the development of the state, the pastoral industry has been equally integral to its development. It is important to consider this background in conjunction with the heritage of mining in order to develop a complete contextual understanding of the Avoca Tank area.

The first governor of New South Wales, Arthur Phillip in 1792 had the power to grant land in the new settlement of Port Jackson (Roberts, 1968). These land grants were enacted in an attempt to make the settlement self-sufficient. Pastoralism, rather than agriculture, emerged in this early period as the dominant land-based industry for over a century in the colony of New South Wales (Harrison, 2004).

The successful exploitation of sheep and wool as a resource was achieved not long after settlement. This in turn led to the expansion of settlements and pastoral land use into the grasslands of central NSW by squatters in the 1820s and 1830s. This was hastened by the international demand for Australian wool (Goodall, 1995: 65).

As settlers ventured beyond the limits of location, Aboriginal people targeted their stock as new sources of food. The penalties for attacks on stock, or indeed settlers, were in many cases extreme. In 1824, Aboriginal resistance to pastoralism west of the Great Dividing Range was met with a proclamation of martial law, the NSW colonial government's strongest military response to pastoralist complaints (Harrison, 2004). Even still by 1846–49, there were 1866 squatters' runs in New South Wales and from 1860 to 1890 the success of the colonies' wool industry accompanied intensified European land use (Roberts, 1970: 362).

As the colony developed infrastructure (railroads, roads, local administration) and the price of wool depreciated around 1900, government investment and William Farrer's wheat experiments turned wheat into a viable cash crop (Roberts, 1968: 312). For pastoralists, however, high debts and falling produce prices had savaged the wool industry. The inflated demand for land, combined with the competitive trade offered by Sydney's markets meant that by 1900, the trend price for land in New South Wales was £14 per acre, compared to under £2 in Victoria (Harrison, 2004).

The transportation of convict labour to NSW ended in during the 1840s, and the discovery of gold in the 1850s produced an employment gap in the pastoral industry that was met by Indigenous men and women (Harrison, 2004).

The work itself was often only seasonal and mostly poorly paid. Often after time pastoralists came to appreciate the in depth Indigenous knowledge of the land including water sources, which made it possible to transport stock over long distances. In later years, as more European workers became available, pastoralists reduced the cash component of Aboriginal

workers' wages to virtually nothing, or entrapped it in the accounts book of the property store (Goodall, 1995).

**Figure 2.1: W H Watts, 'Aboriginal workers, Willandra Station, Hillston area, New South Wales', c 1880. (Harrison, 2004: 33)**



By the 1930s, in most parts of NSW nearly all of the Indigenous pastoral workers were either fringe dwellers or 'clients' of the Aborigines Protection Board (Harrison, 2004). This was due to number of factors including; The Soldier Settlement Scheme which was used as a way of settling returned soldiers in the country after both world wars, and the simple fact that family sized blocks of land needed less people to work them than the larger pastoral properties had done in earlier periods (Brock, 1995). With the introduction of various technologies by the 1950's the swathes of jobs were lost in both the agricultural and pastoral industries, for example mechanized harvesters, the widespread use of motorbikes instead of horses and road trains eliminated the need for droving almost completely.

## 2.4 INDIGENOUS REGIONAL HISTORY

The Avoca Tank Area has a long indigenous occupation record and has been documented in some detail since white occupation. This short section will outline the Aboriginal occupation of the area by drawing on historical, ethno-historical and anthropological records of the Ngiyampaa Wangaaypuwan and their neighbours.

It is recorded that The Bogan River Wiradjuri, the Ngiyampaa Wangaaypuwan's eastern neighbours suffered during significant conflict with early white settlers in the region. The early contact history in this region from 1835 the 1920's is characterized by conflict between indigenous people and white settlers regarding land use (Native Title Tribunal, 1998). Throughout this period the indigenous population of the area had decreased significantly (See **Table 2.1**). The Indigenous people in the area often lived on cattle stations controlled by the Aborigines Protection Board (APB). This was due to a government ruling during the economic depression of 1929-1936 that Aboriginal families could only receive unemployment relief at



APB stations. These stations were later subdivided and sold off, forcing the indigenous population to move from station to station looking for work (Beckett et al, 2003). During the post depression era many local indigenous people were able to find work on stations located on or near their traditional lands, by the 1970's however the government began a program of relocation and consequently the population was dispersed widely.

**Table 2.1: Aboriginal population figures (Beckett et al, 2003)**

Center	1882	1891	1896	1900	1915
Cobar	17	?	65	72	28
Brewarrina	175	?	197	111	?
Louth	118	133	133*	60	-
Bourke	258	24			
Byrock & Bourke	?	?	24	52	-
Byrock	-	-	-	-	35
Nyngan	?	216	30	16	-
Mossgiel	96	114	98	70	109
Ivanhoe	?	?	?	33	43

## 2.5 REGIONAL HISTORY

Charles Sturt first named the River Bogan in 1828, yet it was explorer and surveyor Major Mitchell documented early European exploration of the Bogan region (Bogan Shire Council, 2012). Mitchell first surveyed the area in 1835 and many settlers came closely behind, but due to the resistance of the local indigenous groups many cattle runs were given up and later taken reclaimed by other graziers, making it difficult to record all the changes that occurred (Nyngan Historical Society, 1983). The European relationship with local indigenous groups on the lower Bogan River was strained by conflict and, as a result, and after multiple massacres and retaliations in the area the government cancelled a number of pastoral licenses in 1845 (About NSW, 2012). The area surrounding the Bogan River was difficult to settle in a number of ways as the early graziers of West Bogan County not only had difficulties attempting to subdue the local Indigenous groups, but they also suffered through anthrax outbreaks among their sheep and cattle herds, which devastated livestock numbers (Nyngan Historical Society, 1983).

The Bogan River is evident in the popular culture of early NSW and Henry Lawson mentions the Bogan River in three stories, *The Mystery of Dave Regan*, *Poisonous Jimmy Gets Left* and *The Babies in the Bush*. While Tom Collins (Joseph Furphy) also mentions the Bogan River in *Such Is Life* that was published in 1902 but written in Shepparton in 1896-97 (Rathbone, 2010). Lawson also named a character Bogan Bill, which may have been instrumental in the word "bogan" entering the Australian vernacular.

As with any region establishing itself the names of towns, places and boundaries are all fluid in nature. This is particularly evident in the study area of Avoca. The Parish Maps indicate that the study area is in fact within the parish of Gidalambone, which is within the County of Canbelego, within the Land District of Nyngan that is within the Bogan Shire. When the area of the town of Girilambone was settled near the copper-mine of the same name, there was no Shire, no County and no Land District. Girilambone mine was at its inception essentially a private town, with no police or government. The Municipality of Nyngan was proclaimed on February 17, 1891 with Nyngan having a population of 1355, and in 1906 the Bogan Shire was incorporated (Bogan Shire Council, 2012).

Thomas Hartman, Charles Campbell and George Gibbs discovered copper in the Cobar area in 1869. Thomas Hartman, from his experience at Cobar, later recognised the outcrop of the Girilambone copper deposit, in 1875. At Cobar, both copper (1869-1870) and gold (1871) were discovered in close succession. Other early mines commenced production following the establishment of the Great Cobar Mine, at the following times: Girilambone 1881, Chesney 1887, Occidental (later New Occidental) 1889, Cobar Gold Mine (later New Cobar) 1890, Mt Drysdale 1893, Mt Pleasant 1895, Young Australian 1896, the Peak (Blue Lode) 1896, Mt Boppy 1898, Queen Bee 1902, CSA 1905, Tinto 1906, Gladstone 1908 (NSW DPI, 2007).

George Hunter (**Figure**) joined Thomas Hartman in 1880 and the Girilambone mine was established soon after in 1881 (Heckendorf, K. 1980;3). By 1883 there were 130 men and boys working the mine. There was no town water supply for Girilambone until the 1950's and up until then the local population survived on rainwater tanks, which were often low during drought seasons. Water was such a scare commodity that in 1882 a cask of water sold for the high price of 2s 6d (Sydney Mail, March 18 1882). The mine, however, continued to prosper until approximately 1907. Between 1881 and 1907 the Girilambone mine produced 58,408 tons of ore (Heckendorf, K. 1980). In 1917 over 100 ton of ore was removed from the mine, no mining activity has been recorded since.

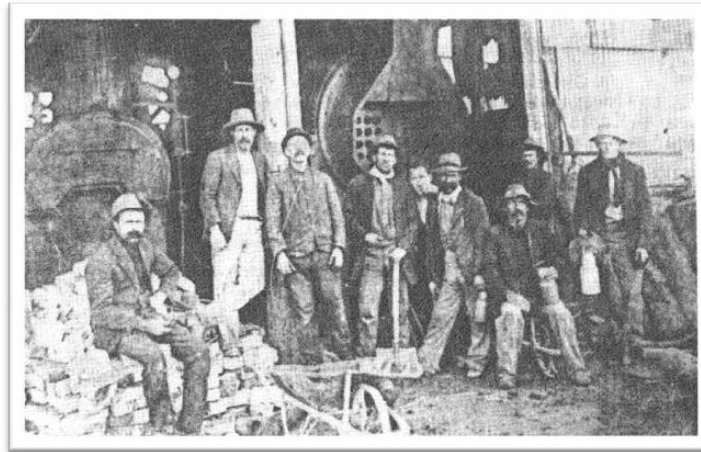
The present town of Girilambone came about when the railway line came to the area in 1883 (See **Figure 2.22.2**). Although the Girilambone mine had been the centre of public activity until this time slowly the public amenities in the area began to be constructed around the railway station.



Figure 2.2: Girilambone railway station, Christmas Eve 1908 (Heckendorf, K. 1980).



Figure 2.3: Outside the Girilambone mine, George Hunter is seated third from the right (Heckendorf, K. 1980).



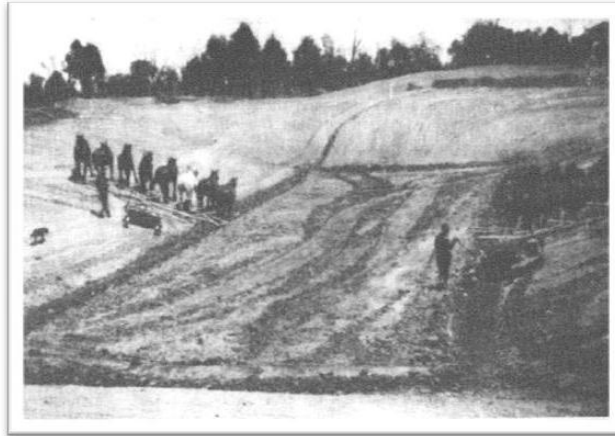
## 2.6 SITE HISTORY

This investigation into the site history for the study area is divided into two stages: Stage 1 (Lot 135 and subsequently 144 and 10) and Stage 2 investigations (Lot 3).

### Stage 1

An early Parish Map of Gidilambone indicates that the land units in the activity area of the Avoca Tank Project Stage 1 was marked as Lot 135 and was wholly owned by a Kenneth MacKinnon as early as 1910 and had a total area of 4087 acres (See **Error! Reference source not found.**). The Sydney Morning Herald on Tuesday 14 January 1919 notes that upon his death Kenneth MacKinnon, grazier, bequeathed his property to his widow Catherine MacKinnon and two sons Malcolm (See **Figure** and **2.5**) and Donald.

**Figure 2.4:** shows Malcolm McKinnon's teams tank sinking on 'Welbury' in approximately 1930 (Heckendorf, K. 1980;).



**Figure 2.5:** Image of Malcolm McKinnon's teams with wool from 'Lemongrove' (Heckendorf, K. 1980).



A later Parish Map in 1916 (See **Error! Reference source not found.**) indicates that the original Lot 135 was subdivided as early as 1907 into three parcels; Lot 10 (Acres 2563), Lot 135 (502 Acres) and Lot 144 (1022 Acres). Lot 144 was acquired by The Australian Bank of Commerce (See **Error! Reference source not found.**) and repurchased by at a later date by MacKinnon, Fuller and Lanson as illustrated by a 1937 parish map (See **Error! Reference source not found.**).

It would appear likely that the activity area under investigation was not only used for grazing purposes, but also for mining or at the very least mineral prospecting. The activity area, which incorporates the Avoca Tank project area, is clearly marked as part of the Bogan Gold Fields on the map of West Bogan (See **Error! Reference source not found.**). It is also noted in a local history of the region (Heckendorf, K. 1980) that at Avoca, 3 miles NNW of Girilambone traces of gold were found.

It is also quite possible that the MacKinnon family (the name was most probably also spelt McKinnon) was related to the Alec McKinnon who held the licence for the Railway Hotel (also known as the Girilambone Hotel) from 1881 to 1921 (Heckendorf, K. 1980; 28).

## Stage 2

Is located to the south western corner of McKinnon's block, Lot 3 that comprises an area of 1575 acres is marked in 1910 as under the control of H. Thorpe, and may have utilized for mining purposes at some point (See **Error! Reference source not found.**). This block falls into a different parish division from the Stage 1 investigation and is included in the Parish of The Brothers. This is most likely the Henry Thorpe who also owned the block directly to the north of the activity area. A Parish map of the Brothers in 1911 (**Error! Reference source not found.**) shows that this portion of the activity area was now a Crown Lease under the name of J.H. Ferguson. Later Parish maps of the Brothers Parish (See **Error! Reference source not found.**, **Error! Reference source not found.**) indicate that Lot 3 was still listed under the name J.H. Ferguson in 1926 and 1957.

In 1900 the Girilambone Primary School photo (See Figure ) a pupil named Mary Thorpe is listed as Mary Thorpe (McKinnon) of 'Glendale', most likely indicating a marriage later in life into the McKinnon family, perhaps coincidentally there is a Tom McKinnon of 'Glendale' is also shown in the photo (Heckendorf, K. 1980; 48). 'Glendale' appears to be an agricultural property within Girilambone. It would also appear that both the Thorpe's and McKinnon's had a hand in the businesses of Girilambone in stores and hotels respectively (Heckendorf, K. 1980; 19).

It would appear that the Thorpe family had a substantial impact on the town of Girilambone as it is known that the 'Thorpe boys had a butchery and other retail based interests in the town' (Heckendorf, K. 1980; 17). It is also quite likely that William Henry Thorpe who was postmaster of Girilambone from 1921-24 was a descendant of Henry Thorpe (Heckendorf, K. 1980; 39).

## 2.1 LATER 20TH CENTURY LAND USE

The area of Bogan in the later 20th Century has been utilized mostly for agricultural purposes and mining. For instance during the 1980's the price of copper was pushed to record highs because of supply disruptions such as the Bougainville conflict. This stimulated the slackened local interest in copper exploration, and Nord Pacific Ltd commenced work aimed at bringing the old Girilambone copper mine back into production as an open cut mine (NSW DPI, 2007).

The greater area of Nyngan has suffered from a number of major floods in the 1990's, in order to combat this a levee was built to protect against future flooding of the Bogan River (Bogan Shire Council, 2012).

Figure 2.6: 1900 the Girilambone Primary School photo (Heckendorf, K. 1980; 48)



### 3.0 HERITAGE SIGNIFICANCE ASSESSMENT

#### 3.1 INTRODUCTION

The assessment of the heritage values of an item or site depend upon the assessment of its significance together with the potential it may possess to expand the existing level of knowledge. An appreciation of these factors assists in the estimation of the impact that any disturbance, damage or destruction may have on such heritage values.

Fundamental to any consideration of the heritage values of a site is an appreciation of the impact of the NSW Heritage Act, 1977 (the Act) which defines heritage items to be:

*Those buildings, works, relics or places of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance for the state of New South Wales.*

Heritage items can be broadly interpreted as features, items, landforms and the like that possess characteristics that are presently of value and likely to be valued by future generations, making it worthy of special effort to conserve. These valued characteristics can originate from past associations and/or present circumstances, and do not necessarily have to be old.

#### 3.2 ASSESSMENT OF HERITAGE SIGNIFICANCE

An assessment of significance is undertaken to understand if and explain why a particular site or item is important, and to enable appropriate best practice heritage management to be determined. Considerations relevant to a heritage significance assessment include whether a site, or the fabric contained within a site, contributes knowledge or has the potential to do so.

An assessment of significance is influenced by the environmental and historical context of the site at the time of the assessment. In this light, significance can be seen as a variable quality. It follows that the evaluation of heritage significance is not a static value, but rather is evolutionary as a function of changing community perspectives and cultural values.

##### 3.2.1 Assessment Criteria

The NSW heritage assessment criterion encompasses the four values in the Australia ICOMOS<sup>1</sup> Burra Charter and these four broad values are used to assess the heritage significance of an item. It is important for items to be assessed against these values to ensure consistency

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<sup>1</sup> ICOMOS – International Council on Monuments and Sites

across the State. While all four values should be referred to during an assessment, in most cases items will be significant under only one or two values. The four values are:

- historic significance;
- aesthetic significance;
- scientific significance; and
- social significance.

In order to apply a standardised approach to the assessment of these four values relative to items and individual elements within or contributing to items, the NSW Heritage Office (2001:9) has defined a series of seven criteria that will be used by the Heritage Council of NSW as an assessment format within NSW. To be assessed as having heritage significance, an item must meet at least one of the criteria detailed below.

**Historic** significance is identified by:

Criterion (a) the importance of an item in the course or pattern of the cultural or natural history of NSW or a local area.

Criterion (b) the existence of a strong or special association between an item and the life or works of a person or group of persons important in NSW or a local area.

**Aesthetic** significance is identified by:

Criterion (c) the importance of an item in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW or a local area.

**Social** significance is identified by:

Criterion (d) the existence of a strong or special association between an item and the social, cultural or spiritual essence of a particular community or cultural group within NSW or a local area.

**Scientific** significance is identified by:

Criterion (e) the potential of an item to provide information that will contribute to an understanding of the cultural or natural history of NSW or a local area.

### 3.2.2 Degree of significance

In addition to the above criteria, in order to describe the degree of significance, an item may be assessed as being either 'Rare' or 'Representative' within its

community/cultural/geographical level as distinguished by criterion (f) for rarity or (g) for representativeness.

Thus, degree of significance is identified by either:

#### **Rarity**

Criterion (f) the quality of an item to possess uncommon, rare or endangered aspects of the cultural or natural history of NSW or a local area; or

#### **Representativeness**

Criterion (g) the demonstration by an item of the principal characteristics of a class of cultural or natural place or cultural or natural environment within NSW or a local area.

### **3.2.3 Level of Significance**

Another aspect of assessment of significance is the level of significance of an item. Level is assessable in two classifications pursuant to NSW Heritage Office (2001) depending upon the breadth of its identifiable cultural, community, historical or geographical context.

**Local level** identifies the item as being significant within an identifiable local and/or regional cultural and/or community group and/or historical/geographical heritage context;

**State level** identifies the item as being significant within an identifiable State-wide cultural and/or community group and/or historical/geographical heritage context;

but on a broader front, recognition of an item at the:

**National level** identifies the item as being significant within an identifiable national cultural and/or community group and/or historical/geographical heritage context;

**International level** identifies the item as having implications of significance for an identifiable cultural and/or community group both nationally and abroad and/or a world-wide historical/geographical heritage context.

### **3.2.4 Condition and Integrity**

An assessment of condition and integrity of resources contributes to the overall assessment of significance. *Condition* considers the physical state of the fabric of the resource and its potential for survival. *Integrity* observes the degree to which the residual material evidence is an appropriate representation of the resource in its original form. *Potential Impact* assesses

the nature and extent to which the resource will be modified as the result of the projected development.

**Condition:**

The condition of heritage resources and/or individual elements that have been identified above is assessed on a five-stage scale, that is to say:

- [i.] *intact*, where the material evidence allows a complete recording of the resource without archaeological hypothesis;
- [ii.] *substantially intact*, where the material evidence is incomplete but the recording of material evidence will be sufficient to allow an accurate archaeological reconstruction, with hypotheses based on the archaeological record only;
- [iii.] *standing ruin*, where the material evidence is incomplete and the recording of material evidence will be sufficient to define the footprint of the resource and some of its elevations and features but will be insufficient to allow an accurate archaeological reconstruction of the resource without hypotheses based on the archaeological record and on a range of outside sources
- [iv.] *ruin*, where the material evidence is incomplete and the recording of material evidence may be sufficient to define part, or the whole, of the footprint of the resource but will be insufficient to allow an archaeological reconstruction of the resource/its features, perhaps spatially and certainly vertically, without hypotheses based on the archaeological record and on a range of outside sources, and in circumstances where the validation of the reconstruction cannot be assured.
- [v.] *archaeological site*, implying a mostly sub-surface residue, where the material evidence suggest the former presence of an archaeological resource that cannot be defined without sub-surface investigation.

**Integrity:**

In order to support an assessment of significance, an item's key attributes must retain a discernible degree of integrity. That is, a relic must retain material associated with the historical development that has remained largely unchanged and/or undisturbed over time. The integrity of archaeological resources and/or individual elements that have been identified during this study have been assessed on a five-stage scale from intact through to none as defined below.

- [i.] *Intact*, where the resource has remained virtually unchanged its form and/or design and/or function can be totally discerned from the material evidence;



- [ii.] *Minor Modification*, where the resource has been modified or deteriorated cosmetically and/or in a manner that does not inhibit the discernment of its form and/or design and/or function by archaeological interpretation of the material evidence;
- [iii.] *Material Modification*, where the resource has been modified so that its form and/or design and/or function cannot be discerned only by archaeological interpretation and without reference to external sources;
- [iv.] *Major Modification*, where the resource has been so modified that attempted discernment of its form and/or design and/or function cannot be achieved by archaeological interpretation of the material evidence and requires a heavy reliance on external sources and in circumstances where discernment one or more elements may be equivocal;
- [v.] *None*, where the integrity of the resource has been completely destroyed and the evidence for its form and/or design and/or function is totally external.

It should be noted that where the resource is wholly archaeological, that is entirely sub-surface, integrity cannot reasonably be assessed prior to excavation.

### 3.3 ASSESSMENT OF HERITAGE IMPACT

Generally, a statement of heritage impact (SOHI) is prepared to assist in the review and approval process when there is a perception that a proposed project could impact upon the heritage values of an item or site. The purpose of a SOHI is to explain how the heritage value of an item might be affected by the proposal. Impact may be positive when an item is to be conserved or enhanced, or impact may be detrimental if the site is to be disturbed or destroyed.

A preliminary assessment of heritage impact seeks to identify whether the disturbance or destruction of an item or site could reasonably be expected to result in a negative impact to assessed heritage values. It then identifies any requirement for additional information in order to inform a more detailed SOHI to further address the guidelines of the NSW Heritage Manual in reference to specific project plans.

The accepted guidelines specify that the following statements are addressed in a SOHI in response to a proposed project:

- *The following aspects of the proposal respect or enhance the heritage significance of the study area for the following reasons.*

- *The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts.*
- *The following sympathetic solutions have been considered and discounted for the following reasons.*

## 4.0 INVENTORY SEARCHES

Heritage registers and inventories are lists of identified items of heritage significance. These registers may provide information on comparative sites that can be used to assist in the evaluation of the relative significance of the site.

Registers and inventories relevant to this study are:

- Bogan Local Environmental Plan 2011
- State Heritage Register and State Heritage Inventory; and
- The Australian Heritage Database.

A summary of inventory search results for the Avoca Tank Study Area is provided in **Table 4.1**.

**Table 4.1 - Summary of Inventory Search Results for the Avoca Tank Study Area**

Heritage Register	Listed	Assessed Significance
State Heritage Register	No	NA
State Heritage Inventory	No	NA
Bogan LEP 2011	No	NA
Australian Heritage Database	No	NA

Searches for each Register using the Bogan Local Government Area as a criterion reveals a number of sites within the Bogan Shire. All but one of these sites is near Nyngan. None of these sites are within the Girilambone region and the Avoca Tank Study Area. The results of these inventories searches are included at **Appendix 2**.

### 4.1.1 State Heritage Register and State Heritage Inventory

The State Heritage Register (SHR) is managed by the NSW Heritage Council and comprises a list of heritage items of particular importance to the people of NSW. Items appearing on the SHR are considered significant to the State and are afforded statutory protection.

The State Heritage Inventory (SHI) is a listing of heritage items within NSW and is also managed by the NSW Heritage Council. It comprises a database of heritage items listed by Local Government and State Agencies across NSW as the result of heritage studies. Items listed on the SHI are considered locally significant and subject to protection through local government processes.

A search of the SHR and SHI showed that there are no heritage listed sites near Girilambone or close to the Avoca Tank Study Area. A wider search of the SHR and SHI for the Bogan Shire returned a number of listed heritage sites, all of which were located near Nyngan and some considerable distance from the Study Area.

#### 4.1.2 Bogan Local Environmental Plan 2011

Local environmental plans (LEPs) provide a framework for development controls in their local area. Heritage schedules within an LEP provide for the identification and protection of heritage items.

Clause 5.10 (1) of the Bogan Valley LEP 2011 provides objectives for Heritage Conservation as:

- (a) to conserve the environmental heritage of Bogan,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

A search of the Schedule 5 of the Bogan LEP 2011 shows four heritage items listed for the Nyngan area and none of which are near Girilambone or close to the Avoca Tank Study Area. These places are also listed on the SHR and SHI.

#### 4.1.3 The Australian Heritage Database

The Australian Heritage Council is an independent agency within the Department of the Environment. The Council is the principal adviser to the Australian Government on heritage matters. The Council assesses nominations for the National Heritage List, and the Commonwealth Heritage List. The Council is responsible for the Australian Heritage Places Inventory (AHPI) and the Australian Heritage Database (AHD) both of which are non-statutory archives.

A search of the Australian Heritage Database for the Bogan Shire LGA shows 5 heritage places, all of which are listed on Register of the National Estate (non-statutory archive). Full listing details are provided at **Appendix 2**. None of these listed places are near Girilambone or close to the Avoca Tank Study Area.

## 5.0 SURVEY METHODOLOGY AND RESULTS

### 5.1 SURVEY METHODOLOGY

The desktop investigations conducted for Stage 1 of the methodology (described in **Section 1.3**) did not identify any particular areas of historical activity or target areas for investigation. The historic heritage survey was therefore conducted in conjunction with the Aboriginal heritage survey to provide coverage across the survey area.

The survey strategies for the Stage 1 and Stage 2 Study Areas was designed with consideration to the potential disturbance of the exploratory drilling program. The drill lines formed the basis for the survey transects which were extended towards the boundaries of the Study Area to achieve greater coverage over the Study Area. The location of transects conducted across Study Area and the Proposed Disturbance Footprint are shown in **Figure 5.1**.

A pedestrian archaeological survey of the Avoca Tank Study Area (Stage 1) was conducted between 26 and 30 April 2012 by On Site Cultural Heritage Management Principal Heritage Consultant / Archaeologist, Gerard Niemoeller and Assistant Archaeologist Craig Reid.

A pedestrian archaeological survey of the Avoca Tank Study Area (Stage 2) was conducted between 29 October and 2 November 2012 by On Site Cultural Heritage Management Principal Heritage Consultant / Archaeologist Gerard Niemoeller and Assistant Archaeologist Kate Duca.

Representatives of the Nyngan Local Aboriginal Land Council and Bogan Aboriginal Corporation also participated in the entire archaeological survey and were present during the recording of all sites. Representatives were:

Sheila Couley – Chair, Nyngan Local Aboriginal Land Council  
Lesly Ryan – CEO, Bogan Aboriginal Corporation  
Deputy Chair, Nyngan Local Aboriginal Land Council

Neville Merritt of the Ngemba/Ngiyampaa Native Title claim group also participated in the fieldwork for the Stage 2 survey.

At least one but usually 2 to 3 representatives of Tritton/Straits participated and assisted in the survey every day over these survey periods.

The survey consisted of a series of transects north south along the proposed drill lines, spaced approximately 200 metres apart. Survey participants were spaced approximately 10 to 20 metres apart providing good survey coverage along each of the drill lines across the Avoca Tank project area. Each participant was therefore able to survey approximately 20 metres in width and allowing survey of approximately 100 metres in width per transect.

Transects were generally in straight lines along the drill lines but particular attention was also afforded to interesting features within the landscape such as prominent clearings or exposures, gravel lags or concentrations, deflations or other areas of erosion, large trees potentially bearing scars. This sometimes resulted in a meandering transect.

## 5.2 RESULTS

The total length of all survey transects walked across the Avoca Tank Study Area (Stages 1 and 2 (18.62km<sup>2</sup>) was 63.5 kms. Based on the 100 metres wide survey transect it is estimated that 6.35km<sup>2</sup>, or 34.1% of the 18.62 km<sup>2</sup> Avoca Tank Study Area was surveyed during the Stage 1 and 2 investigations.

A total of 4 transects conducted as part of the Stage 1 study traversed the Proposed Disturbance Footprint. Based on the 100 metres wide survey transect it is calculated that the Stage 1 transects covered approx 221,900m<sup>2</sup> (0.222km<sup>2</sup> or 66%) of the 0.336 km<sup>2</sup> Proposed Disturbance Footprint. Survey coverage of the Study Area is shown in **Figure 5.1**.

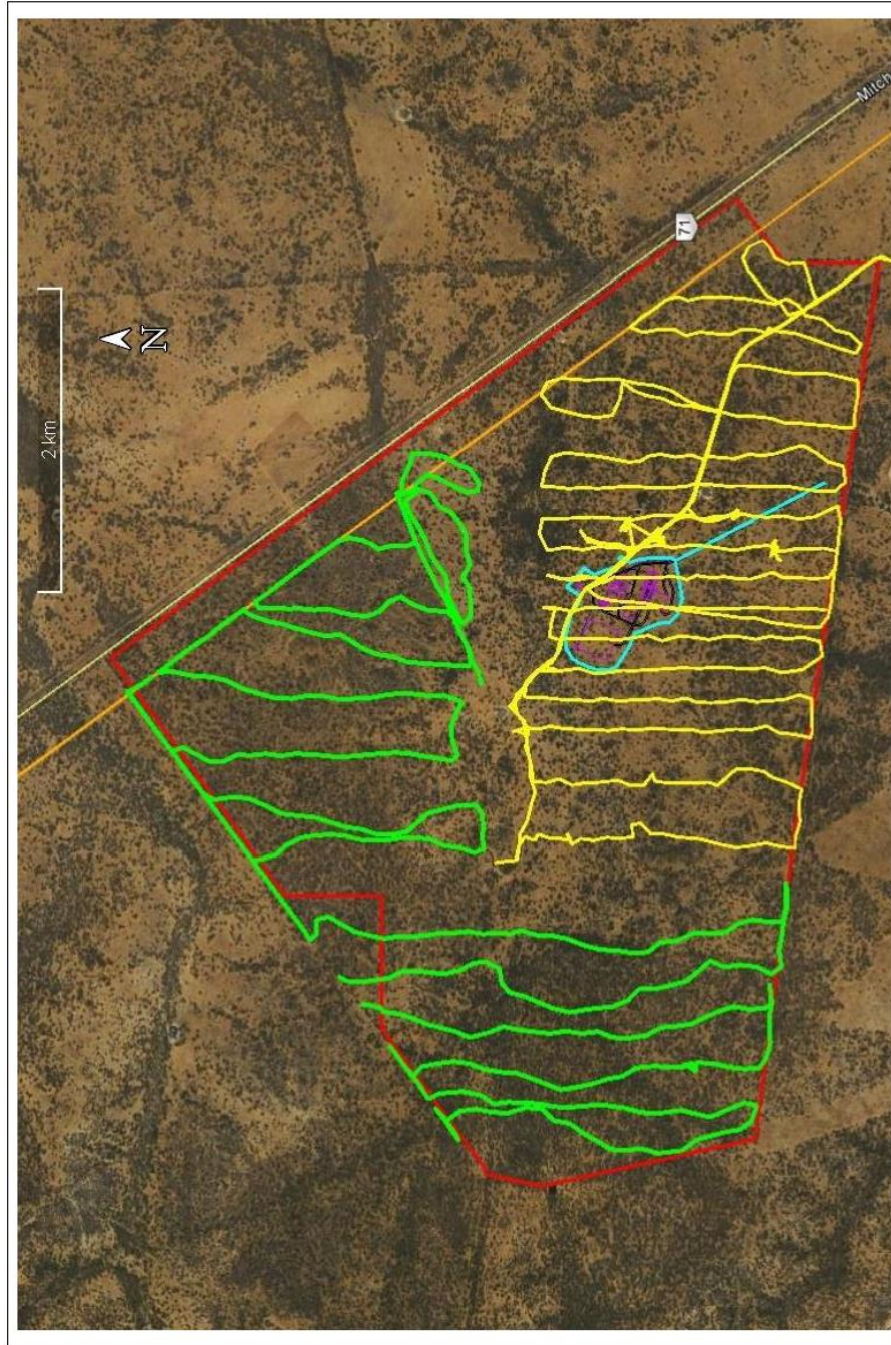
A total of three historic sites were recorded during this survey. None of these sites are within the Proposed Disturbance Footprint and will not be impacted upon by the proposal. Summary details of these sites is provided in **Table 5.1** and their location is shown in **Figure 5.2**.

**Table 5.1: Summary details for historic sites recorded during this survey.**

Datum is GDA 94. Grid references recorded by On Site CHM.

Site Name	Site Features	Easting	Northing
Avoca Tank 4	Historic Scar Tree and Aboriginal Stockman's camp	55 485027	6547775
Avoca Tank 6	Historic glass fragment	55 485381	6548386
Avoca Tank 7	Historic glass bottle (1939)	55 484392	6549640

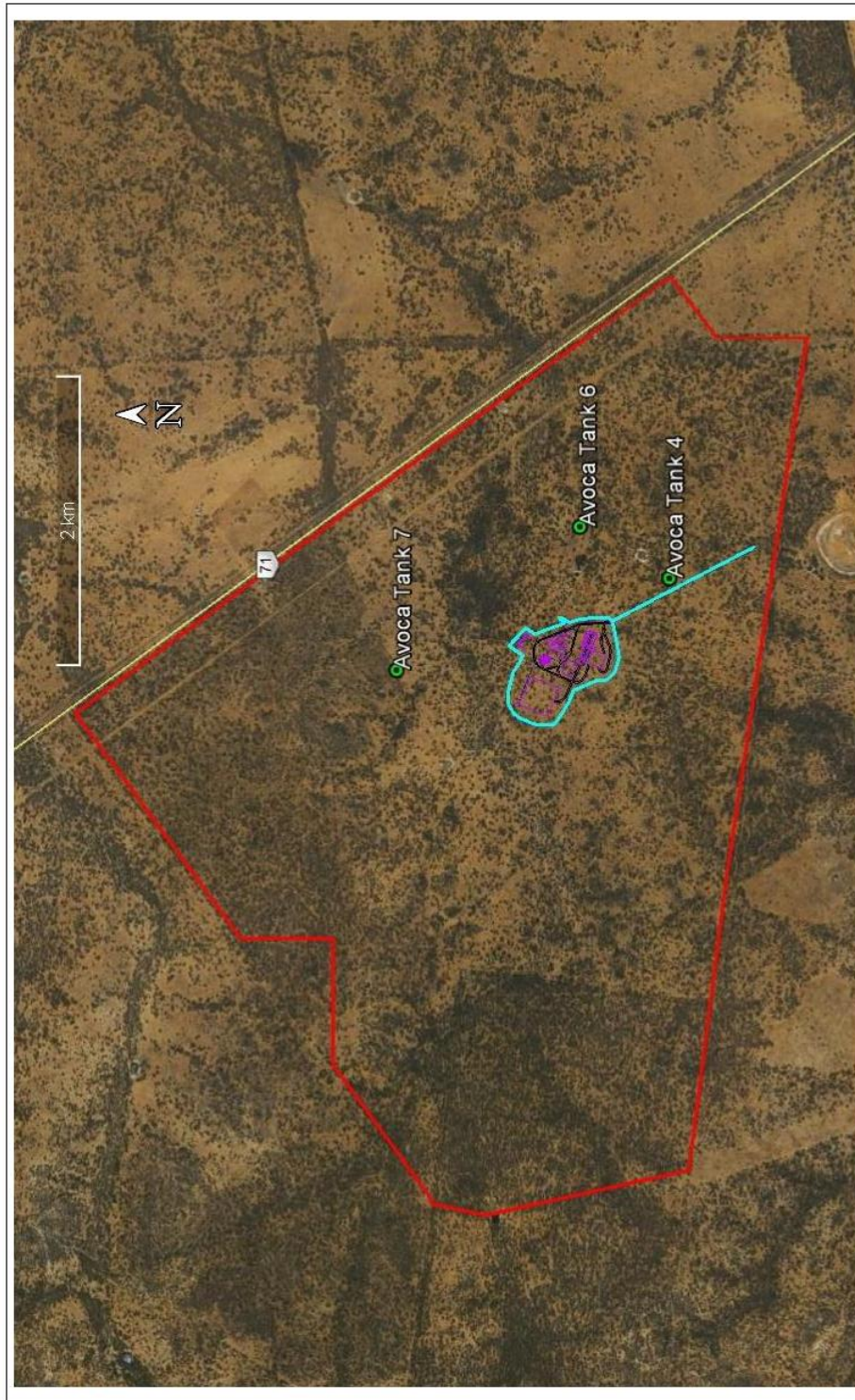
Figure 5.1: Pedestrian survey transects by On Site CHM. Stage 1 Study Area survey transects shown in yellow, Stage 2 shown in green. Red dots show previously recorded AHIMS Sites. Current Project Site Boundary shown in red and Proposed Disturbance Footprint shown in light blue. Orange line west of Mitchell Highway is power easement.



On Site Cultural Heritage Management – May 2014  
Historic Heritage Assessment Report – Avoca Tank Project



Figure 5.2: Historic sites recorded within the Avoca Tank Project Site by On Site CHM (green dots). Project Site Boundary shown in red and Proposed Disturbance Footprint shown in light blue.





### 5.3 SITE DESCRIPTIONS

#### 5.3.1 Avoca Tank 4

**Grid Reference:** 55 485027 E, 6547775 N (GDA 94)

**Site Type:** Historic scar tree, Aboriginal stockmen's camp and dam

**Site Description:**

The site is located at a low point within a wide grassy plain and consists of two small waterholes at the end of an ephemeral drainage line. The western water hole is a natural soak and at a low point in landscape. The eastern waterhole appears to be either entirely man made or heavily modified soak evidence by the spoil heaps around the northern, eastern and southern boundary of the waterhole.

Some additional historic material also occurs in association with the waterhole. A small white earthenware ceramic jar base and three small blackened rocks which may have been used as part of a campfire (see Plates 5.5 and 5.6) were located between the waterholes and amongst a group of trees occur. Five burnt nodules across an area of 2 square metres, indicating a potential hearth, were located approximately 10 metres to the north east of the scar tree

An iron strip wedge was also located 1.5 metres north west from the base of the scar tree. The iron strip measured 250mm Long x 40mm wide and 15mm thick tapering to a thin edge at one end. The function or origin of this "wedge" is unclear but the general form, tapered edge and association with the scar tree suggest that it may have been used in the extraction of the bark from the tree. An alternative explanation of the iron strip is use for locking cart wheels in place. An historic flattened tin can was also found nearby. The area does not show any intensive use or particular features that may indicate repeated use or excavation potential.

**Scar Tree:**

A large dead tree bearing a scar occurs on the north west margin of the eastern soak. The scar is 2.1 metres long and extends around 81% of the trunk. The bottom of the scar begins 40 cm from the ground and extends up the tree to approximately 2.5 metres above the ground. An epicormic or subsidiary stem extends from the base of the scar. Recorded attributes for the scar and tree are provided below.

Scar Length	210 cm
Scar circumference around tree at midpoint of scar	112 cm
Circumference of tree at midpoint of scar	138 cm
Scar Depth (min and maximum)	30mm, 60mm

The tree has been ring barked and displays several isolated and distinct axe marks above the ring barking and on remaining dead bark (xylem) running the length of the scar. These marks were made by a sharp, straight and even edge, characteristics more distinctive of a steel axe.

No tool marks are visible on the scar and it is therefore difficult to discern whether this scar was produced using a stone or steel axe. It is also difficult to discern whether the removal of bark and the ring barking of the host tree are related.

The size and shape of the removed bark, a large rectangle, suggests use for a temporary shelter. The steel axe marks on the tree and presence of several historic artefacts suggest that the scar was probably produced in historic times. The absence of stone tools or other pre-contact Aboriginal occupation materials does not refute a historical date.

Aboriginal community members present suggested that the evidence represented the remains of an Aboriginal stockmen's camp. Aboriginal people were widely employed in the region during the 1900s to ring bark trees and clear land. Certainly some large dead ring barked trees were noted across the Study Area.

***Heritage Assessment:***

The waterholes and surrounding area is heavily vegetated and grassed and does not appear subject to the erosion that covers much of the survey area. The scar tree is dead, degrading and in relatively poor condition. The Stockman's Camp was likely to have been occupied for a short period and is not considered to have any archaeological subsurface potential of significance. This site was also assessed as part of the Aboriginal Cultural Heritage Assessment (On Site CHM 2014) and was considered to moderate level of cultural significance. The scar tree has moderate to high rarity values and significance to the Aboriginal community members. The Aboriginal Stockmen's camp also has historical, social and aesthetic values to Aboriginal community members.

This site is considered significant at the **local level**.

***Statement of Heritage Impact:***

Avoca Tank 4 is approximately 480 metres south east of the Proposed Disturbance Footprint and will therefore not be directly impacted by the Proposal. The site is however approximately 60 metres east of the proposed haul road and therefore has the potential to be accidentally disturbed through ancillary activities.

To protect this site during the development and operation of the Proposal it is recommended that the proponent:

- Cordon off the site to prevent accidental disturbance through entry by any vehicles or unauthorised persons.
- Inform Tritton personnel of the location and designate this area is a "no go zone".
- Develop appropriate management strategies to ensure the long term conservation of this site.

More detailed discussion about the development of management strategies for this site was included in the Aboriginal Cultural Heritage Assessment (On Site CHM 2014).



**Avoca Tank 4**

**Plate 5.3 (above)**  
**Waterhole with scar tree at left**

**Plate 5.4 (right)**  
**Scar tree located at dam**







Plate 5.5 (above)

Tapered iron strip (wedge) located near scar tree.

Plate 5.6 (right)

Camping location between waterholes. Pink flags show ceramic jar in foreground and blackened rocks in background.



Plate 5.7 (below)

Ceramic jar



### 5.3.2 Avoca Tank 6

*Grid Reference:* 55 485381 E, 6548386 N

*Site Type:* Historic glass fragment

***Site Description:***

Isolated piece of thick green bottle glass (30 x 22 x 5mm) circa 1900. An extensive search of the surrounding area (100 metres) failed to locate any additional historic material.

***Heritage Assessment***

The historic fragment is likely to result from historical pastoral activities across the Study Area. The isolated fragment can add little information about these activities and fragments of historic glass cannot be considered unusual or rare across regional NSW. This site is considered to have a low level of significance.

***Statement of Heritage Impact:***

The locality is approximately 600 metres east of the Proposed Disturbance Footprint and will therefore not be impacted upon by the Proposal.

To protect this site during the development and operation of the Proposal it is recommended that the proponent include information within any induction about the presence and treatment of historic artefacts within the Project Site. Historic artefacts should not be disturbed and their location should be reported.

Plate 5.8 (below) Isolated piece of thick green bottle glass





### 5.3.3 Avoca Tank 7

**Grid Reference:** 55 484392 E, 6549640N (GDA 94)

**Site Type:** Historic glass bottle

**Site Description:**

Site consists of a near complete brown glass bottle with minor damage to the lip. The bottle was located within an open flat woodland area displaying high density of quartz gravels. Observation across the study area suggests that areas with high density of quartz gravels are generally more open than areas without quartz gravels.

The bottle displays Embossed lettering is displayed on the base, around the sides of the base and shoulder of the bottle. THIS BOTTLE IS THE PROPERTY OF is embossed around the shoulder and THE N.S.W BOTTLE COMPANY PTY LTD is embossed around the sides at the base. A date of 1939 is embossed on the base.

An extensive search surrounding area (100 metres) failed to locate any additional historic occupation material indicating that bottle deposition / discard was likely part of an isolated event.

**Heritage Assessment**

The historic bottle is likely to result from historical pastoral activities across the Study Area. The bottle can add little information about these activities and historic bottles from this period cannot be considered unusual or rare across regional NSW. This site is considered to have a low level of significance.

**Statement of Heritage Impact:**

The locality is approximately 700 metres north of the Proposed Disturbance Footprint and will therefore not be impacted upon by the Proposal.

To protect this site during the development and operation of the Proposal it is recommended that the proponent include information within any induction about the presence and treatment of historic artefacts within the Project Site. Historic artefacts should not be disturbed and their location should be reported.



Plate 5.9 (above)  
Brown glass beer bottle with THIS  
BOTTLE IS THE PROPERTY OF embossed  
around shoulder and THE N.S.W  
BOTTLE COMPANY PTY LTD is  
embossed around sides at the base



Plate 5.10 (left)  
Bottle base showing embossed date of  
1939.

## 6.0 HERITAGE MANAGEMENT

### 6.1 OVERVIEW OF STUDY RESULTS AND DISCUSSION

The desktop research into the Study Area identified that the subject land were part of the Bogan Gold Fields. It was therefore considered likely that the Study Area was not only used for grazing purposes, but also for mining or at the very least mineral prospecting. However, neither the research nor the survey of the Study Area identify any localities or definitive evidence of mining activity. This study has identified a total of three heritage places within the Avoca Tank Study Area and all of these items are considered to result from pastoral activity.

Avoca Tank 4 has been interpreted as an Aboriginal stockman's camp and it is quite probable that the isolated glass artefacts at Avoca Tank 6 and 7 were also deposited by Aboriginal stockmen, although this remains conjecture. This study has shown that historic heritage sites and artefacts are sparsely distributed across the Study Area and no foci points of historic activity were located. From this perspective the historic potential of the study area to contain further historic sites and artefacts, is considered to be low.

Avoca Tank 4 has been assessed as significant at the local level. Avoca Tank 6 and 7 being isolated glass artefacts are considered to have a low level of significance. None of these places and items will be impacted upon by the Proposal.

### 6.2 HERITAGE MANAGEMENT OVERVIEW

There are three important principles to consider in regard to the management of heritage within a planning process:

1. The legislative obligations under NSW law to take appropriate action to manage heritage items.
2. Heritage significance is based on established assessment criteria. If the value of a heritage item is not clear, a precautionary approach should be adopted until a definitive assessment can be made.
3. Management of an item should be based on the significance of the item and practical realities for its conservation. Management does not preclude adaptive reuse or the installation of modern facilities. It does not preclude demolition where there is no feasible alternative.



### 6.3 STATUTORY CONSIDERATIONS

The *NSW Heritage Act 1977* (Section 4) defines "environmental heritage" to mean those places, buildings, works, relics, moveable objects, and precincts, of historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value that are assessed as significant to the State of New South Wales, significant within the local area. Ideally, significant heritage resources should remain undisturbed and be conserved *in situ* within the framework of the Burra Charter.

In this instance none of the identified places (Avoca Tank 4, 6 and 7) will be impacted upon by the Proposal and are able to be conserved.

Avoca Tank 4 has been assessed as significant at the local level, may contain relics and is considered subject to the provisions of the *NSW Heritage Act 1977*. This site was also identified in the Aboriginal Cultural Heritage Assessment (On Site CHM 2014) and is being managed under the *NSW National Parks and Wildlife Act*. Given the site will not be disturbed by the Proposal however the relics provision (s139) will not be triggered and no approvals will be required.

### 6.4 HERITAGE MANAGEMENT RECOMMENDATIONS

Recommendations for each individual site were made in **Section 5.0** and a summary of individual site recommendations is provided below in **Table 6.1**.

This study has been undertaken with a focus upon the elimination and/or reduction of negative impact upon any archaeological and/or heritage values need for additional detailed study and the potential for triggering the relic's provisions of the *NSW Heritage Act 1977*:

*(NB: it is an offence under Section 139 of the Heritage Act (NSW) to disturb or excavate any land knowing or having reasonable cause to suspect that activity will result in a relic being discovered, exposed, moved, damaged or destroyed with the prior consent of the Heritage Council of NSW. If any historical relics are found during the course of development, excavation work should cease immediately and advice should be sought as to whether an approval under Section 140 of the Heritage Act 1977 (NSW) prior to work recommencing.)*

The objective of management recommendations is to provide a reasonable, balanced and precautionary approach that will appropriately address the potential for the exposure of archaeological resources (relics), and to trigger a due diligence heritage management response as a consequence of the Proposal.

In this instance the potential for the exposure of archaeological resources (relics) is considered to be low. The application of statutory considerations to the Proposal, with

reference to the definitions contained in Section 4 of the *NSW Heritage Act 1977* is considered below:

1. The proponent should consider preparing a due diligence heritage management response strategy to respond the possibility of exposing relics during earthworks or locating further items within the Project Site. As well as detailing response protocols, the strategy should include information to be transmitted to site personnel as part of any inductions so they are aware of the possibility and protocols.
2. Due diligence heritage management and the *NSW Heritage Act 1977* requires that if unexpected **relics** are exposed during any project works, that work is suspended and appropriate heritage personnel consider the need to inform the Heritage Branch of the NSW Office of Environment and Heritage. In this case, additional archaeological assessment and approvals may be required.

**Table 6.1. Summary table for identified historic sites within Avoca Tank Project Site, assessed significance, impacts and recommendations**

Site Name	Site Features	Cultural Significance	Impacts of Proposed Disturbance	Summary of mitigation strategy
Avoca Tank 4	Historic Scar Tree and Aboriginal Stockman's camp	Moderate / Local Significance	None	Upgrade existing fencing. Develop and implement appropriate conservation management strategies and incorporate into relevant management systems and documents. Undertake specific conservation management planning to mitigate the risk of fire (See Aboriginal Cultural Heritage Assessment – On Site CHM 2014).
Avoca Tank 6	Historic glass fragment	Low	None	Location will be avoided. Develop and implement appropriate management strategies. Incorporate into relevant management systems and documents.
Avoca Tank 7	Historic glass bottle (1939)	Low	None	Location will be avoided. Develop and implement appropriate management strategies. Incorporate into relevant management systems and documents.

## 7.0 REFERENCES

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**Primary Sources:**

**Newspapers**

Sydney Morning Herald, January 14, 1919

Sydney Mail, March, 18 1882

**Historical Parish Maps**

Parish of Gidalmabone Maps: 1910, 1916 and 1937

Parish of The Brothers Maps: 1911, 1926 and 1957

Parish of Gidalmabone Parish Maps 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Edition

## APPENDIX 1

[illegible]

**BOGAN**

Set apart for ADP  
E J Thorpe  
July 18 Grant issued  
at 6/8 per acre  
to the Card Bay Co. at April 1901

CL AHS or ASL

10 miles

3492 ac.

2365 ac.

**GOLD FIELDS**

Notified June 1907  
Kerneth MacKinnon  
at CL 173 April 1904  
501 ac 2 r.

The Aust Bank of Commerce Ltd  
CR 22-14 Sept 23<sup>rd</sup> 1901  
(Subdivision) 1022 ac.

PARISH

THE

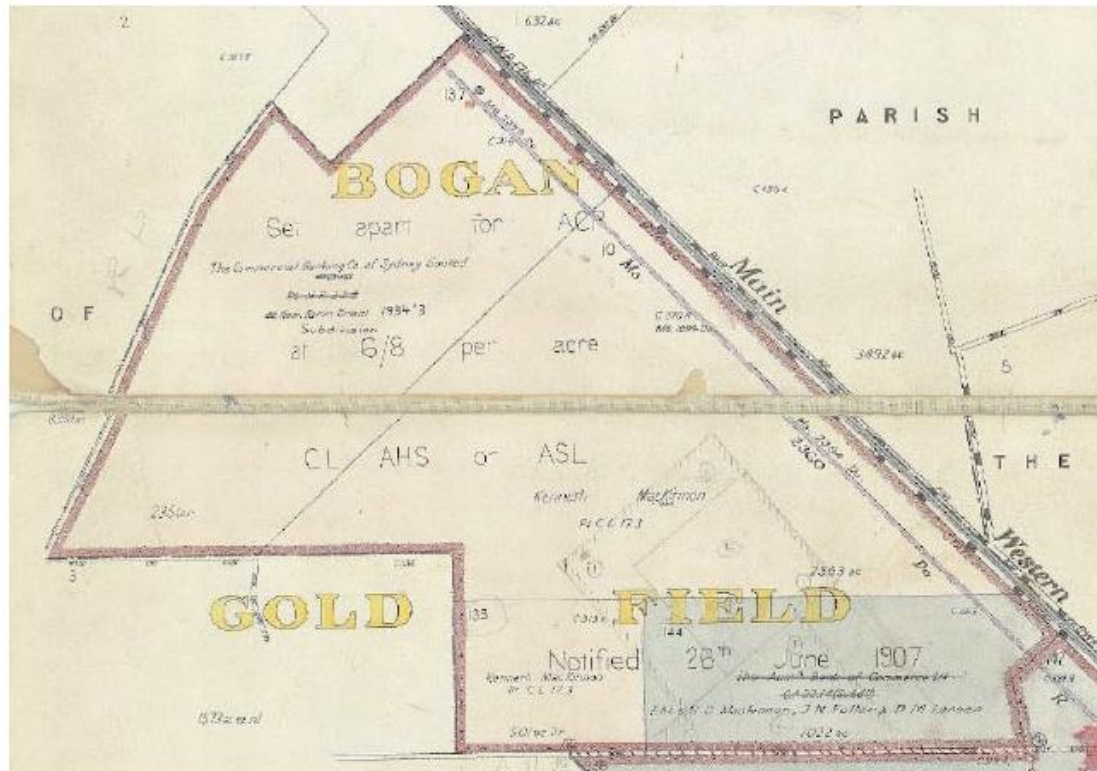
Western

W

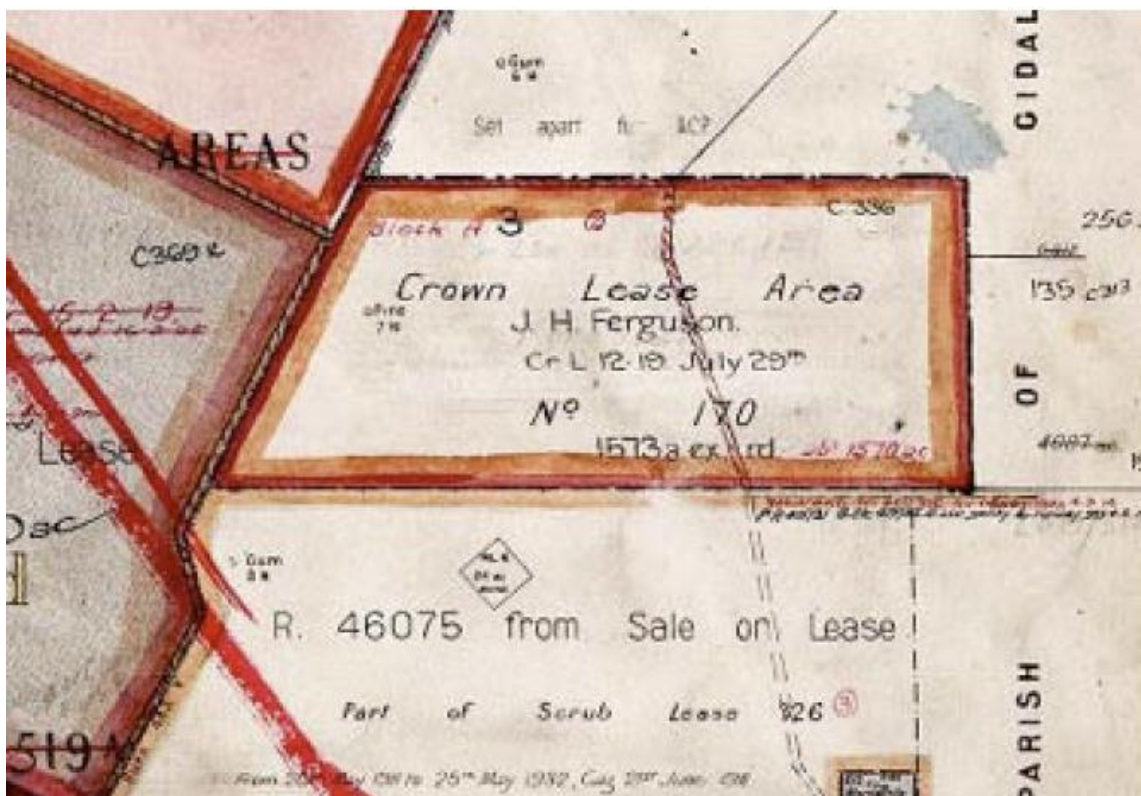
Bradshaw



### Appendix 1C: Parish of Gidalmabone 1937 Map



### Appendix 1D: Parish Map of The Brothers 1911





**Appendix 1E: Parish Map of The Brothers 1926**



**Appendix 1F: Parish Map of The Brothers 1957**



## APPENDIX 2

5/27/14

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You are here: [Home](#) > [Heritage sites](#) > [Searches and directories](#) > NSW heritage search

## Search for NSW heritage

[Return to search page where you can refine/broaden your search.](#)

### Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into two sections.

- **Section 1.** contains items listed by the **heritage council** under the NSW Heritage Act. This includes listing on the state heritage register, an interim heritage order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Branch.
- **Section 2.** contains items listed by **local councils & shires and state government agencies**. This section may also contain additional information on some of the items listed in the first section.

### Section 1. Items listed under the NSW Heritage Act.

Your search returned 2 records.

Item name	Address	Suburb	LGA	SHR
<a href="#">Chinese Graves and Burner at Nyngan Cemetery</a>	Cemetery Road	Nyngan	Bogan	01783
<a href="#">Nyngan Court House</a>	Cobar Street	Nyngan	Bogan	00797

### Section 2. Items listed by Local Government and State Agencies.

Your search returned 5 records.

Item name	Address	Suburb	LGA	Information source
<a href="#">Gongolgon Weir</a>	Bogan River	Nyngan	Bogan	SGOV
<a href="#">Nyngan Courthouse</a>	Cobar Street	Nyngan	Bogan	SGOV
<a href="#">Nyngan Railway Precinct</a>	Pangee Street	Nyngan	Bogan	SGOV
<a href="#">Nyngan Railway Station</a>	Pangee Street	Nyngan	Bogan	GAZ
<a href="#">Overhead footbridge &amp; goods shed</a>	Pangee Street	Nyngan	Bogan	GAZ

There was a total of 7 records matching your search criteria.

#### Key:

LGA = Local Government Area

GAZ = NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.

Note: The Heritage Branch seeks to keep the State Heritage Inventory (SHI) up to date, however the latest listings in Local and Regional Environmental Plans (LEPs and REPs) may not yet be included. Always check with the relevant local council or shire for the most recent listings.

5/27/14

Australian Heritage Database

## Search Results

5 results found.

<a href="#">Ballast Chert Quarry</a>	Barrier Hwy	Hermidale, NSW, Australia	( <a href="#">Registered</a> ) Register of the National Estate (Non-statutory archive)
<a href="#">Belar Creek Mvalls</a>	Nyngan - Brewarrina Rd	Nyngan, NSW, Australia	( <a href="#">Indicative Place</a> ) Register of the National Estate (Non-statutory archive)
<a href="#">Indigenous Place</a>		Folkstone Station via Nyngan, NSW, Australia	( <a href="#">Indicative Place</a> ) Register of the National Estate (Non-statutory archive)
<a href="#">Indigenous Place</a>		Nyngan, NSW, Australia	( <a href="#">Indicative Place</a> ) Register of the National Estate (Non-statutory archive)
<a href="#">Quanda Nature Reserve</a>		Hermidale, NSW, Australia	( <a href="#">Registered</a> ) Register of the National Estate (Non-statutory archive)

Report Produced: Tue May 27 14:23:50 2014

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