HERITAGE ASSESSMENT

TECHNICAL PAPER 2

Wellington Gas Pipeline, Power Station & Compressor Station Heritage Assessment

Prepared by Australian Museum Business Services
for Parsons Brinckerhoff

Final Report

March 2008

A06016

AMBS
Australian Museum Business Services - 6 College Street, Sydney NSW 2010, Ph (02) 9320 6311, Fax (02) 9320 6428
www.amonline.gov.au/ambs - ambs@austmus.gov.au

Executive Summary

Australian Museum Business Services (AMBS) was commissioned by Parsons Brinckerhoff Pty Ltd on behalf of ERM Power Pty Ltd to undertake an assessment of potential impacts to Aboriginal and historic cultural heritage that may arise from a proposed development in Western NSW. Works include the proposed installation of a gas-fired power station, associated transmission infrastructure, and 100km gas supply pipeline and associated support infrastructure including a compressor station. Development of the power station will take place at Wellington, NSW, and the associated gas supply pipeline will be installed from that site to Alectown, approximately 100km south west.

The development has been designated a major project under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). As such, the proponent is not required to apply for approvals or permits under the National Parks and Wildlife Act 1974 (NPW Act) or the NSW Heritage Act 1977 (Heritage Act). However, the Department of Environment and Climate Change (DECC) and the Heritage Office, Department of Planning (Heritage Office), are given the opportunity to review Part 3A applications. This report forms part of the supporting documentation for the environmental assessment.

AMBS undertook consultation with the local Aboriginal communities at Peak Hill and Wellington, as per DECC community consultation guidelines, and conducted survey and assessment with representatives of the Bogan River Peak Hill Wiradjuri Aboriginal Corporation and the Gallanggabang Aboriginal Corporation over eight days in December 2007. During archaeological survey of the proposed gas pipeline route and power station site a total of four Aboriginal heritage sites were identified, comprising three small artefact scatters and one culturally scarred tree. Based upon current scientific evidence, Aboriginal stone artefact scatters (Sites 1, 2 and 4) have been assessed as being of low archaeological significance, while the Aboriginal culturally scarred tree (Site 3) is regarded as being of high archaeological significance. Aboriginal communities consulted with throughout this project have indicated that, while the Aboriginal culturally scarred tree (Site 3) is considered to be highly culturally significant, and all Aboriginal heritage sites recorded contain intrinsic cultural significance, there are no further specific cultural significances attached to the identified sites. No significant historical structures, places or historical archaeological sites have been identified within the pipeline corridor, or within its (immediate) vicinity.

The proposed route of the gas pipeline crosses Aboriginal Sites 1 and 4, and is located close to Sites 2 and 3. Given the highly disturbed nature of Sites 1 and 4, their low assessed significance, and the lesser disturbance of the surrounding creek areas, this report recommends that the current proposed pipeline route not be changed. The current alignment avoids potential impacts upon less disturbed areas adjacent to the recorded sites, which have the potential to contain relatively undisturbed Aboriginal heritage deposits. Further, the proposed pipeline construction route should seek to avoid Site 2 and associated erosion stabilisation area, and a buffer zone of at least 10m surrounding the Site 3 scarred tree should be maintained during pipeline construction works, to ensure the safety of this sensitive site.

Given the level of assessment previously undertaken in the study area, it is unlikely that further archaeological ground survey will identify additional surface archaeological sites. Given the assessed level of significance of the identified sites to be impacted by the current development footprint, further archaeological investigation of these sites is unlikely to increase the current scientific understanding of the region

Contents

Tables

Figures

1 Introduction

1.1 Preamble

Australian Museum Business Services (AMBS) has been commissioned by Parsons Brinckerhoff Pty Ltd on behalf of ERM Power Pty Ltd to undertake an assessment of potential impacts to Aboriginal and historic cultural heritage that may arise from a proposed development in Western NSW. Works include the proposed installation of a gas-fired power station, associated transmission infrastructure, and 100km gas supply pipeline and associated support infrastructure including a compressor station. Development of the power station will take place at Wellington, NSW, and the associated gas supply pipeline will be installed from that site to Alectown, approximately 100km south west.

The development has been designated a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Director-General's requirements for the Part 3A approval state that an Environmental Assessment of the development must be undertaken. As the project is assessable under Part 3A approval, the proponent is not required to apply for approvals or permits under the *National Parks and Wildlife Act 1974* (NPW Act) or the *NSW Heritage Act 1977* (Heritage Act). However, the Department of Environment and Climate Change (DECC) and the Heritage Office, Department of Planning (Heritage Office), are given the opportunity to review Part 3A applications. This report forms part of the supporting documentation for the environmental assessment.

1.2 Study Area

The study area is located within the Parkes, Cabonne and Wellington Local Government Areas (LGAs), approximately 250km north east of Sydney, NSW (see Figure 1.1). The study area comprises a proposed pipeline route approximately 100km in length, running from Alectown to Wellington, and includes a survey area 200m wide. The proposed pipeline route crosses agricultural land and cleared scrubland along its length (see Figure 1.2).

At the north end of the pipeline route, a power station site approximately 45ha is proposed, located within the Wellington LGA. The proposed power station site is situated on part of land described as Lot 101 DP606457, Parish of Nanima, County of Bligh (see Figure 1.3 and Figure 1.4). In addition to the TransGrid substation to the study area's north, a Council owned quarry currently operates north west of the site.

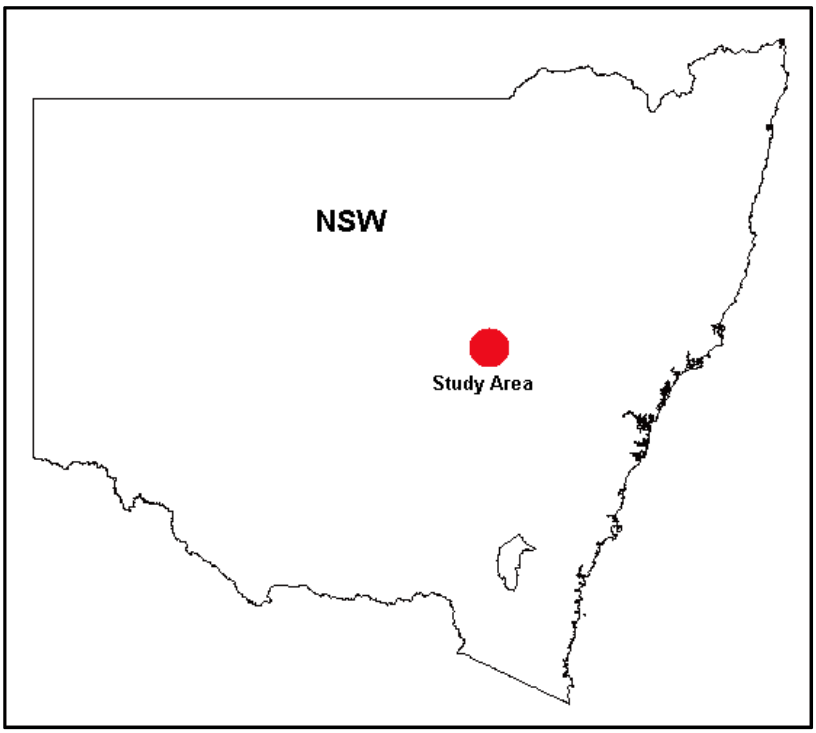

Figure 1.1 Approximate study area location

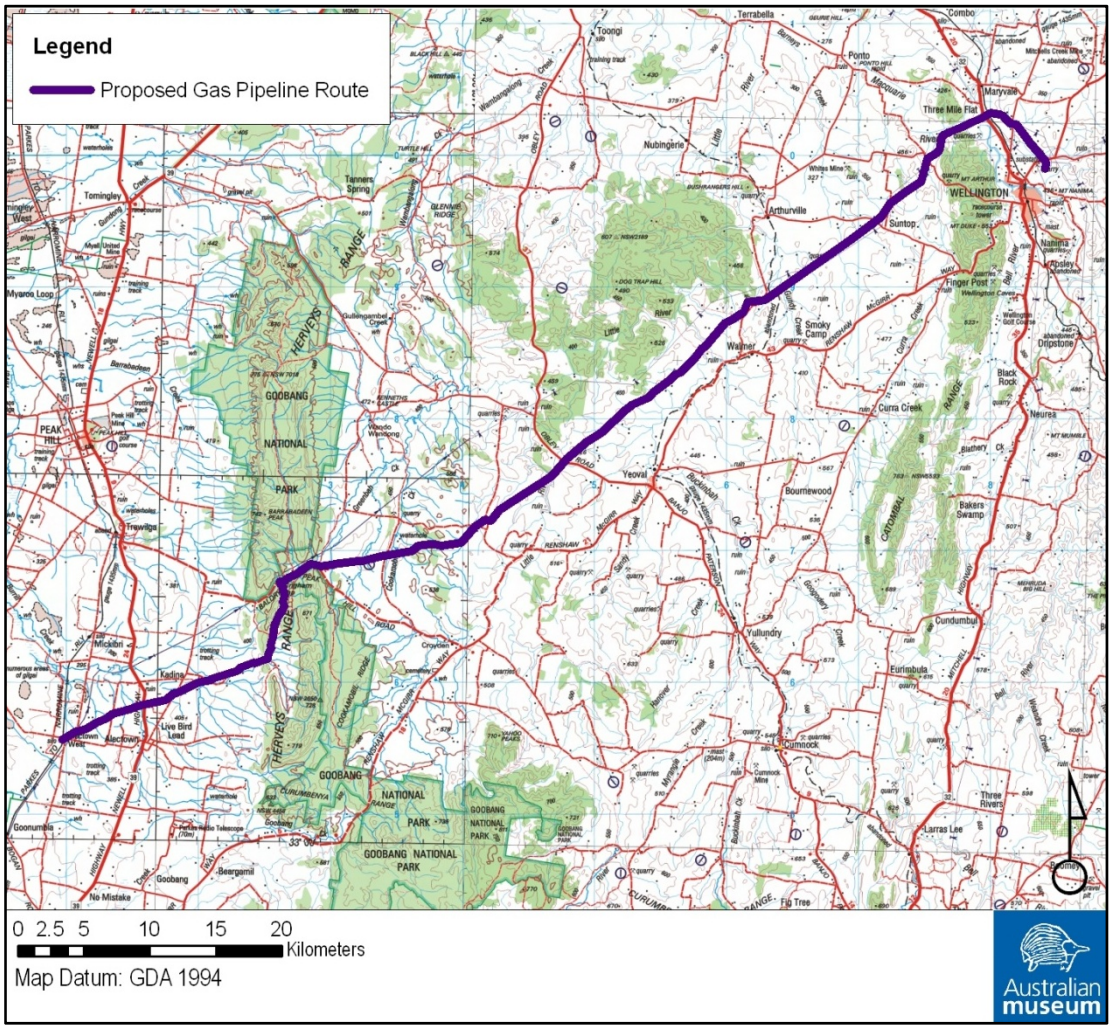

Figure 1.2 Proposed gas pipeline route - Alectown West to Wellington

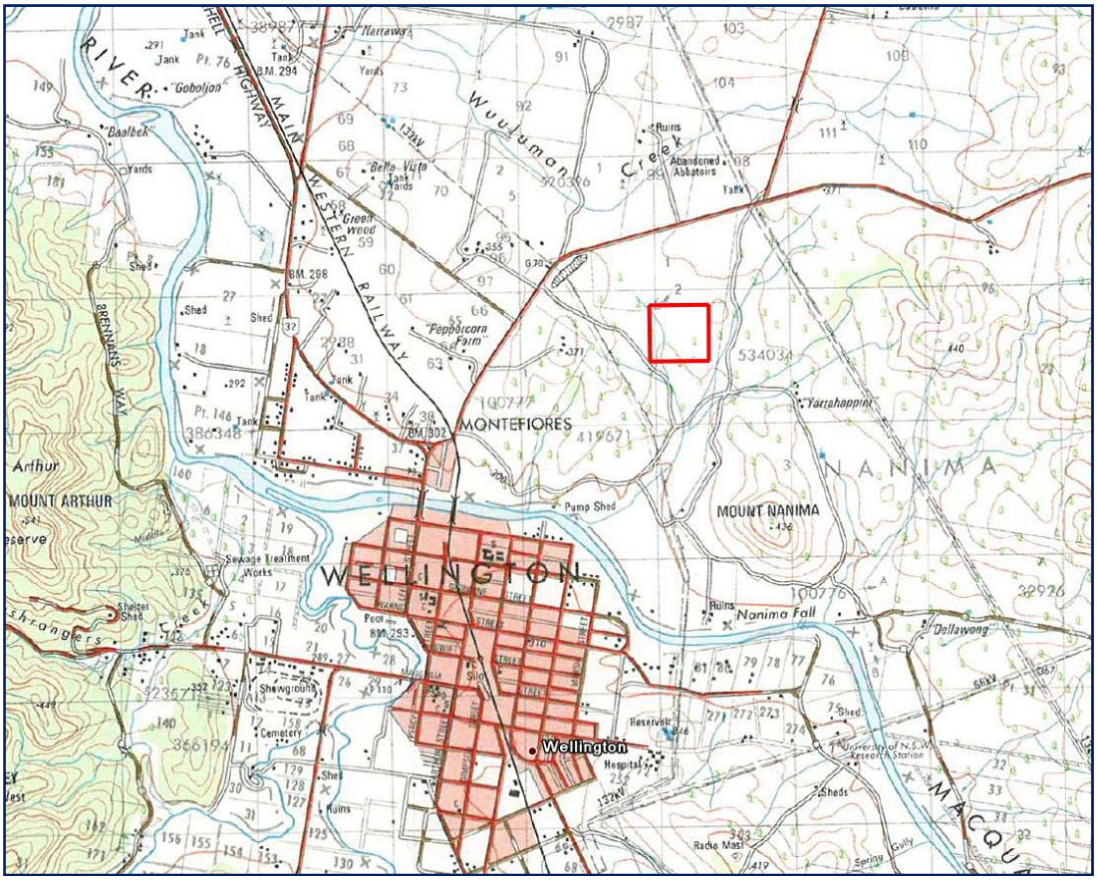

Figure 1.3 Proposed gas-fired power station location at Wellington marked in red (Source: Wellington 8632-N 1:50,000 Map, 2006).

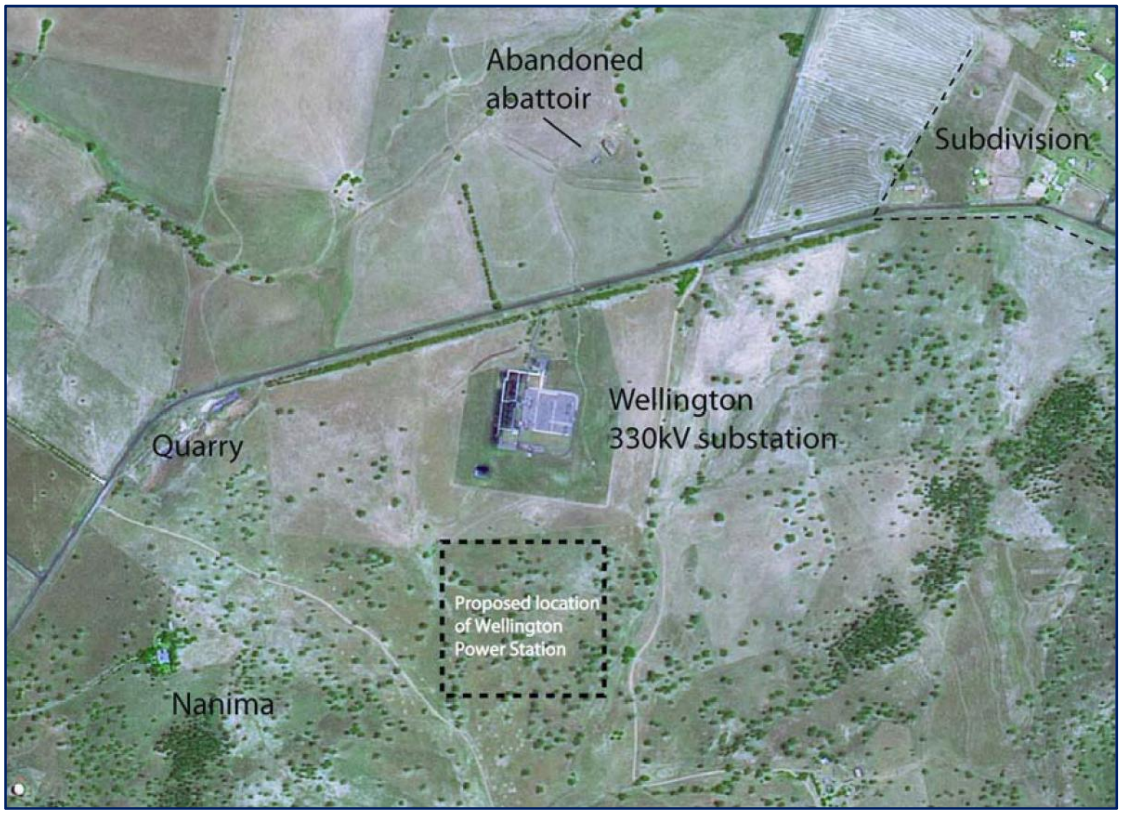

Figure 1.4 Proposed power station location detail

1.3 Proposed Development

ERM Power Pty Ltd propose to develop an open-cycle gas turbine power station with associated transmission and gas supply infrastructure near Wellington, NSW. The power station will consist of four low NOx gas turbo-generators of approximately 150MW rating, with total station capacity around 600MW. The power station will operate as a peaking plant with an annual capacity factor of approximately 4%, producing 220 GWh of electricity per annum.

The proposed site for the power station is 2km north-east of the outskirts of Wellington on Gulong Road. The site is adjacent to TransGrid's 330kV/132kV Wellington sub-station. The proposed power station will be developed within a 45ha site, and will consist of an open-cycle gas turbine power station with associated transmission and gas supply infrastructure with an operational boundary of approximately 6ha.

Gas will be supplied by a new pipeline connecting to the Central West Pipeline at Alectown West, a distance of approximately 100km from the power station site. A compressor station measuring approximately 500m x 200m will be installed at the western end of the pipeline, connecting to the Dubbo-Marsden Central West Gas pipeline at Alectown West. Installation of the gas pipeline will require excavation of trenches along the route, and will impact an area 25 to 30m wide during construction. This impact area can be reduced where necessitated by environmental, heritage or access constraints.

Where the pipeline route crosses creeklines, it is proposed that it will be installed in open cut trenching, a minimum of 1m under the creek bed. Where the pipeline crosses significant watercourses, such as the Macquarie River north west of Wellington, the pipe will be installed using less invasive techniques, such as directional drilling. Similar techniques will be used where the route crosses major roads and rail lines.

1.4 Methodology

This project is consistent with the principles and guidelines of the *Australia ICOMOS Charter for Places of Cultural Significance*, 1999 (Burra Charter). It has been prepared in accordance with current heritage best practice guidelines as identified in the Heritage Office, Department of Planning, documents *NSW Heritage Manual* (NSW HO 1996), *Archaeological Assessment Guidelines* (1996), *Assessing Heritage Significance* (2001), and the Department of Environment & Climate Change (DECC) documents *Aboriginal Cultural Heritage Standards and Guidelines Kit* (DEC 1997), *Draft Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005) and *National Parks and Wildlife Act 1974: Part 6 Approvals Interim Community Consultation Requirements for Applicants* (DEC 2004).

The aim of this report is to assess potential impacts arising from the proposed installation of the gas pipeline and power station development (and associated infrastructure) on Aboriginal and historical cultural heritage, and to recommend measures to mitigate these impacts where required.

The key heritage requirements addressed for this study are:

- consultation and liaison with representatives of the local Aboriginal community, in line with the DECC *Interim Community Consultation Guidelines* (DEC 2004).
- location and assessment of the significance of Aboriginal and historic heritage sites and places within the study area and surroundings;
- investigation of the Aboriginal and historic heritage significance of the study area;
- identification of any potential constraints or opportunities arising from considerations of the study area's heritage;
- determination of the cultural significance of the study area by integrating the results of the archaeological survey and consultation with relevant Aboriginal groups; and

- provision of advice regarding potential constraints and opportunities for future development resulting from considerations of Aboriginal and historic heritage.

The proposed pipeline route surveyed was identified following a comprehensive desk-top assessment of environmental, cultural and social constraints. A one-day workshop was held on 11 September 2007, to allow consultation with GIS specialists and senior specialists in ecology, cultural heritage, environmental planning, and land use and property. The aim of this workshop was to refine a route such that it:

- minimised the length of the pipeline;
- maximised the distance between the pipeline and residential or other sensitive receptors;
- minimised the amount of vegetation clearance and avoided sensitive habitats;
- minimised the number of road, rail and watercourse crossings;
- avoided both known and potential sites of cultural heritage significance; and,
- minimised potential land use impacts.

A 200m buffer around the proposed pipeline route was assessed and surveyed during this heritage study, to account for any minor alterations of the pipeline route that may occur as a result of geotechnical assessments undertaken during the detailed design phase.

On-site consultation was then undertaken with the potentially-affected private landowners to discuss the proposed pipeline route, and to identify any associated potential engineering, environmental or social issues. The resulting proposed pipeline route was intended to avoid and minimise impacts on biodiversity and cultural heritage sensitive areas and sites.

1.5 Authorship & Acknowledgements

This report was prepared by AMBS Project Manager Christopher Langeluddecke and archaeologist Emma Harrison, both of whom undertook archaeological survey of the study area. AMBS Senior Project Manager Jennie Lindbergh reviewed this report and Australian Museum Senior Research Scientist Val Attenbrow provided technical advice.

The authors would like to acknowledge the help and assistance of Russell Reed, Pierce “Melbie” Reed and Bill Cohen of the Upper Bogon River Wirradjurie Corp, Joyce Williams, Violet Carr and Lee Thurlow of Gallanggabang Aboriginal Corporation, and Paul Greenhalgh and Liesl Garret of Parsons Brinkerhoff.

2 Statutory Context

2.1 Environmental Planning and Assessment Act (1979)

The EP&A Act requires consideration to be given to environmental impacts as part of the land use planning process. In NSW, environmental impacts include cultural heritage impacts and as such any required Review of Environmental Factors (REF), Environmental Impact Statement (EIS) or Environmental Impact Assessment (EIA) should incorporate an assessment of Aboriginal cultural heritage. The consent authority is required to consider the impact on all Aboriginal heritage values, including natural resource uses or landscape features of spiritual importance, as well as the impact on Aboriginal Objects and Aboriginal Places.

Part 3A of the EP&A Act concerns the approvals process for major infrastructure development and other projects which classify as 'major projects' under the *State Environmental Planning Policy (Major Projects)* (2005) Regulations. As the Wellington Power Station Project has been classified a major project under Part 3A of the EP&A Act, the developer is not required to apply for approvals or permits under the Heritage Act or the NPW Act. However, the Department of Planning is still required to fully assess the heritage impacts of any proposal under Part 3A in accordance with established guidelines. To this end, the Department of Planning generally provides the relevant statutory authorities the opportunity to review Part 3A applications for the appropriateness of the proposal to the heritage significance of items identified. The statutory authorities then consider and advise the Department of Planning with regard to appropriate conditions of approval.

2.1.1 Environmental Assessment Requirements under Part 3A of the EP&A Act

Pursuant to section 75F(2) of the EP&A Act, the Director-General of the NSW Department of Planning provided ERM Power with requirements for Environmental Assessment of the Wellington Power Station project on 31 January 2007.

The Director-General's requirements state that the Environmental Assessment must include an assessment of impacts on Aboriginal heritage, in accordance with draft *Guidelines for Aboriginal Cultural heritage Impact Assessment and Community Consultation* (DEC, 2005). The assessment must demonstrate that effective community consultation has been undertaken in determining and assessing impacts, developing options and making final recommendations, detail measures to avoid or mitigate any impacts on identified Aboriginal heritage items, and provide for an assessment of the feasibility, effectiveness and reliability of proposed measures and any residual impacts after these measures have been implemented.

Relevant NSW statutory heritage requirements are outlined below to provide a background to current heritage best practice.

2.2 National Parks and Wildlife Act (1974)

Under the provisions of the NPW Act, all Aboriginal Objects are protected regardless of their significance or land tenure. Aboriginal Objects can include pre-contact features such as scarred trees, middens and open campsites, as well as physical evidence of post-contact use of the area such as Aboriginal built fencing and fringe camps. The NPW Act also protects Aboriginal Places, which are defined as *"a place that is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects"*, and may only be declared by the Minister administering the NPW Act.

Under Section 90 of the Act, it is an offence for a person to destroy, deface, damage or desecrate an Aboriginal Object or Aboriginal Place without the prior issue of a Section 90 consent. The Act requires a person to take reasonable precautions and due diligence to avoid impacts on Aboriginal Objects. Section 90 consents may only be obtained from the Environmental Protection and Regulation Division (EPRD) of DECC. It is also an offence under Section 86 of the NPW Act to disturb or excavate land for the purpose of discovering an

Aboriginal Object, or to disturb or move an Aboriginal Object on any land, without first obtaining a permit under Section 87 of the NPW Act.

2.3 NSW Heritage Act (1977)

The Heritage Act provides statutory protection to relics, archaeological artefacts, features or deposits. Sections 139 to 146 of the Act requires that excavation or disturbance of land that is likely to contain, or is believed may contain, archaeological relics is undertaken in accordance with an excavation permit issued by the Heritage Council (or in accordance with a gazetted exception to this Section of the Act).

The Act defines an archaeological relic as:

> *any deposit, object or material evidence:*
> *(a) which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
> *(b) which is 50 or more years old.*

The Heritage Act provides protection for significant heritage items, sites and places in NSW of non-Aboriginal origin. Items and places of Aboriginal heritage significance which are listed on the State Heritage Register, or to which an active Interim Heritage Order applies, are protected under the Act.

The current study area has not been listed on the State Heritage Register and is not the subject of an active Interim Heritage Order.

2.4 The Register of the National Estate

The Register of the National Estate (RNE) was originally established under the *Australian Heritage Commission Act 1975*. In 2004, a new national heritage system which includes the National and Commonwealth Heritage Lists was established under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As a result, there is now a significant level of overlap between the Register of the National Estate and heritage lists at the national, state and territory, and local government levels. To address this situation, the Register has been frozen since February 2007, meaning that no places can be added or removed.

Within the vicinity of the proposed development are the registered places of, *Nanima*, Mudgee Rd, Wellington, NSW and an Indigenous Place (New Oakleigh Carved Trees, details restricted), Wellington, NSW. *The Lion of Waterloo Hotel*, Montefiores St, Wellington, NSW is included as an indicative place.

However, it should be noted that the proposed development will not have an adverse impact on these places, as discussed in Section 5.

2.5 Local Environmental Plans

Under the provisions of the EP&A Act, Local Environmental Plans (LEPs) or Regional Environmental Plans (REPs) can be made. LEPs and REPs include provisions for the protection of items and places of environmental heritage. The study area is located within LGA lands which are the subject of the following LEPs.

2.5.1 Cabonne Local Environmental Plan 1991

Clauses 27-31 of the Cabonne LEP are consistent with current heritage best practice guidelines providing for the protection of heritage items, places and archaeological sites. The LEP's Schedule 1 'Heritage Items' does not include any items or sites within the easement of the pipeline route.

2.5.2 Parkes Local Environmental Plan 1990

Clauses 25-29 of the Parkes LEP are consistent with current heritage best practice guidelines providing for the protection of heritage items, places and archaeological sites. The LEP's Schedule 1 'Heritage Items' does not include any items or sites within the easement of the pipeline route.

2.5.3 Wellington Local Environmental Plan 1995

Clauses 24-27 of the Wellington LEP are consistent with current heritage best practice guidelines providing for the protection of heritage items, places and archaeological sites. The LEP's Schedule 1 'Heritage Items' does not include any items or sites within the easement of the pipeline route.

The following identified heritage items are near to the pipeline route:

- Item 8 - "Goonoo", formerly Ganoo, located approximately 2km west of the proposed gas pipeline corridor;
- Item 28 - "Keston", located approximately 2.5km northwest of the proposed power station site; and
- Item 32 - "Nanima", located approximately 1km southwest of the proposed power station site.

These items are described in detail in Section 5.2.6. It should be noted that although these items are within proximity to the proposed development area, the local topography is such that the visual catchment and aesthetic values of these items will not be adversely affected by the current proposal.

3 Aboriginal Consultation

Aboriginal community consultation is an integral part of the assessment of Aboriginal cultural heritage significance. Consultation was undertaken in accordance with DECC guidelines, as outlined in *National Parks and Wildlife Act 1974: Part 6 Approvals Interim Community Consultation Requirements for Applicants* (DEC 2004).

The aims of this consultation process were to:

- allow identification of local Aboriginal community groups and individuals with an interest in being involved in the ongoing consultation process;
- provide the local Aboriginal community with the opportunity to inspect and comment on the Aboriginal sites and values of the study area and be involved in the heritage assessment process;
- identify the Aboriginal cultural heritage values of the study area;
- provide an opportunity for the local Aboriginal community to comment on the outcomes and recommendations of draft heritage assessment reporting; and,
- integrate Aboriginal heritage values and recommendations for management into the assessment report.

Emails were sent on 11 October 2007 to DECC, the NSW Department of Aboriginal Affairs Registrar of Aboriginal Owners and the Wellington, Parkes and Cabonne Shire Councils requesting notification of any known Aboriginal groups that should be consulted for the assessment.

Searches of the National Native Title Tribunal (NNTT) Registers for the LGAs encompassing the overall study area were undertaken on 11 October 2007. A search of the NNTT register within the Wellington LGA identified three claimant applications, one of which is active (Joyce Williams, Violet Carr & William Riley on behalf of the Traditional Wellington Descendants) and two of which had been discontinued (for "Wiradjuri Wellington" and "Molong Tribe"), while another was a compensation application ("Molong People") that has been discontinued.

A Search of NNTT register within the Parkes LGA shows four claimant applications, none of which are active and all of which had been discontinued (for "David Towney", "Wiradjuri People", "Bogan River Wiradjuri" and "Molong Tribe"), while another was a compensation application ("Molong People") that was discontinued.

A Search of NNTT register within the Cabonne LGA shows two claimant applications, none of which are active and both of which had been discontinued (for "Mooka Traditional Owners Council" and "Molong Tribe"), and one compensation application ("Molong People") had been discontinued.

No native title claims were identified as currently valid for the current study area.

In accordance with DECC guidelines, advertisements were placed in the *Western Magazine* on Thursday 11 October 2007, and in the *National Indigenous Times* on Thursday 18 October 2007. The advertisements sought expressions of interest for participation in the Aboriginal heritage assessment process for the project to be registered. The closing date for registrations was 30 October 2007 and 1 November 2007, respectively.

Letters were sent to Orana Aboriginal Corporation, Wellington Local Aboriginal Land Council (LALC), Peak Hill LALC, Gallanggabang Aboriginal Corporation, Wellington Aboriginal Corp Health Services, Wellington Aboriginal Elder Joyce Williams, asking if they wished to be involved in the consultation and assessment process, and asking that they notify AMBS of any other known Aboriginal groups or individuals that may wish to be consulted. Orana Aboriginal Corporation, Wellington LALC, Peak Hill LALC and Gallanggabang

Aboriginal Corporation all indicated that they wished to be involved in the project. Joyce Williams indicated that she was a part of the Gallanggabang Aboriginal Corporation, and did not wish to be consulted separately.

All groups were provided with details of the proposed development and the heritage assessment methodology following this initial consultation. However, several of the groups who had indicated a wish to participate in the assessment were not able to be contacted again, while others were not available for survey. Final consultation was carried out with Gallanggabang Aboriginal Corporation, from Wellington, and Bogan River Peak Hill Wiradjuri Aboriginal Corporation.

Prior to undertaking field survey with Gallanggabang Aboriginal Corporation, an informal meeting was held with representatives of the Corporation, including elders Joyce Williams and Violet Carr. During this meeting, the proposed development, route and assessment methodology was outlined and discussed in detail to ensure that the representatives understood and agreed with the proposed assessment methodology.

3.1 Fieldwork

The Aboriginal Heritage Assessment was undertaken in consultation with all identified Aboriginal community groups, and AMBS liaised with the representatives throughout all stages of the process. Appropriate representatives from the community groups were engaged to participate in the fieldwork program.

The draft Aboriginal Heritage Assessment has been provided to each group for review and comment. Any information both oral and written, provided by the Aboriginal community groups has been integrated into the assessment and associated documentation. At the time of report finalisation, no relevant written responses have been provided.

Aboriginal community groups who participated in the fieldwork, and their representatives, are listed in Table 3.1.

Table 3.1 Aboriginal Community Participants

Organisations & Groups Represented	Representative
Bogan River Peak Hill Wiradjuri Aboriginal Corporation	Bill Cohen Pierce Reed
Gallanggabang Aboriginal Corporation	Jamie Carr Brent Doherty Jason Carr Lee Thurlow

4 Environmental Context

Consideration of environmental factors at work within the study area may provide a comparative basis to assess the potential for heritage sites to be present within the study area. This section includes an overview of the study area's general geology and topography, soils, hydrology and drainage systems, vegetation, history of land use and level of current disturbance.

4.1 Topography and Geology

The Central West of NSW forms part of a large area of foothills and ranges comprising the western fall of the Great Dividing Range to the edge of the Riverina region. The nature of soils and vegetation within the region is affected by the wide range of rock types and topographic and rainfall gradients that decrease towards the west. Inland streams pass across the slopes in confined valleys with terraces and local areas of sedimentation. Geology, soils and vegetation are complex and diverse but typified by granites and meta-sediments, texture contrast soils and a variety of eucalypt woodlands. Several limestone outcrops are known, with well-developed karst landscape and rich fossil assemblages. The region sustains a large range of economic mineral occurrences such as gold and copper which support a regional mining industry.

The Central West region lies wholly within a geological formation known as the Lachlan Ford Belt. The Belt is composed of Cambrian to Early Carboniferous sedimentary and volcanic rocks formed 350 million years ago when rocks were folded and faulted during tectonic activity. The oldest rocks in the Central West Section of the Lachlan Ford Belt are around 480 million years old, situated between Molong and Wellington and west of Parkes. Granite landscapes are common and mostly associated with large landforms, such as central basins surrounded by steep hills, or high, plateau features with rock outcrops and tors. Hilly landscapes developed on the sedimentary and volcanic rocks, and typically include quartzite features. Valleys are associated with granite, shale, phyllite and slate.

4.2 Soils

The overall regional pattern of soils is one where shallow, stony soils are found on the tops of ridges and hills. Soils down slope are typified by texture contrast soils, with subsoils derived from the underlying weathered rock and the topsoils being a homogenised surface mantle of coarser material derived from all parts of the slope. On valley floors, subsoils have drabber colours indicative of poor drainage, and are prone to accumulating soluble salts. Dryland salinity is widespread. Alluvial sands and loams are more common than clays in most parts of the landscape, but alluvial clays become more important closer to the Riverine Plain. Over the quaternary, soils in these landscapes have accumulated a considerable quantity of wind-blown silt and clay from western NSW (NPWS 2003:120). In the northeast, pockets of Terra Rossa Soils are associated with limestone parent rocks. These soils generally have a high erosion hazard under cultivation and low ground cover levels, especially considering the relatively long length of slopes. Surface soils are friable with moderate fertility (Murphy and Lawrie 1998: 89).

4.3 Hydrology and Drainage

The Macquarie River and its tributaries form the main drainage system over the wider Dubbo region. The Macquarie flows northwest from Euchareena to Dubbo in the central southern part of the region. The main tributaries are the Talbragar River in the north, the Cudgegong River in the east, and the Bell and Little Rivers in the south. The Macquarie River catchment is large and supports a wide agricultural community as well as a number of tributaries and the vast Macquarie Marshes. The township of Wellington and its hinterland are situated on the banks and alluvial floodplain of the Macquarie and Bell Rivers. These Rivers and associated fertile alluvial flats are extensively exploited for agriculture in the Wellington area and have been since settlement in the early nineteenth century. The Macquarie and Bell Rivers in turn feed a number of smaller seasonal waterways, such as the Curra and Wuuluman Creeks and a number of associated perennial streams.

East of Wellington, on the Macquarie River, is the Burrendong Dam, which has an area of 8900 ha. This dam is a major source of water for the intensive irrigation of cotton and citrus fruits downstream of Dubbo, and for other irrigation developments along the Macquarie River. The construction of the dam in 1967 changed the natural processes of drainage in the area as it regulates the natural flow of water to the nearby Macquarie Marshes. The towns of Parkes and Peak Hill are supplied by Beargamil Dam (Lake Metcalfe) on Beargamil Creek. Constructed in 1924, Beargamil Dam has a capacity of 480 ML and has a catchment composed of agricultural land and bushland. This supply is augmented with groundwater drawn from an aquifer and bores near in the mid-Lachlan area.

4.4 Vegetation

The native vegetation of the Wellington-Parkes district is typically an open woodland community dominated by white box (*Eucalyptus albens*), yellow box (*E. melliodora)* and varieties of cypress pine. White box occupies the upper slopes, sometimes in association with grey box (*E. microcarpa)*, with white cypress pine (*Callitris glauca*) on the crests and ridge lines. Yellow box occupies the mid and lower scopes and the drainage lines and valley basins, sometimes with fuzzy box (*E. conica*) and grey box. Scattered kurrajongs (*Brachychiton populneus)* are also common (Murphy and Lawrie 1998: 89).

4.5 Land Use and Disturbance

Agriculture and mining have been the primary industries in the Wellington-Parkes districts since European settlement. Wellington and its hinterland are well situated for agriculture, benefiting from their location in a fertile valley on the banks of both the Macquarie and Bell Rivers and their tributaries, and in close proximity to Lake Burrendong. Parkes was initially a mining district due to the lack of permanent water, with agriculture and grazing becoming prominent later.

In the Wellington district, the fertile river flats of the Macquarie and Bell Rivers are intensively cropped. Market gardens producing vegetables, irrigated fodder and cash crops (such as maize, peas and lucerne hay) are grown. In addition, several dairies occur in the region; however, most of the land is used for mixed farming (mainly winter cereals and sheep-cattle grazing). In areas unsuitable for mixed farming, grazing is the main land use. Yabby farming and flower growing are two relatively new industries.

Erosion hazards of the regional landscape are extreme given the relatively long slopes and level of agricultural activity. Slight to moderate sheet erosion and moderate to severe gully erosion are known in the region, and have in some cases been mostly stabilised.

5 Historic Overview

5.1 Early History

The first European to enter the Wellington Valley was Surveyor-General John Oxley in 1817, returning from an expedition along the Lachlan River. Oxley sighted and named the Hervey Range, later to become Goobang National Park in 1995. The following year, Oxley travelled down the Macquarie River and found the surrounding plains rolling and open, with some wooded areas and plentiful expanses of grassland. This was in contrast to lands east of the Blue Mountains, which were less suited to grazing practices (HO and DUAP 1996:90; Pearson 1981:66). Pastoralists arrived in the Wellington Valley as early as 1819, and a remote convict stock station was established in the Valley in 1823. However, the Valley was truly frontier territory and remained as such until at least the 1840s (Griffin NRM 2004:3-13).

Population growth on the nearby Bathurst Plains during the 1820s, and the ensuing demand for new grazing lands was driving pastoral expansion into outlying regions. Large grazing properties were being established throughout the Central Tableland as cattle stations, with many changing to sheep stock by 1828 (although Wellington remained largely cattle country into the 1830s). A similar pattern was emerging in the region to the southwest, with the development of large pastoral properties surrounding Mudgee and Rylstone (NPWS 2003:122).

The primary records concerning early settlement of the Parkes district are the diaries of Surveyor General Major Thomas Mitchell, who visited the area in 1835 (Figure 5.1). Mitchell set out on an expedition starting some 30km west of the present town of Orange, moving northwest to cover the Bogan and Darling Rivers. On their return trip, Mitchell and his party camped on the banks of the Goobang Creek where they discovered that a cattle station had been established nearby. This is the first recorded white settlement in the area, although wandering pastoralists were probably moving through the area prior to this. By the end of 1835, stations had been established to the north, east and west of Hervey Range (NPWS 2001:30).

Figure 5.1 Major Thomas Mitchell sketching the entrance of the caves in Wellington Valley. Pen drawing by William Romaine Govett (1807-1848) 1843. *(Source: NLA PIC T2331 NK5991/27 LOC NL shelves 55)*

With the European expansion across the South Western Slopes, the traditional lands and lifestyles of the Wiradjuri people became overtaken by pastoral settlers (Figure 5.2). In 1822, Colonial administrators presented the heads of the five tribes around the Bathurst region with 'King plates.' This was an attempt to coerce powerful Aboriginal men into co-operating with pastoralists and to avoid open conflict. There are five 'King plates' that relate specifically to the Wellington area, one of which is shown below (Figure 5.3). Brass 'King plates' are seen as playing a powerful role in the expansion of the pastoral frontier (Troy 1993:7, 18-19).

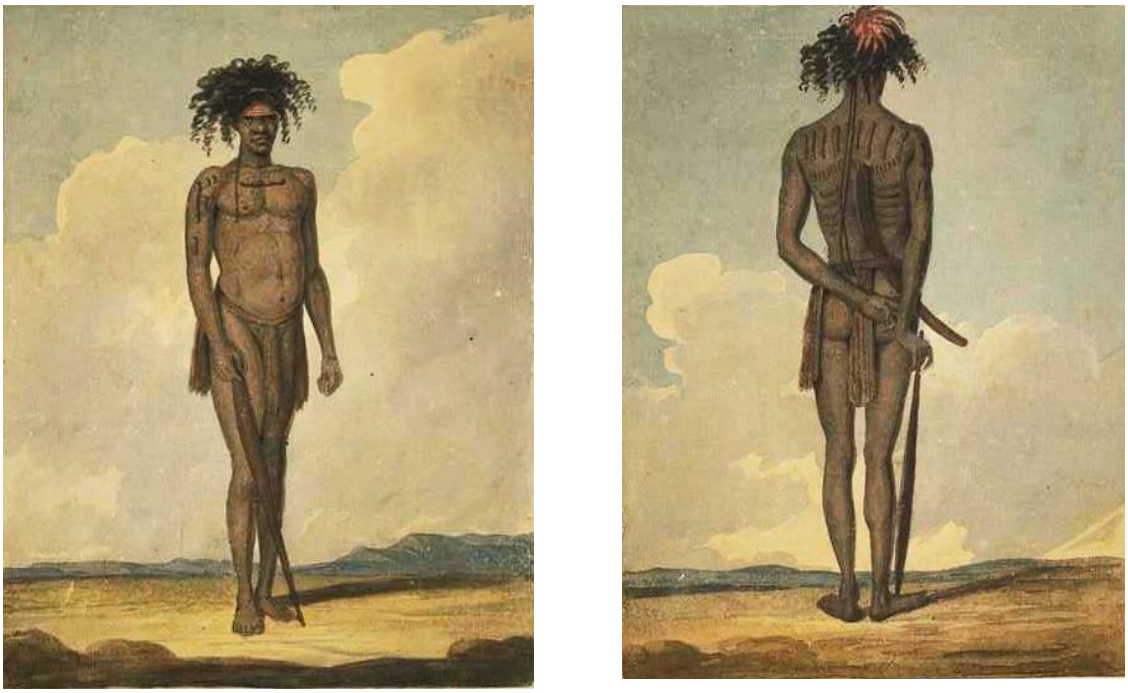

Figure 5.2 Native of New South Wales from Wellington Valley, front and back views. Watercolour by Augustus Earle (1793-1838) *c.*1826. ***(Source: NLA NK12/33 and NK12/32, respectively)***

Figure 5.3 Brass 'King plate' engraved with the words: *Billy King of Nanima* and the figures of a swan and a greyhound engraved between the lines of the inscription. Between 1816-1930 ***(Source: ML R 251a)***

Despite such efforts, racial relations degenerated across the Central Tableland. The Wiradjuri were engaged in guerrilla tactics along the Cudgegong (Gulgong-Mudgee) and around Bathurst until Governor Brisbane

declared a state of martial law in August 1824 (Griffin NRM 2004:3-13). A state of warfare ensued, whereby it is estimated that 'between one quarter and one third of the Bathurst region Wiradjuri were killed' (Read 1988:10). In the region south to the Murrumbidgee River, clashes between European settlers and the Wiradjuri led to the temporary departure of pastoralists from some runs from 1839-1840. Settlers returned in the 1840s and stock numbers grew (NPWS 2003:122).

5.2 Early Settlement Patterns

5.2.1 Convict Settlement

From 1815, private occupation on the Central Tableland had been restricted to the east bank of the Macquarie and Campbell Rivers, with a Government station at Bathurst and small settlement at Kelso from 1818 (Figure 5.4). Despite this, by 1819 roaming pastoralists had probably taken advantage of the good grazing lands in Wellington Valley. The first official European settlement between Wellington and Parkes took place in 1823, when Governor Brisbane established a new, remote convict stock station at Wellington Valley for "gentlemen" convicts. The area was wild, frontier territory at this time despite some growth to the southeast (HO and DUAP 1996:90; McDonald 1968:25).

Figure 5.4 Wellington Valley, New South Wales, looking east from Government House. Watercolour by Augustus Earle *c.*1826. ***(Source: NLA PIC T62 NK12/24 LOC Box B5)***

The convict stock station was also intended to function as a supply base for free settlers, who were increasingly taking up land in the area after 1826, when Governor Darling redefined the limits of location. The venture relied heavily upon economic returns to make it viable. As the convicts were unskilled in agricultural practices, and settlers did not need the convicts' services and refused to buy their produce, the venture soon failed and was closed in 1830. While part of the station continued in government use, in 1832 the remaining part was handed over to the Church Missionary Society (CMS) and a mission to the Wiradjuri established.

5.2.2 The Wiradjuri Mission

James Günther was a missionary based at the Wiradjuri Mission between 1837 and 1843. Günther's journals indicate that the Mission served primarily as a unique source for a range of consumables valued by the Wiradjuri, such as food, tobacco, clothes and blankets. The Wiradjuri continued to rely on traditional methods for the majority of their food supply and never camped near the mission for more than three nights (Günther 183[?], 1836-42: 14 Aug 1837, 14 Aug 1837, 12 Oct 1837; Pearson 1981:74). The Mission served, therefore, as just another food supply in the Wellington area (Pearson 1981:71). The mission operated until

1845, when the site was abandoned. Development focus shifted to the nearby Wellington township, gazetted in 1846 (Griffin NRM 2004:1-1, 3-14). The mission site is now under the management of National Parks as Maynggu Ganai Historic Site (Griffin NRM 2004).

5.2.3 Pastoralism

The drive to settle the Central Tableland, and the establishment of early townships, was the colony's urgent need of new, expansive grazing lands (Heritage Office 1996:90). The European population on the Bathurst Plains was thriving during the 1820s, with pastoral holdings rapidly expanding outwards along the Cudegong and Bell Rivers. Pastoralists preferred lands on distant grasslands edging rivers, as this was more economically viable than clearing new land in closer, wooded areas. This caused early settlement to effectively leapfrog along waterways as pastoralists pursued valuable grasslands (Pearson 1981:204).

Wellington Valley was located on the very western edge of the NSW colony's 'limits of location' as determined by Governor Darling in 1826, and shown on Mitchell's 1834 *Map of the Nineteen Counties.* Settlement into such areas was discouraged and no legal protection was extended to those settlers who ventured beyond these boundaries. The Wellington Valley was wild frontier country in the 1820s, and was to remain as such until at least the 1840s. Bushrangers were active in the area posing a serious threat to settlers. Despite these inhibitions, graziers pushed westward beyond these arbitrary boundaries in their pursuit of viable lands (Griffin NRM 2004:3-13).

Government outstations, such as those at Bathurst and Wellington, became centres of administrative and military presence around which settlers congregated. The Government's presence, and the communications network established to service these settlements, made them nuclei around which free holdings began to develop (Pearson 1981:197-8). The need for some self-sufficiency led to the creation of paddocks of wheat and maize crops, with a small tobacco industry emerging at Wellington. Oxen and horses supplemented cattle and sheep as working stock (HO and DUAP 1996:90). By the end of 1835, pastoral stations had been established to the north, east and west of Hervey Range and wandering pastoralists and squatters had moved into the area surrounding the present town of Parkes. By 1848, more than 80 stations were listed within the boundaries of the Wellington Pastoral District, which incorporated the Hervey and Croker Ranges (NPWS 2001: 30).

5.2.4 Gold

The 1850s gold rush had a profound effect on settlement across the Central Tableland, particularly in the regions surrounding Bathurst, Orange and Mudgee. There was an overall effect of dislocation, as experienced in other regions, as people flocked to the goldfields in great numbers (HO and DUAP 1996:91; McDonald 1968:88-96). Gold mining continued throughout the Central Tableland up to the First World War and through to the present day. The influx of miners and their families, and the requirements of new towns servicing the mines, created a tumultuous period of resettlement and change. The Wiradjuri people were profoundly affected, with the further deterioration of their culture, way of life, and encroachment upon their lands. The influx of migrants and settlers also brought the perils of disease and alcohol with them (HO and DUAP 1996:91; Mcdonald 1968:88-96).

With the discovery of gold in 1856 in Bathurst, the towns of Wellington and Montefiores were deserted as men left en masse for the gold fields. Later goldfields and townships sprang up closer to Wellington near Mookerawa Creek, Mitchells Creek and the Macquarie River. Large tracts of land were locked up as gold-field reserves, and used in the meantime to run sheep (McDonald 1968:34-5). The discovery of gold near Parkes and Peak Hill led to an increase in settlement and development of their districts. Gold was first discovered near Parkes in 1862 close to what was to become the township of Currajong, which is in turn recognised as providing impetus for the settlement of the wider Parkes area (Chappel 1988:11-12) (Figure 5.5). The town of Parkes emerged as an urban centre based upon the exploitation of the nearby reefs (Figure 5.6). Parkes could not have developed as an urban centre without growth generated by the gold rush, without a permanent or

reliable water source needed to support the wool and wheat growing economy that became prominent later. The 1880s and 1890s saw gold rushes in the Tomingley and Peak Hill districts, where townships grew to service the mines. Similarly gold mining later gave way to wheat and sheep as the mainstay of the local economy (Chappel 1988:17-36).

Figure 5.5 The Dayspring Mine at Currajong, 1890. Photograph shows the operation of a substantial mine. (*Source: Chappel 1988: Pl. 24. Photographer: Harry McDade, Parkes.)*

Figure 5.6 Western side of Clarinda Street, Parkes, 1875. View shows development at this time with bakery and the Parkes Hotel on the left, photographer, watchmaker and jeweller in the middle, and bookseller and Commercial Bank on the right. *(Source: SLNSW BCP 00442; Chappel1988:26-27)*

5.2.5 Development of Urban Centres and Townships

Intensive European exploitation of the overall region, following the 1820s, created a demand for villages and market centres. Surveyors laid out plans for projected villages throughout the Central Tableland in the 1830s

and 1840s. Despite some false starts when sites proved impractical for urban development, the familiar towns of the area generally had their physical origins before 1850: Bathurst in 1833, Mudgee in 1837, Carcoar in 1838, Rylstone in 1842, and Orange and Wellington in 1846 (HO and DUAP 1996:91).

Before Wellington was established, the private township of Montefiores was founded by prominent local landowner Joseph Barrow Montefiore, in response to local demand for services. Montefiore subdivided his property *Nanima*, situated on the northern bank of the Macquarie River, in 1840 so that a private village could be established. The township was situated north of the present settlement of Montefiores at the junction of the Bell and Macquarie Rivers. All westbound traffic passed through Gipps St, the village's main thoroughfare (Figure 5.7). However, the Montefiores settlement did not provide the services that were demanded by the population growth, including adequate housing and hospital facilities.

Figure 5.7 Development of Gipps St, Montefiores, 1870-1875. View south. *(Source: SLNSW ON 4 Box 50 No 90)*

The Government was eventually forced to comply with public demand and in 1846, granted approval to begin a new township on land close to that first occupied by the convict stock station, and subsequently by the Wiradjuri mission. The town of Wellington developed, and by 1858 Montefiores had been partially demolished with some houses relocated to the new township (McDonald 1968: Chapters 5 and 6). A few structures remain at Montefiores, including the inn *The Lion of Waterloo*, where in 1854 the last known duel in NSW was fought. The inn is the oldest standing licensed hotel west of the Blue Mountains (HO and DUAP 1996:91).

The 1850s gold rush laid the foundations for development of further townships, and also provided the impetus for urbanisation in Parkes and Peak Hill, where agriculture had not been viable. As a result of the Land Act of 1861, there was some move towards closer settlement of the Wellington district, but large tracts of land remained locked up as gold-field reserves and were used almost exclusively for sheep runs. Land was periodically released, but it was not until 1906 that all suitable land Wellington County was taken up in (McDonald 1968:35).

In 1877, the Lithgow Zig Zag main line was extended from Bathurst west to Orange and Wellington. The principal growth areas on the main western railway line were Orange and Dubbo (Figure 5.8). Although

Wellington succeeded in having the large railway running sheds erected, the town failed to gain a high school under the Public Instruction Act of 1880. However, the town developed and continued to be reasonably prosperous (Figure 5.9). Growth reached a hiatus around the turn of the 20th century (HO and DUAP 1996:93).

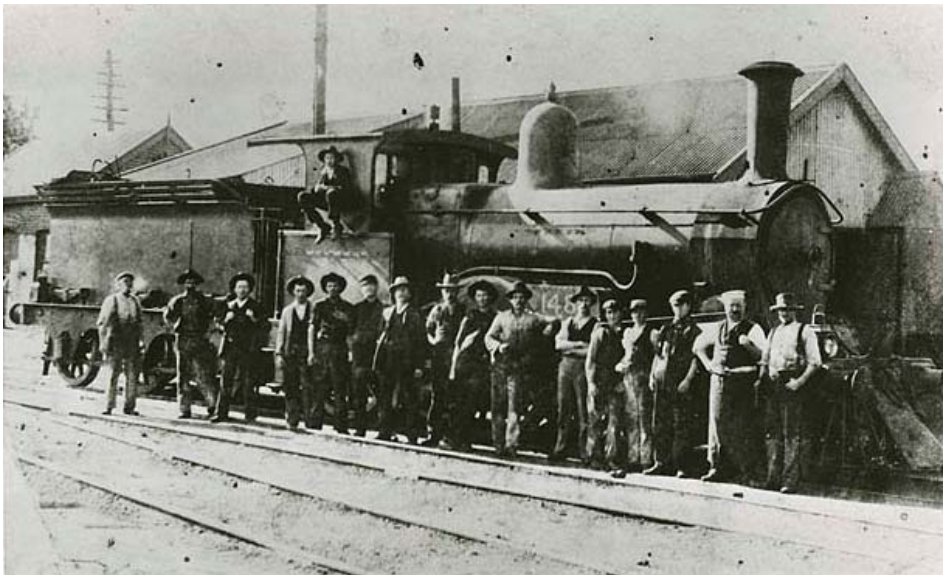

Figure 5.8 The western rail link comes to Wellington: A locomotive at the Wellington Depot. Date unknown. *(Source: SR NSW 418/13NID)*

Figure 5.9 Percy Street, Wellington, 1870-1875. View including wine and spirit merchant on the left and Gow's portrait gallery in the tent on the right. *(Source: SLNSW ON 4 Box 40 No 71).*

5.2.6 Early Homesteads

The development of agriculture and pastoralism saw an increase in the number of homesteads in the region. Known homesteads in the vicinity of the study area include *Goonoo Goonoo* (formerly *Ganoo*), *Keston* and *Nanima*. There is little available information concerning the background to these homesteads. The location and known background history of these places is outlined below.

Goonoo Goonoo **(formerly *Ganoo*)** is located at Walmer, 2km northwest of the proposed pipeline corridor at its closest point. Nicholas Hyeronimus was the original owner of *Goonoo*, receiving a land grant on 30 June

1855. It is possible that Hyeronimus himself began building the house. Nicholas Hyeronimus was a young Belgian, who came to the village of Montefiores and established several significant buildings, including the *The Lion of Waterloo,* and the first building in Wellington. In 1854, he purchased land to the west of the Bell River where he built the homestead *The Meeting of the Waters* (now named *Glenrock*). Hyeronimus was the Local Member for Wellington. He died suddenly in 1860.

The 1866 *New South Wales Gazetteer* refers to Hyeronimus as the occupier of *Goonoo Station*: area 30,000 acres: grazing capability 1000 head of cattle. The Hyeronimus Estate sold the property to Francis Lord (son of Judge Simeon Lord) in about 1870. Lord extended and renovated the house and is probably responsible for its present form. James Carter owned the property from about 1881 until 1883, when he sold it to Samuel Taylor. In 1922, Taylor sold *Goonoo* to Bruce Hayley (the family owned the race horse *Tulloch*). In 1945, R.V. (Rupert) White bought *Goonoo* and the family remained there till 1987, when they sold it to R. McFadyen. Restoration and renovations were carried out during the White's ownership.

***Keston* (also known as *Bella Vista*)** is located approximately 2.5km north of Wellington town centre, on the west side of Mudgee Road. *Keston* lies approximately 2.5km northwest of the proposed power station site. The homestead was built by Henry Nancarrow, proprietor of the Wellington Steam Saw and Planing Mills. Nancarrow was prominent in the development of the town and district of Wellington.

Nanima is located 1.6km north of Wellington town centre, east of Mudgee Road. *Nanima* homestead lies approximately 1km southwest of the proposed power station site, situated on a prominent hill overlooking the town of Wellington. Prior to construction of the present *Nanima* homestead owned by the Bartons, the property was part of that originally owned by Joseph Barrow Montefiore, one of the earliest free Jewish settlers in New South Wales. In 1834, Montefiore had received a land grant of 2,560 acres in the Wellington Valley. By 1838 Montefiore was a prominent local landowner, with holdings of 11,300 acres in addition to further lands in the village of Melbourne. In 1835, James Backhouse and George Walker visited Montefiore's property, then known as Myami. Backhouse wrote:

> *"At Myami a Sydney merchant has erected some good wooden buildings, consisting of a dwelling-house, prisoners' huts a large wool-shed etc. Most of them are weatherboard of the Pine of this neighbourhood... the prisoners' huts are of logs..."*
>
> (McDonald 1968:28-29)

The "dwelling house" Backhouse refers to is likely to be that photographed in 1890, (Figure 5.10). During 1836, Montefiore applied for extra convict labor, referring to the property as *Nanima,* meaning "the other side of the river." However by 1849, *Nanima* was on the market. The property was sold to Joseph Aarons. Aarons spent much of his time at the property and played an active part in local affairs. In 1899, Aarons sold the property to C.H. Barton. Barton was the manager of the local branch of the Commercial Bank of Sydney and owner of Towri Station. Construction of the present *Nanima* homestead began in 1907 (McDonald 1968:30-31).

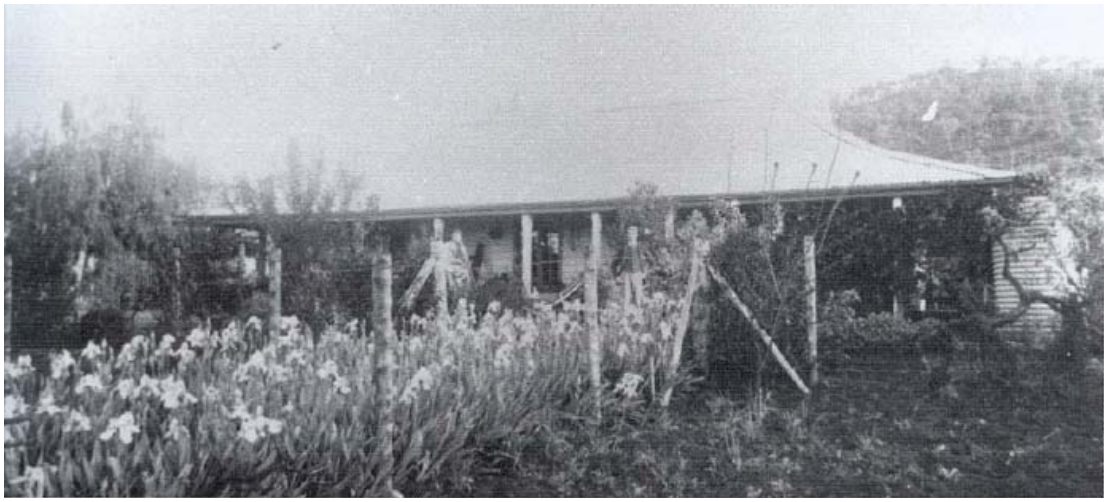

Figure 5.10 The first homestead at *Nanima*, photographed in 1890. The homestead was built by J.B. Montefiore and situated at the foot of Mount Nanima, overlooking the valley. (*Source: Wellington Historical Society).*

5.2.7 Later Developments

In 1897, The Hervey Range was reserved as state forest due to its importance as a timber resource. Several logging camps dating to this period are still evident. In 1995, it was thought beneficial that this area be managed for its natural heritage value rather to continue logging practices, and the area was designated as Goobang National Park.

6 Aboriginal Archaeological Context

This chapter describes the nature of the known Aboriginal archaeology of the study area, based upon a review of relevant archaeological reports and publications, and a search and review of previously recorded sites in DECC's AHIMS database. This review and discussion has been undertaken to allow the development of a predictive model for potential Aboriginal sites within the study area, and to establish a context for a comparative significance assessment.

6.1 Regional Archaeological Context

The Wellington area is situated within what Tindale has identified as Wiradjuri territory (1974). Wiradjuri is the largest Aboriginal language group in NSW, and means "people of the three rivers," referring to the Macquarie, Lachlan and Murrumbidgee Rivers (NPWS 2003:121). Wiradjuri may describe both the people living within the territory and the spoken language, although there would have been a number of different dialects.

These people would have been divided into small groups of varying sizes with the nuclear family the smallest, comprising the immediate kin who shared a landscape. A number of these smaller groups, of up to 20 individuals, would have formed a band of between 80-150 individuals who utilised a large area in which to roam and search for food, or to meet ceremonial or social obligations. Evidence from early settlers indicates the territory of these bands had a radius of up to 65km (Pearson 1981:65, 75-76; Barber 1996:2).

Post-European contact Aboriginal archaeological evidence in the area is represented most frequently in reuse of European materials, such as glass, for flaking; and in scarred and carved trees which, due to typical species lifespan, are not likely to predate this period (Le Maistre 1993:4). These types of contact sites have been identified on land between Wellington and Wallerawang, and are in themselves significant (Cubis 1982: 4, 26).

In 1981, Michael Pearson undertook the most extensive archaeological investigation in the region to date, as part of his PhD dissertation (ANU). Pearson's research focused on the upper Macquarie River valley, which includes the Wellington district. Pearson excavated three known Aboriginal rockshelters and supplemented the information gathered with investigations of other known archaeological sites in the region. Using this data, Pearson was able to formulate conclusions regarding the Aboriginal occupation of the wider Central Western Slopes and Tablelands. As such, this remains the most relevant and comprehensive archaeological study of the Wellington-Alectown district.

Pearson's Granites 2 Shelter archaeological excavations demonstrate that Aboriginal occupation of the region to the south of Hill End extended over 7,000 years, however this site displayed no formal tool types within the deposit. Meanwhile, northeast of Mudgee, his excavations at Botobolar 5 Rockshelter displayed a predominantly scraper dominated pre-Bondaian (>5,000 years ago) tool industry, with the most recent level dated to 5590 ± 90 B.P.. The upper excavation levels revealed a Bondaian (<5,000 years ago) industry characterised by types of retouched flakes known as backed artefacts, and a more diverse tool range with a date of 1170 ± 60 B.P. (Pearson 1981:132). Pearson interpreted the contrast between these two sites as showing that Botobolar was an occupation or habitation site, whereas the Granites site was probably only used as a shelter site during tool manufacture.

These investigations were extremely significant as they not only provide evidence for the antiquity of Aboriginal occupation in the Macquarie River valley, but Pearson was also able to propose a model of Aboriginal open campsite location. This model proposed that open sites would be located on level, well drained ground close to water, with a sunny aspect, protection from prevailing winds and adequate fuel. This model has been found to be vaild when tested in other areas within the wider Western Slopes region (e.g.

Ferguson and Paton 1985; Barber 1990) and therefore may prove useful as a regional reference model in the present study.

6.2 Local archaeological context

Ethnographic accounts indicate that the population of the Upper Macquarie was probably divided into three local groupings or clans, which occupied land in the general areas of Wellington, Mudgee-Rylestone and Bathurst. These clans may have coincided with three Wiradjuri linguistic dialects recorded in the early nineteenth century (Günther 183[?]: 64-65). Pearson estimates that the extent of clan territories approximated a 40-48km radius, although such estimates are known to be tenuous and vary widely (Pearson 1981:80-81).

Local movement of people was associated with several purposes: hunting and gathering, social occasions, and ceremonial gatherings. James Günther, a missionary at the Wellington Wiradjuri Mission from 1837-1843, noted that the number of Wiradjuri camped near the Mission fluctuated periodically between none to over 80 individuals. This was influenced by war or ceremonial demands, such as men's initiation ceremonies or *burbungs*, when men would leave camp for nearby ceremonial grounds (Günther 183[?], 1836-41: 12 Dec 1837; Pearson 1981:71).

Prior to European contact, riverine environments were fundamental for Wiradjuri diet and subsistence needs. Riverine environments, like those of the Macquarie and Bell Rivers and their tributaries, were exploited seasonally for an abundant variety of natural resources. Waterways offered a reliable source of fish and shellfish, even during times of drought, and attracted animals such as birds, kangaroos and emus that could be hunted for their meat. Seasonal fresh foods such as fruit, nuts, yam daisies, wattle seeds and orchid tubers could be gathered from the riverbanks and the land between the river systems (HO and DUAP 1996:121). Other resources such as medicinal plants, animal skins, bark, and plant fibers were also important.

Utilisation of resources took place during seasonal camps of communities or family units, when groups would have been drawn to the riverine area and camped nearby; or during passing exploitation of resources in times of less abundance (Mulvaney 1975:64). Communities would also have been active in the wider area and are known to have either camped near the river semi-permanently or returned to abundant riverine environments from wider areas periodically over great spans of time (Mulvaney 1975:72).

In this way, some particularly desirable campsites, such as those adjacent to rivers, were revisited periodically over time; while at other times smaller, less permanent campsites were visited regularly within a general locality, but not necessarily returned to repeatedly.

Gigmalarie Creek on the Macquarie River, approximately 14km southeast of Wellington, is a localised example of an extensive campsite that the Wiradjuri returned to periodically over time. Long term use of the site is evident in the accumulation of stone artefacts, which have formed a scatter stretching in a 50m wide band 3km along the riverbank (Pearson 1981:74-75). Therefore, it is likely that open campsites and artefact scatters are situated in proximity to waterways (<500m), as these environments were the most abundant and resource-rich zones. Sites in these environments are also the most likely to survive given the impact of farming practices on the grasslands and plains (Pearson 1981:93-100).

To test this locally, a search of the AHIMS database and a review of previous Aboriginal heritage studies conducted in the Wellington-Alectown area was undertaken. This search indicated that sites in the district were commonly located within close proximity to water sources or associated with stands of mature native trees. This pattern reflects known consistencies in site location on a much broader geographic scale.

6.3 Review of Previous Archaeological Works relating to the Study Area

The following comprises a review of Aboriginal heritage reports and investigations conducted in the Wellington-Alectown area, presented in chronological order. It should be noted that a number of restricted documents dealing with Aboriginal burials in the Wellington area have not been viewed for this study due to access limitations. Further, a number of the more recent, unrestricted Aboriginal heritage reports from the AHIMS database were not located at the time of research despite enquiry, we not able to be sourced elsewhere, and can only be assumed to be missing from the AHIMS database.

Griffin NRM 2004. ***Maynggu Ganai Historic Site: Draft Conservation Management Plan.***

The Maynggu Ganai Historic Site is part of a wider historic precinct and is the former location of the colonial convict stock station and Wiradjuri Mission (see sections 5.2.1 and 5.2.2). This site is located 2.3km south of Wellington. The site relates to the first European settlement in the Wellington Valley, and post-European contact Wiradjuri history and culture. The Draft CMP concludes that this site has significance at the national level (2004:-14). However, the site has not been entered on the RNE or NHL. This Draft CMP provides the NPWS and the community with a framework to facilitate decision-making about the interpretation and conservation of the site.

NSW National Parks and Wildlife Service 2003. "The South Western Slopes Bioregion" in ***The Bioregions of NSW: Their Biodiversity, Conservation and Histories.***

This document provides a series of textual snapshots of the conservation character and significance of the 17 bioregions of NSW as a basis for establishing future conservation priorities. Each of the bioregions is described, including that of the South Western Slopes. This bioregion comprises the inland slopes of the Great Dividing Range extending from north of Cowra through southern NSW into western Victoria, with an area of 8,657,426ha. The study area relates directly to this bioregion as it is situated within its northeastern sphere. The document includes information on regional Aboriginal and European history as well as overviews of topographical, geographical, floral and faunal issues specific to the biosphere. As such the study is not archaeologically specific however it forms a useful overview of the regional environmental and historical context.

Cubis, L. 1982. ***The Identification of Aboriginal Archaeological Sites on the Wallerawang/Wellington 330kV Electrical Transmission Line.***

This survey of the Wallerwang/Wellington 330kV electrical transmission line was conducted by Cubis and the Electricity Commission Officer during July 1982. The route followed a proposed transmission corridor linking Wellington substation, approximately 500m to the north of the proposed Wellington power station site and approximately 2.6km northeast of Wellington, with Wallerawang Power Station, which is located approximately 140km southeast of Wellington. Cubis identified 55 Aboriginal heritage sites located on, or in close proximity to, the transmission corridor. These were limited to stone and glass artefact scatters. The majority of these sites were seen as having undergone minimal to minor disturbance and were deemed to have promising investigative potential, based on surface features and the depth of alluvium.

The most promising of these sites were in proximity to drainage lines and/or were located on ridges close to semi-permanent gullies/streams/swamps and uncleared land. One such site, referred to as Oaky Creek 1, showed evidence of *in situ* knapping and featured a number of stone artefacts including a Bondi Point. Post-contact sites were defined as having flaked reuse of European glass, including a bottle base. Cubis also identified and recorded a number of quarries in the area, such as Williwa Creek 1, that were seen to have been exploited for stone tool raw materials.

Cubis concluded that the Central Western Region contained a rich archaeological heritage of prehistoric and contact archaeological sites as well as being a historically significant region. He also considered that this work formed the basis for further future investigations into such important areas.

Bowdler, S. 1982. *Five Sites on the Proposed Transmission Line Route between Wellington and Wallerawang: An Assessment*. A Report to the National Parks and Wildlife Service of NSW on behalf of the Electricity Commission of NSW.

This report constitutes a further appraisal of five sites along the transmission corridor between the Wellington substation and Wallerawang power station, surveyed by Leonard Cubis earlier in 1982 (above), and evaluates the need for further archaeological investigations to be carried out. The sites considered were in the immediate impact zone of the proposed transmission line.

After visiting and assessing the sites Bowdler found that none of these sites could be considered significant in terms of future research potential. Sites that had been identified as quarries by Cubis (1982) were not recognised as such by Bowdler, who disagreed with Cubis' identification. Further, Bowdler considered open camp sites previously identified as having high research potential by Cubis to be of lesser potential value as these were in her view much better represented elsewhere in the Macquarie River Valley (following Pearson 1981), and recommended that no further archaeological work was necessary in any case.

McIntyre, S. 1985. *An Archaeological survey of the Reconstructed Route of Two Proposed Electricity Commission Transmission Lines, Wellington to Dubbo*. A report to the Electricity Commission of NSW and the National Parks and Wildlife Service of NSW.

The survey of these proposed transmission lines began at the Wellington substation located approximately 500m to the north of the proposed power station site and followed the line of the Mitchell Highway approximately 54km northwest to Dubbo. McIntyre identified 15 sites and 12 isolated finds during the course of this investigation, but found that there was severe ongoing disturbance in the area due to agricultural practices, including ploughing. Disturbed archaeological contexts were therefore common, and sites were often found in disturbed locations such as fields ploughed over many years or on well-used tracks.

Sites were generally situated within close proximity to seasonal creek beds and/or the Macquarie River. Two scarred trees and two canoe trees were located, as were two possible historic sites.

In addition to these sites, other areas were identified as being archaeologically sensitive. Highest sensitivity was accorded to those zones adjacent to reliable seasonal water sources, such as the banks of Deep Creek and its tributaries and the banks and immediate surrounds of Eulomogo Creek. Stands of mature native vegetation, particularly of those species known to be exploited, were also accorded archaeological sensitivity.

Lance, A. 1985. *An Archaeological Survey of the Proposed Wellington to Forbes Transmission Line.* Report to the National Parks and Wildlife Service of NSW and the Electricity Commission of NSW.

This report details the findings of an archaeological field survey of the route of the proposed 132kV transmission line from Wellington to Forbes, which extended over approximately 145km. It is assumed that this transmission line began at the Wellington substation, located 500m north of the proposed Wellington power station; however, the precise start of the transmission line within Wellington is not clearly stated.

Lance identified 18 sites along this route consisting of 16 artefact scatters and 2 scarred trees, and found that there was a direct correlation between the location of archaeological sites and water sources in the area, particularly in the case of stone artefact scatters. Those sites not located near major watercourses were found in proximity to smaller creeks and channels. Lance also found that those artefact scatters located near Wellington were predominantly quartz artefacts. River pebble was found to be a main source of stone tool raw material.

Lance found that most of the sites identified were not located in the direct impact zone. However, a scarred tree that was identified was found to be in direct threat from development. On the grounds that this tree was already extensively damaged in the scar region, was badly preserved, and was not unique to the area, it was recommended that no action be taken to preserve the tree.

Dallas, M. and L. Smith. 1989. *Archaeological Survey of Commonwealth Gold Mine at Wellington*. Report to Cluff Resources Pacific Limited.

This study centres on the Commonwealth Goldmine lease at Wellington, as Cluff Resources proposed to reopen a goldmine in the region. The mine site is situated on the northern side of the Macquarie River approximately 20km upstream of the Macquarie River at Wellington.

Dallas and Smith identified two open artefact scatters located within the lease area. The site CM1 is located at the confluence of the Macquarie River and Deep Creek and is very large, extending up to 400m over the river flat. Site CM 2 is located on a creek line away from the river, and such a location had not previously been identified in the Wellington area. Siltstones and quartzites dominated raw materials at these sites.

The report found that the sites were of high importance to the local Aboriginal community based on their relative rarity in the area and region, and their relationship with another large and important site nearby. On these grounds it was recommended that both sites be preserved and managed with protective fencing, and that these areas not be exploited for raw materials or access roads during the proposed development's construction.

Le Maistre, B. 1993. *Aboriginal People at Wellington: Holding on to Land and Heritage*. Report to the NSW National Parks and Wildlife Service.

This brief study documents the history of the Wiradjuri people in the Wellington area. The report focuses primarily on the Wiradjuri's fate in the post contact era after European settlement, and looks at the history of the failed Wellington Mission. The report is for the most part a historically researched and referenced document that looks at regional ethnohistory, and linking the heritage and continuity of the Wiradjuri on their lands from prehistory to the present.

Barber, M. 1996. *Archaeological Survey of Proposed Optus Communications GSM Site, Wellington NSW*. Report Prepared for Optus Communications by Williams Barber Archaeological Services.

The proposed tower site is located approximately 4km south of the proposed Wellington power station, on the crest of a prominent hill approximately 1km southeast of the Wellington township. At that time the hill was being utilised for the Henry Werner Trig Station and agricultural research and grazing on behalf of its owners, the University of NSW. The site had undergone extensive clearance of native vegetation.

The hill itself had been heavy impacted through development and traffic associated with the trig point, radio mast, fencing line, vehicle track, and concrete water tanks. No sites were identified on the hillcrest area, although visibility was good in most places. This is not surprising considering the disturbance to the natural area and the fact that camp sites would have been located on flats in proximity to waterways. Whilst hillcrests were probably utilised in order to spot game, they are unlikely to harbour actual sites as they are not naturally sheltered camping locations.

On the flattening of the slope dipping down into a gully below the hill Barber recorded a large native white box tree with a large scar, although this was not within the impact zone of the proposed development. Barber concluded that these findings were in keeping with both the site location model for the area and the disturbance outlined above, and that there was little chance of subsurface deposits being present within the impact zone.

Kelton, J. 1999. *An Archaeological Study of the Proposed Upgrading of Wellington Sewerage Treatment Plant, Wellington, NSW*. Report prepared for the Department of Public Works and Services by Central West Archaeological and Heritage Services.

This archaeological study was undertaken on a location immediately adjacent to the Wellington Sewerage Treatment Plant (STP), which is situated approximately 4km southwest of Wellington. No Aboriginal sites were known to exist in the immediate 1km radius and no new sites were recorded during the survey. However, it is noted that an Aboriginal burial is known approximately 1.6km to the east in the banks of the Macquarie River.

The study area had undergone extensive disturbance in the form of past cultivation and grazing practices, road and track construction and frequent use, and the construction and use of the existing STP. The disturbed surface and shallow subsurface plus low to moderate landform sensitivity of the study area resulted in an extremely low potential for intact subsurface deposits. However, a single scarred tree site was identified outside the study area on a creek flat and this, together with the burial, suggests that archaeological sensitivity increases with proximity to seasonal waterways.

OzArk Environmental and Heritage Management. 2007. *Indigenous Heritage Assessment, Proposed TransGrid Radio tower, Mt Wellesley, Wellington NSW*. Report to TransGrid.

This report details the results of a survey of Aboriginal heritage at the proposed location for the construction of a radio tower at the summit of Mt Wellesley, approximately 7km southeast of the proposed Wellington power station. The impacted area was not more than 30m x 30m.

No Aboriginal heritage sites were recorded during the course of the assessment. Although this was a feasible location within the landscape for use as a lookout, this site type leaves little or no archaeological trace. The area was further deemed to have extremely low potential for the presence of undetected, subsurface archaeological sites. As a result of this no constraints to development of the tower on the grounds of cultural heritage were deemed necessary.

6.4 DECC Aboriginal Heritage Information Management System

The NSW DECC AHIMS database, maintained by the DECC Cultural Heritage Division, includes a database and recorded site cards for all Aboriginals sites, items, places and other heritage objects that have been reported to the NSW DECC. It should be understood that this database is not a comprehensive listing of all Aboriginal sites, items or places in NSW.

A search of the AHIMS database was submitted to DECC on 23 November 2007, and identified 25 previously recorded Aboriginal sites within a 10km search area around the proposed pipeline route, the results of which are summarised in Table 6.1, detailed in Table 6.2, and presented in Figure 6.1 and Figure 6.2.

The search indicated that there were no Aboriginal sites, objects, places or other heritage values registered within the study area. Analysis of the distribution of these sites indicated that:

- artefact scatters form the majority of Aboriginal heritage sites present in the local area;
- scarred trees are the second most common site type present in the local area, with six previously recorded; and,
- geologically associated site types, such as quarries and rock engravings, are unlikely to be found within the study area due to the lack of exposed suitable geological deposits.

Table 6.1 Aboriginal sites previously recorded near the study area

Site Type	Number Present	Percentage
Artefact Scatter	13	52%
Scarred Tree	6	24%
Burial Mound, Carved Tree	2	8%
Bora Ground	1	4%
Grinding Grooves	1	4%
Stone Arrangement	1	4%
Stone Cairns	1	4%
Total	25	100%

Data based on results of a search of the DECC AHIMS database received 23/11/2007

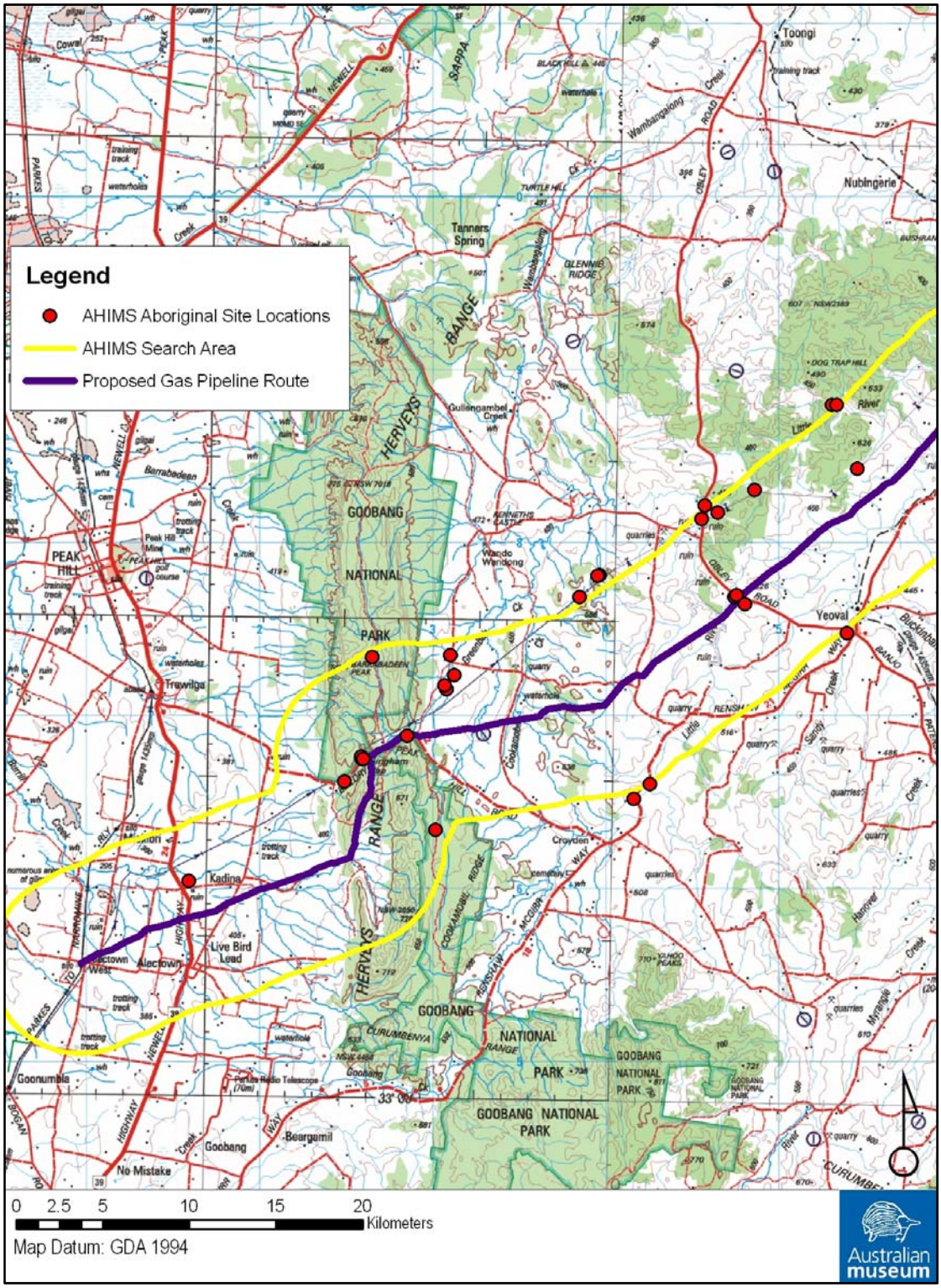

Figure 6.1 Aboriginal heritage sites within 10km of the western extent of the study area. Data based on results of a search of the DECC AHIMS database received 23/11/2007. N.B. Due to the scale of this map, sites that appear to be close to the proposed gas pipeline route are in fact no closer than 1km from the study area, and no previously recorded Aboriginal heritage sites were within the surveyed pipeline route and buffer area.

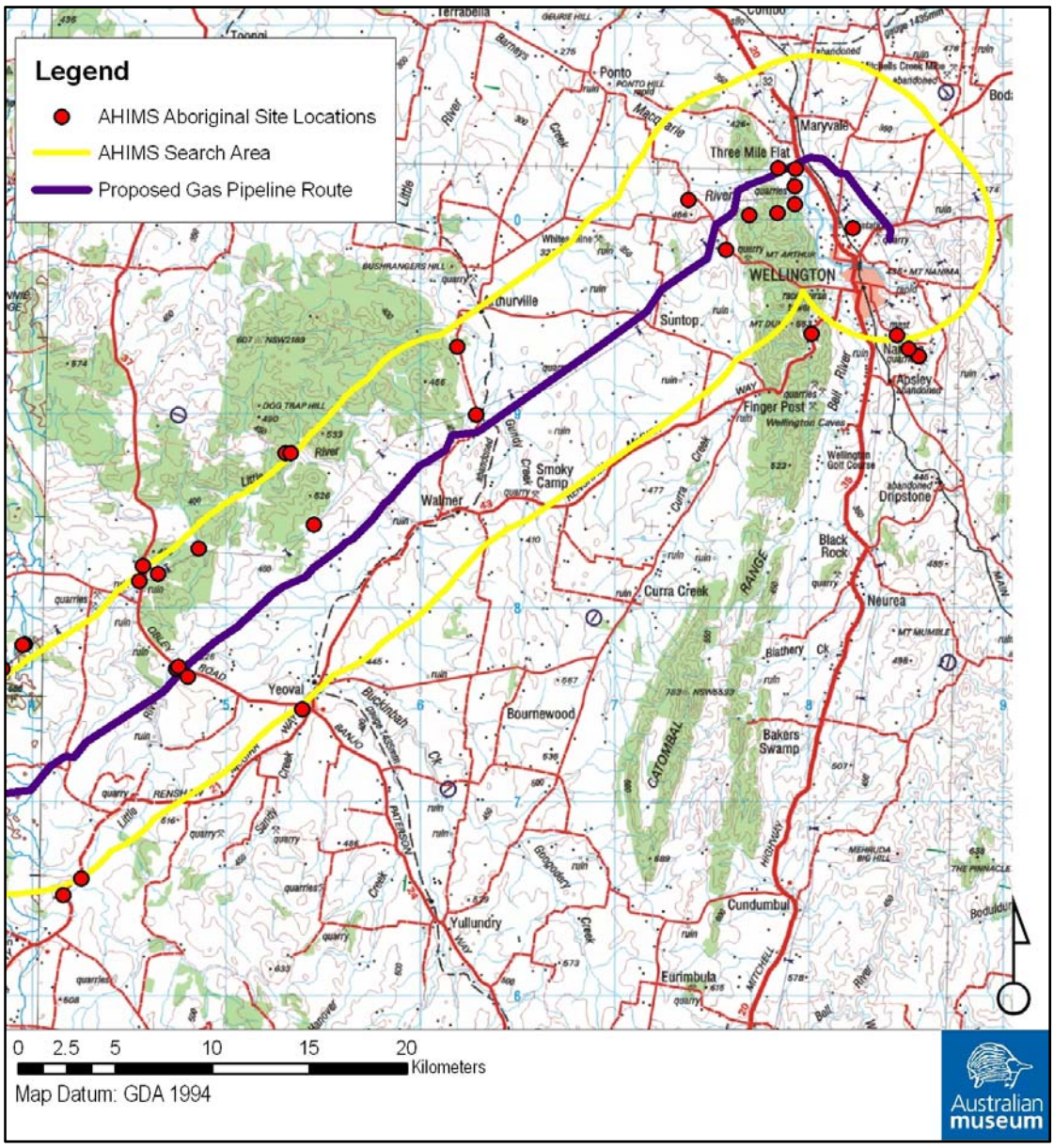

Figure 6.2 Aboriginal heritage sites within 10km of the eastern extent of the study area. Data based on results of a search of the DECC AHIMS database received 23/11/2007. N.B. Due to the scale of this map, sites that appear to be close to the proposed gas pipeline route are in fact no closer than 1km from the study area, and no previously recorded Aboriginal heritage sites were within the surveyed pipeline route and buffer area.

Table 6.2 Aboriginal sites previously recorded near the study area. Data based on results of a search of the DECC AHIMS database received 23/11/2007

AHIMS Site ID	Site Name	Datum	Zone	Easting	Northing	Site Type
36-4-0081	R-ST-01	AGD	55	682210	6399610	Scarred Tree
35-6-0124	AGG1 Goobang	AGD	55	625886	6367551	Grinding Grooves
35-6-0112	OS-20;Goobang National Park;	AGD	55	625870	6367690	Artefact Scatter
35-6-0113	OS-15;Evandale;	AGD	55	631213	6372401	Artefact Scatter
35-6-0114	OS-17;Evandale;	AGD	55	630758	6371581	Artefact Scatter
35-6-0116	OS-16;Evandale;	AGD	55	630650	6371782	Artefact Scatter
35-6-0086	OS-22;Goobang National Park;	AGD	55	624900	6366230	Artefact Scatter
35-6-0087	OS-21;Goobang National Park;	AGD	55	625977	6367536	Artefact Scatter
36-1-0038	Maryvale Creek	AGD	55	678375	6402718	Stone Cairns
36-1-0041	Maryvale Creek 2	AGD	55	679288	6402684	Scarred Tree
36-1-0042	Maryvale Creek 1	AGD	55	679288	6402684	Scarred Tree
36-4-0014	Baalveck; Micketymulga Hill;	AGD	55	679219	6400857	Bora Ground
36-4-0016	Macquarie Park;	AGD	55	673740	6401063	Artefact Scatter
36-4-0017	Maryvale Creek; Micketymulga Hill;	AGD	55	679254	6401770	Artefact Scatter
36-4-0020	Maryvale Creek;	AGD	55	678375	6402718	Stone Arrangement
36-4-0028	Macquarie Park/WF4;Macquarie Park;	AGD	55	675690	6398510	Artefact Scatter
36-4-0030	Obley/WF 6;Goonoo State Forest;	AGD	55	654490	6384312	Artefact Scatter
36-4-0049	Baalbek/WF 2;Wellington;	AGD	55	678340	6400400	Artefact Scatter
36-4-0050	Macquarie Park/WF3;Wellington;Macquarie Park;	AGD	55	676900	6400280	Artefact Scatter
36-4-0053	Obley	AGD	55	647400	6376900	Burial Mound, Carved Tree

6.5 Aboriginal Heritage Site Prediction Modelling

On the basis of the archaeological sites registered in the region and review of previous archaeological studies, the following conclusions can be drawn regarding the potential presence and location of Aboriginal heritage sites within the landscape of the study area:

Open Artefact Scatters/Open Campsites

These deposits represent past Aboriginal subsistence and stone knapping activities, and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. There is potential for artefact scatters to be found in all environmental contexts and landforms, although larger and denser sites are predominantly located on the riverbanks and lower slopes facing watercourses, and on elevated ridgelines. This site type is the most commonly recorded within and near the study area.

Given the presence of major waterways and creeklines associated with the Macquarie, Bell, and Little Rivers, and likely exposures created by agricultural events, there is high to moderate potential for such sites to be present in association with these environmental contexts. Flat, open areas associated with the creeks and their resource-rich surrounds would have offered ideal camping areas to the Aboriginal inhabitants of the local area.

Isolated Artefacts

For the purposes of this report, an isolated artefact is defined as a single artefact, located more than 50m from another artefact. Isolated artefacts may represent a single item discard event, or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, *in situ* buried archaeological deposit, or a larger deposit obscured by low ground visibility. Although no isolated artefacts have previously been recorded in or near the study area, there is a high likelihood that such isolated artefacts are present in the study area. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.

Scarred Trees/Carved Trees

Aboriginal scarred trees display scars resulting from the removal of bark or wood for cultural purposes, such as for the construction of canoes or shields, to mark the tree, or to gain access to food resources. Carved trees marked areas for ceremonial purposes, and are known to have existed locally through ethnographic accounts associated with Wellington. Generally speaking, scarred and carved tree sites are relatively uncommon within NSW, and as such are seen as highly significant, both culturally and archaeologically. Given the occurrence of old tree growth in the study area, particularly associated with Goobang National Park and the Macquarie, Bell, and Little Rivers and tributaries, there is a moderate likelihood that such sites will be present in the study area.

6.5.1 Sites Unlikely to be Present

The following site types have previously been recorded within the local region, but have a moderate to low likelihood of being present within the current study area:

Burial Mounds, Carved Tree

Aboriginal burial of the dead is known to have taken place relatively close to campsite locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distances. Soft, sandy soils on, or close to, rivers and creeks also allowed for easier movement of earth for burial. Many such sites are known to

occur in the Macquarie River district, always in association with desirable camping grounds and sometimes with nearby carved trees as ceremonial markers. The presence of such sites in the general area, and the occurrence of waterways and suitable camping grounds within the study area, indicates a moderate to low likelihood that burial mounds will be present.

Bora Ground

Bora grounds are ceremonial places that were often located in a secret or seldom visited location some distance from usually frequented campsites. Several bora grounds are known to have existed in the region through ethnographic accounts, although many sites have been destroyed or lost. One such site was on the Macquarie River bank at Wellington, marked by several bora rings as well as earth figures and carved trees. Others are known to occur in the wider region up to 6.5km from the river. There is some potential for these sites to exist; however, given the agricultural practices that have taken place over the majority of the study area, the likelihood of the location of bora grounds within the study area is low.

Grinding Grooves

Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against each other creates grooves in the rock, which are usually found on flat areas of soft rock such as sandstone, in areas of creek beds and other water sources. Grinding grooves and carvings are most likely to occur in areas to the north of the Macquarie River in association with sandstone and/or granite formations.

Stone Arrangements and Cairns

Stone arrangements and cairns are thought to be ceremonial in nature, and are known to occur regionally in association with bare, exposed hilltops or knolls; or bare areas of exposed, flat land. Their locations are usually isolated from known campsite areas and are often a considerable distance from water, especially in the case of the hill top variety. There is some potential for these sites to exist; however, the level of agricultural disturbance within the majority of the study area indicates a low likelihood that stone arrangements are present within the pipeline corridor.

Quarries

Aboriginal quarry sites a source of raw materials, primarily for the manufacture of stone tools, but also for ochre procurement. Such sites are often associated with stone tool artefact scatters and stone knapping areas. Exposures of suitable raw material that allowed the creation of quarry sites are known to be present within Goobang National Park from local Aboriginal cultural knowledge. This and the large region covered by the study area, varied landforms, and widespread occurrence of artefact scatters in the vicinity suggests some likelihood of raw material quarries being present within or near the study area. Past research has shown quarries may be present anywhere that suitable raw material and geology are accessible (Pearson 1981). Therefore there is moderate to low likelihood that such sites will be present within the study area.

7 Field Survey

7.1 Survey Methodology

Due to the length of the proposed gas pipeline route and the high level of disturbance from agricultural practices along the majority of the route, it was determined that the most efficient assessment methodology would be to undertake a targeted field survey of the proposed pipeline route and buffer zone. Informed by the predictive model for Aboriginal heritage sites discussed in Section 6.5, the targeted survey was designed to focus on landform types along the proposed pipeline route with the potential to contain Aboriginal heritage sites. To allow the predictive model to be tested in the field, the first three days of survey examined the entirety of those survey sections, regardless of landform or level of disturbance.

The survey aimed to record both physical evidence of past Aboriginal occupation and to investigate the likelihood for potential archaeological deposits to be present within the proposed pipeline route. Fieldwork methodology, the pipeline route and available mapping information were discussed with all Aboriginal community representatives present prior to beginning fieldwork, and copies of topographic maps and aerial photography were made available to all proponents.

A buffer area of 200m around the proposed pipeline route was examined where ground visibility and access allowed. The survey was carried out by AMBS archaeologists Christopher Langeluddecke and Emma Harrison in conjunction with representatives from the relevant local Aboriginal community, as described in Section 3.1. Representatives of the Bogan River Peak Hill Wiradjuri Aboriginal Corporation participated in the first week of survey, while representatives of the Gallanggabang Aboriginal Corporation from Wellington participated the second.

The entirety of the first three days survey was undertaken by pedestrian survey, while subsequent days targeted sensitive landforms and open ground exposures. Targeted areas were examined by pedestrian survey, including a minimum 200m buffer from the proposed pipeline impact area. Where mature native trees were observed within the pipeline route buffer area, they were examined for the presence of Aboriginal cultural scarring. Where Aboriginal heritage sites were identified, their location was recorded using a handheld Magellan Explorist 500LE GPS unit and descriptions of the site and any artefacts found were recorded. All artefacts identified during survey were photographed.

7.2 Survey Results

Survey took place over 8 days in December 2007. For the purposes of this discussion, each portion examined over a day will be referred to as survey sections. Survey sections examined are briefly described in Table 7.1 and illustrated in Figure 7.1.

Table 7.1 Survey Sections Summary

Survey Section	Date Surveyed	Approx. Distance Surveyed	Current Land Use
Day 1	3/12/07	10 km	Agricultural land, primarily stock grazing and cropping.
Day 2	4/12/07	11 km	Agricultural land, primarily stock grazing and cropping.
Day 3	5/12/07	14 km	Agricultural land and cleared scrub. Agricultural land primarily stock grazing, with some cropping. Where the route goes through scrub adjacent to Goobang National Park it follows an unsealed track, previously cleared of vegetation for proposed mining operations.
Day 4	6/12/07	9 km	Agricultural land, primarily stock grazing and cropping.
Day 5	7/12/07	9 km	Agricultural land, primarily stock grazing and cropping.
Day 6	10/12/07	14 km	Agricultural land, primarily stock grazing and cropping.
Day 7	11/12/07	18 km	Agricultural land, primarily stock grazing and cropping.
Day 8	12/12/07	17 km	Agricultural land, primarily cropping.

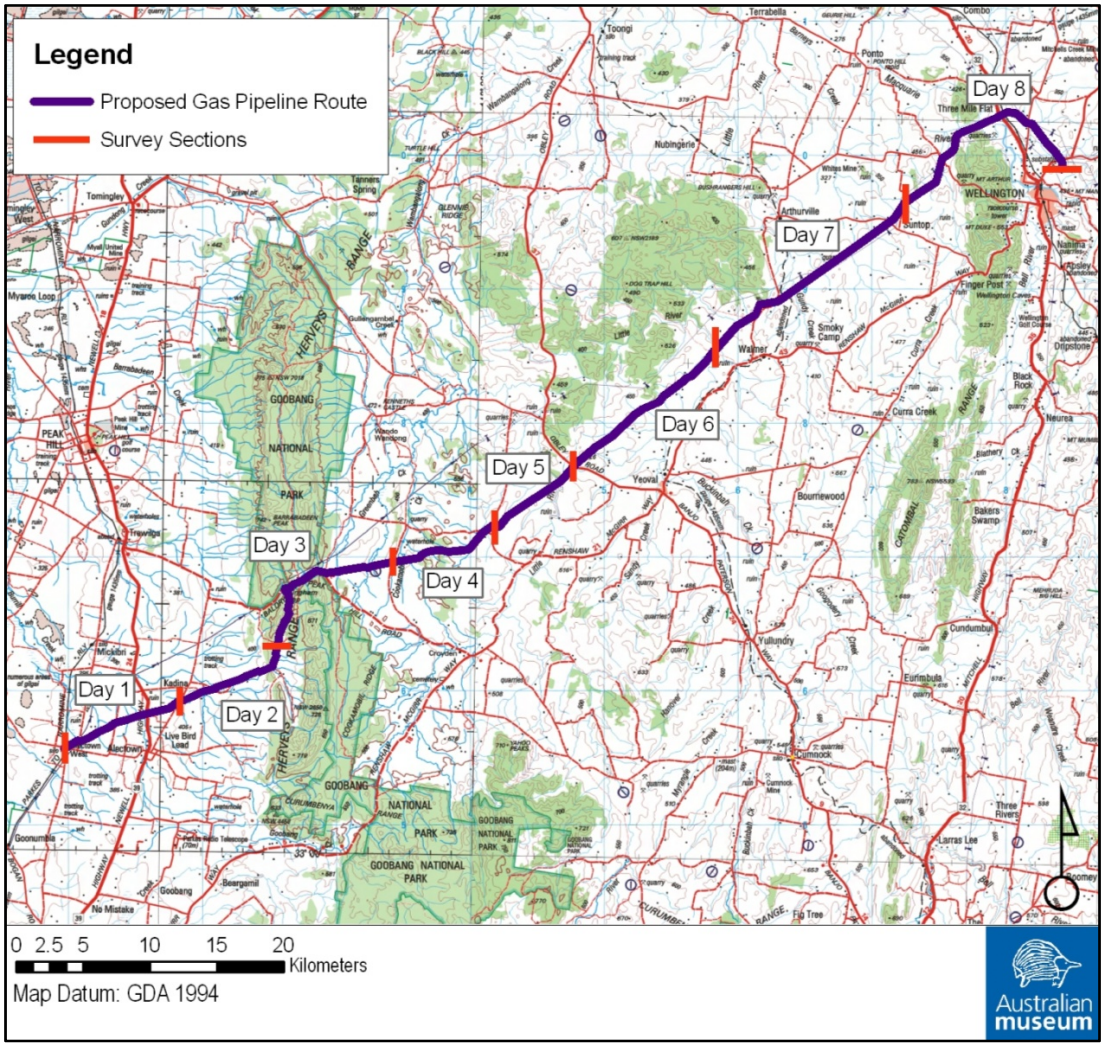

Figure 7.1 Survey Sections

7.2.1 Aboriginal Heritage Sites

A total of four Aboriginal heritage sites were recorded during the archaeological survey of the proposed gas pipeline route and power station site. These sites comprised three small artefact scatters and one culturally scarred tree. Identified sites are referred to in this report as Sites 1 to 4, dependent upon the order in which they were recorded. A summary of sites identified during the survey is presented in Table 7.2, and their location relative to the overall proposed pipeline route is presented in Figure 7.2.

Table 7.2 Identified Aboriginal Heritage Sites Summary

Site	Type	Zone	E	N	Datum	Landform	Details
Site 1	Artefact Scatter	55	615214	6358217	WGS84	Waning lower slope	2 artefacts
Site 2	Artefact Scatter	55	620151	6360115	WGS84	Flat	11 artefacts
Site 3	Scarred Tree	55	625226	6362033	WGS84	Waning lower slope	
Site 4	Artefact Scatter	55	650919	6379372	WGS84	Maximal lower slope	2 artefacts

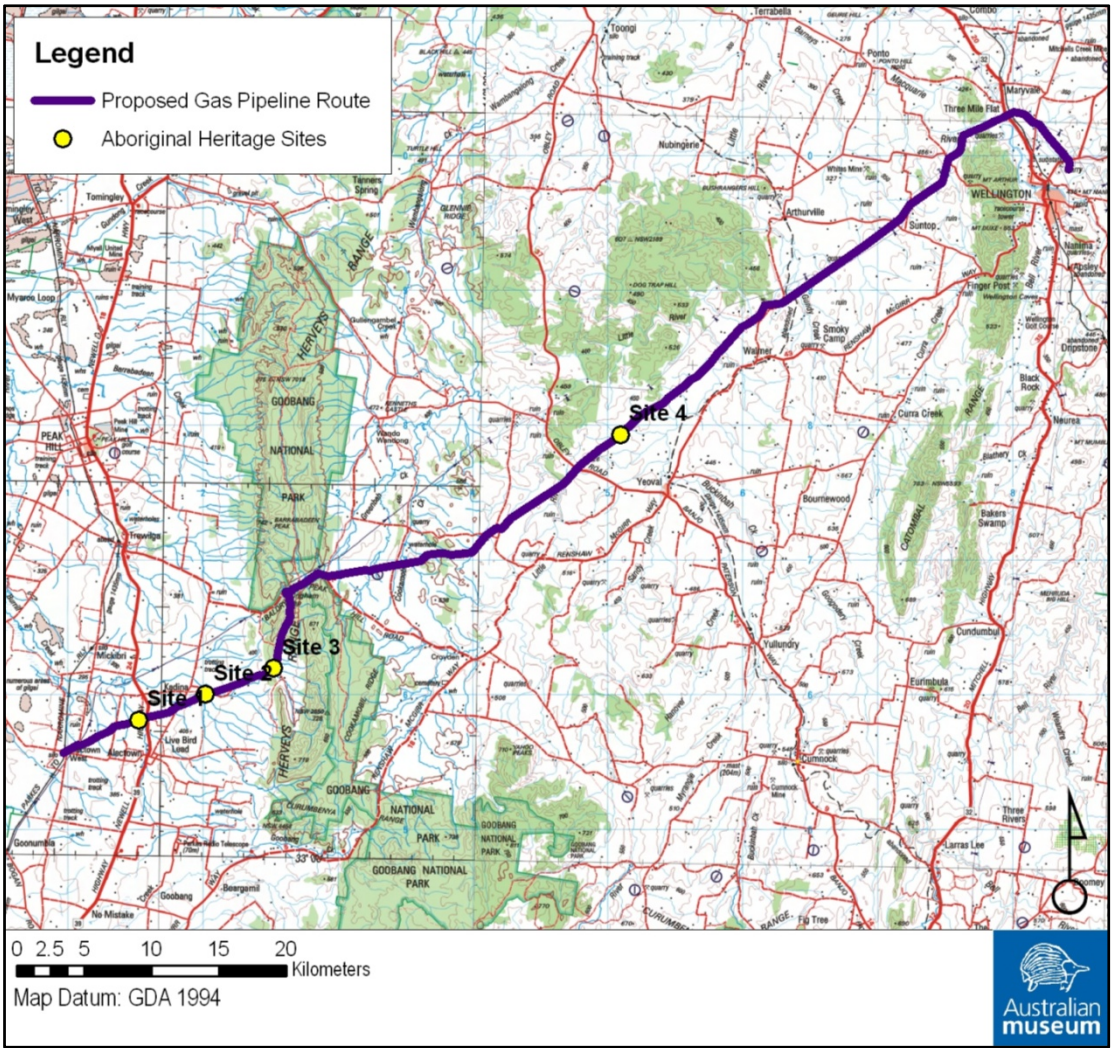

Figure 7.2 Aboriginal heritage sites identified during field survey

Site 1 – Artefact Scatter

Location: Zone 55, 615214E, 6358217N, Datum WGS84
Landform: Waning lower slope
Site Size: 20m x 20m
Exposure: Lower slope of a hill, adjacent to Burrandong Creek.
Site Description:
Site 1, recorded in Survey Section 1, is located on the north side of Burrandong Creek, approximately 600m west of the intersection of the proposed pipeline route and the Newell Highway, and approximately 2km north of Alectown (see Figure 7.3). The proposed pipeline route crosses directly through the site.

The site is an artefact scatter comprising two chert flakes, one red and one black. The two artefacts are located approximately 15m apart on the base of a low hill, within the flood zone of the adjacent creek. The site showed no indication of subsurface deposit.

At the top of the hill adjacent to the north east, a number of unsealed farm tracks leading to the nearby property's farm house and equipment sheds converge, resulting in a lack of ground vegetation and corresponding increase in erosion on the slope. In addition, the site is regularly inundated by water when the creek is in flood. Vehicle movement and stock grazing in the area have also impacted upon the site.

Table 7.3 Site 1 artefact details

Material	Colour	Maximum Size (cm)	Artefact Type
Chert	Red	2.5	Flake
Chert	Black	4	Flake

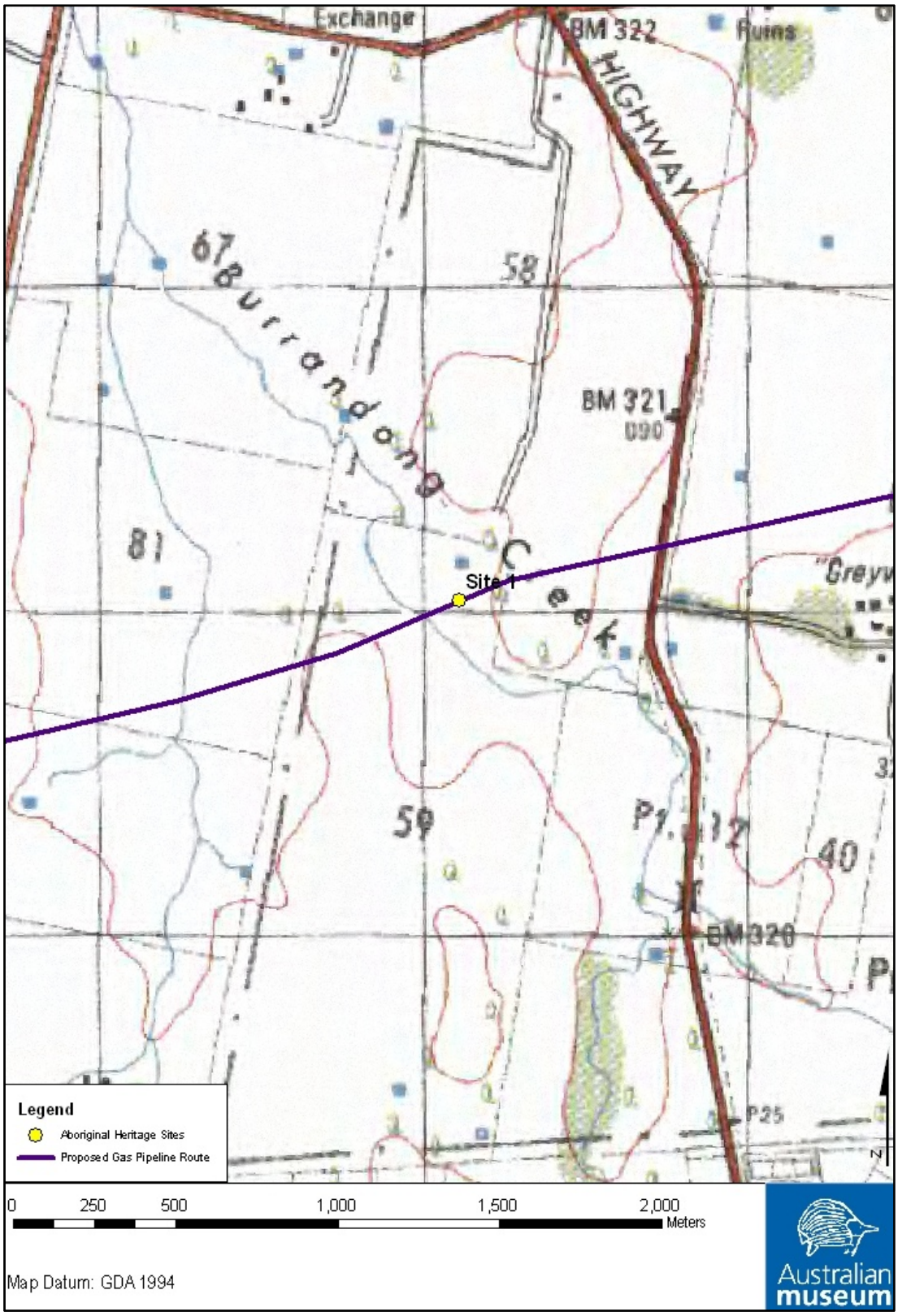

Figure 7.3 Location of Aboriginal heritage Site 1

Figure 7.4 Aboriginal heritage Site 1 - Aerial Photograph

Figure 7.5 Site 1 location. View to south east

Figure 7.6 Site 1 chert artefact

Figure 7.7 Site 1 chert artefact

Site 2 – Artefact Scatter

Location: Zone 55, 620151E, 6360115N, Datum WGS84
Landform: Flat, Creek Bank
Site Size: 25 x 10m
Exposure: Large erosional area adjacent to Kadina Creek
Site Description:
Site 2, recorded in Survey Section 2, is located approximately 1.2km east of Kadina road, 6.1km north east of Alectown. The site is situated within a large erosional area on the eastern bank of Kadina Creek, on the other side of which is an access road leading south to the "Bridgewater" property farm buildings. The area within the creekline is heavily overgrown, and has zero ground visibility (see Figure 7.10). The current proposed pipeline route runs approximately 30m to the south of Site 2, and will not directly impact on the area.

The site comprises a total of 11 stone artefacts on the eroding slope of the creek bank. The site measures approximately 25 x 10m, and artefacts were not observed *in situ* eroding from the bank, but were apparently moving down the eroding slope from the ridge above. Artefacts observed comprised chert, silcrete and quartz. The quartz artefacts are bipolar flakes, and the chert and silcrete artefacts are flakes.

The site is currently being impacted by extensive erosion and flooding from the adjacent creek line. Additionally, the paddock adjacent to the east has been ploughed for crop planting up to the creek bank, creating disturbance to any scatter that may extend into the paddock. Recent tree plantings have been established directly adjacent to the site in an attempt to stabilise the creek bank and prevent further erosion, see Figure 7.11.

Table 7.4 Site 2 artefact details

Material	Colour	Maximum Size (cm)	Artefact Type
Chert	Red	5.5	Flake
Silcrete	Grey	2.5	Flake
Chert	Grey	2	Flake
Silcrete	Grey	3	Flake
Chert	Grey	2	Flake
Silcrete	Grey	3	Flake
Silcrete	Red	2.5	Flake
Chert	Grey	2	Flake
Quartz	White	2.5	Bipolar Flake
Quartz	White	2	Bipolar Flake
Quartz	White	2	Bipolar Flake

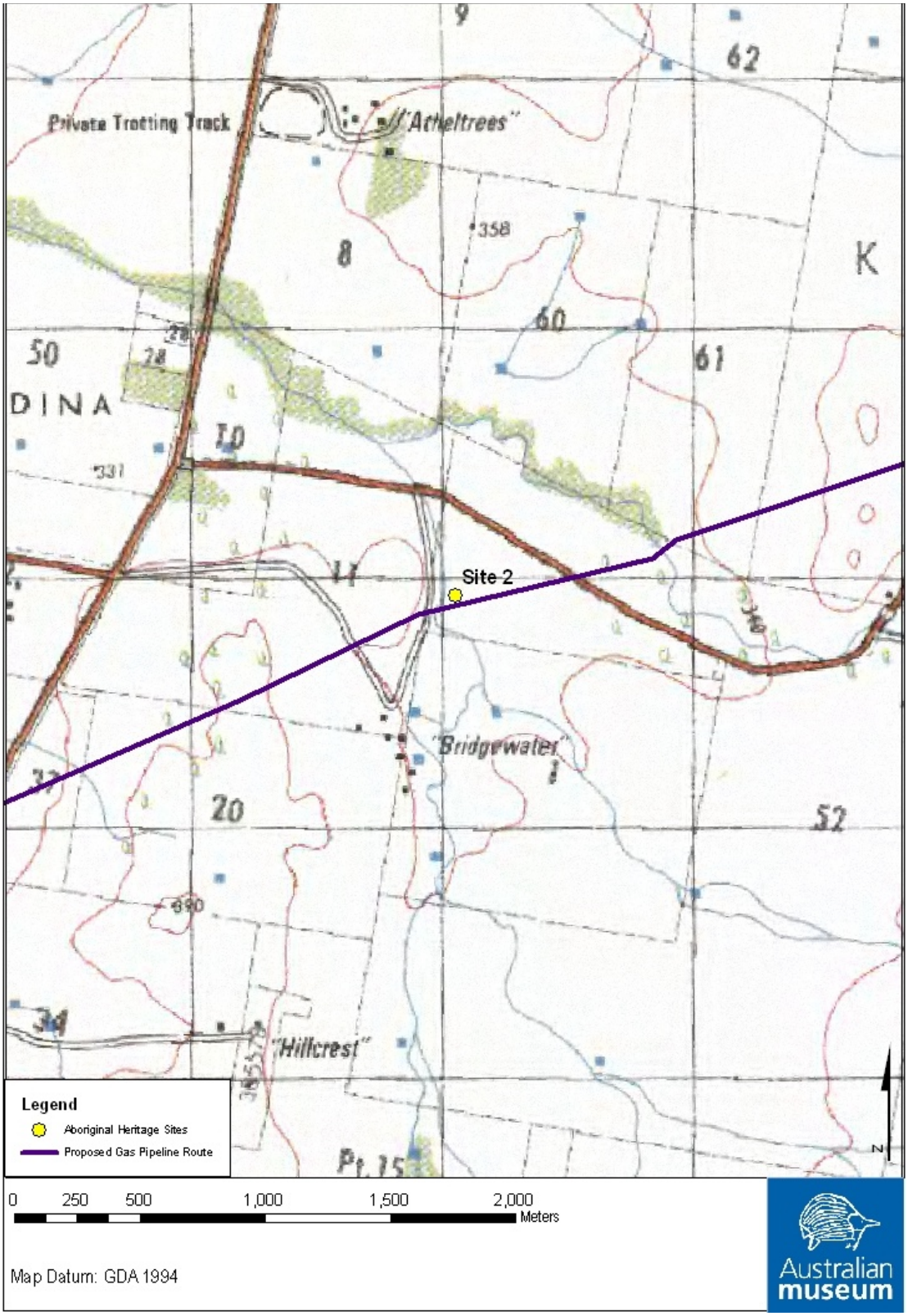

Figure 7.8 Location of Aboriginal heritage Site 2

Figure 7.9 Aboriginal heritage Site 2 - Aerial Photograph

Figure 7.10 Site 2 location, view to north. Note creek line to the left and extensive erosion area

Figure 7.11 Site 2 location. Note tree plantings to contain erosion and stabilise creekline. View to north east

Figure 7.12 Site 2 chert artefact

Figure 7.13 Site 2 chert and silcrete artefacts

Figure 7.14 Site 2 chert and silcrete artefacts

Figure 7.15 Site 2 chert and silcrete artefacts

Figure 7.16 Site 2 quartz artefacts

Site 3 – Scarred Tree

Location: Zone 55, 625226N, 6362033N, Datum WGS84
Landform: Waning lower slope
Site Size: 1 x 1m
Site Description:
Site 3 comprises an Aboriginal culturally scarred tree located 11km north east of Alectown, and approximately 30m west of Burrill Creek. The site is directly adjacent to the west of a dirt road leading south to the "Aliambie" property, and west to the "Glenbrook" property. The tree is currently less than 1m from the road, and is on the edge of a scrubby area encompassing a hill to the west. The proposed pipeline route does not impact upon Site 3, and does not encroach closer than approximately 30m east of the tree.

The scar measures approximately 50 x 40cm in size, and is located approximately 4m from the ground. Due to its height above ground, it was not possible to take accurate measurements of the scar. No further artefacts or cultural objects were identified in the vicinity of the tree.

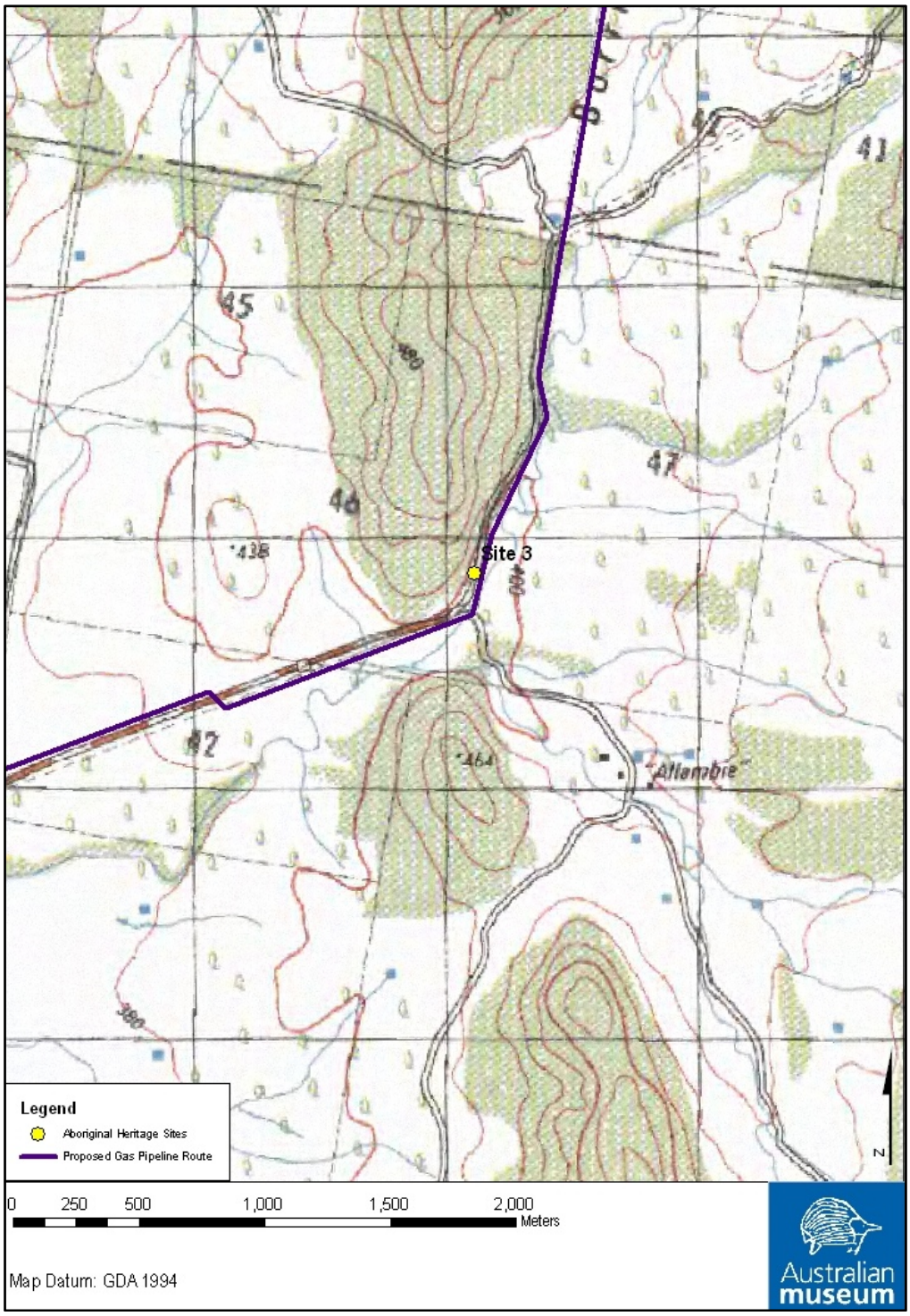

Figure 7.17 Location of Aboriginal heritage Site 3

Figure 7.18 Aboriginal heritage Site 3 - Aerial Photograph

Figure 7.19 Site 3 scarred tree site. View to west

Figure 7.20 Site 3 scarred tree detail. View to west

Figure 7.21 Site 3 context. View to east from scarred tree

Site 4 – Artefact Scatter

Location: Zone 55, 620151E, 6360115N, Datum WGS84
Landform: Maximal lower slope
Site Size: 15 x 5m
Exposure: Large erosional areas adjacent to creek line
Site Description:
Site 4 is a scatter of two stone artefacts located on the south bank of Timby Creek, within the "West Timbie" property. The site is approximately 5.3km north east of Yeoval, and 4km north of Obley Road. The artefacts are located within an eroded area heavily disturbed by water erosion, land clearing and stock grazing activity. The site is located at the base of two hills within a natural drainage slope into the creek. Both artefacts are exposed within extensive washout areas (see Figure 7.24).

The two artefacts recorded comprise two black chert flakes, one showing signs of retouch on two sides. The artefacts were identified approximately 15m apart, and were not *in situ*.

Table 7.5 Site 4 artefact details

Material	Colour	Maximum Size (cm)	Artefact Type
Chert	Black	5	Flake with retouch
Chert	Black	5	Flake

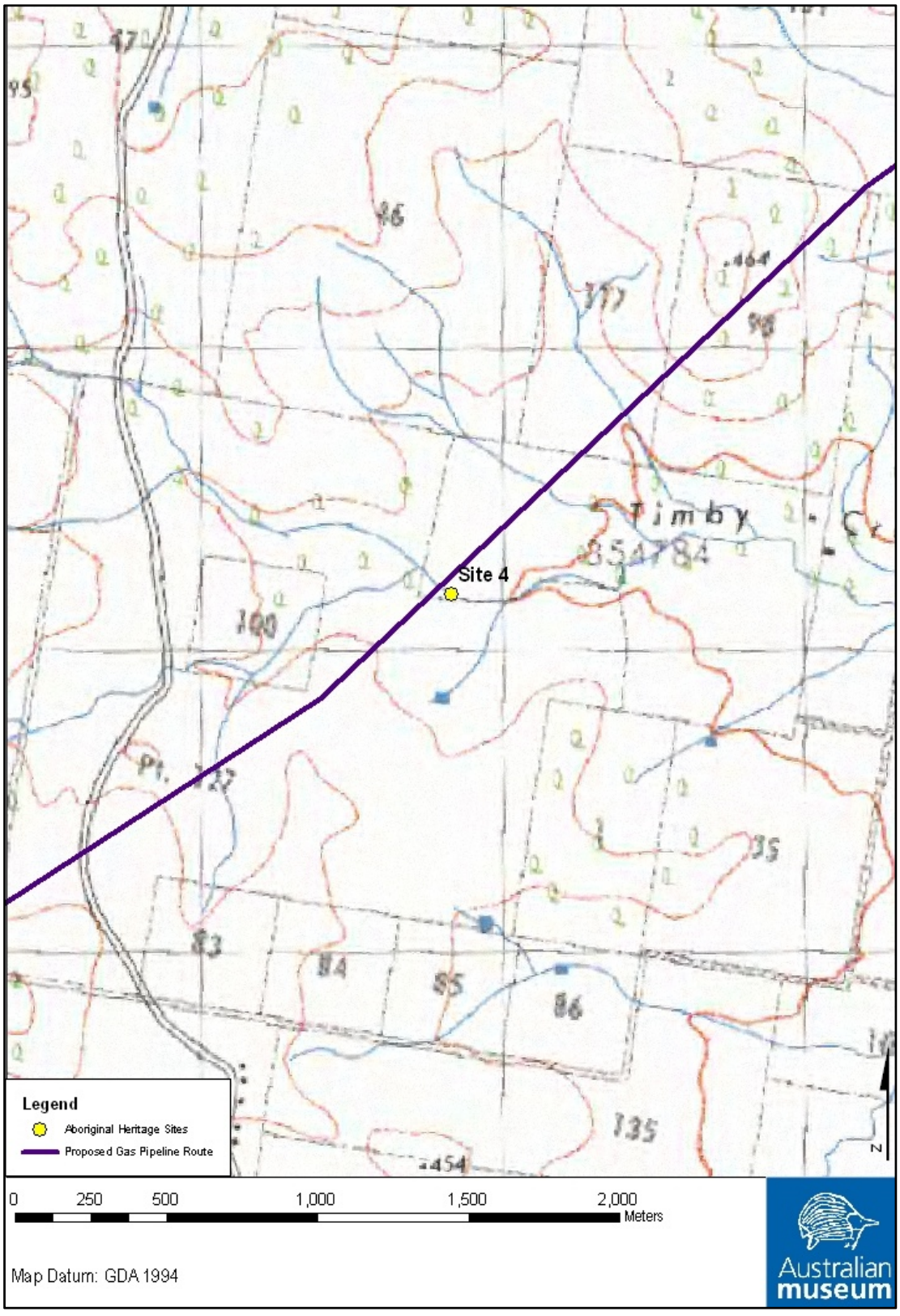

Figure 7.22 Location of Aboriginal heritage Site 4

Figure 7.23 Aboriginal heritage Site 4 - Aerial Photograph

Figure 7.24 Site 4 location. Note erosion along creek bank. View to east

Figure 7.25 Chert artefact at Site 4. Note retouch on two sides

Figure 7.26 Eastern extent of Site 4. Note erosion along creek bank. View to north east

Figure 7.27 Chert artefact at Site 4

7.3 Historic Heritage Sites

No significant historical structures, places or archaeological sites of known or potential significance were identified within the pipeline corridor, or its immediate vicinity, during the field survey.

7.4 Discussion of Survey Results

All identified Aboriginal sites were located in immediate proximity to creek line water sources. The presence of these sites corresponds with the predictive model for the study area, and may represent evidence of Aboriginal camping and utilisation of the resources associated with these creekline water sources. All artefact scatter sites were exposed in erosional areas, in highly disturbed contexts.

Large, older trees in the study area are only present adjacent to creek lines, suggesting that the majority of the area has undergone clearing for agriculture or logging in the past. Those trees mature enough to have been used for cultural scarring by Aboriginal peoples remaining within the pipeline route and the defined buffer zone were examined during survey. Only one scarred tree was identified, Site 3, within an area that had not previously been cleared of vegetation. The pipeline route was designed to avoid intact areas of vegetation, and so has decreased the chance that scarred trees would be identified within the route and buffer area.

No stone outcrops of a type likely to contain Aboriginal rock art, quarries or grinding grooves are present within the study area. To allow ease of construction, the pipeline route has been designed to avoid such geological outcrops.

Levels of disturbance throughout the study area varied, although the majority of the pipeline route had been extensively disturbed by past land clearing and agricultural practices. Farm land in the study area is currently used for stock grazing and cropping, with associated vehicle movement and ploughing/sowing practices. Creeklines within the study area were, for the most part, heavily disturbed. Minor creeklines and drainage areas were uniformly cleared, and had experienced large amounts of soil erosion. Larger watercourses in the area, including the Macquarie River, retain some mature trees on their banks, but had still been disturbed by varying levels of erosion caused by land clearing and stock access.

7.4.1 Archaeological Potential

Results of the field survey have been used to inform an estimate of archaeological potential for landforms within the study area. This estimation considers both the predictive model for Aboriginal heritage and Aboriginal sites identified during the field survey. For the purposes of this assessment, archaeological potential is described as the potential for selected landforms and areas to contain undetected buried Aboriginal archaeological deposits. Definitions of levels of archaeological potential are presented in Table 7.6.

Table 7.6 Definition of levels of archaeological potential

Level	Definition
No Potential	Artefacts will not occur. May include constructed or fully developed/excavated landscapes
Low Potential	Artefacts unlikely to be found in similar environmental/landscape contexts, but may occur in very low densities, making detection unlikely
Moderate Potential	Artefacts known to occur in similar environmental/landscape contexts in detectable densities within the region
High Potential	Artefacts are consistently identified in similar environmental/landscape contexts, and are highly likely to be detected and disturbed during ground disturbance works and archaeological excavations

Given the predictive model for Aboriginal sites, the high level of disturbance, landforms present, and identified Aboriginal sites within the study area, the following conclusions can be made:

- Creek banks within the study area have a moderate archaeological potential to contain highly disturbed Aboriginal stone artefact sites; and,
- Farming areas, which form the majority of the study area, have low archaeological potential to contain intact, undisturbed Aboriginal archaeological sites.

8 Assessment of Significance

A primary step in the process of cultural heritage management is the assessment of significance. Cultural significance is defined in the Burra Charter as meaning *aesthetic, historic, scientific or social value for past, present or future generations* (Article 1.2).

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more historical research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time (Pearson and Sullivan 1995:7).

8.1 Historic Heritage Significance

The physical evidence of past activities is a valuable resource that is embodied in the fabric, setting, history and broader environment of an item, place or archaeological site and, the response that it evokes in the community. The value of this resource to the community can be evaluated by assessing its cultural heritage values. 'Cultural significance' and 'heritage value' are terms used to express the intangible values of a place to the community. Assessment provides a tool for identifying and understanding the tangible and intangible values that are embodied in that item or place. Assessment will also provide the framework on which the development of management strategies assigned to protect the item or place for future generations, is based.

8.1.1 Assessment against Criteria

Seven criteria developed by the NSW Heritage Office (now Heritage Office, NSW Department of Planning) were designed to assess and identify the heritage significance of items, places and archaeological sites in NSW. An item will be considered to be of State (or local) significance if, in the opinion of the Heritage Council, it meets one or more of the following criteria:

Criterion a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);

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

Criterion d) an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;

Criterion e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

Criterion g) an item is important in demonstrating the principal characteristics of a class of NSW's Cultural or natural places or environments (or in the local area).

8.1.2 Background to Significance

In addition to the evaluation criteria, the Commonwealth and State Government authorities have developed a series of Historic Themes to provide a framework for understanding the primary influences in the historical development and significance of a place. The major historic themes that have been identified as applying to the general Wellington–Alectown area are discussed below:

8.1.3 Peopling Australia

Aboriginal cultures and interactions with other cultures; Convict; Ethnic Influences:

The Wiradjuri culture of the Wellington-Parkes district is a living culture that has adapted to the incursion and occupation of the region by people from other cultures. Wiradjuri remembrances and histories relate to their cultural places, such as those in the Goobang National Park; as well as places of cultural interaction, such as the Wellington Convict and Mission Precinct. The first arrival of white Europeans into Wellington Valley and the operation of the convict system in the Central West are reflected locally at the Convict and Mission precinct. The theme of Ethnic Influence is particularly reflected in the local accomplishments of J.B. Montefiore, a prominent Jewish businessman, local figure, and one of the first Jewish settlers in the colony.

Complies with: Criterion a; Criterion b; Criterion d; Criterion g

8.1.4 Developing local, regional and national economies

Agriculture, Pastoralism, Mining:

Agriculture, particularly wheat growing, and pastoralism have become important industries in the local and regional economies. The Wellington Convict and Mission precinct represent agricultural beginnings within the Wellington-Parkes district. As the first European settlement in the Valley, its fundamental purpose was to further the colony's economic productivity. Large pastoral properties, such as *Nanima* and *Goonoo Goonoo*, remain as reflections of the early stages of pastoralism in the district. The advent of mining, particularly of gold, was the beginning of an important commercial industry that brought urban development to townships such as Parkes (Currajong) and Peak Hill. In the twentieth century, the desire to preserve natural landscapes increased. This desire had a local impact with the allocation of Herveys Range as a state forest and later as Goobang National Park. This process reflects a definite decision not to utilise the land for economic gain, but to manage it for its natural and cultural value.

Complies with: Criterion a; Criterion c; Criterion g

8.1.5 Building settlements, towns and cities

Land Tenure; Towns, Suburbs and Villages:

Themes of land tenure in the Wellington-Parkes district are historically reflected in the arrival of squatters, settlers and pastoralists; and the Crown retention of land as gold-field reserves that were gradually released, leading towards closer settlement in the district. The development of towns, suburbs and villages is reflected locally at Montefiores, founded in response to public needs that Government administration failed to meet at that time. Structures dating to this period still exist at the village, such as *The Lion of Waterloo*. Montefiores' decline as a private village and Wellington's emergence as a Government approved township are in contrast with the rapid development of mining towns, such as Parkes and Peak Hill, which were contrary to normal town planning procedures in terms of location and layout.

Complies with: Criterion a; Criterion b; Criterion e.

8.1.6 Conclusion

The historic themes contribute to an understanding of the historic context of the Wellington–Parkes area; however, although the pipeline corridor is within this general area, no significant historical structures, places or historical archaeological sites have been identified within the pipeline corridor, or within its (immediate) vicinity.

8.2 Aboriginal Heritage Significance

8.2.1 Assessment Criteria

Professional guidelines for the assessment of significance of Aboriginal sites, objects and places discuss two types of significance: cultural significance and archaeological significance (NPWS Aboriginal Heritage Guidelines 1997:5-11).

Cultural Significance

This area of assessment concerns the value(s) of a site or feature to a particular community group – in this case the local Aboriginal community or communities. Aspects of social significance are relevant to sites, items and landscapes that are important, or have become important, to the local Aboriginal community. This importance involves both traditional links with specific areas as well as an overall concern by Aboriginal people for sites and landscapes generally and their continued protection. Aboriginal cultural significance may include social, spiritual, historic and archaeological values. Aboriginal cultural significance assessments can only be made by the relevant Aboriginal communities.

Scientific Significance

Scientific significance is assessed using criteria to evaluate the contents of a site, state of preservation, integrity of deposits, representativeness of the site type, rarity/uniqueness and potential to answer research questions on past human behaviour (NPWS, 1997:5). The NPWS guidelines recommend the following criteria for assessing archaeological significance:

- *Archaeological Research Potential*- significance may be based on the potential of a site or landscape to explain past human behaviour and can incorporate the intactness, stratigraphic integrity or state of preservation of a site, the association of the site to other sites in the region or a datable chronology;
- *Representativeness* - all sites are representative of those in their class (site type/subtype); however, this issue relates to whether particular sites should be conserved to ensure that a representative sample of the archaeological record is retained. Representativeness is based on an understanding of the regional archaeological context in terms of site variability in and around the Study Area, the resources already conserved and the relationship of sites across the landscape; and
- *Rarity* - defines how distinctive a site may be, based on an understanding of what is unique in the archaeological record and consideration of key archaeological research questions (i.e. some sites are considered more important due to their ability to provide scientific or cultural information). It may be assessed at local, regional, state and national levels.

8.2.2 Assessment of Archaeological Significance

Archaeological Research Potential

Aboriginal Stone Artefact Scatters (Sites 1, 2 & 4)
Creek lines within the region are likely to contain evidence of past Aboriginal activity in the region. However, the high level of disturbance observed at the identified sites during survey indicates that the landform is unlikely to contain undisturbed *in situ* archaeological deposits. In addition, the number

and type of artefacts recorded at these sites is not suggestive of complex archaeological deposits. As such, the sites are likely to represent incidental, background Aboriginal activity within the region. These sites are considered to have low research potential.

Aboriginal Culturally Scarred Tree (Site 3)
Given the good condition of this site, and the relatively low level of disturbance in its vicinity, the site is a clear, intact example of Aboriginal tree scarring practices. As such, this site is considered to have high research potential for studies involving these forms of evidence.

Representativeness

Aboriginal Stone Artefact Scatters (Sites 1, 2 & 4)
The artefact scatters recorded within the study area are the most common site previously recorded within the local region. Such site types represent a continuity of use of water resources across the study area, and it is considered likely that a background scatter of such artefacts is present throughout similar landforms in the region.

Aboriginal Culturally Scarred Tree (Site 3)
Aboriginal scarred trees are the second most common site type in the local region, and as such this site is a clear, intact representative of the scarred trees of the area.

Rarity

Aboriginal Stone Artefact Scatters (Sites 1, 2 & 4)
The complex of artefact scatter sites present within the study area may be regarded as being relatively common within the local region. Such sites are the most common site type both locally and regionally, and are therefore not considered to have archaeological rarity.

Aboriginal Culturally Scarred Tree (Site 3)
Aboriginal scarred trees are relatively rare in most areas throughout Australia, due to past land clearing practices. Although this site type is the second most common in the local region, it is considered to retain high archaeological rarity for its place in the wider regional archaeological landscape.

8.2.3 Summary of Archaeological Significance

Based upon current scientific evidence, Aboriginal stone artefact scatters, Sites 1, 2 and 4, are regarded as being of low archaeological significance. The Aboriginal culturally scarred tree, Site 3, is regarded as being of high archaeological significance.

8.2.4 Assessment of Aboriginal Cultural Significance

Aboriginal communities consulted with throughout this project have indicated that, while the Aboriginal culturally scarred tree (Site 3) is considered to be highly culturally significant, and all Aboriginal heritage sites recorded contain intrinsic cultural significance, there are no further specific cultural significances attached to the identified sites.

9 Conclusions and Policy Recommendations

As a major project under Part 3A of the EP&A Act, the Wellington gas pipeline and power station does not require permits to be approved or granted under the provisions of the NPW Act or the Heritage Act; however, heritage best practice guidelines do require that works are undertaken in an appropriate manner.

The following recommendations are based on the results of the Aboriginal and historic background research, Aboriginal community consultation and archaeological field survey.

9.1 Site 1 & Site 4– Artefact Scatter

The proposed route of the gas pipeline crosses both Site 1 and Site 4. Given the highly disturbed nature of these sites, their low significance, and the lesser disturbance of the surrounding creek areas, it is recommended that the current proposed pipeline route not be changed. The current alignment avoids potential impacts upon less disturbed areas adjacent to the recorded sites, which have the potential to contain relatively undisturbed Aboriginal heritage deposits.

Recommendation 1.1

Although the proposed pipeline route will impact upon Site 1 and Site 4, these highly disturbed sites with low significance should not be avoided.

Site 1 and Site 4 have been assessed as having low research potential and low archaeological significance. As such, further archaeological investigation of these sites is unlikely to increase the current scientific knowledge of the region.

Recommendation 1.2

Given the high level of disturbance and the associated low level of significance of these sites, no further archaeological investigation of Site 1 or Site 4 is required.

9.2 Site 2 – Artefact Scatter

The proposed route of the gas pipeline runs directly south of this site. Tree plantings have been established along the edge of the site to stabilise the creek bank, which will prevent further erosion of the site. It is recommended that construction works avoid the erosion stabilisation areas adjacent to Site 2, in order to limit further creek bank erosion, and to preserve any further *in situ* artefacts present.

Recommendation 2.1

The proposed pipeline construction route should seek to avoid Site 2 and associated erosion stabilisation area.

Site 2 has been assessed as having low research potential and low archaeological significance. As such, further archaeological investigation of these sites is unlikely to increase the current scientific knowledge of the region.

Recommendation 2.2

Given the high level of disturbance and the associated low level of significance of the site, no further archaeological investigation of Site 2 is required.

Although there is potential for further artefacts to be present where the current proposed pipeline route crosses the creek south of Site 2, the significance and level of disturbance observed at Site 2 suggests that any artefacts that may be present will be highly disturbed and of low significance. Any such deposit is unlikely to increase the scientific knowledge of the region. As such, the proposed pipeline route does not need to avoid this area.

Recommendation 2.3

Given the assessed low level of significance of the site, no further archaeological investigation of the environment and immediate vicinity of Site 2, where the proposed pipeline construction will impact, is recommended.

9.3 Site 3 - Aboriginal Culturally Scarred Tree

Aboriginal culturally scarred trees are considered to be highly significant both archaeologically and to the Aboriginal community, and are relatively rare in some parts of the Australian landscape due to past land clearing. Site 3 is currently directly adjacent to a track that may form an access point during construction works. This area will be at risk from accidental impacts during development works, and a buffer area around the site should be established during construction to prevent such impacts.

Recommendation 3.1

A buffer zone of at least 10m surrounding the Site 3 scarred tree should be maintained during pipeline construction works, to ensure the safety of this sensitive site. All impacts to this site and its immediate surrounds should be avoided.

This buffer area may be at risk from accidental impacts during development works, and should be clearly demarcated during construction to prevent such impacts.

Recommendation 3.2

The Site 3 buffer zone should be clearly demarcated during development construction activities to prevent accidental impacts arising from the works, possibly through the use of temporary fencing.

9.4 Historic Heritage

No significant historical structures, places or archaeological sites of known or potential significance were identified within study area.

Recommendation 4.1

There are no constraints to the current proposed development arising from considerations of historic heritage, and no further historic heritage assessment is required.

9.5 General Recommendations

Given the level of assessment previously undertaken in the study area, it is unlikely that further archaeological ground survey will identify additional surface archaeological sites. Given the assessed level of significance of the identified sites to be impacted by the current development footprint, further archaeological investigation of these sites is unlikely to increase the current scientific understanding of the region

Recommendation 5.1

Further archaeological ground survey of the study area is not required for the current development footprint. No further Aboriginal heritage assessment of the current development plan is required.

Archaeological survey and examination of the archaeological and environmental context of current development footprint has shown that there is very low likelihood of further significant Aboriginal archaeological sites being present.

Recommendation 5.2

There are no further constraints or issues arising from considerations of Aboriginal heritage within the current proposed pipeline route and power station development footprint.

Should the pipeline route be realigned beyond the identified development corridor surveyed, further archaeological assessment and Aboriginal community consultation should be undertaken.

Recommendation 5.3

ERM Power should consult with appropriate Aboriginal heritage specialists if the detailed design phase of the project determines that the pipeline corridor is to be realigned beyond the 200m surveyed corridor buffer.

The Gallanggabang Aboriginal Corporation have indicated a wish to participate in a one-day vehicle survey of the finalised, pegged pipeline route to confirm that the final pipeline route conforms to the area surveyed. To achieve an appropriate level of Aboriginal community consultation, it is recommended that this additional consultation be carried out following finalisation of the pipeline route.

Recommendation 5.4

Representatives of the Gallanggabang Aboriginal Corporation should be offered the opportunity to participate in a single day vehicle survey of the finalised, marked pipeline route to allow confirmation of the final development impact area, prior to construction being undertaken.

The Gallanggabang Aboriginal Corporation have indicated concern that vehicle access to the construction site has not been assessed within this project, outside of the described pipeline buffer. ERM Power proposes that, should the project be approved, a Construction Environmental Management Plan will be developed to guide and manage all activities associated with construction, and to ensure these activities do not impact on areas of environmental, cultural or social significance.

Recommendation 5.5

Vehicle access during construction of the pipeline should be guided by a Construction Environmental Management Plan. This plan should outline any constraints and issues to access and construction activities arising from considerations of Aboriginal and historic heritage.

Bibliography

Allen, William (September 1998) *Goobang national Park Cultural Heritage Survey: A report from the Aboriginal and Non Aboriginal Community of Peak Hill*, report for National Parks & Wildlife Service, Bathurst District.

Australia International Council on Monuments and Sites (1999) *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999*, Australia ICOMOS inc.

Australian Museum Business Services (2007) *Wellington Power Station Stage 1 Preliminary Aboriginal Heritage Feasibility Study*, report for Parsons Brinckerhoff.

Bowdler, S. (1982) *Five Sites on the Proposed Transmission Line Route Between Wellington and Wallerawang: An Assessment,* report for National Parks & Wildlife Service of NSW on behalf of the Electricity Commission of NSW.

Chappel, C.B. (1988) *A History of Peak Hill and District*, Peak Hill: Peak Hill Centenary Book Committee.

Cubis, L. (1982) *Report on the Identification of Aboriginal Archaeological Sites on the Wallerawang/Wellington 330kV Electrical Transmission Line*.

Dallas, M. and L. Smith (1989) *Archaeological Survey of Commonwealth Gold Mine at Wellington*, Report to Cluff Resources Pacific Limited.

Department of Environment and Conservation (DEC) (1997)*Aboriginal Cultural Heritage Standards and Guidelines Kit*.

Department of Environment and Conservation (DEC) (2004) *National Parks and Wildlife Act 1974: Part 6 Approvals Interim Community Consultation Requirements for Applicants*.

Department of Environment and Conservation (DEC) (2005) *Draft Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation.*

Department of Lands (2006) *Wellington 8632-N*, 1:50,000 topographic map, NSW Department of Lands, Sydney.

Griffin NRM (2004) *Maynggu Ganai Historic Site, Wellington Valley 1823-1844, Draft Conservation Management Plan,* Report to NSW National Parks and Wildlife Service.

Günther, J. 183[?] 'Lecture on the Aborigines of Australia', Mitchell Library B505.

Günther, J. (1836-42) *The Papers of Reverend James Günther: the Reverend Günther's Journals,* Available online at: http://www.newcastle.edu.au/centre/wvp/papersofjamesgunther/index.html, Accessed 31/01/08.

Heritage Office (HO) and Department of Urban Affairs and Planning (DUAP) (1996) *Archaeological Assessments*, Sydney.

Heritage Office (HO) and Department of Urban Affairs and Planning (DUAP) (1996) *Regional Histories: Regional Histories of New South Wales*, Sydney.

Kelton, J. (1999) *An Archaeological Study of the Proposed Upgrading of Wellington Sewerage Treatment Plant, Wellington, NSW,* Report prepared for the Department of Public Works and Services by Central West Archaeological and Heritage Services.

Lance, A. (1985) *An Archaeological Survey of the Proposed Wellington to Forbes Transmission Line*, report for National Parks & Wildlife Service and The Electricity Commission of New South Wales

Le Maistre, B. (1993) *Aboriginal People at Wellington: Holding on to land and heritage* Unpublished NSW NPWS Report

McDonald, D.I. (1968) *They Came to a Valley, Wellington 1817-1967,* Wellington Times Commercial Printing Department.

McIntyre, S. (1985) *An Archaeological Survey of the Reconstructed Route of Two Proposed Electricity Commission Transmission Lines, Wellington to Dubbo*, report for the Electricity Commission of NSW and the National Parks and Wildlife Service of NSW.

Mulvaney, D. J., (1975) *The Prehistory of Australia*, Penguin Books, Melbourne.

Murphy, B.W. and J.W. Lawrie (1998) Soil Landscapes of the Dubbo 1:250 000 Sheet (Dubbo, Wellington, Gulgong, Mudgee). Sydney: Dept. of Land and Water Conservation.

NSW Heritage Office (2001) *Assessing Heritage Significance*, Sydney.

NSW National Parks and Wildlife Service (2001) *Goobang National Park Plan of Management*, Hurstville.

NSW National Parks and Wildlife Service (2003) *The Bioregions of NSW: Their Biodiversity*, Conservation and Histories

NSW National Parks & Wildlife Service (1997) *Standards for Archaeological Practice in Aboriginal Heritage Management.*

NSW National Parks and Wildlife Service (November 2001) *Goobang National Park Plan of Management*

Pearson, M. (1981) *Seen through different eyes,* unpublished PhD thesis, Department of Archaeology and Anthropology, ANU, Canberra.

Pearson, M., Sullivan, S. (1995) *Looking After Heritage Places: The Basics of Heritage Planning for Managers, Landowners and Administrators*, Melbourne University Press, Carlton.

Read, P. (1988) *A Hundred Years War: The Wiradjuri People and the State*, ANU Press, Canberra

Troy, J. (1993) *Kingplates: A history of Aboriginal Gorgets,* Aboriginal Studies Press, Canberra