# Mamre Road and Abbotts Road Intersection Upgrades, Kemps Creek, NSW: Aboriginal Due Diligence Assessment

FINAL REPORT

Prepared for AT&L on behalf of LOG-E

20 April 2023

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## Document information

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## Acknowledgements

Biosis gratefully acknowledges the contributions of the following people and organisations in preparing this report:

- AT&L: Debbie Fransen, and Gabriel Vermeesch
- Deerubbin Local Aboriginal Land Council: Steve Randall.
- Darug Custodian Aboriginal Corporation: Lana Wedgewood.

Biosis staff involved in this project were:

- Astrid Mackegard (mapping).
- Jen Townsend (mapping).

# Glossary

| | |
|---|---|
| **ACHA** | Aboriginal Cultural Heritage Assessment |
| **ADDA** | Aboriginal Due Diligence Assessment |
| **AHIMS** | Aboriginal Heritage Information Management System |
| **AHIP** | Aboriginal Heritage Impact Permit |
| **ASIRF** | Aboriginal Site Impact Recording Form |
| **AR** | Archaeological Report |
| **BP** | Before present |
| **Biosis** | Biosis Pty Ltd |
| **Consultation requirements** | *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* |
| **DCP** | Development Control Plan |
| **Due diligence code** | *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* |
| **EIS** | Environmental Impact Statement |
| **EP&A Act** | *Environmental Planning and Assessment Act 1979* |
| **GSV** | Ground Surface Visibility |
| **Heritage NSW** | Heritage NSW, Department of Planning and Environment |
| **ICOMOS** | International Council on Monuments and Sites |
| **LEP** | Local Environment Plan |
| **LGA** | Local Government Area |
| **NPW Act** | *National Parks and Wildlife Act 1974* |
| **NSW** | New South Wales |
| **MRP DCP** | *Mamre Road Precinct Development Control Plan 2021* |
| **PAD** | Potential Archaeological Deposit |
| **REF** | Review of Environmental Factors |
| **SEPP** | State Environmental Planning Policy |
| **SSD** | State Significant Development |
| **Study area** | The intersection of Abbotts and Mamre Road, Kemps Creek, New South Wales |
| **The Code** | *The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* |

# Summary

Biosis Pty Ltd (Biosis) has been commissioned by AT&L on behalf of LOG-E to undertake an Aboriginal Due Diligence Assessment (ADDA) for the proposed upgrades to the intersection of Abbotts and Mamre Road, Kemps Creek, New South Wales (NSW) (the project). The ADDA will inform a Review of Environmental Factors (REF) to be prepared by AT&L on behalf of LOG-E. The REF will be assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

An assessment in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010a) (Due Diligence Code) has been undertaken for the study area in order to inform responsibilities with regards to Aboriginal cultural heritage in the area. In addition to the basic tasks required for a due diligence assessment, an extended background review, as well as an archaeological survey in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b) (the Code) was conducted, in order adequately map areas of high, moderate and low archaeological potential.

Background research included an extensive search of the Aboriginal Heritage Information Management System (AHIMS) database, which identified 112 Aboriginal archaeological sites within a 1.5 by 1.5 kilometre search area, centred on the study area. No AHIMS sites are located within the study area. A review of the *Mamre Road Precinct Development Control Plan 2021* (MRP DCP) identified areas of moderate-high Aboriginal potential along sections of Mamre Road. Background research indicated that the study area is located within the Bringelly Shale and alluvial floodplain deposit geological units commonly associated with Aboriginal artefact scatter sites and potential archaeological deposits (PADs). The study area is underlain by the residual Blacktown soil landscape. Due to their age and slow accumulation, residual soil landscapes such as the Blacktown soil landscape, have reasonable potential to preserve archaeological material, such as stone artefacts deposited by occupation sites, in areas of low disturbance.

Historical aerial photographs show significant development has occurred within the study area. Disturbances include historical vegetation clearance, the construction of Aldington Road, Abbotts Road, adjoining roads and streets, the establishment of dams, small structures and driveways, market gardening, and installation of surface and sub-surface infrastructure.

A field investigation was undertaken on 22 November 2022 by Anthea Vella (Biosis, Heritage Consultant), Steve Randall (Deerubbin Local Aboriginal Land Council (LALC), Cultural Sites Officer), and Lana Wedgewood (Darug Custodian Aboriginal Corporation, Cultural Sites Officer). Only Abbotts Road was able to be surveyed on the day due to land access issue which prevented any adjacent properties and Mamre Road from being investigated.. Mamre Road was not surveyed due to safety concerns related to high levels of traffic. During the field investigation no Aboriginal sites or objects were identified. The field investigation determined that the study area has low potential to contain archaeological deposits due to unfavourable landforms being present within the study area which have been subject to moderate to high levels of disturbance.

Prior to any impacts occurring within the study area, the following is recommended:

### Recommendation 1: No further archaeological assessment in areas of low potential

No further archaeological work is required in areas of low archaeological potential. Works can proceed with caution following recommendation 2, 3, and 4.

### Recommendation 2: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or state significance and are protected in NSW under the *Heritage Act 1977* (Heritage Act). Relics cannot be disturbed except with a permit or exception notification. Should unanticipated relics be discovered while the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. Heritage NSW will require notification if the find is assessed as a relic.

### Recommendation 3: Discovery of unanticipated Aboriginal objects

All Aboriginal objects and Places are protected under the *National Parks and Wildlife Act 1974* (NPW Act). It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by Heritage NSW, Department of Planning and Environment (Heritage NSW). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying Heritage NSW and Aboriginal stakeholders.

### Recommendation 4: Discovery of Aboriginal ancestral remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by Heritage NSW.

# Contents

## Tables



## Figures

# 1. Introduction

## 1.1. Background

Biosis has been commissioned by AT&L on behalf of LOG-E to undertake an ADDA for the proposed upgrades to the intersection of Abbotts and Mamre Road, Kemps Creek, NSW (the project) (Figure 1, Figure 2, Figure 3). The ADDA will inform an REF to be prepared by by AT&L on behalf of LOG-E. The REF will be assessed under Part 5 of the EP&A Act.

An assessment in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010a) has been undertaken for the study area in order to inform responsibilities with regards to Aboriginal cultural heritage in the area. In addition to the basic tasks required for a due diligence assessment, an extended background review, as well as an archaeological survey in accordance with the Code was conducted, to adequately map areas of high, moderate and low archaeological potential.

## 1.2. Location of the study area

The study area is located within the Penrith Local Government Area (LGA), Parish of Melville, County of Cumberland (Figure 1). The study area incorporates the intersection of Mamre Road and Abbotts Road, and is bounded by private property to the north, south, east, and west (Figure 2).

## 1.3. Planning approvals

The proposed development will be assessed against Part 5 of EP&A Act. Other relevant legislation and planning instruments that will inform the assessment include:

- NPW Act.
- *National Parks and Wildlife Amendment Act 2010* (NSW).
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*.
- *State Environmental Planning Policy (Industry and Employment) 2021*.
- *State Environmental Planning Policy (Western Sydney Aerotropolis) 2020*.
- MRP DCP.

### *1.3.1. Mamre Road Precinct Development Control Plan 2021*

The MRP DCP aims to ensure that Aboriginal heritage values are managed appropriately to produce conservation outcomes. This includes archaeological and culturally significant areas. The DCP has mapped areas of high and moderate Aboriginal archaeological potential along Mamre Road; however, it was noted by Heritage NSW in their review of the DCP that the designations of potential were primarily based on a desktop assessment and predictive modelling with very limited field survey. The study area contains areas of moderate-high Aboriginal potential along sections of Aldington Road (Photo 1).

The DCP has a list of controls for completing assessments for Aboriginal heritage. For ground disturbing works this includes completing an ADDA for areas that have not yet been mapped or areas of low potential as a first step. If land is within or adjacent to land that contains a known Aboriginal cultural heritage site, assessments must consider and comply with the requirements of the NPW Act.

The DCP determines that an ACHA is required if the study area contains areas of moderate-high Aboriginal archaeological potential and that these areas would be impacted by the proposed development. The DCP also states that an AHIP will be required if impacts to Aboriginal heritage cannot be avoided.

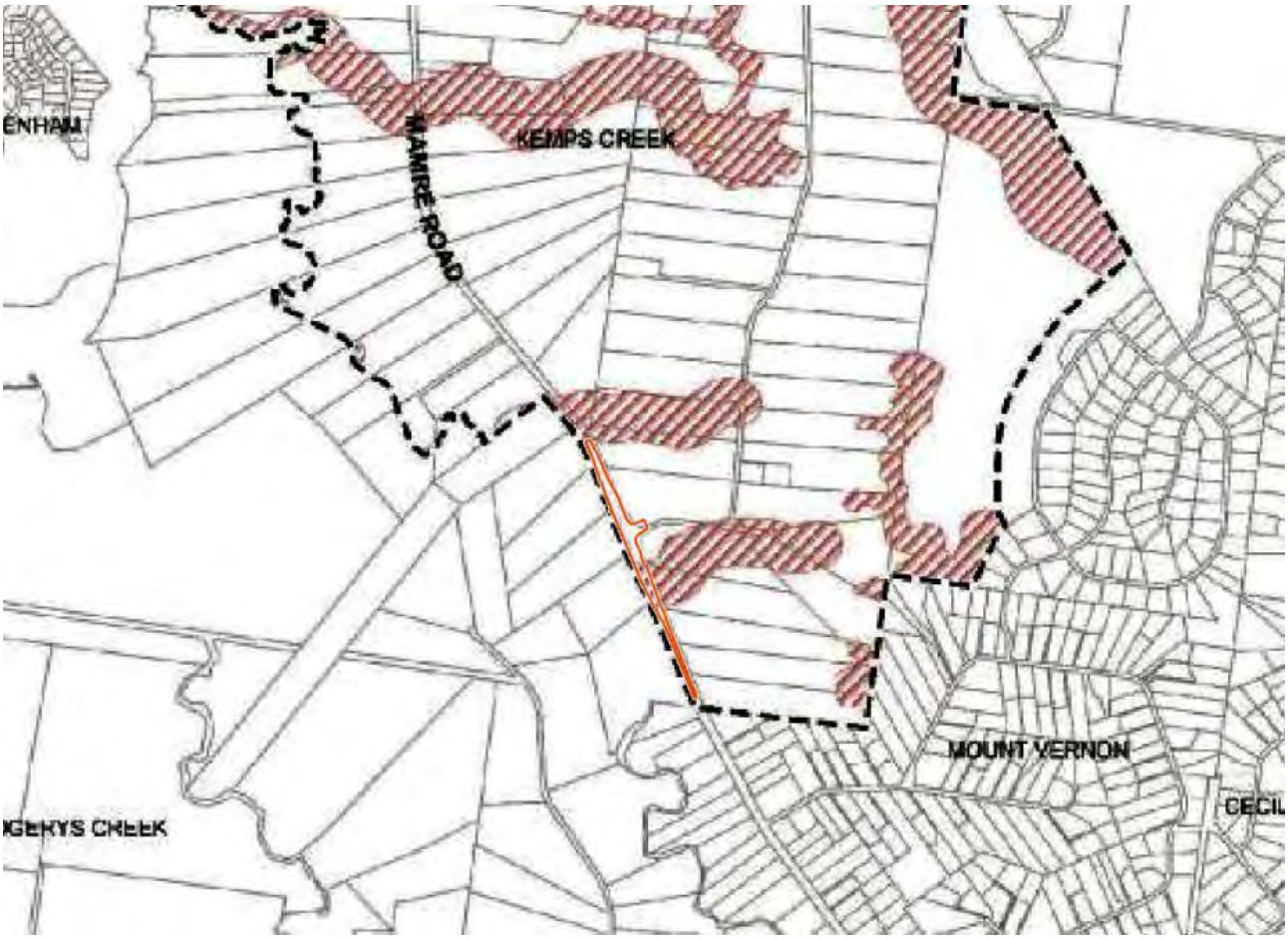



**Photo 1 MRP DCP archaeological potential (study area in red) (Source: NSW Planning portal)**

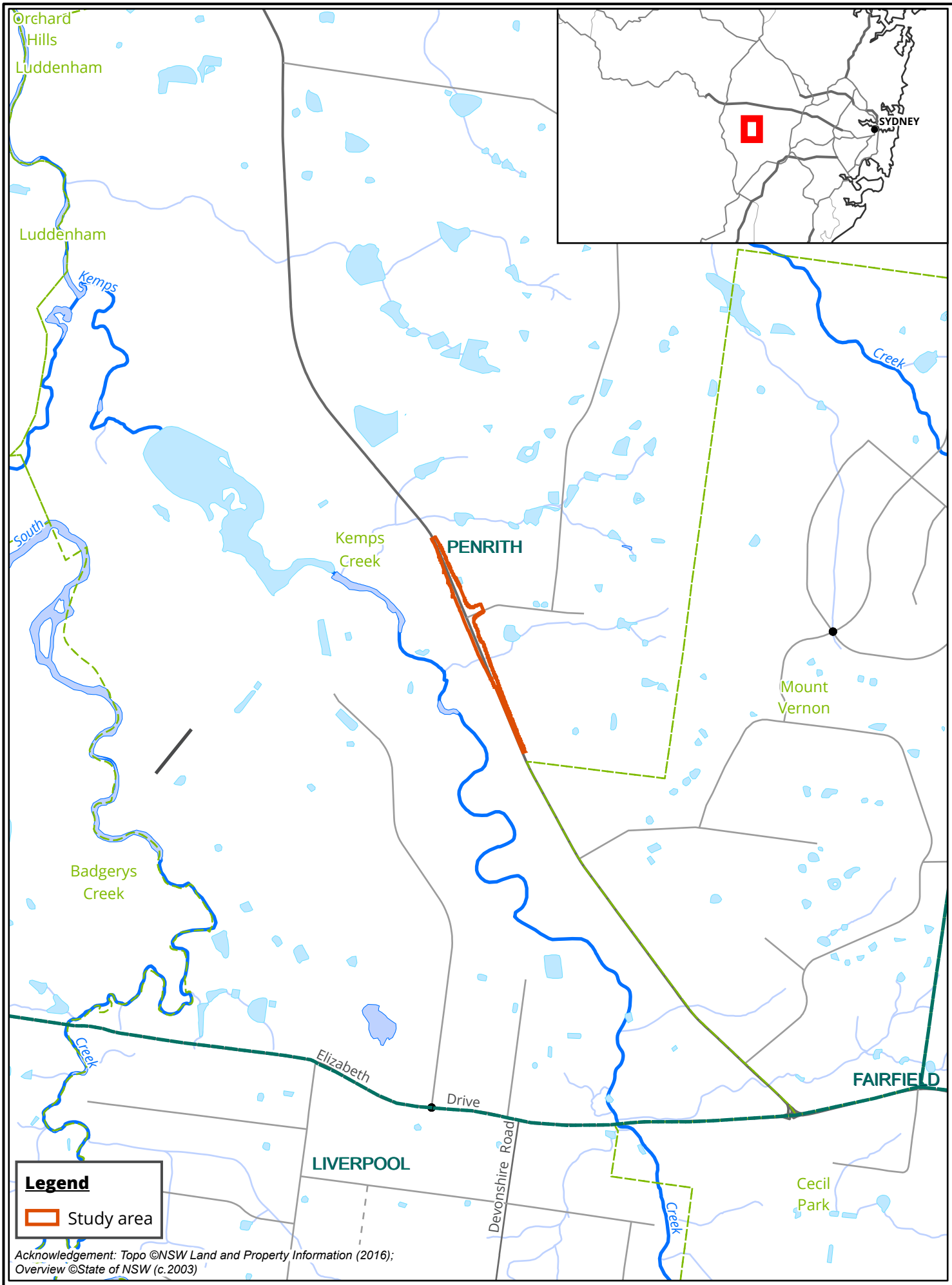
## 1.4. Scope of the assessment

The following is a summary of the major objectives of the assessment:

- Conduct background research to recognise any identifiable trends in site distribution and location, including a search of the AHIMS.
- Undertake archaeological survey as per requirement 5 of the Code, with particular focus on landforms with high potential for heritage places within the study area, as identified through background research.
- Record and assess sites identified during the survey in compliance with the guidelines endorsed by Heritage NSW.
- Determine levels of archaeological and cultural significance of the study area.
- Make recommendations to mitigate and manage any cultural heritage values identified within the study area.

## 1.5. Aboriginal consultation

Representatives from Deerubbin LALC (Steve Randall, Cultural Sites Officer) and Darug Custodian Aboriginal Corporation (Lana Wedgewood, Cultural Sites Officer) attended the field investigation on 22 November 2022. It was noted that there have been numerous assessments undertaken in the area, and that the road has likely disturbed PAD that may have otherwise been present. This was supported by both representatives. No specific comments regarding the cultural significance of the study area was provided.




*Acknowledgement: Topo ©NSW Land and Property Information (2016); Overview ©State of NSW (c.2003)*

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## Figure 1 Location of the study area

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Date: 30 March 2023,
Drawn by: AM, Checked by: AK, Last edited by: amackegard
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Metres

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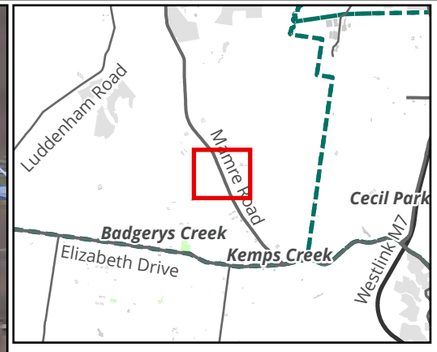


**Legend**

- Study area
- Lot

**Figure 2 Study area detail**

0 25 50 75 100

Metres
Scale: 1:4,500@ A3
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*GDA 1994 MGA Zone 56*

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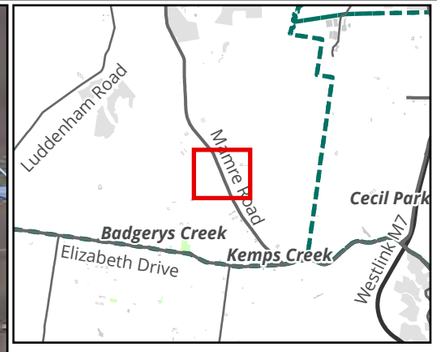


**Legend**

Study area

**Proposed works**

Batter ticks export

Limit of works

Road

**Figure 3 Proposed works**

0 25 50 75 100

Metres

Scale: 1:4,500@ A3

*Coordinate System:*
*GDA 1994 MGA Zone 56*

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# 2. Desktop assessment

A brief desktop assessment has been undertaken to review existing archaeological studies for the study area and surrounding region. This information has been synthesised to develop some Aboriginal site predictive statements for the study area and identify known Aboriginal sites and/or places recorded in the study area. This desktop assessment has been prepared in accordance with requirements 1 to 4 of the Code.

## 2.1. Landscape context

It is important to consider the local environment of the study area any heritage assessment. The local environmental characteristics can influence human occupation and associated land use and consequently the distribution and character of cultural material. Environmental characteristics and geomorphological processes can affect the preservation of cultural heritage materials to varying degrees or even destroy them completely. Lastly landscape features can contribute to the cultural significance that places can have for people.

## 2.2. Geology, soils and landforms

The study area is located within the Cumberland Lowlands physiographic region that consists of low lying, gently undulating plains and low hills, with a dense drainage net of predominantly northward flowing channels (Bannerman & Hazelton 1990a, pp. 2). Topographically, the study area along Abbotts and Mamre Road is characterised by a flat to gentle slope. This landscape is situated on the Bringelly Shale formation and alluvial floodplain deposits (Figure 4). The Bringelly Shale formation is part of the Wianamatta group, and consists of shale, carbonaceous claystone, laminate, lithic sandstone, and rare coal. Artefact scatters are common in this geological unit, as are PADs. The presence of underlying shale deposits suggests that sites commonly found within sandstone formations, such as grinding grooves and rock shelters/rock art, are less likely to be present. Alluvial floodplain deposits consist of alluvium, and this is comprised of gravel, sand, silt, and clay from sandstone and shale that overlies buried estuarine sediments (Hazelton 1992, pp. 68). Alluvial floodplains are deposited when flooding breaks through the river bank, with deposited materials varying depending on the energy of the river (Nanson, & Croke 1992).

There is one second-order non-perennial creek line that crosses Mamre Road and travels across to the south of Abbotts Road (Figure 5). This second-order creek line is a tributary of Kemps Creek, a perennial fourth-order watercourse. Kemps Creek is located approximately 351 metres west of the study area at its closest point. Proximity to a permanent water source is considered a positive indicator for past Aboriginal land use. Stream order is recognised as a factor which assists the development of predictive modelling in Sydney Basin Aboriginal archaeology, and has seen extensive use in predictive modelling for the Sydney region, most notably by Jo McDonald Cultural Heritage Management (JMCHM) (JMCHM 2000, JMCHM 2005a, JMCHM 2005b, JMCHM 2008). These predictive models tend to favour higher order streams as the locations of campsites and therefore archaeological deposits. Larger water sources would have been more likely to provide a stable source of water and by extension other resources which would have been used by Aboriginal groups.

The stream order system used for this assessment was originally developed by Strahler (1952). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Photo 2. As stream order increases, so does the likelihood that the stream would be a perennial source of water.

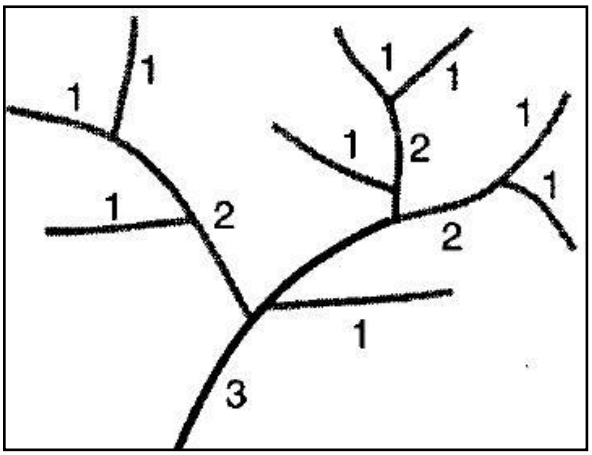


**Photo 2 Diagram showing Strahler stream order (Ritter, Kochel, & Miller 1995, pp. 151)**

### 2.2.1. Soil landscapes

Soil landscapes have distinct morphological and topological characteristics that result in specific archaeological potential. As they are defined by a combination of soils, topography, vegetation and weathering conditions, soil landscapes are essentially terrain units that provide a useful way to summarise archaeological potential and exposure.

The study area is located within the Blacktown soil landscape (Figure 6). This soil landscape is a residual soil landscape and consists of gently undulating rises, broad rounded crests, and gently inclined slopes with a gradient of less than 5%. Local relief within the Blacktown soil landscape is up to 30 metres and rocky outcropping is absent. Dominant soils consist of shallow to moderately deep (<100 centimetres) red and brown podzols on crests and in well drained topographies, and deep (150–300 centimetres) yellow podzolic soils and soloths on lower slopes and drainage lines (Bannerman & Hazelton 1990b, pp. 28). A description of the soil types within the Blacktown soil landscape are provided in Table 1 and Photo 3.

**Table 1 Blacktown soil landscape characteristics (Bannerman & Hazelton 1990, p.29)**

| Soil material | Description |
|---|---|
| **Blacktown 1 (*bt1*) - Friable brownish-black loam** | Friable brown loam to clay loam with a moderately pedal subangular block structure and rough-faced porous fabric ped fabric. This soil material generally occurs as a topsoil (A horizon) up to 30 cm in thickness. Peds are well defined and range from 2–20 mm. Rounded iron indurated fine gravel-sized shale fragments and charcoal fragments sometimes occur as inclusions. Soil colour is brownish black (10YR 2/2) and can also range from dark reddish brown (5YR 3/2) to dark yellowish brown (10yr 3/4). Soil varies from moderately acidic to neutral. |
| **Blacktown 2 (*bt2*) - Hardsetting brown clay loam** | Hardsetting brown clay loam to silty clay loam, with an apedal massive to weakly pedal structure and porous earthy fabric. Occurs as an A2 Horizon deposit and occasionally a nA1 horizon topsoil. Typically, between 10–30 cm in thickness. Peds range from 20–50 mm. Platy, iron indurated gravel sized shale fragments are common, with rare inclusions of charcoal and roots. Soil colour is predominately dark brown (7.5YR 4/3) but can range from dark reddish brown (2.5YR 3/3) to dark brown (10YR 3/3). Soil acidity varies from moderately acidic to slightly acidic. |
| **Blacktown 3 (*bt3*) - Strongly pedal, mottled brown light clay** | Brown light to medium clay with strong pedal polyhedral or subangular-blocky structure and smooth faced dense ped fabric that occurs as a subsoil (B horizon). The soil texture increases with depth and peds range from 5–20 mm. Fine to coarse gravel-sized shale fragments are a common inclusion and often occur within stratified bands, with roots and charcoal rarely being present. Soil colour is brown (7.5YR 4/6) and can range from reddish brown (2.5YR 2/6) to brown (10YR 4/6). The pH of this soil material varies from strongly acidic to slightly acidic. |
| **Blacktown 4 (*bt4*) - Light grey plastic mottled clay** | Plastic light grey silty clay to heavy clay with moderately pedal polyhedral to subangular blocky structure, and smooth-faced dense ped fabric, that occurs as a deep subsoil deposit overlying shale bedrock (B3 or C Horizon). Peds range between 2–20 mm. Inclusion consists of weathered ironstone concretions and rock fragments. Gravel sized shale fragments and roots occur occasionally, but charcoal is rare within this soil deposit. Red, yellow and brown mottles are present and soil colour is usually light grey (10YR 7/1) or sometimes greyish yellow (2.5YR 6/2). Soil acidity ranges from strongly acidic to moderately acidic. |

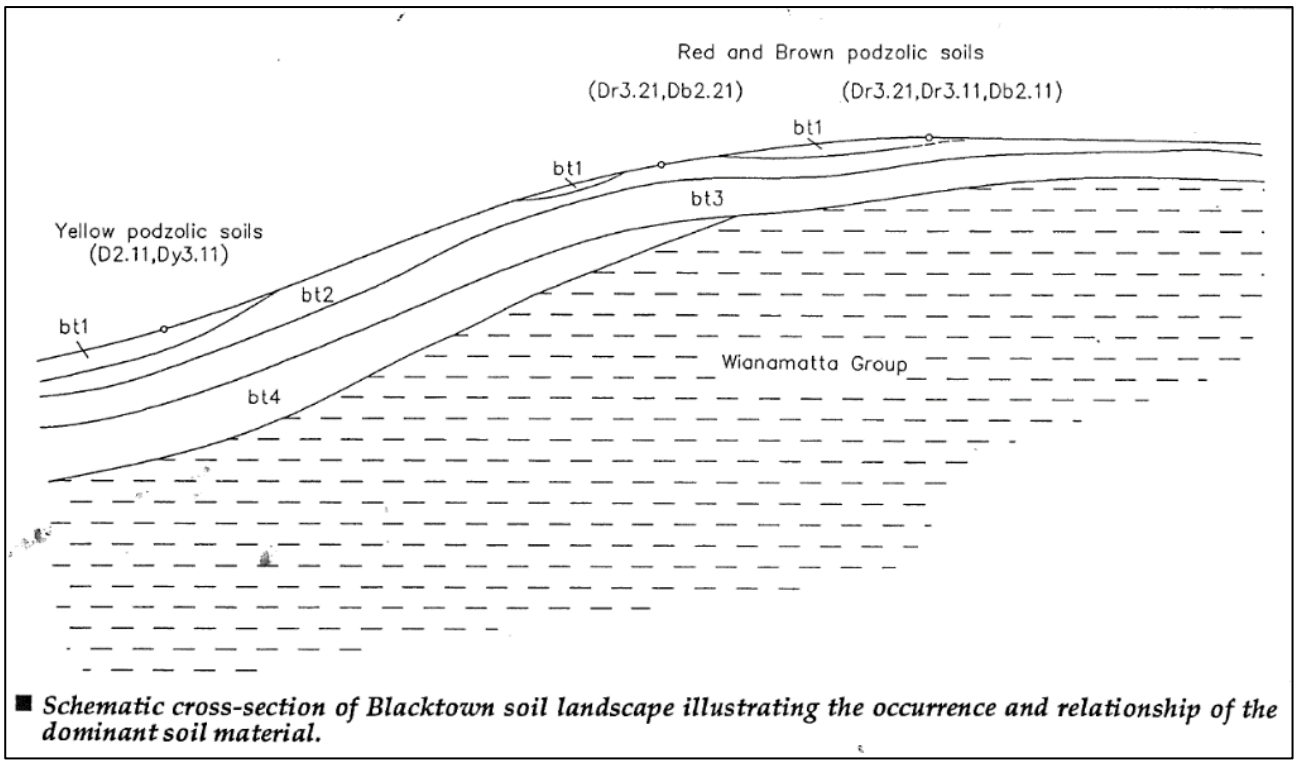


**Photo 3 Schematic cross section of the Blacktown soil landscape (Bannerman & Hazelton 1990b, pp. 31)**

Residual soils form from the *in situ* weathering of bedrock material, resulting in slow accumulation of soils over long periods of time. Due to their age and slow accumulation, residual soil landscapes have reasonable potential to preserve archaeological deposits in an open context, such as stone artefacts derived from occupation sites. However, this slow accumulation combined with extensive land clearing and land use (usually associated with pastoral and civic development) will result in an increased likelihood that soils will have been disturbed. This could result in poor preservation of archaeological material in these locations of disturbance, and it is therefore likely archaeological sites will be preserved in areas where minimal disturbance has affected soils.

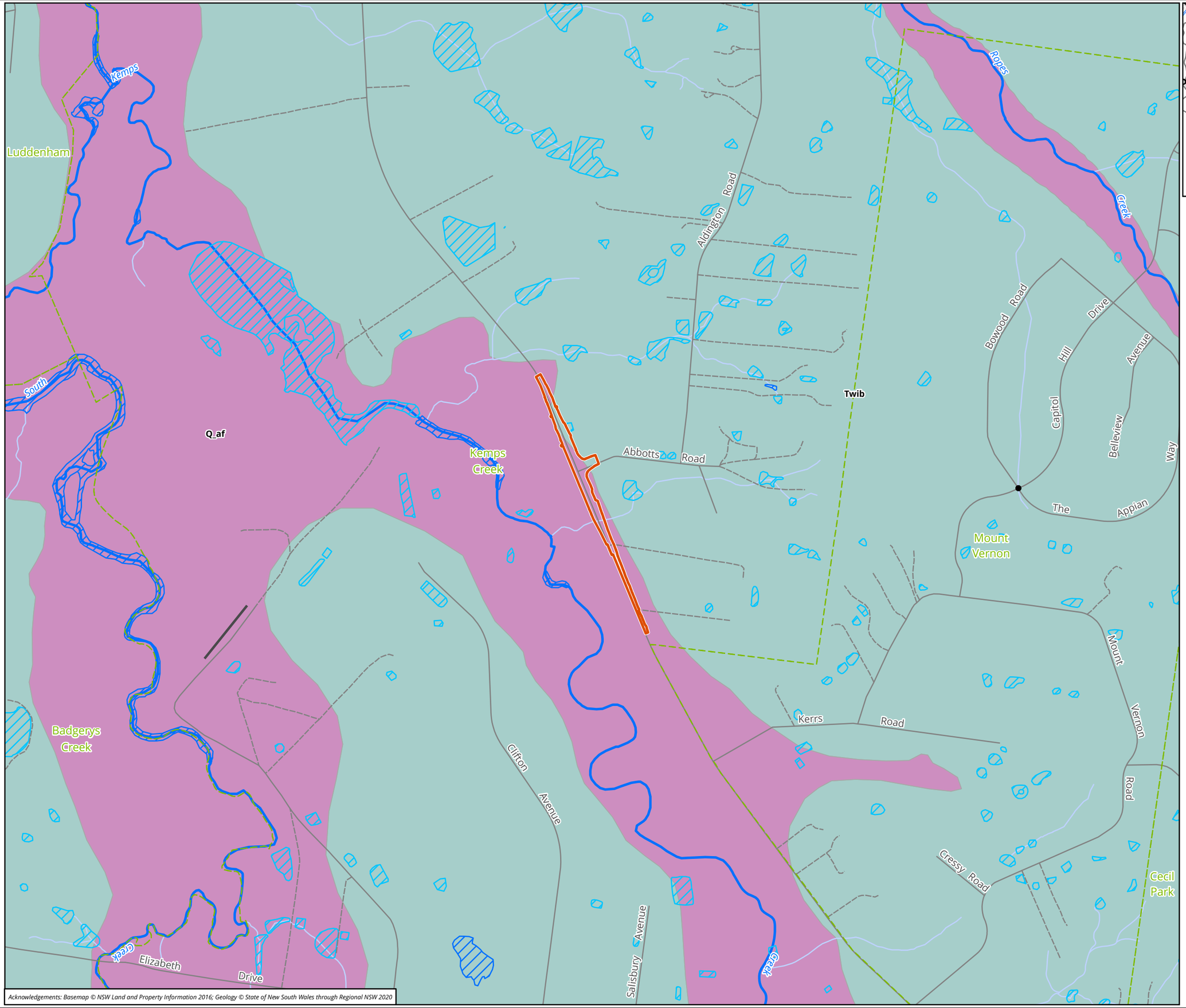


**Figure 4 Geological units in the vicinity of the study area**

*Acknowledgements: Basemap © NSW Land and Property Information 2016; Geology © State of New South Wales through Regional NSW 2020*

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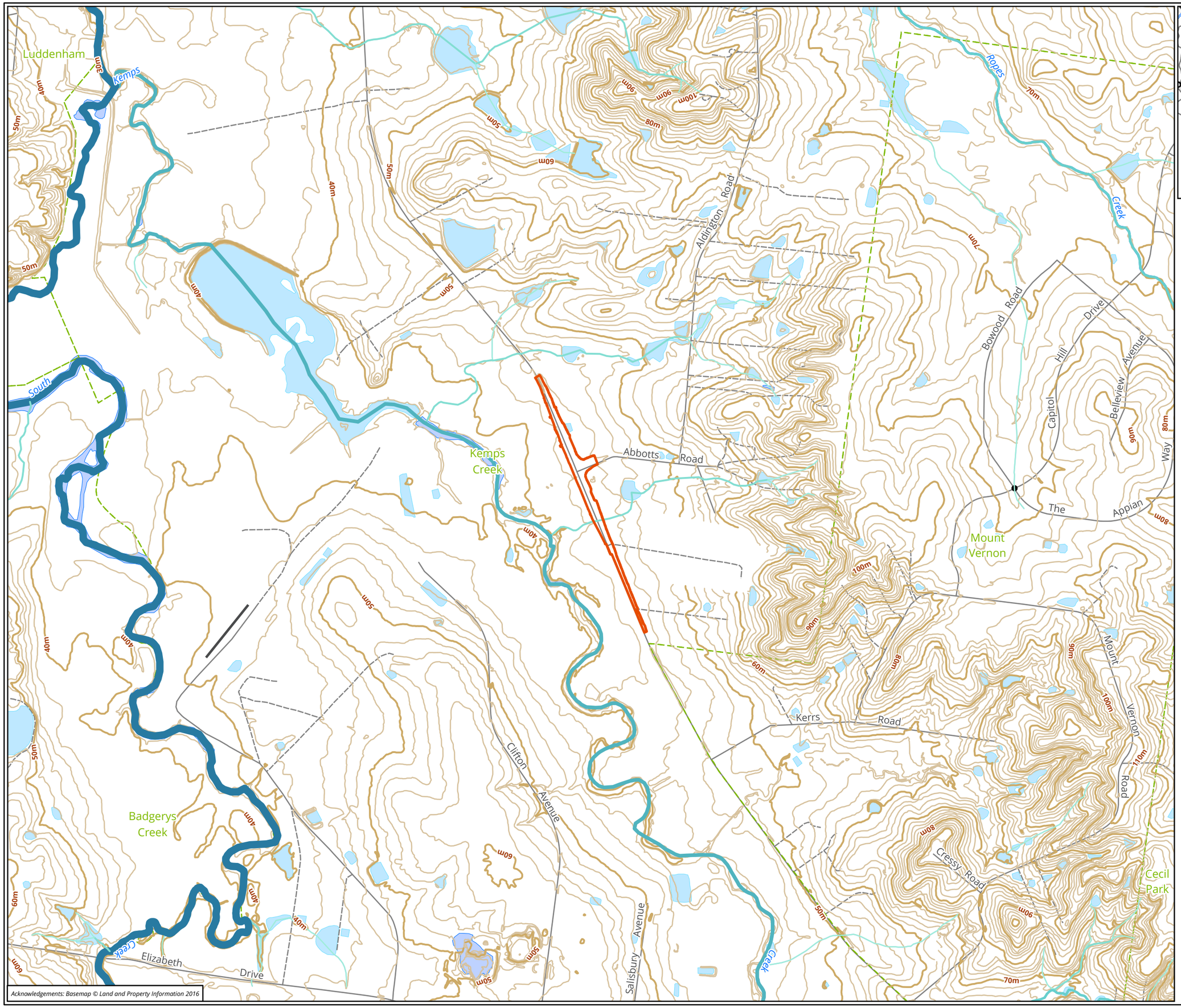


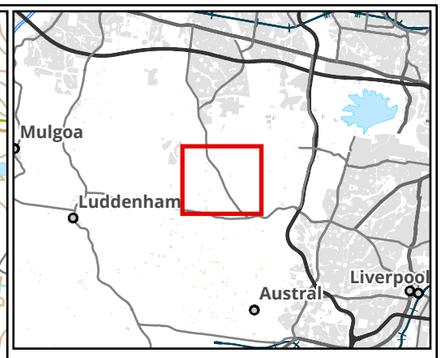


**Legend**

- Study area
- Contour (2m)

**Strahler Order**

- 1
- 2
- 3
- 4
- 6

**Figure 5 Hydrology and topography in the vicinity of the study area**

0 150 300 450 600

Metres

Scale: 1:15,000@ A3

*Coordinate System:*
*GDA 1994 MGA Zone 56*

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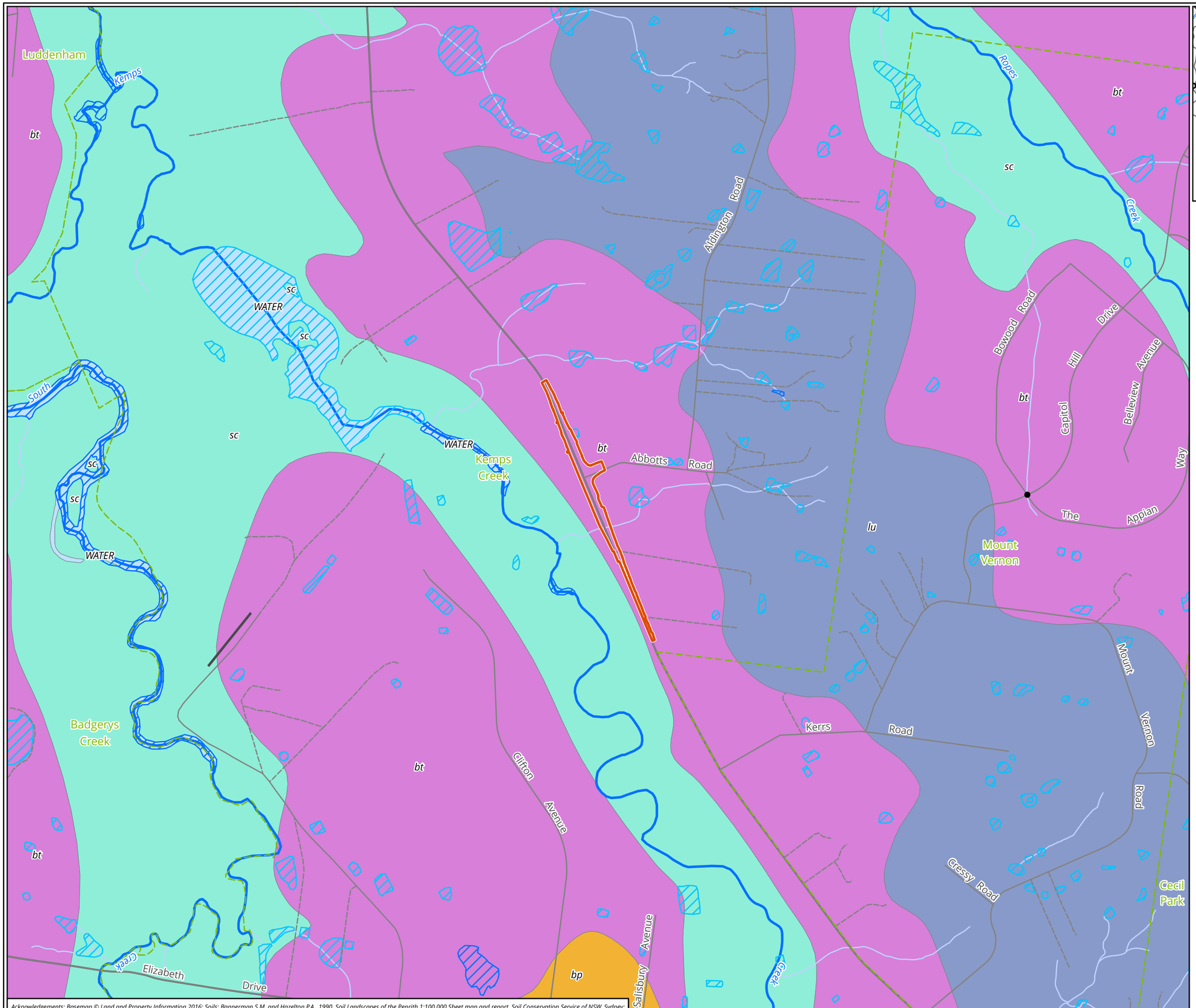


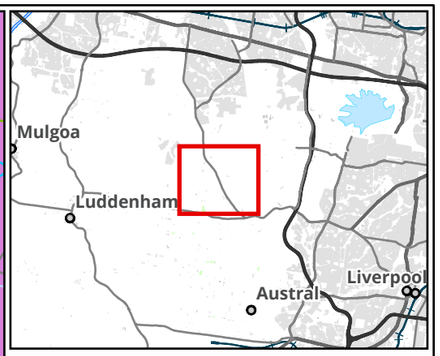


**Legend**

Study area

**Soil landscape units**

- bp - BERKSHIRE PARK
- bt - BLACKTOWN
- lu - LUDDENHAM
- sc - SOUTH CREEK
- WATER - WATER

**Figure 6 Soil landscapes in the vicinity of the study area**

0 150 300 450 600

Metres

Scale: 1:15,000@ A3

*Coordinate System:*
*GDA 1994 MGA Zone 56*

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*Acknowledgements: Basemap © Land and Property Information 2016; Soils: Bannerman S.M. and Hazelton P.A., 1990, Soil Landscapes of the Penrith 1:100,000 Sheet map and report, Soil Conservation Service of NSW, Sydney;*

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## 2.3. Flora and fauna

Within the Cumberland subregion of the Sydney Basin Bioregion a variety of vegetation types are present, with Grey Box *Eucalyptus microcarpa*, Forest Red Gum *E. tereticornis*, Narrow-leaved Ironbark *E. crebra* woodland, and Spotted Gum *Corymbia maculata* present on shale hills. Hard-Leaved Scribbly Gum *E. sclerophylla*, Rough-Barked Apple *Angophora floribunda*, and Old Man Banksia *Banksia serrata* are identified on alluvial sands and gravels. Broad-Leaved Apple *Angophora subvelutina*, Cabbage Gum *E. amplifolia*, Forest Red Gum, and Swamp Oak *Casuarina glauca* are present on river flats. Tall Spike Rush *Eleocharis sphacelata*, and Juncus *Juncus effuses* and Parramatta Red Gum *E. parramattensis* are noted around lagoons and swamps (NPWS 2003, pp. 193). Many of these species are present across the Luddenham and Blacktown soil landscapes (Bannerman & Hazelton 1990b, pp. 29, 64, 68–69).

Aboriginal people used plant resources in a variety of ways. Fibres were twisted into string, which was used for many purposes, including the weaving of nets, baskets and fishing lines. String was also used for personal adornment. Bark was used in the provision of shelter; a large sheet of bark being propped against a stick to form a gunyah (Attenbrow 2002).

Native fauna that would have been present in the vicinity of the study area include Australian Wood Duck *Chenonetta jubata*, White-Faced Heron *Egretta novaehollandiae*, Eastern Long-Necked Tortoise *Chelodina longicollis*, Eastern Water Skink *Eulamprus quoyii*, Garden Skink *Lampropholis guichenoti*, Welcome Swallow *Hirundo neoxena*, Western Swamphen *Porphyrio porphyrio*, as well as arboreal fauna including owls *Strigiformes*, Ringtailed Possum *Pseudocheirus peregrinus* and Brushtailed Possums *Trichosrus vulpecula*, and gliders *Petauridae*.

As well as being important food sources, animal products were also used for tool making and fashioning a myriad of utilitarian and ceremonial items. For example, tail sinews are known to have been used to make fastening cord, while 'bone points', which would have functioned as awls or piercers, are sometimes present as part of the archaeological record. Animals such as Brush-tailed Possums were highly prized for their fur, with possum skin cloaks worn fastened over one shoulder and under the other. Kangaroo teeth were incorporated into decorative items, such as head bands (Attenbrow 2002).

The presence of the landscape resources listed above would have increased the inhabitability of the study area and may have meant that the study area was used as a resource gathering zone.

## 2.4. Land use history

The earliest European exploration of the Penrith region was led by Captain Watkin Tench, an officer in the Marine Corps, accompanied by Mr Lowe (surgeon's mate of the Sirius), Mr Arndell (assistant surgeon to the Colony), two other marines, and a convict. The group reached the Nepean River on 28 June 1789 (Oehm, A. 2006, Paul Davies Pty Ltd 2007a, pp. 11). Later that year, the Penrith Ford was crossed, and in 1791 the course of the Nepean River had been explored from the ford to Grose River. By 1791, it had been confirmed that the Hawkesbury and Nepean rivers were the same watercourse; however, each of the names were kept, transitioning from one to the other at the junction with the Grose River (Thorpe 1986, pp. 12).

From 1803, Charles Grimes and James Meehan surveyed areas of the eastern bank of the Nepean following the sanctioning of settlement in this area by Governor Philip Gidley King, likely in part for the fertile soils associated with the Nepean River floodplain. The portions of land ranged from 40 to 200 acres (approximately 16.2 to 81 hectares), with several of 1000 acres (404.6 hectares) and above. These were granted to officials, free settlers and military staff (Paul Davies Pty Ltd 2007a, pp. 11, Thorpe 1986, pp. 12). Over time, around 1699 Europeans had settled in the Nepean region, most of whom were of Irish and English heritage and were emancipists or convicts assigned to free settlers or those associated with the government

or military (Paul Davies Pty Ltd 2007b). Until the establishment of the Great Western Road around 1815, there was no official passage to the Nepean area. In the same year, Governor Lachlan Macquarie conducted his inspection tour of the region (Thorpe 1986, pp. 12). The Great Western Road had developed into a main route for travel and communication for the Nepean region by 1817, and in this year the government town of Penrith was also established which remained a small, roadside settlement into the 1830s (Thorpe 1986, pp. 12).

The development of the region was centred around agricultural and pastoral land use, which evolved from the 1830s to the mid-twentieth century. Historical aerial photography provides a record of development within the study area during the 20th century. Table 2 summarises the development of the study area with reference to the historical aerials.

**Table 2 Summary of historical aerials**

| Aerial | Description |
|---|---|
| **1947 (Photo 4)** | The 1947 aerial shows that Mamre Road has been constructed, and there has been extensive historical land clearing within the study area. Abbotts and Aldington Roads have not yet been constructed. There are few areas of remaining trees located within the study area, and several tracks. No structures are present in the study area. |
| **1965 (Photo 5)** | The 1965 aerial shows some change from the 1947 aerial. More vegetation clearance has been undertaken, and several dams and access tracks have been constructed in the surrounds of the study area. |
| **1978 (Photo 6)** | The 1978 aerial shows several developments, including the construction of Abbotts Road. Mamre Road also appears to have been upgraded. |
| **1991 (Photo 7)** | By 1991 there has been further development of the study area. The surrounding area has become large lot market gardens with some greenhouses, and pastoral land still present. Several driveways, and dams have been constructed in the study area. The alignment of Mamre and Abbotts Roads have remained the same. |
| **2005 (Photo 8)** | The 2005 aerial shows an increase in structures, landscaping around houses, construction of additional dams, and additional greenhouses and areas of cropping. The alignment of Mamre and Abbotts Roads have remained the same. |
| **Current (Figure 2)** | Little change has occurred within the study area from 2005. |

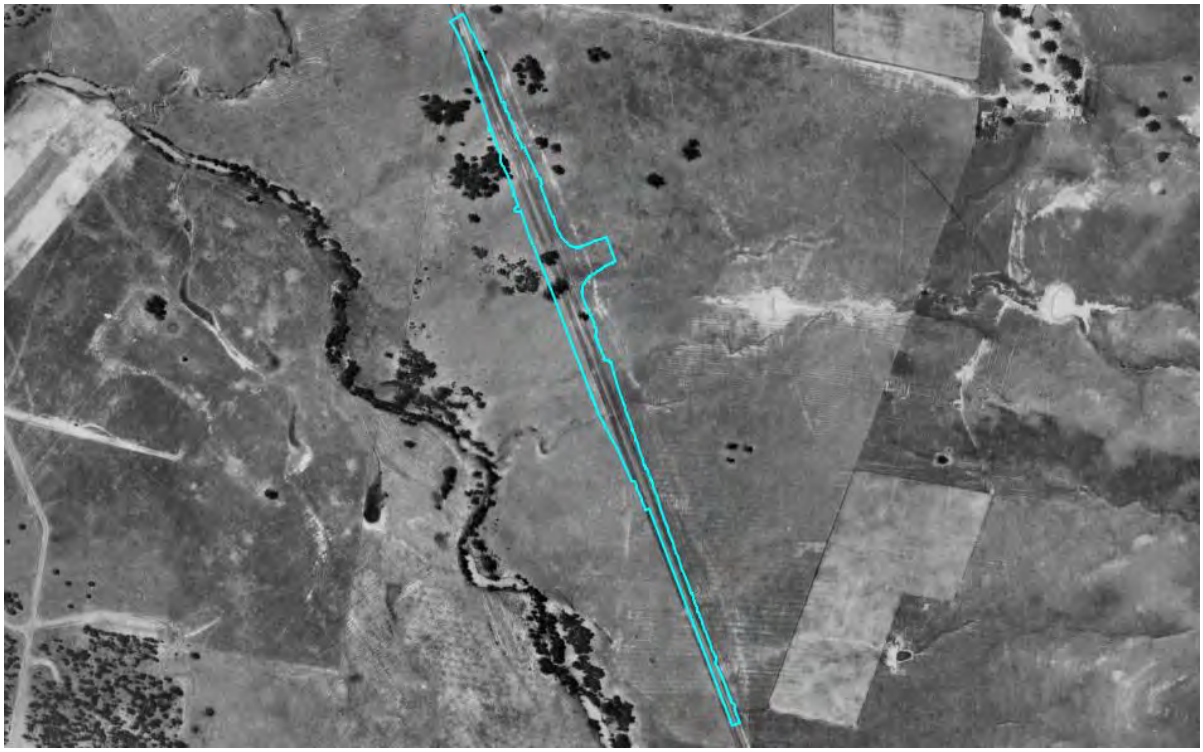


**Photo 4** **1947 aerial with the study area outlined in blue (Source: NSW Spatial Services)**

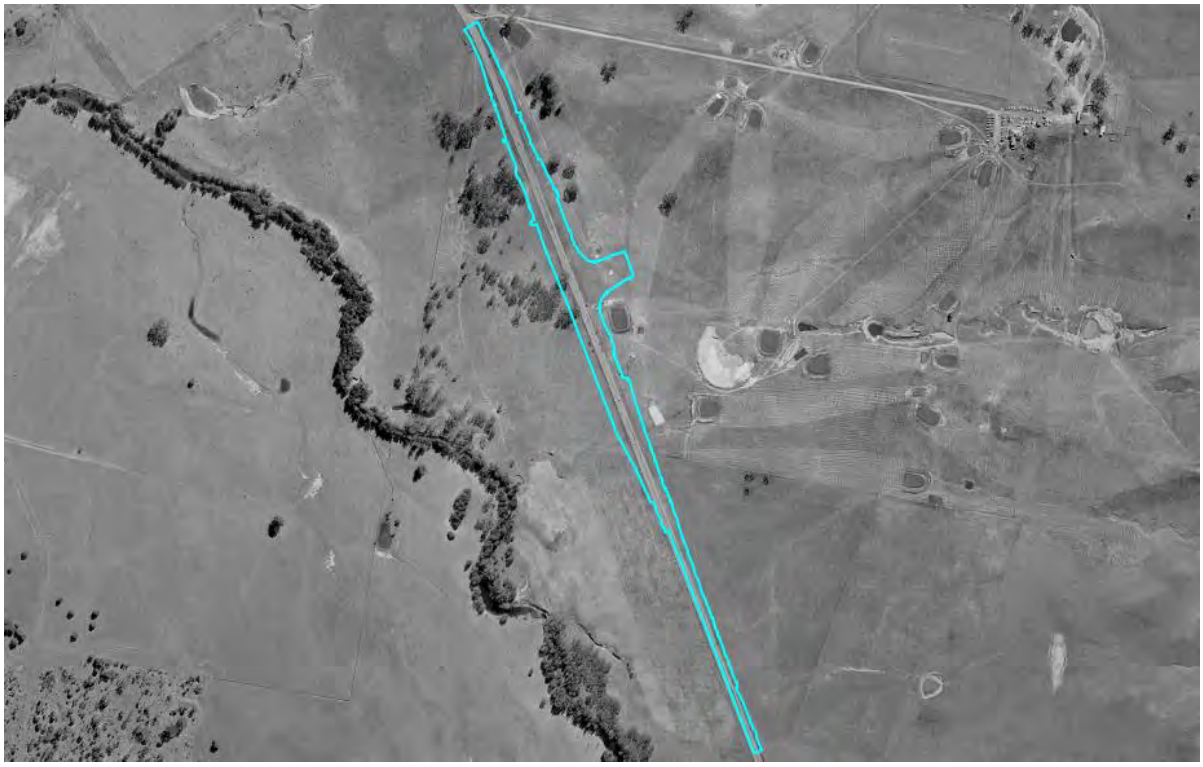


**Photo 5** **1965 aerial with the study area outlined in blue (Source: NSW Spatial Services)**

**Photo 6** 1978 aerial with the study area outlined in red (Source: NSW Spatial Services)

**Photo 7** 1991 aerial with the study area outlined in red (Source: NSW Spatial Services)

**Photo 8 2005 aerial with the study area outlined in red (Source: NSW Spatial Services)**

# 3. Aboriginal context

## 3.1. Ethnohistory and contact history

It is generally accepted that Aboriginal people have inhabited the Australian landmass for the last 65,000 years (Clarkson et al. 2017). Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The study area falls within the Sydney Basin. Aboriginal occupation of the region extends well back into the Pleistocene period (i.e., prior to 10,000 years before present (BP)). This is evidenced by radiocarbon dates retrieved from excavated sites at Shaw's Creek K2 (14,700 years BP) (Attenbrow 2010, pp. 18), at Windsor with 33,000 BP (Karskens, Burnett, & Ross 2019) as well as sites in Parramatta (approximately 25,000–30,000 BP and 14,000 BP) (JMCHM 2005a, 2005c, Williams et al. 2021).

Archaeological evidence of Aboriginal occupation of the Cumberland Plains indicates that the area was intensively occupied from approximately 6000–4000 years BP (Dallas 1982, Mcdonald 2008, White & McDonald 2010). Such 'young' dates are probably more a reflection of the conditions associated with the preservation of this evidence and the areas that have been subject to surface and sub-surface archaeological investigations, rather than actual evidence of Aboriginal occupation prior to this time.

Our knowledge of Aboriginal people and their land-use patterns and lifestyles prior to European contact is mainly reliant on documents written by non-Aboriginal people. These documents are affected by the inherent bias of the class and cultures of their authors, who were also often describing a culture that they did not fully understand—a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records can however be used in conjunction with archaeological information and surviving oral histories from members of the Aboriginal community to gain a picture of Aboriginal life in the region.

Despite a proliferation of Aboriginal heritage sites there is considerable ongoing debate about the nature, territory, and range of pre-contact Aboriginal language groups in the greater Sydney region. These debates have arisen largely because, by the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late nineteenth century, pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. The following information relating to Aboriginal people on the Cumberland Plains is based on such early records.

There is some confusion relating to group names, which can be explained using differing terminologies in early historical references. Language groups were not the main political or social units in Aboriginal life. Instead, land custodianship and ownership centred on the smaller named groups that comprised the broader language grouping. There is some variation in the terminology used to categorise these smaller groups; the terms used by Attenbrow (2010) will be used here.

The study area is in the vicinity of three language groups, Dharawal, Gundungurra and the hinterland Darug. Attenbrow (2010, pp. 34) suggests:

- The Gundungurra covered "the southern rim of the Cumberland Plain west of the Georges River, as well as the southern Blue Mountains".
- The Dharawal covered "the south side of Botany Bay, extending as far as the Shoalhaven River; from the coast to the Georges River and Appin, possibly as far west as Camden".
- The hinterland Darug covered the area "from Appin in the south to the Hawkesbury River in the north; west of the Georges River, Parramatta, the Lane Cove River and Berowra Creek".

These areas are indicative only and would have changed through time.

After the arrival of European colonisers, the movement of Aboriginal people became increasingly restricted. European expansion along the Cumberland Plain was swift and soon there had been considerable loss of land to agriculture. At the same time diseases such as smallpox were having a devastating effect on the Aboriginal population. Death, starvation, and disease were some of the disrupting factors that led to a reorganisation of the social practices of Aboriginal communities after European contact. The formation of new social groups and alliances were made as Aboriginal people sought to retain some semblance of their previous lifestyle.

## 3.2. Regional context

Several Aboriginal cultural heritage investigations have been conducted for the Cumberland region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Cumberland lowlands region and thus relevant to the study area have also been formulated, some as a part of these investigations and others from cultural heritage investigations for relatively large developments.

Brayshaw McDonald (1994) completed the Liverpool Rural Lands Study which included a broad predictive study relating to Aboriginal sites in rural areas to the west of Liverpool, located approximately 12 kilometres south-east of the current study area. The report identified that the distribution of sites was mostly dependent on topography and the bedrock formation of the area, or geology. Background research supported predictive models 10 kilometres from the study area.

It identified that shelter sites, art sites, and grinding grooves were likely to occur on overlying sandstone formations where the appropriate topography was present. Sites over the remainder of the Cumberland Plain were likely to consist of open artefact scatters, quarries, modified trees, and stone arrangements. The report noted that occupation within the area was likely to be like the northern Cumberland Plain, as the landscape and geology were extremely similar. As such, predictive site modelling was summarised from an assessment which included test excavations completed by Rich and McDonald (1993):

- *"Most of the areas tested [either with sparse or no surface manifestations] contained subsurface archaeological deposits.*
- *Sites which are on permanent water are more complex [ie they represent foci for larger groups or are used repeatedly by smaller groups over a long period of time] than sites on ephemeral or temporary water lines. Major confluences are prime site locations. Sparse sites also occur on major creeklines and not all confluences are locations of prime sites.*
- *Alluvial terraces [and other depositional environments] contain the best potential for intact archaeological remains. Some hillslope zones may also be intact and have good potential. In areas where there is deep alluvium many sites also have intact material below the plough zone. These sites often have artefact bearing deposit to a depth of 70-90 centimetres; the plough zone is [max] 25 centimetres deep.*
- *Temporary and minor gullies tend to have one-off or occasionally repeated Aboriginal visits in prehistory and hence low density sites.*
- *Few ridgetop sites were located by the testing programme mostly because the associated development was located close to the creeklines, but also because of the higher levels of destructive disturbance in the more elevated locations, e.g. housing and ploughing of shallower deposit.*
- *While much of the Rouse Hill study area had been severely disturbed over the last 200 years, the areas tested on the whole revealed intact patterns in the archaeological material."* (Brayshaw McDonald Pty Ltd 1994, pp. 20–21).

JMCHM (1997) conducted an archaeological investigation of the Australian Defence Industries (ADI) Site, at Saint Marys, for ADI-Lend Lease Joint Venture, located approximately 6.3 kilometres north-west of the study area. The investigation included the refinement of existing Aboriginal site predictive models, by developing a framework for assessing Aboriginal site representativeness (JMCHM 1997, pp. 1–2). A model was presented for the ADI site that predicted the character of Aboriginal sites in relation to landscape features; particularly water permanence, lithic resources and landscape unit. The study concluded that the model is applicable to the Cumberland Plains region, and provides a framework for which the correlation between sites and permanent water can be tested. The model predicts the following (JMCHM 1997, pp. 56–57):

- *"The frequency and density of Aboriginal sites located in the headwaters of upper tributaries (first order watercourse) is likely to be low, and such sites are likely to represent a background scatter.*
- *The frequency and density of Aboriginal sites located in the middle reaches of minor tributaries (second order watercourses) is likely to be low, and such sites are likely to represent single events, for example, one-off camping locations or knapping episodes.*
- *The frequency and density of Aboriginal sites located in the lower reaches of tributary creeks (third order watercourses) is likely to be greater, and such sites are likely to represent repeated occupation, knapping events and more concentrated activities.*
- *The frequency and density of Aboriginal sites located on major creek lines is likely to be greater, and such sites are likely to represent or more permanent occupation and consequently will be more complex.*
- *The junctions of creeks may have been a focus of Aboriginal activity.*
- *The frequency and density of Aboriginal sites located on ridge tops between drainage lines is likely to be low, and such sites are likely to represent single event.*
- *Outcrops of silcrete would have been exploited if known.*
- *The general size of stone artefacts is likely to decrease the further they are located from the quarry from which they were obtained. Similarly, the presence of cortex on artefacts is less likely to be present, or occur as smaller percentages that further artefacts are located from the quarry from which they were obtained due to the continued reduction sequence.*
- *Sandstone outcrops may have been the focus of camping and art production for sandstone overhangs as well as axe production/sharpening for sandstone platforms*."

JMCHM (2001) undertook an assessment at West Hoxton, approximately 12 kilometres south from the study area, in aid of the South Hoxton Park Aerodrome Master Plan. The background research for the area suggested that artefact scatters would likely be associated with streams, with the size and number of sites increasing with stream order. It also noted that smaller scatters and isolated finds have the potential to be identified across a variety of landforms within the landscape, including hillslopes and ridges away from water (JMCHM 2001, pp. 9). Survey efforts were hampered by land access issues, as the majority of the land in the area studied was privately owned; however, a total of two artefact scatters and nine PADs were identified by the investigation, with one previously identified site (also an artefact scatter) being relocated. Most of the PADs were assessed as having low to moderate potential, with JMCHM noting that the true potential of sites was difficult to assess in the absence of test excavations.

White & McDonald (2010) undertook a review of previous work in the Rouse Hill development area, discussing lithic artefact distribution in previous excavations carried out by JMCHM, approximately 20 kilometres north-east from the study area. The study considered several factors including stream order, distance from water, landform, aspect, and distance to silcrete sources. As a result of the assessment, the following statements were made:

- Stream Order: water supply was a significant factor influencing Aboriginal land use and habitation in the area. There was a correlation between increasing stream order and larger numbers and higher densities of artefacts (from a comparison of first, second, and fourth order streams).
- Distance from water: the results showed that an assumption that sites would be clustered within 50 metres of water sources was not entirely correct from the data available. In first order stream landscapes, there was no significant correlation between artefact distribution and distance to water. In second order landscapes, artefact density was highest within 50 metres of water, and then declined with increasing distance. In fourth order landscapes, density was highest between 51–100 metres from water.
- Landform: artefact density was considered to be lowest on upper slopes and ridgetops, with density increasing on mid and lower slopes. Density was highest in terrace landforms, and lower on creek flats, likely due to repeated flooding events and the erosion this caused.
- Distance to silcrete sources: the results of the study showed no significant difference between sites located closer to or further away from silcrete sources. However, 6 kilometres was the maximum tested distance from silcrete sources, so the sample is only representative of a limited area.
- Aspect: only appeared to have an influence on sites in the lower parts of valley. Locations may have been sited to take advantage of constant factors such as the rising/setting sun and wind direction. Sites in higher parts of valleys may have been influenced by weather and other factors.

Kelleher Nightingale Consulting (2011) undertook an assessment of a 10 kilometre strip of Bringelly Road, approximately 12 kilometres south of the study area, in advance of a proposed upgrade (taking the road from two to four lanes in size). Predictive modelling employed by KNC suggested that artefact scatters and isolated finds were the site types most likely to be identified, where exposure and visibility were high. These sites were considered most likely to be identified near water sources, on either flat or gently sloping landforms. A total of 44 sites were identified in the design corridor of the proposed upgrade, all of which were either artefact scatters or isolated finds.

AMBS (2012) conducted a wide ranging report, assessing the entirety of the Austral and Leppington North precincts, approximately 11 kilometres south-east from the study area. Although surveys were targeted at specific properties, which at the time represented accessible properties, the results of the survey were combined with the existing regional model and a review of studies within the local area to produce sensitivity mapping for the entirety of the Austral and Leppington North precincts.

Regionally, trends noted as influencing this sensitivity model include the following statements:

- Sites are most frequently located near permanent water courses on creek banks, alluvial flats, or high ground.
- Large artefact scatters may be identified up to 200–250 metres away from water courses.
- Additional factors need to be considered than just the presence or absence of surface artefacts when characterising an archaeological site.

The predictive model employed by AMBS stated that the most common site type occurring in the area would be stone artefacts scatters, and that undisturbed alluvial soils have the potential to be associated with stratified archaeological deposits (AMBS 2012, pp. 56). The results of the survey largely confirmed this predictive model, with AMBS identifying seven new sites including six isolated finds and one artefact scatter/PAD.

GML (2016) conducted an archaeological excavation and assessment of Stockland's land in East Leppington approximately 12 kilometers south-east of the study area, prior to the development of the residential estate Willowdale. Predictive modeling of the area has shown that Aboriginal people occupied East Leppington for over 5,000 years. Areas along Bonds Creek were used as camping sites meanwhile areas of tool manufacture and procurement was resource specific. Both survey and hand excavation were used to understand the area. In total, 12 locations were excavated over a total of 487 square metres. Of these, 7956 lithic artefacts and 21 features were identified. Features included ground ovens, hearths, clay extraction pits and modified trees. Dominant material types were silcrete, mudstone (IMSTC) and quartz, comprising 66%, 25% and 8% of finds respectively. Tool types included anvils, hammers, and a possible grindstone fragment. Backing was visible in artefacts from all but two excavation areas. A total of 253 cores and core fragments were also recovered, mostly of silcrete. Overall, GML identified an area of domestic activity (associated with hearths and ovens), and an area of ceremonial activity associated with red paint pits, culturally modified trees, and unusual stone arrangements. Pits at the base of these trees suggest evidence of landscape use unique to this particular area of the site

## 3.3. Local context

Several Aboriginal cultural heritage investigations have been conducted within the local area (within approximately 10 kilometres of the study area). Most of these investigations were undertaken as part of development applications and included surface and sub-surface investigations. These investigations are summarised below.

JMCHM (2000) undertook a survey in advance of a proposed light industrial subdivision on Mamre Road, Erskine Park, 5.6 kilometers north of the current study area. The predictive modelling undertaken primarily identified the potential for sites to be present in association with water sources, with the size and density increasing with stream order. It was also noted that creek junctions provide a focus for activity. Other locations such as ridgetops between drainage lines may provide evidence of occupation (JMCHM 2000). The area surveyed contained first and second order creeks, and so it was predicted that background scatters of artefacts may be associated with first order creeks, and that higher density sites may be identified in association with the second order creek. The survey identified nine sites, including six artefact scatters and three isolated finds. Six of the identified sites were located on lower hillslopes, two on creek bank/lower hillslopes, and one on a creek bank/floodplain. Most sites were identified between 50 and 200 metres from water sources. Subsequently, sensitivity mapping was developed, and it was recommended that subsurface investigation take place in areas of higher sensitivity within the study area.

Excavations of the site were subsequently carried out by JMCHM (2008). These salvage excavations retrieved a total of 8,867 lithics from 298 square metres, indicating a density of 29.8 artefacts per square metre. It was identified that the pattern of artefact distribution within the Austral Land site was typical for the Cumberland Plain and was likely higher due to the presence of second and third order streams (which indicates a permanent or semi-permanent water source).

Based on the review of previous work undertaken, a number of predictive statements were formulated for the study area, including the following (JMCHM 2008):

- *"There may be evidence of long or short term occupation with sporadic use and re-use of locations.*
- *Occupation may date to the pre-Bondaian period (30,000 – 9,000BP), but is more likely to date to the Bondaian period (9,000 BP – European Contact).*
- *A variety of activities are likely to have been carried out within the study area and discrete knapping floors may have been present in association with both creeks and the area of their confluence.*
- *The proximity of the salvage locations adjacent to second order streams and the confluence of these creeks (where they become a third order stream) would have suggested that there would be evidence for sparse, but focussed activity and potentially repeated occupation by small groups, knapping floors and evidence for more concentrated activities."*

In addition to these predictions, several more general statements about the Cumberland Plain were made, including that large scale patterning of sites is identifiable based on environmental patterns, particularly stream order, with permanent sources of water being associated with more complex sites than ephemeral sources. Most sites will be dated to the mid to late Holocene, as geomorphic conditions necessary for the preservation of earlier sites are not common on the Cumberland Plain. Most areas contain subsurface deposits, regardless of the presence or absence of surface artefacts, and that where silcrete outcrops are present, there will be evidence for quarrying (JMCHM 2008).

The excavations consisted of testing followed by open area salvage at two locations with a total of 145 square metres and 153 square metres at each location. Both locations were located relatively close (within 100 metres) to creeklines in the study area. It was concluded that the site patterning in the area was typical of the Cumberland Plain, however artefact density was influenced by several landscape and resource features in the area, with it being noted that artefact density decreases with stream order and use of silcrete as a raw material decreases with increasing distance from silcrete sources. As a whole, the site displayed a higher than average artefact density, likely due to the presence of nearby sources of silcrete (JMCHM 2008 p. i).

DSCA (2003) undertook test excavation at Wallgrove Road, Eastern Creek approximately 8.6 kilometres north-east of the study area. The assessment built on several previous surveys conducted between 1980 and 2002. The assessment included predictive statements determined by the JMCHM study from 1997, which stated that surface artefacts were not an effective way to characterise archaeological sites, and that at the time of writing:

- 17 out of the 61 excavated sites on the Cumberland Plain had no artefacts present on the surface, however, most areas with sparse or no surface manifestations contained considerable archaeological deposits.
- The ratio of recorded surface to excavated artefacts is 1:25 across the Cumberland Plain.
- None of the excavated sites could be properly characterised based on their surface artefacts alone.

Open campsites are located in all landscapes on the Cumberland Plain. The predominance of sites recorded along creek banks is likely to be indicative of surface visibility conditions and taphonomic factors, rather than the human distribution of artefacts across the landscape (DSCA 2003, pp. 19–20)These statements note a number of issues with predictive models that base their assessment of subsurface potential entirely on the presence or absence of surface artefacts. Steele also reviewed previous work carried out in the Rouse Hill area to create a predictive model for the nature and extent of subsurface deposits (DSCA 2003, pp. 20–21). Some of the key factors noted include:

- Sites along permanent water courses tended to be more complex than those along ephemeral water courses, and the ideal site locations were at major confluences.

- Within the Rouse Hill area, alluvial areas along with intact hillslopes had the greatest potential to retain intact archaeology, with artefact deposits extending from 70 to 90 centimetres, while the typical plough zone extended to 30 centimetres.
- Hillslopes and ephemeral water courses which revealed sites typically showed evidence of limited occupation, with few producing artefact densities of greater than 20 artefacts per square metre.
- Sites located at the interface of sandstone and shale geologies tended to demonstrate evidence of single occupations by large groups, or multiple occupations by smaller groups.
- There is greater potential for complex archaeological sites to be located subsurface than is demonstrated by surface artefacts, with knapping floors, backed blade manufacturing sites, and other complex sites have been identified.
- There may be a correlation between artefact density and site function.

A total of 20 1 by 1 metre squares were excavated using a backhoe and sieved through nested 5 and 2.5 millimetre sieves. The deposit encountered tended to be relatively shallow, with most pits not exceeding 20 centimetres. A total of 38 artefacts were identified by surface survey and excavation, with a density characterised by Steele as extremely low. The area was interpreted as being visited sporadically, and not the site of any sort of knapping or camping, but rather a general background scatter. The deposit consisted primarily of silcrete, with quartz, tuff, and volcanic rock present in much lesser quantity. Most of the deposit was identified as manuport, with some flake and core fragments present, and one potential broken axe.

Navin Officer Heritage Consultants (2005) conducted machine testing at the CSR lands, Erskine Park, approximately 5.6 kilometres to the north of the current study area. A total of 256 test pits were excavated, with 285 artefacts being identified across 88 of these pits. It is noted (JMCHM 2008, pp. 14) that only a sample of the excavated deposit was sieved, and that this may be a contributing factor to the relatively low number of artefacts identified at the site relative to other excavations in the area. The assemblage was primarily comprised of silcrete and silicified tuff, making up approximately 81% of the total assemblage, and contained a range of artefact types, including microblades, Bondi points, and backed artefacts. Based on the results of this testing, Navin Officer characterised the site as having been used as a transient camp, or for peripheral activities in relation to a larger camping area, and stated that it had been subject to low intensity occupation (Navin Officer Heritage Consultants Pty Ltd 2005).

Biosis (2017, 2018) completed an Aboriginal heritage assessment of the Mamre West Precinct located approximately 2.8 kilometres north-west of the study area. The initial assessment recorded three areas of potential within low rises adjacent to depressions (OA1, OA2, and OA3). Test excavations were conducted within these areas with OA1 and OA2 located the furthest distance from water and both containing low density artefact deposits, while a high density artefact deposit was identified at OA3 which was located closer to South Creek. Biosis found that the dominance of material types differed to those of the surrounding region. Within one portion of the site, chert and mudstone artefacts were found in higher proportions to silcrete, which is seen in higher proportions other sites in the region. The assemblage at OA3 contained a varied artefact deposit including several backed artefacts which placed it within the Middle Bondaian phase of occupation, approximately 4000–1000 years BP. Further investigation through salvage excavations was recommended.

Biosis (2019) carried out an ACHA as part of a two stage industrial development along Mamre Road, Kemps Creek, that incorporated Lots 210–215 DP 1013539, and Lots 1 and 2 DP 1233392, located approximately 3.3 kilometres north-west of the study area. The ACHA included archaeological survey and test excavations in an area of high subsurface archaeological potential. The results of the test excavations identified one subsurface archaeological deposit (AHIMS 41-5-0016/MNPAD01) consisting of 14 artefacts dispersed across an area of 105 metres by 17 metres of a gently sloping plain landform.

Biosis (2020) completed a ACHA for 106–228 Aldington Road, Kemps Creek, NSW for SSD-10479, located approximately 1 kilometre west of the current study area. The ACHA included archaeological survey of the study area and test excavations in three areas of moderate archaeological potential. The areas of moderate archaeological potential were located on creek terraces and hill crests in proximity to water sources within Blacktown and Luddenham soil landscapes. A total of 248 artefacts were identified across the three areas of potential:

- In Area 1 located on a hill crest, soils consisted of loam to loamy clay deposits of moderate to high compaction, with little disturbance identified. Test excavations within this portion of the study area encountered a low density archaeological deposit, with 19 artefacts identified.
- In Area 2 on a creek terrace, soils consisted of loamy clay deposits of moderate to high compaction, with little disturbance identified. Test excavations within this portion of the study area encountered a low density archaeological deposit, with 28 artefacts identified.
- Area 3 consisted of loosely to moderately compacted sandy to clay loamy soils on a creek terrace landform. A high density, intact subsurface archaeological deposit within 70 metres of Ropes Creek and 25 metres of a tributary of Ropes Creek was identified with a total of 201 artefacts recovered. The results of the test excavation supported predictive modelling within the local region.

The investigation concluded that while Area 1, Area 2 and part of Area 3 will be impacted by the proposed development, further testing and/or salvage of these sites was not recommended. It was also recommended that a CHMP should be developed to provide management and mitigation measures for cultural heritage values identified within the study area. The proposed works permitted to proceed with caution in those areas in line with an approved CHMP.

Biosis (2021) completed an ACHA for 155–217 Aldington Road for SSD-17552047, located 0.82 kilometres north-east of the study area. A field investigation of the study area was conducted on 12 April 2021 and 15 December 2021. No Aboriginal objects were identified in the study area; however, one area of Potential Archaeological Deposit (PAD) (Aldington PAD 1) was identified on a relatively undisturbed, flat, hill crest at the headwaters of a dammed drainage line. The area of PAD was identified in consultation with Deerubbin Local Aboriginal Land Council (LALC) representative, Steven Randall during the field investigation. Test excavations were therefore undertaken within the study area in August 2021. One Aboriginal site (AHIMS 45-5-5578/Aldington Road PAD 1) was identified through these test excavations.

The results of the test excavations support predictive modelling for the region, having identified a low-density artefact scatter of two artefacts (AHIMS 45-5-5578/Aldington Road PAD 1) within a flat hill crest landform, within approximately 100-250 metres of two first order creek line. AHIMS 45-5-5238/Aldington Road PAD 1, was identified as having low scientific significance. Further testing and salvage of this site was not recommended. AHIMS 45-5-5578/Aldington Road PAD 1 is to be reburied in consultation with RAPs. Two additional lots were added to the study area, (lot 24 DP 255560 and lot 10 DP 253503) and an additional archaeological survey was undertaken on 15 December 2021 (Biosis 2022). No new areas of archaeological potential were identified during the additional survey.

Urbis (2021) completed an ACHA for 290–308 Aldington Road and 59–63 Abbotts Road for SSD-9138102, adjacent to the current Biosis study area. The ACHA included Aboriginal community consultation, an archaeological survey, and test excavations. The survey identified three isolated finds within vehicle tracks, and the test excavations identified 13 subsurface artefacts, representative of a low density background scatter. Artefacts were identified within lower slopes, terraces adjacent to waterways, spurs, and ridge crests. The ACHA also noted the heavy disturbance across parts of the site due to construction and market gardening. The ACHA recommended that surface collection be undertaken, and Aboriginal cultural heritage

induction material be prepared. Further consultation was also required in also to determine the long term care and control for the identified artefacts.

Urbis have also completed an ADDA in 2021 for 244–270 Aldington Road, Kemps Creek, NSW. The report could not be obtained, however the site card for the registered site provided some information. According to the site card AHIMS 45-5-5502/Aldington Rd Kemps Ck IF-1, was found within Lot 17 DP253503. The site contained a single indurated mudstone/tuff flake and was found in a disturbed context on the northern flank of the dam.

Austral Archaeology (2022) completed an ACHA for an SSD submission for Dexus Wholesale Management Limited, at 113–153 Aldington Road, Kemps Creek, a property approximately 1.1 kilometre north-east of the current Biosis study area. Test excavations were undertaken within the study area on 17 November 2021 within areas of moderate to high archaeological potential which had previously been identified during a field investigation undertaken by Austral Archaeology on 6 July. The test excavation program resulted in the identification of four low density subsurface artefact sites (AHIMS 45-5-5608/Aldington Road 02, AHIMS 45-5-5609/Aldington Road 03, AHIMS 45-5-5607/Aldington Road 01, AHIMS 45-5-5610/Aldington Road 04). The assessment determined that AHIMS 45-5-5608/Aldington Road 02, AHIMS 45-5-5609/Aldington Road 03, AHIMS 45-5-5607/Aldington Road 01, AHIMS 45-5-5610/Aldington Road 04 were likely representative of a continuous site consisting of background scatter associated with ridges and slopes within the local region.

The assessment concluded that AHIMS 45-5-5608/Aldington Road 02, AHIMS 45-5-5609/Aldington Road 03, AHIMS 45-5-5607/Aldington Road 01, AHIMS 45-5-5610/Aldington Road 04 each possessed low archaeological significance and would be directly impacted by the proposed development. No further archaeological investigation was recommended, however as part of the conditions of consent, AHIMS 45-5-5608/Aldington Road 02, AHIMS 45-5-5609/Aldington Road 03, AHIMS 45-5-5607/Aldington Road 01, AHIMS 45-5-5610/Aldington Road 04 were proposed for reburial on site. The report recommended that along with reburial, an Aboriginal Site Impact Recording Form (ASIRF) should be submitted when impacts occur on site (Austral Archaeology 2022). The reburial location is to be determined in consultation with the proponent and RAPs. It was also recommended that works within Dexus' development footprint should no proceed until Development Consent and Conditions of Approval had been granted and complied with where appropriate.

Biosis (2023) conducted an ACHA for 99–111 Aldington Road, Kemps Creek, a property 1.11 kilometres north-east of the current Biosis study area. A survey of the study area was conducted on 4 May 2021, where one area of moderate archaeological potential (AHIMS 45-5-5568/ALD-RD-PAD-01) was identified. This as located on a flat relatively undisturbed terrace adjacent to a dammed second-order drainage line, in the easternmost portion of the study area. All other areas within the study area were identified as possessing low archaeological potential. Test excavations were completed on 27 September 2021 for the portion of ALD-RD-PAD-01 which could not be avoided by the proposed works. These excavations established the presence of one low density subsurface archaeological deposit, comprising of two artefacts. In 2022 the proposed works were updated, and it was therefore determined that ALD-RD-PAD-01 would be directly impacted by the proposed works, resulting in total loss of value if not mitigated. Additional test excavations were therefore conducted on 20 and 22 December 2022 to determine the extent of the PAD associated with ALD-RD-PAD-01, and to determine the full extent of impact the development would have on cultural heritage values within the study area. The excavations resulted in the location of an additional two artefacts. As the proposed development could not avoid impacts to ALD-RD-PAD-01, an AHIP was recommended.

### 3.3.1. Identified Aboriginal archaeological sites

An extensive search of the AHIMS database was conducted on 17 November 2022 (Client service ID: 733150). The search identified 112 Aboriginal archaeological sites within a 1.5 by 1.5 kilometre search area, centred on

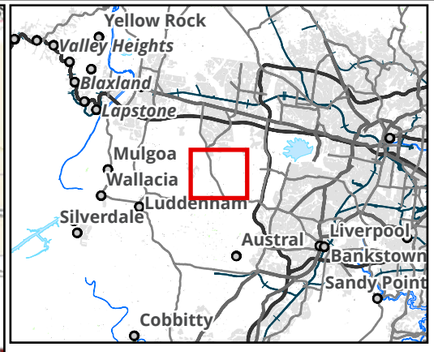
the study area (Table 3). None of these AHIMS sites were identified within the study area. The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available. These descriptions and maps were relied upon where notable discrepancies occurred.

It should be noted that the AHIMS database reflects Aboriginal sites that have been officially recorded and included on the list. Large areas of NSW have not been subject to systematic, archaeological survey; hence AHIMS listings may reflect previous survey patterns and should not be considered a complete list of Aboriginal sites within a given area. Some recorded sites consist of more than one element, for example artefacts and PAD, however for the purposes of this breakdown and the predictive modelling, all individual site types will be studied and compared. This explains why there are 117 results presented here, compared to the 112 sites identified in AHIMS.

**Table 3 AHIMS search results**

| Site type | Occurrences | Frequency (%) |
|---|---|---|
| **Artefact** | 105 | 89.74 |
| **PAD** | 11 | 9.41 |
| **Grinding groove** | 1 | 0.85 |
| **Total** | **117** | **100.00** |

A simple analysis of the Aboriginal cultural heritage sites registered within a 1.5 by 1.5 kilometre search of the study area indicates that the dominant site type is artefacts, representing 89.74% (n=105), with PAD represented by 9.41% (n=11). Grinding groove was represented by 0.85% (n=1).




**Legend**

- Study area
- AHIMS

NOT TO BE MADE PUBLIC

**Figure 7 AHIMS within the vicinity of the study area**

0 200 400 600 800

Metres

Scale: 1:20,000@ A3

*Coordinate System:*
*GDA 1994 MGA Zone 56*

N

Matter: 38335, Date: 29 March 2023,
Drawn by: JEt, Checked by: AK, Last edited by: amackegard
Location: P:\38300s\38335\Mapping\
38335_AldingtonRd, Layout: 38335_ADDA_F7_AHIMS_MamreRd

### 3.3.2. Predictive statements

A series of statements been formulated to broadly predict the type and character of Aboriginal cultural heritage sites likely to exist throughout the study area and where they are more likely to be located.

This model is based on:

- Local and regional site distribution in relation to landform features identified within the study area.
- Consideration of site type, raw material types and site densities likely to be present within the study area.
- Findings of the ethnohistorical research on the potential for material traces to present within the study area.
- Potential Aboriginal use of natural resources present or once present within the study area.
- Consideration of the temporal and spatial relationships of sites within the study area and surrounding region.

Based on this information, a predictive model has been developed, indicating the site types most likely to be encountered during the survey and subsequent sub-surface investigations across the present study area (Table 4). The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the study area.

**Table 4 Aboriginal site prediction statements**

| Site type | Site description | Potential |
|---|---|---|
| **Flaked stone artefact scatters and isolated artefacts** | Artefact scatter sites can range from high-density concentrations of flaked stone and ground stone artefacts to sparse, low-density 'background' scatters and isolated finds. | Low: Stone artefact sites have been previously recorded in the region across a wide range of landforms including alluvial landforms, crests and gentle slopes. As the study area has been extensively disturbed, there is low potential for this site type to be present within the study area. |
| **PADs** | Potential sub surface deposits of cultural material. | Low: PADs have been previously recorded in the region across a wide range of landforms. However, as the study area has been extensively disturbed, there is low potential for this site type to be present within the study area. |
| **Axe grinding grooves** | Grooves created in stone platforms through ground stone tool manufacture. | Low: There has been no previously recorded grinding groves within the vicinity of the study area. There is low potential for axe grinding grooves to be present as suitable sandstone exposures are unlikely to occur within the study area due to the underlying geology. |
| **Shell middens** | Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time. | Low: Shell midden sites have not been recorded within proximity to the study area. There are no perennial water sources within the study area therefore the potential for shell midden sites is considered low. |
| **Aboriginal ceremony and** | Such sites are often intangible places and features and are identified through oral | Low: There are currently no recorded mythological stories for the study area. |

| Site type | Site description | Potential |
|---|---|---|
| **Dreaming Sites** | histories, ethnohistoric data, or Aboriginal informants. | |
| **Post-contact sites** | These are sites relating to the shared history of Aboriginal and non-Aboriginal people of an area and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post-contact Aboriginal use. | Low: There are no post-contact sites previously recorded in the study area and historical sources do not identify one. |
| **Aboriginal places** | Aboriginal places may not contain any 'archaeological' indicators of a site but are nonetheless important to Aboriginal people. They may be places of cultural, spiritual, or historic significance. Often, they are places tied to community history and may include natural features (such as swimming and fishing holes), places where Aboriginal political events commenced or particular buildings. | Low: There are currently no recorded Aboriginal historical associations for the study area. |
| **Burials** | Aboriginal burial sites. | Low: Aboriginal burial sites are generally situated within deep, soft sediments, caves, or hollow trees. Areas of deep sandy deposits will have the potential for Aboriginal burials. The soil profiles associated with the study area are not commonly associated with burials. |
| **Quarries** | Raw stone material procurement sites. | Low: There is no record of any quarries being within or surrounding the study area. |
| **Rock shelters with art and / or deposit** | Rock shelter sites include rock overhangs, shelters, or caves, and generally occur on, or next to, moderate to steeply sloping ground characterised by cliff lines and escarpments. These naturally formed features may contain rock art, stone artefacts or midden deposits and may also be associated with grinding grooves. | Nil: The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist, which are not present in the study area. |
| **Modified trees** | Trees with cultural modifications | Nil: Aerial images indicate that large vegetation within the study area has been removed. Therefore, there is no potential for modified trees within this area. |

# 4. Archaeological investigation

An archaeological investigation of the study area was undertaken on 22 November by Anthea Vella (Biosis, Heritage Consultant), Steve Randall (Deerubbin LALC, Cultural Sites Officer), and Lana Wedgewood (Darug Custodian Aboriginal Corporation, Cultural Sites Officer). The survey sampling strategy, methodology and a discussion of results are provided below.

## 4.1. Archaeological survey aims

The principle aims of the survey were to:

- Undertake a systematic survey of the study area targeting areas with the potential for Aboriginal heritage.
- Identify and record Aboriginal archaeological sites visible on the ground surface.
- Identify and record areas of Aboriginal archaeological and cultural sensitivity.

## 4.2. Survey methods

The survey was conducted on foot. Recording during the survey followed the archaeological survey requirements of the code and industry best practice methodology. Information that recorded during the survey included:

- Aboriginal objects or sites present in the study area during the survey.
- Survey coverage.
- Any resources that may have potentially been exploited by Aboriginal people.
- Landform elements, distinguishable areas of land approximately 40m across or with a 20m radius (CSIRO 2009).
- Photographs of the site indicating landform.
- Ground surface visibility (GSV) and areas of exposure.
- Observable past or present disturbances to the landscape from human or animal activities.
- Aboriginal artefacts, culturally modified trees, or any other Aboriginal sites.

Where possible, the identification of natural soil deposits within the study area was undertaken. Photographs and recording techniques were incorporated into the survey including representative photographs of survey units, landform, vegetation coverage, GSV and the recording of soil information for each survey unit were possible. Any potential Aboriginal objects observed during the survey were documented and photographed. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements were recorded using a hand-held Global Positioning System and the Map Grid of Australia (94) coordinate system.

## 4.3. Constraints to the survey

With any archaeological survey there are several factors that influence the effectiveness (the likelihood of finding sites) of the survey. The factors that contributed most to the effectiveness of the survey within the study area were access, and extensive grass coverage. Mamre Road was not surveyed on 22 November 2022

due to safety concerns regarding traffic, photos were taken at the corner of Mamre and Abbotts Road of this area. The survey was undertaken along the road reserve, where possible, and photos were taken of fence lines.

## 4.4. Visibility

In most archaeological reports and guidelines visibility refers to GSV, and is usually a percentage estimate of the ground surface that is visible and allowing for the detection of (usually stone) artefacts that may be present on the ground surface (DECCW 2010b). GSV across the site was low (10%), hindered by extensive grass coverage and access (Photo 9).

**Photo 9 General visibility in the study area along Abbotts Road, photo facing north-west**

## 4.5. Exposure

Exposure refers to the geomorphic conditions of the local landform being surveyed and attempts to describe the relationship between those conditions and the likelihood the prevailing conditions provide for the exposure of (buried) archaeological materials. Whilst also usually expressed as a percentage estimate, exposure is different to visibility in that it is in part a summation of geomorphic processes, rather than a simple observation of the ground surface (Burke & Smith 2004, pp. 79, DECCW 2010b).

Overall, the study area displayed very few areas of high exposure, mainly present around vehicle access areas. Low areas of exposure were due to the extensive grass coverage. Approximately 5% of the study area was subject to exposure (Photo 10).

**Photo 10 Exposure within the study area, photo facing north-east**

## 4.6. Disturbances

Disturbance in the study area is associated with natural and human agents. Natural agents generally affect small areas and include the burrowing and scratching in soil by animals, such as wombats, foxes, rabbits, and wallabies, and sometimes exposure from slumping or scouring. Disturbances associated with recent human action are prevalent in the study area and cover large sections of the land surface. Examples of human agents can include the construction of roads and driveways, residential development such as landscaping and construction of residential buildings; farming practices, such as initial vegetation clearance for creation of paddocks, fencing and stock grazing; and agricultural practices.

Disturbance levels within the study area were assessed during the visual inspection. Levels of disturbance were categorised through an inspection of the ground surface, landforms, and aerial imagery. Disturbance levels within the study area have been categorised according to the following criteria:

- High disturbance—the landform has been heavily disturbed and all natural soil horizons have been displaced or removed, these areas are unlikely to contain Aboriginal cultural material.
- Moderate disturbance—the landform has undergone disturbances to a certain degree, but the extent and nature of these disturbances cannot be fully quantified. Aboriginal cultural material may be present within these locations but is unlikely to be *in situ*.
- Low disturbance—the landform has not been significantly disturbed and is highly likely to contain intact soil horizons. Aboriginal cultural material if present is likely to be *in situ*.

The study area has been subject to disturbance by human activity. Historic and recent aerials (Photo 4 to Photo 8) show that the study area has been subject to moderate–high levels of disturbance. This has occurred in the forms of vegetation clearance, the construction of Mamre Road, Abbotts Road and adjoining streets

and roads, the construction of dams and driveways, market gardening, signage and surface and sub-surface infrastructure (Photo 11 and Photo 12).

**Photo 11 Area of disturbance near intersection of Mamre and Abbotts Roads, facing south-west**

**Photo 12 Area of disturbance near intersection of Mamre and Abbotts Roads, facing south-west**

## 4.7. Investigation results and discussion

The archaeological investigation of the study area was undertaken by Biosis Heritage Consultant Anthea Vella, Cultural Sites Officer Steven Randall of Deerubbin LALC and Cultural Sites Officer Lana Wedgewood of Custodian Aboriginal Corporation. The investigation consisted of meandering transect walked across Aldington Road and Abbots Road. Mamre Road was unable to be physically surveyed due to site access issues, however, observations of these areas were made from Abbotts Road. GSV along Mamre Road was poor (see Photo 9, therefore a physical survey of this portion of the study area is unlikely to have influenced the results of the field investigation. No previously unrecorded Aboriginal sites were identified during the field investigation; however, this is likely attributed to poor GSV and ground disturbances, rather than an absence of Aboriginal occupation of the area. As portions of the study area were inaccessible, the identification of archaeological potential within the study area are based upon observations made in the field and predictive modelling for the local region. The results of the field investigation have been summarised below and transect locations are provided in Figure 8.

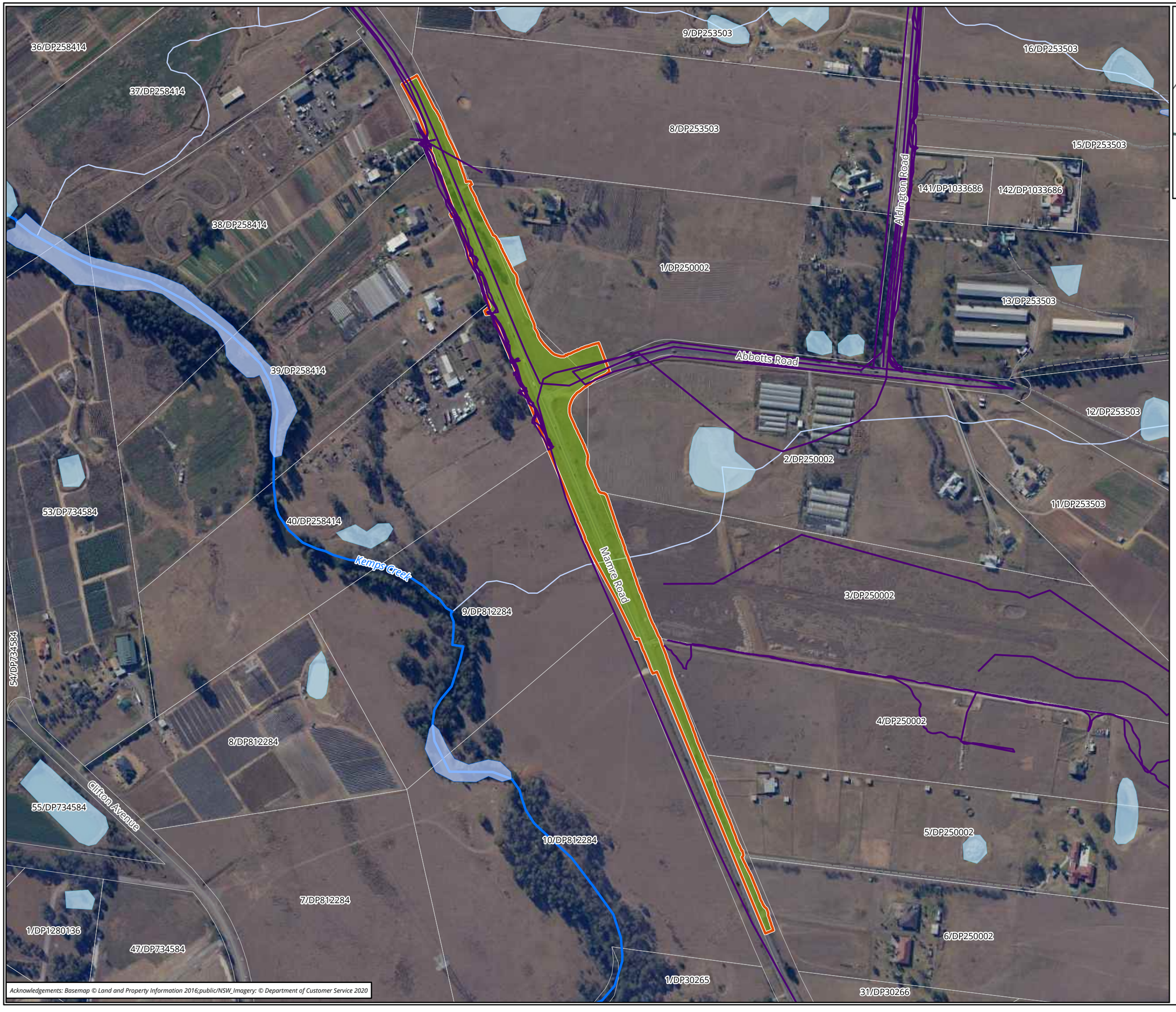
As discussed above, a review of historical aerial photographs (Photo 4 to Photo 8) shows significant development has occurred within the study area. Disturbances include historical vegetation clearance, the construction of Mamre Road, Abbotts Road, adjoining roads and streets, the construction of small structures and driveways, market gardening, and surface and sub-surface infrastructure (see Photo 11 and Photo 12). During the field investigation, it was discussed with Steve Randall of Deerubbin LALC, and Lana Wedgewood of Darug Custodian Aboriginal Corporation, that prior to development the road was likely to contain PAD, that may have otherwise been present had the road not been constructed. Therefore, the study area was considered likely to possess low archaeological potential

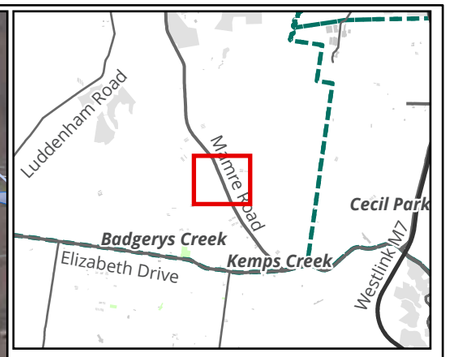
This was supported by background research which identified that the study area is contained within the Blacktown soil landscape. The Blacktown soil landscape is located within a small portion of the study area and is characterised as a residual soil landscape formed by the slow accumulation of sediment over extended periods of time. As a result of this slow aggregation process and the typical age of these soils, residual soil landscapes have reasonable potential to preserve archaeological deposits. As the study area is present within a flat gentle slope, it suggests that the total depth of the soils within the study area is less than 100 centimetres with artefact bearing deposits typically ceasing at 30–40 centimetres upon clay/bedrock (Chapman et al. 1989, pp. 32). The soil depths throughout the Blacktown landscape suggest that intact, subsurface archaeological deposits could be found within the study area in areas with minimal disturbance. However, the degree and nature of disturbances in the study area has varied from moderate to high throughout time. This coupled with the typical soil depths throughout the Blacktown landscape suggests that intact, subsurface archaeological deposits are unlikely to be in the study area.

Furthermore, predictive modelling by JMCHM for the wider area primarily identified the potential for sites to be present in association with water sources, with the size and density increasing with stream order (JMCHM 2000). JMCHM (1997) suggested that the frequencies and densities of Aboriginal sites in association with lower order tributaries are likely to be low and to represent sites that were one-off camping locations. Predictive modelling established by AMBS (2012) suggested that sites are most frequently located in close proximity to permanent water courses on creek banks, alluvial flats, or high ground; and that large artefact scatters may be identified up to 200–250 metres away from water courses. Recent archaeological excavations undertaken by Biosis are congruent with these finding, with high-density deposits identified in proximity to perennial water sources (Biosis 2017, Biosis 2018, Biosis 2019, Biosis 2020). The current study area is in proximity to lower-order stream. There is one second-order non-perennial creek line that crosses the study area along Mamre Road and travels across to the south of Abbotts Road. The nearest permanent, higher-order watercourse is located approximately 351 metres west of the study area at its closest point. This suggests that the site was unlikely to have been occupied for extensive periods of time by Aboriginal groups,

and Aboriginal sites within the study area are likely to be low density deposits found within intact soil deposits, if present.

Surveyors' were unable to survey Mamre Road due to site access issues and safety concerns. Some of these unsurveyed areas were indicated in the MRP DCP as possessing moderate-high archaeological potential. It was noted by Heritage NSW in their review of the DCP that the designations of potential were primarily based on a desktop assessment and predictive modelling with very limited field survey. Most of the areas of moderate-high Aboriginal potential marked on the MRP DCP within the study area fall within the road reserve, and therefore have been highly disturbed during its construction. Therefore, background research and a previous survey conducted by Biosis (Biosis Pty Ltd 2022) on 22 November 2022 for AT&L coupled with observations made within the field and comments from Aboriginal stakeholders has led to the conclusion that the study area possesses low archaeological potential (Figure 8).




**Legend**

- Study area
- Lot
- Survey tracks from previous assessments

**Archaeological potential**

- Low

**Figure 8 Survey effort and results**

0 25 50 75 100

Metres

Scale: 1:4,500@ A3

*Coordinate System: GDA 1994 MGA Zone 56*

N

Matter: 38335, Date: 31 March 2023,
Drawn by: AM Checked by: AK, Last edited by: lharley
Location: P:\38300s\38335\Mapping\
38335_AldingtonRd, Layout: 38335_ADDA_F8_SurveyEffort

# 5. Conclusions and recommendations

## 5.1. Conclusions

The results of the desktop assessment and archaeological investigation have identified that the study area possesses low archaeological potential (Figure 8). This was determined based upon observations made in the field, in consultation with Aboriginal stakeholders, and through a review of historical aerials, previous archaeological studies, and the study area's landscape context, as discussed above. Though Mamre Road was unable to be surveyed, a pedestrian survey of this area would be unlikely to change the outcome of this assessment due to poor GSV evident in this portion of the study area. The results of this assessment are summarised in the due diligence flow chart shown in Figure 9.

## 5.2. Recommendations

The following management recommendations have been developed relevant to the study area and influenced by:

- Predicted impacts to Aboriginal cultural heritage.
- The planning approvals framework.
- Current best conservation practise, widely considered to include:
  - Ethos of *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter).
  - The code.

Prior to any impacts occurring within the study area, the following is recommended:

### Recommendation 1: No further archaeological assessment in areas of low potential

No further archaeological work is required in areas of low archaeological potential. Works can proceed with caution following recommendation 2, 3 and 4.

### Recommendation 2: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or state significance and are protected in NSW under the Heritage Act. Relics cannot be disturbed except with a permit or exception notification. Should unanticipated relics be discovered while the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. Heritage NSW will require notification if the find is assessed as a relic.

### Recommendation 3: Discovery of Unanticipated Aboriginal Objects

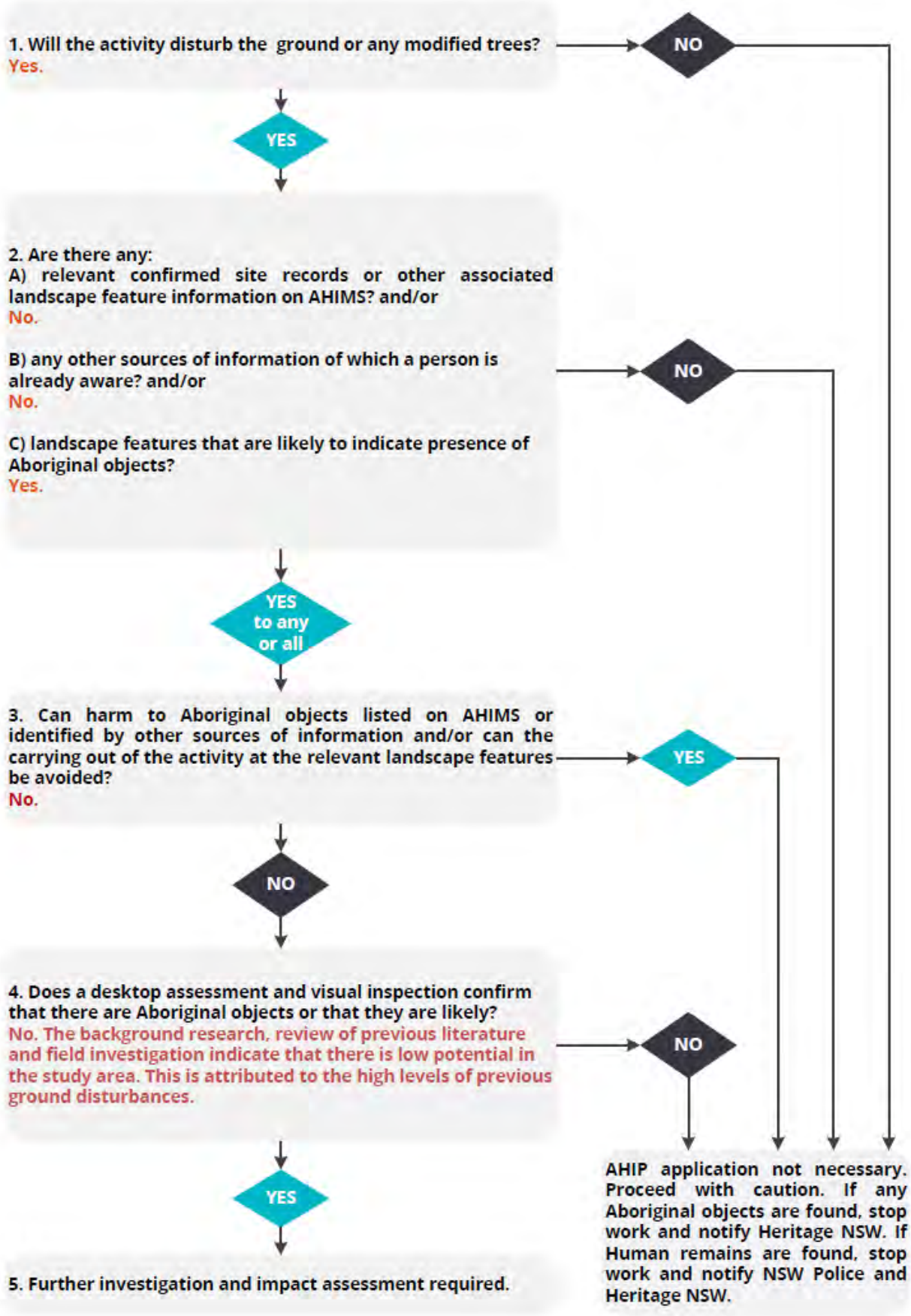
All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Heritage NSW. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying the Heritage NSW and Aboriginal stakeholders.

### Recommendation 4: Discovery of Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by Heritage NSW.

**Figure 9** **Due diligence flow chart**



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# Appendices

# Appendix 1 AHIMS search results

**This Appendix is not to be made public.**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-4-0971 | EP3 - "Erskine Park 3" | AGD | 56 | 295814 | 6254965 | Open site | Valid | Artefact : - | Open Camp Site | 97503 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0972 | EP4 - "Erskine Park 4 " | AGD | 56 | 295740 | 6254900 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0973 | EP5 - " Erskine Park 5 " | AGD | 56 | 295349 | 6254843 | Open site | Valid | Artefact : - | Isolated Find | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0974 | EP7 - "Erskine Park 7" | AGD | 56 | 294580 | 6255220 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | 2256 | |
| 45-4-0975 | EP6 - " Erskine Park 6 " | AGD | 56 | 294652 | 6255153 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0976 | EP8 - " Erskine Park 8 " | AGD | 56 | 294657 | 6254870 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0977 | EP9 - " Erskine Park 9 " | AGD | 56 | 295440 | 6254955 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0978 | EP2 - " Erskine Park 2 " | AGD | 56 | 295615 | 6254982 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-4-0970 | EP1 - "Esrkine Park 1" | AGD | 56 | 295277 | 6254955 | Open site | Valid | Artefact : - | Open Camp Site | 97503,98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald,Stephanie Garling | | | | | **Permits** | | |
| 45-5-2516 | Erskine Park Quarry 6 (EPQ6) | AGD | 56 | 296580 | 6255120 | Open site | Valid | Artefact : - | Open Camp Site | 98435 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald,Mr.Mark Rawson | | | | | **Permits** | 2076,2188 | |
| 45-5-0604 | Cecil Park 1 | AGD | 56 | 297350 | 6251470 | Open site | Valid | Artefact : - | Open Camp Site | 1283,98435 |
| | **Contact** | **Recorders** | Smith,M Hanckel | | | | | **Permits** | 694 | |
| 45-5-0605 | Cecil Park 2 | AGD | 56 | 297600 | 6251780 | Open site | Valid | Artefact : - | Open Camp Site | 1283,98435 |
| | **Contact** | **Recorders** | Smith,M Hanckel | | | | | **Permits** | | |
| 45-5-0215 | South Creek | AGD | 56 | 293800 | 6249900 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | 362 |
| | **Contact** | **Recorders** | Ms.Laila Haglund | | | | | **Permits** | | |
| 45-5-0496 | Fleurs1 Fleurs Radio Telescope | AGD | 56 | 293750 | 6250730 | Open site | Valid | Artefact : - | Open Camp Site | 961,1018,98435 |
| | **Contact** | **Recorders** | University of Sydney | | | | | **Permits** | | |
| 45-5-2857 | HP1 | AGD | 56 | 297500 | 6255160 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Mr.John Appleton | | | | | **Permits** | | |
| 45-5-3065 | EPR1 | AGD | 56 | 294147 | 6255326 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Doctor.Susan (left ahms) Mcintyre-Tamwoy | | | | | **Permits** | 2255 | |
| 45-5-3066 | EPR2 | AGD | 56 | 294184 | 6255333 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | M McIntyre | | | | | **Permits** | 2255 | |
| 45-5-3067 | EPR3 | AGD | 56 | 294240 | 6255315 | Open site | Valid | Artefact : - | | |

**Report generated by AHIMS Web Service on 17/11/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 293592.452 - 297716.899, Northings : 6249989.985 - 6255548.948 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 112**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Contact** | **Recorders** | M McIntyre | | | | | **Permits** | 2255 | |
| 45-5-3058 | EV1 | AGD | 56 | 295751 | 6254547 | Open site | Valid | Artefact : -, Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Jim Wheeler | | | | | **Permits** | | |
| 45-5-3059 | EV2 | AGD | 56 | 295663 | 6254735 | Open site | Valid | Artefact : -, Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Jim Wheeler | | | | | **Permits** | 2237 | |
| 45-5-3060 | EV3 | AGD | 56 | 295666 | 6254988 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Jim Wheeler | | | | | **Permits** | 2237,2391 | |
| 45-5-3061 | EV4 | AGD | 56 | 295822 | 6254837 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Mr.Alan Wheatley | | | | | **Permits** | 2391 | |
| 45-5-3028 | EPTA3 | AGD | 56 | 294160 | 6254370 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3029 | EPTA4 | AGD | 56 | 294850 | 6253540 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3030 | EPTA5 | AGD | 56 | 295170 | 6253570 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3031 | EPTA6 | AGD | 56 | 295210 | 6253410 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3032 | EPTA10 | AGD | 56 | 293580 | 6253610 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3034 | EP-I 1 | AGD | 56 | 295260 | 6253400 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3035 | EP-I 2 | AGD | 56 | 295190 | 6253500 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-3036 | EP-I 3 | AGD | 56 | 295240 | 6253710 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd | | | | | **Permits** | 2188 | |
| 45-5-2992 | Erskine Park Quarry (EPQ1) | AGD | 56 | 296600 | 6255175 | Open site | Valid | Artefact : - | | |
| | **Contact** T Russell | **Recorders** | Doctor.Jo McDonald,Mr.Mark Rawson | | | | | **Permits** | 2076,2188 | |
| 45-5-3266 | Erskine Park Roadworks (EPR 3) | AGD | 56 | 294240 | 6255315 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Doctor.Susan (left ahms) Mcintyre-Tamwoy | | | | | **Permits** | | |
| 45-5-3267 | Erskine Park Roadworks (EPR 1) | AGD | 56 | 294147 | 6255326 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Doctor.Susan (left ahms) Mcintyre-Tamwoy | | | | | **Permits** | | |
| 45-5-3268 | Erskine Park Roadworks (EPR 2) | AGD | 56 | 294184 | 6255333 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Doctor.Susan (left ahms) Mcintyre-Tamwoy | | | | | **Permits** | | |

**Report generated by AHIMS Web Service on 17/11/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 293592.452 - 297716.899, Northings : 6249989.985 - 6255548.948 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 112**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-3273 | erskine park roadworks (EPR 7) | GDA | 56 | 294262 | 6255398 | Open site | Valid | Artefact : 1 | | |
| | **Contact** Searle | **Recorders** | Doctor.Susan (left ahms) Mcintyre-Tamwoy,Mrs.Tessa Boer-Mah | | | | | **Permits** | | |
| 45-5-3382 | Oakdale Campsite 1 | AGD | 56 | 297377 | 6255038 | Open site | Partially Destroyed | Artefact : 3 | | 103482 |
| | **Contact** Searle | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | 3728 | |
| 45-5-3383 | Oakdale Campsite 2 | AGD | 56 | 297391 | 6254871 | Open site | Valid | Artefact : 3 | | |
| | **Contact** Searle | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-3384 | Oakdale Campsite 3 | AGD | 56 | 297295 | 6254935 | Open site | Valid | Artefact : 3 | | |
| | **Contact** Searle | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-3385 | Oakdale Campsite 4 | GDA | 56 | 296733 | 6254945 | Open site | Destroyed | Artefact : 3 | | |
| | **Contact** Searle | **Recorders** | Dominic Steele Archaeological Consulting,Artefact - Cultural Heritage Management | | | | | **Permits** | | |
| 45-5-2518 | Erskine Park Quarry 1 (EPQ1) | AGD | 56 | 296600 | 6255175 | Open site | Valid | Artefact : - | Open Camp Site | |
| | **Contact** | **Recorders** | Unknown Author | | | | | **Permits** | | |
| 45-5-4102 | Kemps Creek IF1 | GDA | 56 | 295565 | 6253701 | Open site | Valid | Artefact : 1 | | 104747 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-4103 | Kemps Creeks IF2 | GDA | 56 | 294737 | 6254040 | Open site | Valid | Artefact : 1 | | 104747 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-4104 | Kemps Creek (logosoc1) | GDA | 56 | 295307 | 6254094 | Open site | Valid | Artefact : 1 | | 104747 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-4105 | Kemps Creek (logosoc2) | GDA | 56 | 295265 | 6254066 | Open site | Valid | Artefact : - | | 104747 |
| | **Contact** | **Recorders** | Dominic Steele Archaeological Consulting | | | | | **Permits** | | |
| 45-5-4328 | Oakdale Central 2 | GDA | 56 | 297701 | 6255070 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | GML Heritage Pty Ltd - Surry Hills,Miss.Diana Cowie | | | | | **Permits** | | |
| 45-5-4329 | Oakdale Central 3 | GDA | 56 | 297665 | 6255265 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | GML Heritage Pty Ltd - Surry Hills,Miss.Diana Cowie | | | | | **Permits** | | |
| 45-5-4330 | Oakdale Central 4 | GDA | 56 | 297614 | 6255227 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | GML Heritage Pty Ltd - Surry Hills,Miss.Diana Cowie | | | | | **Permits** | | |
| 45-5-4524 | Oakdale South AS1 | GDA | 56 | 297508 | 6254973 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |
| 45-5-4525 | Oakdale South IF2 | GDA | 56 | 297566 | 6254552 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |
| 45-5-4526 | Oakdale South AS2 | GDA | 56 | 297513 | 6254618 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |
| 45-5-4527 | Oakdale South IF1 | GDA | 56 | 297516 | 6254817 | Open site | Valid | Artefact : - | | 104331 |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |
| 45-5-4528 | Oakdale South AS3 | GDA | 56 | 297508 | 6254390 | Open site | Valid | Artefact : - | | 104331 |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |

**Report generated by AHIMS Web Service on 17/11/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 293592.452 - 297716.899, Northings : 6249989.985 - 6255548.948 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 112**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-4529 | Oakdale South AS4 | GDA | 56 | 297190 | 6253944 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms | | | | | **Permits** | | |
| 41-5-0016 | MNPAD01 | GDA | 56 | 293879 | 6255448 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats,Mrs.S | | | | | **Permits** | 4655 | |
| 45-5-4672 | Oakdale West Artefact Scatter 1 (OW AS 1) | GDA | 56 | 297234 | 6255014 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Mr.Josh Symons | | | | | **Permits** | | |
| 45-5-4673 | Oakdale West Isolated Find 1 (OW IF 1) | GDA | 56 | 297349 | 6255114 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.Ryan Tadd | | | | | **Permits** | | |
| 45-5-4674 | Oakdale West Artefact Scatter 2 (OW AS 2) | GDA | 56 | 297355 | 6255099 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Mr.Josh Symons | | | | | **Permits** | | |
| 45-5-4675 | Oakdale West Isolated Find (OW IF 2) | GDA | 56 | 296627 | 6254876 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.Ryan Tadd | | | | | **Permits** | | |
| 45-5-4676 | Oakdale West Isolated Find 3 | GDA | 56 | 295882 | 6254754 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.Ryan Tadd | | | | | **Permits** | | |
| 45-5-4718 | Mamre West Precinct - Archaeological Deposit 2 (MWP-AD2) | GDA | 56 | 294095 | 6255380 | Open site | Valid | Artefact : - | | 104138,104145 |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Miss.Shannon Smith | | | | | **Permits** | | |
| 45-5-4719 | Mamre West Precinct - Archaeological Deposit 4 (MWP-AD4) | GDA | 56 | 294089 | 6255064 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Miss.Shannon Smith | | | | | **Permits** | | |
| 45-5-4720 | Mamre West Precinct - Archaeological Deposit 3 (MWP-AD3) | GDA | 56 | 293670 | 6255005 | Open site | Valid | Artefact : - | | 104138 |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Sydney,Biosis Pty Ltd - Wollongong,Mr.James Cole,Miss.Shannon Sn | | | | | **Permits** | | |
| 45-5-4749 | M12 A4 | GDA | 56 | 293785 | 6251051 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes | | | | | **Permits** | | |
| 45-5-5133 | Oakdale West 18 Isolated Find 01 | GDA | 56 | 296303 | 6254317 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5134 | Oakdale West 18 Artefact Scatter 02 | GDA | 56 | 296886 | 6254515 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5135 | Oakdale West 18 Artefact Scatter 03 | GDA | 56 | 296777 | 6254242 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5136 | Oakdale West 18 Isolated Find 02 | GDA | 56 | 296659 | 6254589 | Closed site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5137 | Oakdale West 18 Artefact Scatter 01 | GDA | 56 | 297167 | 6254820 | Closed site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5187 | MSP-01 | GDA | 56 | 294210 | 6254558 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats,Mrs.S | | | | | **Permits** | | |
| 45-5-5188 | MSP-02 | GDA | 56 | 293594 | 6253823 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats,Mrs.S | | | | | **Permits** | | |

**Report generated by AHIMS Web Service on 17/11/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 293592.452 - 297716.899, Northings : 6249989.985 - 6255548.948 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 112**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 41-5-0014 | M12-AS-04 | GDA | 56 | 294361 | 6250957 | Open site | Destroyed | Artefact : 1 | | |
| | **Contact** | **Recorders** | Jacobs Group (Australia) Pty Ltd - Newcastle,Miss.Chelsea Jones,Mr.Matthew Kellel | | | | | **Permits** | | |
| 45-5-5186 | Mamre Road Artefact Scatter 1901 (MAM AS1901) | GDA | 56 | 295114 | 6253373 | Open site | Valid | Artefact : -, Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5274 | Bakers Lane SLR AFT 1 | GDA | 56 | 295915 | 6254097 | Open site | Partially Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats,Mr.Matthew Kelleher,Kelleher Nig | | | | | **Permits** | | |
| 45-5-5268 | Kemps Creek IF-02 | GDA | 56 | 295030 | 6253859 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker | | | | | **Permits** | | |
| 45-5-5269 | Kemps Creek IF-01 | GDA | 56 | 294976 | 6253943 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker | | | | | **Permits** | | |
| 45-5-5303 | Kemps North West (KNW) PAD | GDA | 56 | 295455 | 6250265 | Open site | Valid | Artefact : 1, Potential Archaeological Deposit (PAD) : 1 | | |
| | **Contact** | **Recorders** | Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney | | | | | **Permits** | | |
| 45-5-5306 | South Creek East (SCE) | GDA | 56 | 293940 | 6251020 | Open site | Valid | Artefact : 1, Potential Archaeological Deposit (PAD) : 1 | | |
| | **Contact** | **Recorders** | Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney,Mr.Matthew K | | | | | **Permits** | | |
| 45-5-5315 | MRP-OS2 | GDA | 56 | 296737 | 6253925 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid | | | | | **Permits** | | |
| 45-5-5316 | MRP-OS1 | GDA | 56 | 294413 | 6252254 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid | | | | | **Permits** | | |
| 45-5-5358 | OW 19 IF 2 | GDA | 56 | 296486 | 6254788 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5359 | OW 19 IF 1 | GDA | 56 | 296535 | 6254830 | Open site | Destroyed | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma | | | | | **Permits** | | |
| 45-5-5340 | MSP-05 | GDA | 56 | 294016 | 6254604 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5341 | MSP-06 | GDA | 56 | 294123 | 6254552 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5342 | MSP-07 | GDA | 56 | 294146 | 6254469 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5343 | MSP-08 | GDA | 56 | 294155 | 6254417 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5344 | MSP-09 | GDA | 56 | 294469 | 6253984 | Open site | Valid | Artefact : - | | |

**Report generated by AHIMS Web Service on 17/11/2022 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 293592.452 - 297716.899, Northings : 6249989.985 - 6255548.948 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 112**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5345 | MSP-10 | GDA | 56 | 294548 | 6253896 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5357 | Oakdale West Industrial Estate Artefact Reburial | GDA | 56 | 297245 | 6255243 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Ryan Taddeucci | | | | | **Permits** | | |
| 45-5-5486 | MR902TE_AS1 | GDA | 56 | 295460 | 6252681 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Austral Archaeology - Wollongong,Mr.Ricardo Servin | | | | | **Permits** | | |
| 45-5-5467 | ARKC Area 1 | GDA | 56 | 296685 | 6252817 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5468 | ARKC Area 3 | GDA | 56 | 296932 | 6253304 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5469 | ARKC Area 2 | GDA | 56 | 296768 | 6253309 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5634 | Mamre Road PAD 1 | GDA | 56 | 296283 | 6251079 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5565 | BakersLn PAD3 | GDA | 56 | 295361 | 6253886 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5566 | BakersLn PAD4 | GDA | 56 | 295463 | 6254049 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5567 | BakersLn PAD5 | GDA | 56 | 295258 | 6253931 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5568 | ALD-RD-PAD-01 | GDA | 56 | 295809 | 6253440 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | 104841,104842 |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5569 | BakersLn PAD2 | GDA | 56 | 295194 | 6253772 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5570 | BakersLn PAD1 | GDA | 56 | 295064 | 6254052 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5619 | Bakers Lane PAD01 | GDA | 56 | 295382 | 6254225 | Open site | Valid | Potential Archaeological Deposit (PAD) : - | | |

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : 38335 AV

Client Service ID : 733150

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status ** | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Michael Lever | | | | | **Permits** | | |
| 45-5-5632 | 805MAMRE-AS01 | GDA | 56 | 294607 | 6253281 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Mr.Michael Lever | | | | | **Permits** | | |
| 45-5-5501 | 784 Mamre Rd AFT1 | GDA | 56 | 295424 | 6253360 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Urbis Pty Ltd - Angel Place L8 123 Pitt | | | | | **Permits** | | |
| 45-5-5502 | Aldington Rd Kemps Ck IF-1 | GDA | 56 | 296357 | 6251913 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Mr.Owen Barrett | | | | | **Permits** | | |
| 45-5-5503 | Abbot's Rd Kemps Creek IF1 | GDA | 56 | 296422 | 6251265 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Mr.Owen Barrett | | | | | **Permits** | | |
| 45-5-5504 | Abbot's Rd Kemps Creek IF2 | GDA | 56 | 296149 | 6251410 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Mr.Owen Barrett | | | | | **Permits** | | |
| 45-5-5505 | Abbott's Rd Kemps Creek IF3 | GDA | 56 | 296168 | 6251367 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Mr.Owen Barrett | | | | | **Permits** | | |
| 45-5-5607 | Aldington Road 01 | GDA | 56 | 296335 | 6253304 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Austral Archaeology - Wollongong,Miss.Stephanie Moore | | | | | **Permits** | | |
| 45-5-5608 | Aldington Road 02 | GDA | 56 | 296072 | 6253285 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Austral Archaeology - Wollongong,Miss.Stephanie Moore | | | | | **Permits** | | |
| 45-5-5609 | Aldington Road 03 | GDA | 56 | 296045 | 6253055 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Austral Archaeology - Wollongong,Miss.Stephanie Moore | | | | | **Permits** | | |
| 45-5-5610 | Aldington Road 04 | GDA | 56 | 295845 | 6253075 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Austral Archaeology - Wollongong,Miss.Stephanie Moore | | | | | **Permits** | | |
| 45-5-5578 | Aldington Road Kemps Creek PAD 1 | GDA | 56 | 296008 | 6252610 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats | | | | | **Permits** | | |
| 45-5-5614 | Bakers Lane IF 01 | GDA | 56 | 295828 | 6254057 | Open site | Valid | Artefact : - | | |
| | **Contact** | **Recorders** | Artefact - Cultural Heritage Management - Pyrmont,Ms.Isabel Wheeler | | | | | **Permits** | | |

**** Site Status**

**Valid** - The site has been recorded and accepted onto the system as valid

**Destroyed** - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

**Partially Destroyed** - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

**Not a site** - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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