Lot 10 DP 1157491, Eastern Creek, NSW

Aboriginal and Historical Heritage Study

Prepared for Department of Planning & Environment

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Abbreviations

Abbreviation	Description
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AHD	Australian Heritage Database
CHL	Commonwealth Heritage List
DCP	Development Control Plan
DPE	Department of Planning & Environment
ELA	Ecological Australia Pty Ltd
LEP	Local Environment Plan
LGA	Local Government Area
NHL	National Heritage List
RNE	Register of the National Estate
SHI	State Heritage Inventory
SHR	State Heritage Register
WHL	World Heritage List

Executive summary

Eco Logical Australia (ELA) was commissioned by the NSW Department of Planning and Environment to prepare a Historical and Aboriginal Heritage Study to inform a Development Control Plan for Lot 10, DP 1157491 at Eastern Creek, NSW.

The study area comprises approximately 130 hectares of former agricultural land within the southern portion of the Blacktown Local Government Area (LGA), parish of Rooty Hill, county of Cumberland. It is located to the south of the Western Motorway, bounded to the west by Ropes Creek and to the south by Old Wallgrove Road. The study area is owned by the Minister administering the *Environmental Planning and Assessment Act 1979* (EPA Act), following its compulsory acquisition in 2005 as a special uses corridor. The land is located within the Western Sydney Employment Area, and is zoned IN1 (General Industrial) under the State Environmental Planning Policy (Western Sydney Employment Area) 2009 (the WSEA SEPP). A previous assessment of the site was undertaken in 2005 (ERM).

The purpose of this current report is to identify and assess the potential and significance of Aboriginal and historic heritage currently present on the site, identify constraints and opportunities and provide appropriate management recommendations. In addition, ELA has prepared a set of recommendations, objectives and development controls for inclusion in the (Development Control Plan) DCP for the NSW Department of Planning and Environment.

The key findings of the Aboriginal heritage assessment were as follows. 17 Aboriginal sites, all previously recorded artefact sites were identified on AHIMS search within the study area. Three new Aboriginal artefact sites identified by ELA field survey. The 20 Aboriginal sites recorded for the study area are protected under the National Parks and Wildlife Act 1974 (NSW). Dense ground cover prevented the location of further artefacts, however the topography, general lack of disturbance, proximity to water and the presence of multiple sites in close proximity, suggests that additional Aboriginal objects or sites both on the surface and in subsurface archaeological deposits are likely to be present within the study area. Any future development of the subject site will result in ground modification that may have the potential to disturb Aboriginal cultural objects in the form of stone artefacts.

The key findings from the historical heritage assessment are as follows. The subject site is assessed as having high potential for the survival of an archaeological resource relating to the occupation and development of the homestead site over time. The archaeological resource is assessed as possessing local significance for association with the Chatsworth nursery and the Shepherd family. Despite their association with the development of the site, buildings such as the cottages on the hill, the long agricultural shed, the stables and the stock yards are not considered to contain a significant archaeological resource. These items are common on rural properties and were all constructed around or after 1900.

<u>Recommendations for Aboriginal cultural heritage:</u>

- If development is proposed in the future, further archaeological investigation in the form of test excavation should be undertaken to understand the nature, extent and significance of archaeological resource within different landforms in the study area. Test excavation can be undertaken following the 'Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales' (DECCW 2010). A sampling strategy / methodology should be developed and the OEH notified prior to commencement of the test excavation.
- Prior to the undertaking of test excavation, Aboriginal community consultation must be undertaken as set out in the NPW Regulation and completed to the stage described in subclause 80C(6) of the Regulation.

- Areas of moderate or high significance identified should be prioritised for conservation. If this is not achievable, archaeological salvage excavation following issue of an AHIP under Section 90 of NPW Act would be required. An AHIP application would require the preparation of an Aboriginal Cultural Heritage Assessment (ACHA) and Archaeological Technical Report (ATR) and necessitate full Aboriginal community consultation following the document 'Aboriginal cultural heritage consultation requirements for proponents 2010' (DECCW 2010). Any areas of low significance may be managed through surface salvage collection following issue of an AHIP under Section 90 of the NPW Act.
- As part of any future development consultation should be ongoing with Aboriginal stakeholders to determine cultural significance and the management of the Aboriginal heritage resource. A management plan may be developed to management the Aboriginal heritage resource and may include opportunities for interpretation through consultation with stakeholders.
- In the extremely unlikely event that human remains are found as part of future development, works should immediately cease and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the OEH should also be contacted at this time to assist in determining appropriate management.
- A copy of this report has been provided to DLALC.

Recommendations for Historical heritage:

- The homestead archaeological site should be listed on the Blacktown LEP.
- A heritage curtilage should be established around the sensitive area similar to that in Figure 41 that prevents and protects the archaeological resource from any impact or disturbance and conserves it *in situ*. An Archaeological Management Plan should be developed to manage this resource.
- If development of the archaeologically sensitive area is proposed, no ground disturbance works may proceed in areas identified as having historical archaeological potential without first obtaining an Excavation Permit pursuant to Section 139 of the *Heritage Act 1977*.
- Preparation of a research design and excavation methodology for the excavation of the site should accompany an excavation permit application to the Heritage Division OEH.
- Following the archaeological investigation, an excavation report would be prepared detailing the findings of the investigation, along with a catalogue and analysis of recovered artefacts. These items could then be removed according to regulations. No state heritage items would be removed from the site.
- An interpretation plan be developed for the site as a whole outlining the history and heritage values.

1 Introduction

1.1 Project background

Eco Logical Australia (ELA) was commissioned by the NSW Department of Planning and Environment to prepare a Historical and Aboriginal Heritage Study to inform a Development Control Plan for Lot 10, DP 1157491 at Eastern Creek, NSW.

1.2 Study area

Lot 10, DP 1157491 Eastern Creek, NSW is referred though this report as the project area or study area. The study area comprises approximately 130 hectares of former agricultural land within the southern portion of the Blacktown Local Government Area (LGA), parish of Rooty Hill, county of Cumberland. It is located to the south of the Western Motorway, bounded to the west by Ropes Creek and to the south by Old Wallgrove Road and by the east by a boundary fence, and is currently accessible from the Erskine Park Link Road.

Figure 1 Location map, the subject site in context of the surrounding area.

The study area is owned by the Minister administering the *Environmental Planning and Assessment Act 1979* (EPA Act), following its compulsory acquisition in 2005 as a special uses corridor. The land is located within the Western Sydney Employment Area, and is zoned IN1 (General Industrial) under the State Environmental Planning Policy (Western Sydney Employment Area) 2009 (the WSEA SEPP).

1.3 Purpose and scope of this assessment

The scope of this assessment covers the following tasks:

1.3.1 Aboriginal cultural heritage

For the purposes of this report, an Aboriginal archaeological assessment was prepared to understand the Aboriginal archaeological resource within the study area. The following tasks were undertaken for this project:

- A search of the Aboriginal Heritage Information Management System (AHIMS) register maintained by the Office of Environment and Heritage (OEH) to establish if there are any previously recorded Aboriginal objects or places on the properties.
- A search of the Australian Heritage Database, NSW State Heritage Inventory, Blacktown LEP 1988 and Draft LEP 2013 to determine if there any places of Aboriginal significance within or adjacent to the Study Area.
- A desktop review of relevant previous archaeological assessments and studies and to understand the local archaeological context of the surrounds.
- Review of the environmental and landscape context including geology, soils, landforms and hydrology to consider what evidence of Aboriginal occupation may exist.
- Review of the regional archaeological context, predictive model and site types that may exist in the study area.
- A review of historic aerial photographs to determine past land use patterns, any historic disturbances to the properties, and to identify potential areas of archaeological sensitivity.
- Undertake a site survey with a representative of the Deerubbin Local Aboriginal Land Council (DLALC) to verify the findings of the desktop review, to relocate and verify previously recorded sites, identify and record any previously unknown sites and document any landscape features of which may indicate the likely presence of Aboriginal sites and objects. The archaeological survey was conducted in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects (DECCW 2010a).
- Preparation of mapping of Aboriginal heritage sites identified.
- Preparation of a draft section for the report which will document the findings of the tasks above including results of the field survey and survey coverage. The report will also identify constraints and opportunities for Aboriginal heritage for the project area and provide appropriate management recommendations.

Aboriginal community consultation has been limited to the DLALC for this project. Full Aboriginal community consultation following *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010) was not undertaken. Full Aboriginal community consultation is a requirement to support an AHIP application.

1.3.2 Historical heritage

For historic heritage the following tasks were undertaken for this project:

- Outline the statutory framework for the conservation, management and approvals processes of historic heritage items and historic archaeological relics. This is presented in Section 2 of this report.
- Undertake a search of heritage registers and databases to identify all known historical heritage items and places within the project area including:
    - The Australian Heritage Database which includes places on the World Heritage List, National Heritage List, Commonwealth Heritage List and Register of the National Estate.
    - The State Heritage Inventory (SHI) which contains over 25,000 heritage items on statutory lists and includes items and places on the NSW State Heritage Register (SHR), items on s170 state agency heritage and conservation registers and items listed on the local environmental plans at the council level.
    - The National Trust Heritage Register.
    - Blacktown LEP 2015 – Local Heritage Register.

  The results of the heritage register searches are presented in Section 3 of this report.

- Review literature and background reports. Undertake a literature review of available reports for the study area including heritage and archaeological assessments.
- Prepare an overview contextual history. This report will present a historical overview of the project area as a context to the study. Historic research including obtaining historical maps, plans, historic aerial photographs, photographs of heritage places from archives and more detailed site histories may unearth the location of former farms and homesteads, roads and other structures, features and potential archaeological sites within the project area.
- Identify areas of historic heritage potential as based on the findings above.
- An Assessment of heritage significance for identified heritage items in accordance with the NSW Heritage Division Guidelines 'Assessing Heritage Significance'.
- Preparation of a draft section for the report which will document the findings of the tasks above and identify constraints and opportunities for historical heritage for the project area and provide appropriate management recommendations.

1.3.3 Development of text suitable for the draft Development Control Plan

As part of this assessment, ELA will prepare for the NSW Department of Planning and Environment a set of recommendations, objectives and development controls for inclusion in the (Development Control Plan) DCP. The controls will be designed to satisfy section 8 of Schedule 4 of the WSEA SEPP which requires the DCP to address:

- The impact of the proposed development on European and Indigenous heritage values, and
- Opportunities to offset impacts on areas of heritage significance.

1.4 Investigators and contributors

This report and assessment was prepared by ELA Senior Archaeologists Karyn McLeod and ELA Archaeologists Taryn Gooley and Erin Finnegan. The report was reviewed by ELA Senior Archaeologist Lyndon Patterson and ELA Project Director David Bonjer.

Karyn McLeod has Bachelor of Arts (Hons Archaeology) from the University of Sydney and Master of Cultural Heritage from Deakin University. Taryn Gooley has a Bachelor of Arts (Hons Archaeology) from the University of Sydney. Erin Finnegan has a Bachelor of Arts Cultural Anthropology from Macalester College USA, Post Grad Diploma in Museum and Heritage Studies from the University of Cape Town and

Master of Philosophy (Archaeology) from the University of Cape Town. Lyndon Patterson has a Bachelor of Arts (Hons Archaeology) and Bachelor of Science from La Trobe University and a Master of Environmental Law from the University of Sydney.

2 Statutory framework

The conservation and management of Aboriginal cultural heritage and historic heritage takes place in accordance with relevant Commonwealth and State legislation and local government planning and development controls. The project area is affected by a number of statutory controls for the planning and management of cultural heritage. Statutory requirements for the project area are summarised below.

2.1 Commonwealth legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (Cth) [EPBC Act] took effect on 16 July 2000.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (known as a controlled action under the Act), may only progress with approval of the Commonwealth Minister for the Department of the Environment (DoE). An action is defined as a project, development, undertaking, activity (or series of activities), or alteration. An action will also require approval if:

- It is undertaken on Commonwealth land and will have or is likely to have a significant impact on the environment on Commonwealth land; and,
- It is undertaken by the Commonwealth and will have or is likely to have a significant impact.

The EPBC Act defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and historic cultural heritage items. Under the Act protected heritage items are listed on the World Heritage List (WHL) National Heritage List (items of significance to the nation) or the Commonwealth Heritage List (items belonging to the Commonwealth or its agencies). These last two lists replaced the Register of the National Estate (RNE). The RNE is no longer a statutory list; however, it remains available as an archive.

2.2 State legislation

2.2.1 National Parks and Wildlife Act 1974 (NSW)

Aboriginal cultural heritage in NSW is afforded protection under the provisions of the *National Parks and Wildlife Act 1974* (NSW) [NPW Act]. The Act is administered by the Office of Environment and Heritage (OEH) which has responsibilities under the legislation for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places'.

Under the provisions of the NPW Act, all Aboriginal objects are protected irrespective of their level of significance or issues of land tenure. Aboriginal objects are defined by the Act as any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains). Aboriginal objects are limited to physical evidence and may be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include scarred trees, artefact scatters, middens, rock

art and engravings, as well as post-contact sites and activities such as fringe camps and stockyards. The OEH must be notified on the discovery of Aboriginal objects under section 89A of the NPW Act.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to destroy, deface, damage, or move them from the land. The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010c) as adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation) made under the NPW Act, provides guidance to individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects. This Code also determines whether proponents should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the Act. This code of practice can be used for all activities across all environments. The NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP. However, if an Aboriginal object is encountered in the course of an activity work must cease and an application should be made for an AHIP.

The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010a) assists in establishing the requirements for undertaking test excavation as a part of archaeological investigation without an AHIP, or establishing the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made. OEH recommends that the requirements of this Code also be followed where a proponent may be uncertain about whether or not their proposed activity may have the potential to harm Aboriginal objects or declared Aboriginal places.

AHIMS database

The Aboriginal Heritage Information Management System (AHIMS) is a statutory register managed by the OEH under section 90Q of the NPW Act. The AHIMS manages information on known Aboriginal sites, including objects as defined under the Act. A search of the AHIMS database was undertaken as part of the due diligence process (refer to section 4.2).

2.2.2 Heritage Act 1977 (NSW)

The *Heritage Act 1977* (NSW) provides protection of the environmental heritage of the State which includes places, buildings, works, relics, movable objects or precincts that are of State or local heritage significance. A key measure for the identification and conservation of State significant items is listing on the State Heritage Register (SHR) as provided in Part 3A of the Heritage Act.

Heritage Act Registers

The Heritage Branch Division of OEH maintains registers of heritage places and items that are of State or local significance to NSW. The NSW State Heritage Register (SHR) is the statutory register under Part 3A of the NSW Heritage Act. The State Heritage Inventory (SHI) is an amalgamated register of items listed on LEPs and/or on a State Government Agency's Section 170 register and may include items that have been identified as having state or local level significance, but which are statutorily protected at a local level.

State Heritage Register

Listing on the SHR means that any proposed works or alterations (unless exempted) to listed items must be approved by the Heritage Council or its delegates. Proposals to alter, damage, move or destroy places, buildings, works, relics; moveable objects or precincts protected by an Interim Heritage Order (IHO) or listed on the SHR require an approval under section 60.

Exemptions from Heritage Act Approval

Section 57(2) of the Heritage Act provides for a number of potential exemptions to Section 57(1) approval requirements to reduce the need for approval of minor or regular works such as maintenance. Exempted development does not require prior Heritage Council approval.

'Standard' exemptions generally include minor and non-intrusive works, such as maintenance to buildings and gardens, minor repairs and repainting in approved colours. Standard exemptions do not apply to the disturbance, destruction, removal or exposure of archaeological relics.

Specific exemptions include those works specifically approved for a place as included on the SHR listing.

The Relics Provision

Archaeological features and deposits are afforded statutory protection by the 'relics provision'. Section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as follows:

> any deposit, artefact, object or material evidence that:
>
> (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
>
> (b) is of State or local heritage significance.

The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW. To determine if an area has historical archaeological potential or relics an assessment is be made using the guidelines 'Assessing Significance for Historical Archaeological Sites and Relics' (Heritage Branch 2009). The Heritage Council must be notified on the discovery of a relic under Section 146 of the *Heritage Act 1977*.

Therefore, no ground disturbance works may proceed in areas identified as having historical archaeological potential, in areas outside of SHR curtilages, without first obtaining an Excavation Permit pursuant to Section 139 of the *Heritage Act 1977*.

2.2.3 Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (NSW) [EP&A Act] requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine development requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs). LEPs commonly identify, and have provisions for the protection of, local heritage items and heritage conservation areas (refer to Section 2.3 for the relevant LEPs).

2.2.4 State Environmental Planning Policy (Western Sydney Employment Area) 2009

A dedicated SEPP has been developed for the WSEA titled: *State Environmental Planning Policy (Western Sydney Employment Area) 2009*. This SEPP applies to the land identified in the Land Application Map (see Section 4 of the SEPP). The Land Application Map is smaller than the current study area which forms this assessment and is generally in the northern half of the WSEA.

Under the SEPP, a Development Control Plan (DCP) must be prepared prior to consent being issued. Under Schedule 4 1 (1) (h) A DCP must take make provisions for heritage conservation (both indigenous and non-indigenous). In making provision for or with respect to heritage conservation, a development control plan must address:

(a) the impact of proposed development on indigenous and non-indigenous heritage values, and

(b) opportunities to offset impacts on areas of heritage significance (Sch 4, 8).

The aim of the SEPP is outlined in Section 3:

(1) This Policy aims to protect and enhance the land to which this Policy applies (the Western Sydney Employment Area) for employment purposes.

(2) The particular aims of this Policy are as follows:

(a) to promote economic development and the creation of employment in the Western Sydney Employment Area by providing for development including major warehousing, distribution, freight transport, industrial, high technology and research facilities,

(b) to provide for the co-ordinated planning and development of land in the Western Sydney Employment Area,

(c) to rezone land for employment or environmental conservation purposes,

(d) to improve certainty and regulatory efficiency by providing a consistent planning regime for future development and infrastructure provision in the Western Sydney Employment Area,

(e) to ensure that development occurs in a logical, environmentally sensitive and cost-effective manner and only after a development control plan (including specific development controls) has been prepared for the land concerned,

(f) to conserve and rehabilitate areas that have a high biodiversity or heritage or cultural value, in particular areas of remnant vegetation [SEPP (WSEA) 2009 s3].

Of particular interest to the current study is s3 (f); the conservation of areas of high heritage or cultural value. Zone E2 (Environmental Conservation Zone) aim is

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values* [SEPP (WSEA) 2009 s11].

Section 8: Relationship to other environmental planning instruments

(1) State Environmental Planning Policy No 1—Development Standards does not apply to the land to which this Policy applies.

(2) This Policy to prevail over LEPs

In the event of an inconsistency between this Policy and a local environmental plan or deemed environmental planning instrument that applies to the land to which this Policy applies, this Policy prevails to the extent of the inconsistency.

2.3 Local Environmental Plans

Local Environmental Plans (LEPs) are made under the *Environmental Planning and Assessment Act 1979* (NSW) to guide planning decisions by local councils, such as development applications.

In relation to heritage, the LEPs general objectives are to conserve the heritage of the respective LGAs through the protection of the significance of heritage items, conservation areas, archaeological sites and Aboriginal objects and Aboriginal places of heritage significance.

LEPs can be overridden by the *SEPP (WSEA) 2009* where there is an inconsistency between the LEP and the SEPP, as SEPPs deal with matters of state significance. LEPs contain a schedule with lists of heritage items, heritage conservation areas and archaeological sites.

The Blacktown LEP 2015 is the relevant document in relation to the control of development with regard to heritage within the project area. A search of the newly revised heritage schedule formed part of the register search for this project. The results of this search are presented in Section 4.

3 Aboriginal archaeological assessment

This section of the report has been prepared using the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

3.1 Landscape context

An understanding of the physical landscape is important in identifying the interface between humans and their environment. This is particularly true of Indigenous communities where a close relationship has historically existed between people and their surroundings. Environmental factors and resources can also have considerable influence upon the distribution of people (and thus the archaeological remains of their sites) across the landscape.

The following section presents a brief overview of the geomorphology, vegetation and resources of the wider Eastern Creek region as well as the specific landscape profiles of the subject area.

3.1.1 Geology

The subject area is located within the Wianamatta shale group. The South Creek portion of the site is typified by Quaternary alluvium. The portion of the site within the Blacktown soil landscape consists of Ashfield Shale, Bringelly Shale, and larger shale lenses which can occur in Hawkesbury Sandstone. Ashfield Shale is characterised by dark grey siltstone and laminate. Bringelly Shale is characterised by shale with occasional laminate, coal, and calcareous claystone (Hazelton and Tille 1990: 27-28).

3.1.2 Soils

The subject area is located within the Blacktown and South Creek soil landscapes. Soil landscapes are largely determined by the underlying geology.

The South Creek soil landscape is characterised by very deep layered sediments over bedrock or relict soils. Structured plastic clays and structured loams are often found within and immediately adjacent to drainage lines. Terraces consist of red and yellow podzolic soils with some small areas of structured grey clays, leached clays and yellow solodic soils. The dominant soil materials identified within the South Creek soil landscape are sc1 - Brown apedal single-grained loam; sc 2 – dull brown clay loam; and sc3 – bright brown clay. All soil types within the South Creek soil landscape have low fertility, and high erodibility levels.

The Blacktown soil landscape consists of shallow to moderately deep (up to 150cm) red podzolic and brown podzolic soils, and deep (150-300cm) yellow podzolic soils and soloths. Red podzolic and brown podzolic soils are typically found on the crests, upper slopes, and well drained areas within the Blacktown soil landscape. Yellow podzolic and soloths are commonly found on the lower slopes, drainage lines, and areas of poor drainage within the soil landscape (Hazelton and Tille 1990: 27-28). Dominant soil materials found within the Blacktown soil landscape are bt1 – friable greyish brown loam; bt2 – hardsetting brown clay loam; bt3 – strongly pedal, mottled brown, light clay; and bt4 – light grey plastic mottled clay. The fertility levels of the Blacktown soil types is generally very low with the exception of bt1 which is considered moderate due to the high levels of organic materials present. All four Blacktown soil types are acidic, with a moderate erosion risk (Hazelton and Tille 1990: 27-28).

3.1.3 Vegetation

The vegetation within both the South Creek and the Blacktown soil landscapes has largely been cleared. Much of the vegetation within the South Creek soil landscape is dominated by introduced weeds such as

blackberry and thistle. Prior to clearing, the dominant vegetation within this soil landscape would have consisted of tree species such as *Angophora subvelutina* (broad-leaved apple), *Eucalyptus amplifolia (*cabbage gum), and *Casuarina glauca* (swamp oak). Due to the frequent water inundation occurrences within the soil landscape, still water plant species such as *Eleocharis sphacelata* (tall spike rush), *Juncus usitatus* (common rush), and *Polygonum* spp (knotgrass) were common in areas which silted up. Stream banks within this soil landscape also supported trees such as, *Melaleuca* spp. (Paperbarks) and *Leptospermum* spp. (tea trees).

Areas of revegetation within the Blacktown soil landscape are typified by tall open forests such as wet sclerophyll forest and woodland such as dry sclerophyll forest. Portions of remnant vegetation exist in some areas. Remnant vegetation in higher rainfall areas consists of Sydney blue gum and blackbutt, while areas of remnant woodlands and open forests of forest red gum, narrow leaved ironbark, and grey box exist in the west (Hazelton and Tille 1990: 27-28).

In the past the area would have provided a wide variety of flora and fauna resources for the Aboriginal communities who lived there.

3.1.4 Landforms, topography, and hydrology

The topography of the South Creek soil landscape consists of flat to gently sloping alluvial plains with occasional terraces which provide low relief of <10m.

The Blacktown soil landscape consists of gently undulating rises with local relief of 10-30m. Crests and ridges within this landscape are generally broad (200-600m) and rounded with convex upper slopes and concave lower slopes. Drainage depressions and valley flats are broad. Rock outcropping is not present within this landscape (Hazelton and Tille 1990: 27).

The study area landscape is characterised by low-lying floodplains and creek terraces in the western and northern portions of the study area, with rolling hills and valley flats in the eastern and south-eastern portions of the study area. The western boundary is defined by Ropes Creek.

Two small, unnamed creek lines transect the study area from east to west draining into Ropes Creek. The northern most creek is a second order stream. The southernmost unnamed creek has been dammed for agricultural purposes and is a first order stream. The stretch of Ropes Creek is the study area is a third order stream. Ropes Creek flows north across the Cumberland Plain and joins South Creek which in turn meets the Hawkesbury River at Windsor.

3.2 AHIMS search results

A search of the AHIMS register was undertaken by ELA on the 27 July 2015 and listed in Table 1 (also see Appendix B). The search covered the area of Lot 10, DP 1157491, with a buffer of 1 km. 17 registered sites were identified within the study area and a further 65 registered sites were identified within 1 km of the study area (Figure 2). The details of the sites within the study area are shown in Table 1.

Three of the sites 45-5-0559, 45-5-3159, 45-5-3160 in the west of the study area have been partially destroyed by works associated with the construction of a pipeline following issue of AHIP 3728.

Sites 45-5-0562 and 45-5-3843 in the far south of the study area have also been impacted by AHIPs but the AHIMS search says these sites are valid. The map of AHIMS sites (Figure 2) show these sites at the location of the Lenore Drive and it is likely these sites have been destroyed from the construction of this road.

Table 1: Summary of AHIMS sites within the study area

Site number	Site Name	Feature	Site type	Site status	AHIPs
45-5-0557	Blacktown Southwest 3 Eastern Creek	Artefact	Open camp site	Valid	-
45-5-0559	Blacktown Southwest 7 Colyton	Artefact	Open camp site	Partially destroyed	3728
45-5-0560	Blacktown Southwest 8 Colyton	Artefact	Open camp site	Valid	-
45-5-0562	Blacktown Southwest 10 Colyton	Artefact	Open camp site	Valid	1007, 1050, 984, 35
45-5-0563	Blacktown Southwest 11 Colyton	Artefact	Open camp site	Valid	-
45-5-3159	RCIF 2	Artefact - 1	Open camp site	Partially destroyed	3728
45-5-3160	RCAS 8	Artefact - 5	Open camp site	Partially destroyed	3728
45-5-3161	RCAS 7	Artefact - 27	Open camp site	Valid	-
45-5-3162	RCAS 4	Artefact - 7	Open camp site	Valid	-
45-5-3163	RCAS 5	Artefact - 3	Open camp site	Valid	-
45-5-3164	RCAS 3	Artefact - 14	Open camp site	Valid	-
45-5-3165	RCAS 1	Artefact - 5	Open camp site	Valid	-
45-5-3843	RCIF 1	Artefact	Open camp site	Valid	3262, 3340
45-5-4192	Eastern Creek IF	Artefact - 1	Open camp site	Valid	-
45-5-4599	AIF 6	Artefact	Open camp site	Valid	-
45-5-4600	AIF 7	Artefact	Open camp site	Valid	-
45-5-4605	AIF 5	Artefact	Open camp site	Valid	-

All of the sites identified within 1 km of the study area are open sites; either artefact scatters or isolated artefacts. Four of the sites are also listed as having potential archaeological deposit (PAD). A breakdown of the site types and artefact quantities is presented in Table 2.

Table 2: Aboriginal site types within 1km of the study area.

Site Type / Feature	Frequency	Percentage
Artefact Scatter - Number unknown	62	75.60%
Isolated Artefact	8	9.80%
Artefact Scatter - 2-10 artefacts	5	6%
Artefact Scatter with PAD	4	4.95%
Artefact Scatter - 10-60 Artefacts	3	3.65%
Total	82	100.00%

AHIMS MAP REMOVED FOR PUBLIC EXHIBITION

Figure 2: AHIMS Sites within the study area and adjacent properties (ELA 2015)

3.3 Regional Aboriginal archaeological context

Regional overviews are important for general modelling which in turn helps us to understand the likely distribution of sites for an area. Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. The oldest dated site from the Cumberland lowlands region comes from artefacts found in gravels of the Cranebrook Terrace on the Nepean River, dated to 41,700 +3000/-2000 BP (years before present) (Nanson et al. 1987; Stockton 1993; Stockton & Holland 1974), however there is some dispute over the actual age of the deposits.

A site (RTA-G1) located within the Parramatta Sand Sheet in the city centre of Parramatta was excavated by McDonald (2005). This site (RTA-G1) has been reliably dated to 30,735 +/- 407 BP making it one of the earliest Aboriginal sites identified on the Cumberland Plain. A rock shelter site north of Penrith on the Nepean, known as Shaws Creek K2, is another Pleistocene site, dated to 14,700 +/- 250 BP (Attenbrow 2010:18). More recently, a salvage excavation at Pitt Town on the banks of the Hawkesbury River identified three separate, stratified artefact assemblages dating from 15,000 BP through to < 4,500 BP (Williams et al, 2012:95). The site known as Bull Cave, a sandstone rock shelter east of Campbelltown has been dated to 1820 + 90 BP (Koettig 1985). While there are a number of sites identified within the Cumberland Plain region dating to the Pleistocene period, the majority of both open and rock shelter sites in the region date to within the last 3,000 to 5,000 years (Biosis 2013: 21)

The archaeological evidence of Aboriginal occupation of the Cumberland Plains indicates that the area was intensively occupied from approximately 4000 years BP with many researchers proposing that occupation intensity increased from this period (Kohen 1986; McDonald 1994; McDonald & Rich 1993). This increase in sites may reflect an intensity of occupation which was influenced by rising sea levels, which stabilised approximately 6,500 years ago. Older occupation sites along the now submerged coastline would have been flooded, with subsequent populations concentrating on and utilising resources along the current coastlines and in the changing ecological systems of the hinterland (Attenbrow 2003). Such ‘young’ dates are probably more a reflection of conditions of archaeological site preservation and sporadic archaeological excavation, rather than actual evidence of the presence or absence of an Aboriginal hunter-gatherer population prior to this time (Biosis 2008).

Numerous archaeological studies of the wider Cumberland Plains area have been conducted over recent years resulting in a general regional site typology and distribution being developed (Artefact Heritage 2013; Attenbrow 2010; White & McDonald 2010). The Cumberland Plain covers most of the Sydney metropolitan area, extending from 10 km north of Windsor at the northern extent, to Picton in the southern extent; and from the Nepean - Hawkesbury River in the west to Sydney’s Inner West at its eastern extent.

Early archaeological work in the region (Dallas 1989a; Haglund 1980; Kohen 1986; Smith 1989) established predictive models for Cumberland Plain site patterning based on the notion that there is an almost continuous scatter of artefactual material across the landscape. A small number of test excavations have been carried out as a result of sites identified from previous archaeological surveys (English & Gay 1994; Haglund 1989). The results of these studies show that the dominant archaeological resource of the area consists of low density stone artefact scatters across all landforms, with some evidence for the presence of higher density stone artefact scatters (indicating longer and more intense occupation) associated with water sources.

More recent works have contributed to refining these models (AMBS 2000, 2002; ENSR 2009, Jo McDonald Cultural Heritage Management [JMCHM] 1999, 2001; McDonald 1999). McDonald (1999)

posited that most areas of the Cumberland Plain contain subsurface archaeological material irrespective of ground surface manifestations, and that the complexity of the archaeological record was far greater than previously identified on the basis of surface recording. Studies have demonstrated that the average ratio of subsurface artefacts to those found at surface could be 25:1, with more recent work indicating this could be as much as 2,000:1 in some locations (JMCHM 2001).

A study conducted by White and McDonald (2010) focused on confirming the link between water sources and Aboriginal archaeological sites. White and McDonald analysed artefact distribution in the north of the Cumberland Plain by examining the results from a number of archaeological investigations in the Rouse Hill area. The study determined that generally, sites are located within 50-100 m of forth order water courses, and within 50 m of second order water courses. First order water courses did not have any effect on sites. The study by White and McDonald also confirmed existing theories (Veth 1993) that the artefact densities of sites increased within proximity to higher order creek lines (second order and above). First order streams had a mean density of 0.7 artefacts/m^2, while for 2nd order streams this was 6.5 artefacts/m^2 and 4th order streams this increased in 13.9 artefacts/m^2. There was not enough data on 3rd order streams to make a comparison (White & McDonald, 2010:32).

It is important to note however, that archaeological investigations still reveal site information in contradiction to the current, general predictive model for the area, and it is expected that further archaeological work will continue to refine the model.

The paper also argues that lower densities within 50 m of larger streams may be reflective of a range of factors including erosion and sheet wash adjacent to major streams. Behaviour may also be a factor such as people conducting knapping, artefact discard and hunting activities slightly further away (White & McDonald 2010:33).

In terms of landforms, the study by white and McDonald found that terraces yielded the highest densities. Terraces had a mean density of 20.8 artefacts/m^2. Mean densities for other landforms are as follows: creek flat 3.8 artefacts/m^2, lower slope 8.4 artefacts/m^2, mid slope 3.8 artefacts/m^2 and upper slope and ridge top 0.4 artefacts/m2 (White & McDonald 2010:33).

Based on the material evidence and range of archaeological sites right across the region, it is clear that Aboriginal people have been utilising the land and resources for millennia.

3.3.1 Contact, European settlement, and dispossession

Determining the population of Aboriginal people at the time of European contact is notoriously difficult. Firstly, Aboriginal people were mobile and largely avoided contact with Europeans. Further, many Aboriginal people perished from introduced diseases such as smallpox and influenza, as well as violent clashes with early settlers. Population statistics gathered in the colony's early years are unlikely to be reliable however estimates for the greater Sydney region, including the lower Blue Mountains, generally range from 4,000 – 8,000 at the time of European contact. The western Cumberland Plain population specifically, has been estimated to be between 500 – 1,000 people at that time, which translates to an approximate minimum population density of 0.5 people / km (Kohen 1995).

At the time of European settlement, the Cumberland Plains was thought to be close to the intersection of a number of language group (tribal) boundaries. There is considerable debate over the extent and nature of territorial boundaries in the Sydney Basin. This is due in part to the absence of ethnographic and linguistic study at the time of contact and the scarcity of adequate historical documentation and anthropological interest until well after settlement of the region (McDonald 2007). The linguistic evidence from the Sydney region indicates the presence of five discrete language groups at European contact:

Darug, Darginung, Dharawal, Gundungurra and Guringai (Capell 1970, Dawes 1970, Mathews 1897, 1901, Matthews and Everitt 1900, Threlkeld in Fraser 1892, Tindale 1974, Troy 1990).

As greater expanses of land were occupied by settlers towards the end of the eighteenth century, tensions boiled over and resistance to white settlement became increasingly violent. In 1790, station raids let by Koori leader Pemulwuy and his son Tedbury saw the use of arson to destroy buildings and burn crops, and numerous assaults on livestock and settlers themselves. A period of armed resistance by Aboriginal people in the Parramatta areas and beyond began in 1799 and was known as the 'Black Wars' (Australian Museum website). The violence diminished only with the death of Pemulwuy in 1802.

It was in the context of this conflict that in April 1814 William Shelley, a trader and former London Missionary Society missionary, wrote to Governor Macquarie with a proposal for educating Aboriginal people. Macquarie seized upon the proposal and commenced establishment of a 'Black Native Institution of NSW' at Parramatta. More children came to be educated at the Parramatta Institution over the coming years, with the school's enrolment reaching more than 20 students at some periods. During this time Macquarie also made the first land grant to Aboriginal people, granting 30 acres to Colebee and Nurragingy on Richmond Road in 1816. The settlement on and around the land grant flourished and by the 1820s it had become known as the 'Black Town' (OEH website: State Heritage Register listing, Blacktown Native Institution).

In 1823 the Institution was moved by Governor Brisbane (who succeeded Macquarie as Governor on 1 December 1821) to land adjoining the new settlement along Richmond Road at Black Town. While the Parramatta phase of the school was considered by settlers as a success, primarily because the students had acquired European skills, the Blacktown stage, by contrast, was viewed by Europeans as a failure. The Blacktown Native Institution operated from 1823-1829 under the direction of the Church Missionary Society (CMS). Whilst the structures no longer exist, the site of the former institution was listed on the SHR in November 2011 (OEH website: State Heritage Register listing, Blacktown Native Institution).

The Blacktown Native Institute holds high social value for the Aboriginal community as a key site symbolising dispossession, child removal and enduring links to the land. For some members of the Aboriginal community it represents a landmark in Aboriginal-European relations, symbolising the continuing need for reconciliation and understanding between blacks and whites (OEH website: State Heritage Register listing, Blacktown Native Institution).

3.4 Previous Aboriginal archaeological assessments

Kohen, 1985. *An Archaeological Survey of Industrial Land in the City of Blacktown.* Report to Blacktown City Council

This survey report synthesised the results of the Glendenning, Arndell Park, Huntingwood, and Colyton Industrial Estate archaeological surveys conducted by Kohen in 1985. The study found that the four study areas mentioned above had very limited archaeological potential due to the level of disturbance exhibited throughout each of the industrial estates.

The background research by Kohen found that the majority of archaeological sites in the area were located adjacent to creeks and streams which eventually drain into the Hawkesbury River. Ridge tops which run sub-parallel with the previously mentioned water courses were the second most likely area for sites to be located. The most important ridge appears to have been Plumpton Ridge which extends from Marayong through Plumpton and to the west toward Riverstone. This is likely due to the outcrops of silcrete found on the ridge top.

The surveys completed by Kohen identified 25 Aboriginal archaeological sites. Of these sites, 10 were located along creek lines, 10 were located on ridgelines, and 5 were located in 'other' areas. One Site contained more than 50 artefacts, 15 sites contained between 2 and 50 artefacts, and 9 sites were isolated flakes.

Kohen, 1986. *An Archaeological Study of Aboriginal Sites within the City of Blacktown*. PhD Thesis.

Kohen completed a series of archaeological surveys within the Blacktown LGA, including the areas of Prospect Reservoir, Erskine Park, Marsden Park, and along Ropes Creek. The surveys covered a variety of landform units such as gentle slopes, rolling slopes, flats, and ridges. The study found that 25 archaeological sites consisting of 50 or more artefacts existed within the wider Blacktown LGA. All 25 sites contained artefacts made of silcrete, indicating the raw material was readily available. The sites found to have 50 or more artefacts were all located within 50m of a reliable water course or on a ridge top. Where a ridge or higher ground was located within close proximity to a reliable water course, the site was usually found on the higher ground or ridge.

Appleton, 2002. *The Archaeological Investigation of Lot 2, DP 120673, the Site of a Proposed new Clay and Shale Extraction Area, Old Wallgrove Road, Horsley Park, West of Sydney NSW.* Report to Austral Brick Company Pty Ltd.

John Appleton completed an archaeological assessment of the proposed clay and shale extraction site located between Old Wallgrove Road and Ropes Creek. One site was located during the assessment. The site consists of an isolated flake which was eroding out of a creek bank. Appleton determined the area surrounding the isolated flake to have the potential for stratified archaeological deposit and therefore classified it as PAD.

Two areas were identified during the assessment as having high archaeological sensitivity. The first area of archaeological sensitivity surrounds the area of PAD identified. The second area of archaeological sensitivity was identified on a tributary draining into Ropes Creek close to a previously recorded artefact. The two archaeologically sensitive areas were not recorded on the AHIMS register.

Jo McDonald Cultural Heritage Management 2002. *Archaeological Assessment of Aboriginal Sites: Eastern Creek Strategic Land Use Study (SEPP59)*

An archaeological assessment of the State Environment Planning Policy (SEPP 59) – Central Western Area Economic and Employment Area was undertaken by Jo McDonald CHM. This area is located immediately to the east of the study area subject to this report. The survey identified three isolated artefacts within 100 m of each other which were registered as one AHIMS Site 'Archbold Road', and two artefact scatters named Sargents 1, and Sargents 2.

A large portion of the study area outside of the quarry was determined to have moderate archaeological potential while the treed areas within the north and south of the study area were found to have high archaeological potential.

Dominic Steele Consulting Archaeology, 2003. *Aboriginal Archaeological Test Excavation Report, Proposed Wonderland Business Park Development.* Report to Australand

The test excavations were conducted in the Wonderland Business Development area located to the east of the study area subject to this report. The test excavations conducted by Steele concentrated on 8 previously recorded sites which were within the proposed impact footprint. The test excavations focused on sampling a variety of landform units such as the hill crest, lower slope and creek flats associated with

a small tributary to Eastern Creek. A total of 5 artefacts from 20 test pits were recovered. 33 Surface artefacts were recorded. 8 of the recorded artefacts were diagnostic pieces. The remaining 29 artefacts were classified as debitage or manuports. Steele concluded that the low density of artefacts indicated the area was used only sporadically for short periods of time.

Jo McDonald Cultural Heritage Management Pty Ltd, 2004. *Archaeological Investigations at Austral Site (#45-5-2986) 'The Vineyard', Wallgrove Road, Horsley Park.* Report to Austral Brick Company Pty Ltd

This archaeological investigation involved the testing and salvage of site AUS1 (AHIMS #45-5-2986). AUS 1 was located at the base of a slope on the margin of a floodplain. The area had been highly disturbed by earthmoving and quarrying operations. Despite the level of disturbance a total of 2029 artefacts were recovered from 37 test pits and 5 open areas.

Silcrete and silicified tuff were the dominant raw materials, with smaller amounts of quartz and silicified wood also represented. Retouch including backing, and bipolar flaking was identified on some of the artefacts.

McDonald concluded that the low density of the site (17 artefacts/m²) indicated that the site was used as a transitory camp.

Jo McDonald Cultural Heritage Management Pty Ltd, 2005. *Heritage Conservation Strategy for Aboriginal Sites in the Lands Owned by Valad Funds Management Ltd and Sargents P/L in the Eastern Creek Business Park (Stage 3) Precinct Plan Blacktown, NSW.* Report to Valad Funds Management Ltd and Sargents Pty Ltd.

This report outlines the Aboriginal heritage conservation strategy for the lands owned by Valad Property Group and Sargents Pty Ltd. The report identifies requirements for mitigation and ongoing management requirements for areas to be conserved. 42 Previously recorded sites have been identified within the lands subject to this strategy. Of the 42 sites identified, 22 are open sites, 19 are isolated artefacts and one is an open site with a scarred tree.

Much of the study area had been extensively disturbed by previous development and land use. Areas which have been highly disturbed account for a total of 35% of the subject area, while moderately disturbed land accounts for 46.5% and areas of land with low disturbance account for only 14% of the subject area.

The strategy identified high value landscapes in terms of local heritage conservation requirements due their scarcity within the Cumberland Plain area. The high value landscapes include shale hillslopes, first order creek lines, shale ridges, and low ridgetops.

ERM 2005. *Historical and Aboriginal Heritage Assessment of Lot 4 DP 262213, Eastern Creek.* Report to Department of Planning and Infrastructure

ERM undertook an Aboriginal and historic heritage assessment of the current study area in 2005. The assessment included a two day field survey with Aboriginal stakeholders. Six AHIMS sites had been previously identified within the study area. A further 14 Aboriginal archaeological sites, and two PAD's were identified during the field survey.

The assessment recommended two 'heritage preservation zones' be established in order to protect the main concentration of Aboriginal and historic heritage sites. The assessment also identified three 'heritage

mitigation zones' containing Aboriginal and heritage items which require further investigation prior to impact.

Eco Logical Australia Pty Ltd, 2013. *Broader Western Sydney Employment Area – Aboriginal Heritage Assessment*, prepared for Department of Planning & Environment NSW.

Eco Logical Australia (ELA) completed an Aboriginal Heritage Assessment for the Broader WSEA for the Department of Planning and Infrastructure in December 2013. The study comprised a literature review, environmental background and Aboriginal cultural context, a search of the AHIMS register, the NSW SHI and National Trust Register and a consultation workshop with Aboriginal stakeholders. Analysis of Aboriginal site predictive data was also undertaken using the Aboriginal Site Decision Support Tool, developed by the OEH. The AHIMS search identified 275 previously recorded Aboriginal sites within the study area. The assessment recommended that precinct level studies involve Aboriginal stakeholders in the management of Aboriginal heritage and that Aboriginal people be consulted at the early stage in the process (ELA 2014:19, 36).

ENSure 2014. *St Marys Wastewater System Augmentation Aboriginal Cultural Heritage Assessment Report.* Prepared for Sydney Water.

ENSure completed an ACHAR for the proposed St Marys waste water augmentation in 2014. The ACHAR completed by ENSure covers land which is part of the property subject to this report. The ENSure report included desktop assessment results, cultural assessment results, field survey results, and an assessment of heritage significance based on Aboriginal archaeological and cultural values.

A detailed predictive model was developed by ENSure based on the desktop study conducted for the ACHAR. The field survey for the area of proposed works was conducted over three days. Low surface visibility due to dense grasses was recorded across all areas of survey. No new Aboriginal archaeological sites were identified during the field survey.

The three sites located within the study area subject to this report which will be impacted on by the proposed waste water augmentation are 45-5-3160, 45-5-0559, and 45-5-3159.

Site 45-5-0559 was determined to be of high significance due to the artefact types identified and the landform unit within which it is situated. The site will require partial salvage under an AHIP as part of the proposed wastewater system augmentation.

Site 45-5-3160 was determined to have low- moderate significance due to low surface artefact numbers and potential surface disturbance due to historic agricultural activities.

Site 45-5-3159 was determined to have low- moderate significance due to low surface artefact numbers and potential surface disturbance due to historic agricultural activities.

Consultation with RAP's identified the entire project area as holding cultural significance to the local Aboriginal community.

The ENSure report included a detailed analysis of the previous archaeological test excavations which have been conducted within close proximity to the proposed wastewater system augmentation impact area. This analysis found that previous archaeological assessments within the Eastern Creek area concluded that evidence of long term Aboriginal use of the region can be found throughout the landscape particularly within proximity to Ropes Creek. The rapid development occurring within the western Sydney region has resulted in the loss of Aboriginal archaeological evidence across the landscape. Therefore the study area can provide information on the nature of Aboriginal occupation and activities within the region.

The ENSure report concluded that no further testing within the area of proposed works was required as previous archaeological testing had been conducted within similar landscapes within the region. The report recommended the sites which will be impacted by the proposed works be salvaged under the salvage methodology developed by ENSure in consultation with RAP's.

The wastewater system augmentation works were conducted in 2015. The results of the archaeological salvage works for this project are not yet available.

GML 2014. *Energy from Waste (EFW) Plant, Eastern Creek, Aboriginal Cultural Heritage Assessment and Archaeological Technical Report.* Prepared for Urbis on behalf of The Next Generation (TNG)

GML completed an Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Technical Report for the Energy from Waste (EFW) Facility at eastern creek. The assessment focuses on the land immediately to the North East of the study area subject to this report. Three previously identified but unregistered sites (Archbold1, Sargents 1, and Sargents 2) were relocated and registered with AHIMS during this assessment.

Two previously unrecorded sites were also located during the field survey (Archbold Road 2, and EFW South).

Artefact Heritage 2015. *PACHCI Stage 2 Cultural Heritage Assessment Report Archbold Road.* Report to Roads and Maritime Services

Artefact Heritage completed a PACHCI Cultural Heritage Assessment Report on behalf of the Roads and Maritime Services in order to identify any Aboriginal objects within the proposed Archbold Road upgrade. The proposed road upgrade will transect the eastern portion of the study area subject to this report.

The survey undertaken by Artefact Heritage identified seven Aboriginal sites within the proposed project boundary. A total of seven previously unrecorded Aboriginal sites were identified during this survey. Two of the newly identified sites (AIF-05, and AIF-06) are located within the study area subject to this report.

ENSure 2015. *St Marys Wastewater System Augmentation Salvage Excavation Report.* Prepared for Sydney Water.

ENSure was engaged to undertake salvage excavations at seven archaeological sites identified in the St Marys Wastewater System Augmentation Aboriginal Cultural Heritage Assessment Report as being impacted by the works. The excavations were conducted under AHIP # C0000501.

Three of the seven sites which were impacted on by the works are located within the study area for this project (45-5-3160, 45-5-0599, and 45-5-3159). ENSure classified the site as having *"high significance at the local level as it has potential to contain further archaeological deposit, and includes several uncommon artefact types. It is of high social significance as it provides evidence of the use of the area by Aboriginal people in a specific way – resource utilisation – and includes particular highly valued and uncommon artefacts"* (ENSure 2015; 57)

Excavations conducted at site 45-5-3160 included ten shovel test pits and eleven 1 m x 1m test pits (13.5 m² in total). A total of 13 artefacts were salvaged. No surface finds were identified or collected. ENSure classified the site as having *"low-moderate level significance at the local level. It has low-moderate social significance and has low scientific significance due to the presence of 18 artefacts. The site has low research and educational potential."* (ENSure 2015; 58)

A total of 20 shovel test pits and 20 1 m x 1 m (25 m² in total) test pits were excavated within the portion of site 45-5-0559 located in the AHIP boundary. 1346 artefacts were salvaged during the excavation of this site, 90 of which were modified artefacts.

Site 45-5-3159 was also excavated as part of this salvage works program. As with site 45-5-0559, a total of 20 shovel test pits and 20 1 m x 1m test pits were excavated (25 m² in total). 463 artefacts were salvaged during excavations of this site. High significance at the local level as several uncommon artefact types were identified in the assemblage. ENSure classified the site as having *"high social significance as it provides evidence of the use of the area by Aboriginal people in a specific way – resource utilisation – and includes particular highly valued and uncommon artefacts." (*ENSure 2015; 57)

No further testing was conducted outside of the three sites mentioned above within the study area subject to this report.

The ENSure study concluded that "There appears to be a preference for stone tool curation practises on elevated, well drained landforms adjacent to the floodplain of Ropes Creek"(ENSure 2015; 49).

3.4.1 Summary

The archaeological assessments conducted both within the study area and within close proximity to the study area, indicate that open artefact sites are likely to be identified throughout all landscape features within the study area. While areas of disturbance are unlikely to contain intact archaeological deposits, excavations carried out by Jo McDonald CHM on site # 45-5-2986 'The Vineyard', indicate that disturbed sites within close proximity to the study area have the potential to contain large quantities of Aboriginal objects. Areas of undeveloped land are relatively rare in the region.

3.5 Predictive model

A wide range of Aboriginal site types can be encountered during archaeological investigations and these reflect the range of activities carried out by Aboriginal people in the past. AHIMS sets out twenty site types which are defined by the cultural activities associated with the use of a place. The main site types which may be present in the study area are summarised in **Table 2** below along with a prediction of likelihood of these sites types to be present. This summary is based on previous archaeological research and predictive models, as well as the assessment of landforms and environment within the study area discussed above.

Table 3: Aboriginal site types for the study area

Site Type	Description
Open Camp Sites / Stone Artefact Scatters / Isolated Finds	Open camp sites represent past Aboriginal subsistence and stone knapping activities, and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Camp sites containing surface or subsurface deposit from repeated or continued occupation are more likely to occur on elevated ground near the most permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich surrounds would have offered ideal camping areas to the Aboriginal inhabitants of the local area. Isolated finds may represent a single item discard event, or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in

Site Type	Description
	situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers. Artefact scatters and isolated artefacts are common site types identified within the study area.
Potential Archaeological Deposit	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above, ridge lines and ridge tops and sand dune systems. PADs may occur with the study area in areas of higher ground within proximity to creek lines. Land at the confluences of creek lines is also likely to contain PAD.
Scarred or Carved Trees	Tree bark was utilised by Aboriginal people for various purposes, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments. The removal of bark exposes the heart wood of the tree, resulting in a scar. Trees may also have been scarred in order to gain access to food resources (e.g. cutting toe-holds so as to climb the tree and catch possums or birds), or to mark locations such as tribal territories. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees generally marked areas for ceremonial purposes, or the locations of graves. The limited number of old native trees in the study area means this site type is unlikely to be present.
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against each other creates grooves in the rock, which are usually found on flat areas of soft rock such as sandstone, in areas of creek beds and other water sources. They are often associated with rock pools in creek beds and on platforms to enable the wet-grinding technique. Sandstone outcropping in the study area should be inspected for possible grinding grooves. Sandstone outcropping is not expected to be present within the study area.
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees. Agricultural and pastoral activities are likely to damage or destroy raised earth features. Vegetation growth and exposure to weather would also be impacting factors. It is unlikely that any bora or ceremonial grounds remain within the study area, if indeed they once existed in this part of the landscape.

Site Type	Description
Natural Mythological (Ritual) sites	These types of sites are usually identified by the local Aboriginal community as locations of cultural significance, and they may not necessarily contain material evidence of Aboriginal associations with the place. These sites are generally determined through community consultation. There is no information to suggest that the property contains such sites.
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distances. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records, or oral histories. Burial sites are considered highly unlikely in the study area.
Contact / Historical Sites	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people, or be sites of Aboriginal occupation in the historical period. There is no information to suggest that the property is the location of a contact site.

Archaeological implications for the study area based on previously recorded sites, archaeological investigations in the region, predictive models, and the site's environmental characteristics are as follows:

- From the AHIMS search results and previous reporting for the Eastern Creek area, 17 registered artefact sites have been recorded in the study area.
- Open sites containing artefacts are by far the most recorded on the Cumberland Plain and the most common site within 1 km of the study area.
- Areas of potential archaeological deposit (PAD) are also frequently found throughout the region.
- Other site types such as scarred trees are generally rare in the region. The lack of mature trees within the study area indicates that scarred trees are unlikely to be located within the study area.
- Midden sites are often found within close proximity to water sources. Middens can contain stone artefacts, animal and fish bone, charcoal, hearths, and ochre. There are no midden sites within 1 km of the study area.
- Grinding grooves are generally located on exposed sandstone outcrops in open areas close to water sources. Rock outcrops near the creek line should be inspected for grinding grooves
- There are no registered Aboriginal burial sites within 1 km of the study area. Burials would be unlikely in the area and are more likely to occur on coastal sand dunes or sand bodies near major rivers.

3.6 Field survey methods

The archaeological survey was conducted in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects (DECCW 2010a).

A pedestrian field survey of the study area was conducted on 15 October 2015 by ELA archaeologists Lyndon Patterson, and Taryn Gooley; and Steve Randall, representative of the Deerubbin Local Aboriginal Land Council (DLALC).

The study area was divided into three separate survey areas delineated by the two tributary creek lines which drain into Ropes Creek (Figure 2). All areas of exposure were inspected for evidence of Aboriginal artefacts and sites. Areas which contained remnant old growth trees were inspected for Aboriginal artefacts and sites, and the trees were inspected for cultural scarring. Particular attention was given to areas within 150 m of Ropes Creek and the tributary creek lines which transect the study area, as well as areas of higher ground within the study area.

All previously recorded sites within the study area were also reinspected during the pedestrian survey in order to determine the condition of the sites.

All previously recorded sites and newly identified sites were recorded using a hand held GPS. The condition of each of the sites as well as the site contents was recorded and photographs of each site were taken. General overview photographs were taken of each survey area documenting the terrain, landscape features, areas of disturbance, and surface visibility.

3.7 Field survey results

As mentioned above the study area was divided into three survey areas for ease of recording. Weather conditions were fair with very little cloud cover. Recent rainfall and sunny weather within the Eastern Creek region resulted in increased vegetation growth which severely hampered surface visibility within all survey areas. One established gravel track, located along the western border of the study area, was constructed as part of the St Marys wastewater system augmentation works. This access track measures approximately 20-30 m wide, and appears to have been constructed using imported gravels.

All survey areas had evidence of widespread modern and historic rubbish dumping. A large transmission line also transects the entire study area from north to south along the eastern boundary. The effective survey coverage of the study area is listed in **Error! Reference source not found.**.

Table 4: Effective survey coverage within the study area

Survey Unit	Survey Unit Area (m²)	Visibility %	Exposure %	Effective Coverage Area (m²)	Effective Coverage %
Survey Area 1	277538	10%	10%	2775.38	1%
Survey Area 2	431306	15%	10%	6469.59	1.48%
Survey Area 3	499257	10%	10%	4992.57	1%

3.7.1 Survey Area 1

Survey area 1 is located in the northern most portion of the study area. It is defined to the north and east by the lot boundary, by Ropes creek to the west, and by the northern most unnamed creek line to the south. The topography of this survey area primarily consists of lower slopes of <5° in the south eastern portion of the survey area, and valley flats and floodplains in the central, northern and western portions of the survey area.

Six well established gravel access tracks transect survey area 1, along with multiple informal four wheel drive, and motorbike tracks. The access tracks provided the only source of surface visibility and archaeological visibility within this survey area.

Much of survey area 1 was covered in long, dense grasses. Parts of the north western portion of survey area 1 were waterlogged and had reed-like plants growing throughout. Aerial photographs as well as field observations indicate that the waterlogged area in the north western portion of survey area 1 is a wetland. A small drainage line runs from the east of the survey area and terminates at the wetland.

Some remnant old growth trees were noted within survey area 1. The old growth trees were inspected for cultural scarring, however no cultural scarring was observed. The bases of these trees were also inspected for Aboriginal artefacts.

Much of the bank of Ropes Creek was found to be largely undisturbed; old growth trees including eucalypt species were noted growing along the banks of ropes creek within this survey area. One portion of Ropes Creek in the North West corner of the study area was found to be highly disturbed. This part of Ropes Creek had been excavated in parts to build motorbike or BMX jumps. The creek in this section of the study area was also found to be highly polluted with large amounts of rubbish noted.

Newly identified sites

Two previously unrecorded sites were identified within survey area 1. Ropes Creek AS6 consists of a disperse artefact scatter of three artefacts located on an established access track. The artefacts were identified on an area of raised ground adjacent to the possible billabong feature. Site integrity is low due to disturbance from the access track.

Ropes Creek AS7 Is an isolated artefact located on an established access track on the eastern boundary of survey area 1. Refer to **Table 5** for site details and artefact photograph. Site integrity is low due to disturbance from the access track. The location of the sites is shown in Figure 9.

Previously recorded AHIMS sites

Two AHIMS sites are located within survey area 1 (Table 1). Site 45-5-3160 (RCAS08) is listed as a small artefact scatter of five artefacts. The site has been partially destroyed under AHIP 3728. The St Marys wastewater system augmentation works were conducted immediately adjacent to the site. The ENSure assessment classified the site as having low to moderate archaeological significance (ENSure 2014). This site was inspected as part of the field assessment. The eastern most portion of the site has been disturbed by the St Marys waste water augmentation works. Three artefacts were identified within close proximity to the site, along an established farm track and are considered part of the site. As the salvage report for the St Marys wastewater augmentation works is not yet available it is unclear if these artefacts are additional artefacts or if the artefacts are part of the original artefact assemblage recorded on AHIMS.

Figure 3: Exposure 45-5-3160

Figure 4: Exposure 45-5-4192

The area between Ropes Creek and the access track where the three artefacts were noted during this field assessment was relatively undisturbed. Aerial images also confirm that disturbance to this area from 2005-2015 was minimal. The landform unit within which this site is located, the presence of surface artefacts, as well as the minimal level of ground disturbance indicates that the likelihood of PAD being present is moderate to high.

Site 45-5-4192 (Eastern Creek IF 1) is an isolated artefact located on a well-established farm track towards the eastern border of survey area 1. This site was inspected during the field assessment; however the artefact was not relocated. Site integrity is low due to disturbance from the dirt track.

Table 5: Newly recorded sites within the study area

AHIMS #	Field Name	Easting; Northing	Site Area	Site Description	Artefact Description	
TBC	Ropes Creek AS6	-	~50x20m	Disperse scatter of 3 artefacts located on a dirt farm track.	Brown mudstone flake 25x31x6mm Pink silcrete flaked piece 9x5x2 mm Pink silcrete retouched flake. Retouch on left lateral and distal margins 10x10x6 mm	
TBC	Ropes Creek AS7	-	3x3m	Isolated artefact located on dirt track at the eastern boundary of the study area.	Red silcrete flake18x20x4mm	

TBC	Ropes Creek AS8	-	3x3m	Isolated artefact located on dirt track on the south side of northern most unnamed creek line. This area has been disturbed but has potential for PAD	Red silcrete retouched flake 16x10x1mm. Retouch on distal margin.	

3.7.2 Survey Area 2

Survey area 2 is defined by Ropes Creek to the west, the lot boundary to the east, the northern most unnamed creek line to the north and the southernmost unnamed creek line to the south (Figure 2).The topography of survey area 2 consists of hilltops and upper slopes of <30° in the south east; mid to lower slopes (~10-25°) in the central portion; and lower slopes (<5°), and valley flats and flood plains in the western and northern portions of the survey area.

As with survey area 1, this survey area was found have very low surface visibility due to dense grass cover. Five well established gravel vehicle tracks transect survey area 2, along with multiple less established four wheel drive and motorbike tracks. Two areas of exposure were also noted were previous farm structures once stood within survey area 2. These gravel tracks and areas of exposure from past disturbance provided some of the only surface visibility within the survey area. A large dam is located in the south western portion of the study area. The southernmost unnamed creek line currently drains into this dam. The land surrounding the dam has been highly disturbed through the construction of the dam. Immediately to the north of the dam the remains of farm structures and stock yards are visible. Another area of disused stock yards and the remains of a farm shed are also evident approximately 100 m to the east of the dam. Further to the east along the gravel access track on a hill top are the remains of a now demolished cottage.

Very few mature trees were noted within this survey area. The mature trees which were noted within this survey area were identified within close proximity to Ropes Creek and the northern most unnamed creek line. These mature trees were inspected for cultural scarring and the bases were inspected for evidence of Aboriginal objects. No cultural scars or Aboriginal objects were noted during the inspection of these trees.

Portions of the Ropes Creek line within this survey area have been disturbed as a result of the St Marys wastewater augmentation works which were conducted within the western boundary of the study area. Some areas of the Ropes Creek line however remain relatively undisturbed (Figure 6).

Newly identified site

One previously unrecorded site was identified within this survey area. Ropes Creek AS8 consists of one retouched flake identified on a gravel access track running adjacent to the northern most unnamed creek line, near the confluence of Ropes Creek and the northern most unnamed creek line. The location of the site is shown in Figure 9.

Figure 5: Site 45-5-3161

Figure 6: Site 45-5-3165

Previously recorded AHIMS sites

Three AHIMS Sites are located within survey area 2. Site 45-5-3161 (RCAS 7) is an artefact scatter consisting of 27 artefacts along the northern most unnamed creek line. This site was inspected during the site assessment, however due to dense grass cover the artefacts were not able to be relocated. The site integrity was found to be good and the site has potential for subsurface deposits.

Site 45-5-3165 (RCAS 1) is a small artefact scatter consisting of five artefacts. This site is located approximately 200 m south of site 45-5-3161 along the northern most unnamed creek line. The archaeological assessment conducted by Artefact Heritage (2015) classified the area between the two sites along the creek line as PAD. The artefacts were not relocated during this site assessment due to the level of grass cover however it was agreed that the entire creek line between the two sites was an area of PAD. The site integrity was found to be good and the site has potential for subsurface deposits.

Site 45-5-4600 (AIF-07) is an isolated artefact located close to the edge northern most unnamed creek and an erosional scar line in the north eastern portion of survey area 2. The site was inspected during the site assessment but the artefact was not relocated. Site integrity is low due to disturbance from previous earth works and the area is heavily eroded. There is no sub surface potential here due to previous disturbance.

Figure 7: Site 45-5-4600

Figure 8: Site 45-5-0559

AHIMS MAP REMOVED FOR PUBLIC EXHIBITION

Figure 9: Location of sites identified during the current assessment in survey units 1 and 2 (ELA 2016)

3.7.3 Survey Area 3

Survey area 3 is defined by Ropes Creek to the west, the southernmost unnamed creek line to the north, and the lot boundaries to the east and south. The topography of survey area 3 consists of hilltops and upper slopes of <30° in the east; mid to lower slopes (~10-25°) in the central portion; and lower slopes (<5°), and creek flats and flood plains in the western, north western, and southern portions of the survey area. A small drainage line runs east-west along the southern boundary of survey area 3, draining into Ropes Creek.

The southernmost portion of the survey area has been highly disturbed by the construction works associated with the upgrade of Lenore drive and Old Wallgrove Road. As with survey areas 1 and 2 the main areas of exposure and surface visibility were the gravel access tracks and numerous motorbike and four wheel drive tracks located throughout the survey area. As with survey area 1 and 2 the western section of survey area 3 towards Ropes creek has been disturbed by the St Marys wastewater augmentation works. The land immediately adjacent to Ropes Creek however remains relatively undisturbed.

Previously recorded AHIMS sites

Twelve AHIMS sites have been previously recorded in survey area 3. All but one (45-5-0559) of the AHIMS sites located within this survey area were inspected as part of this field assessment, however due to the poor surface visibility and exposure levels from grass and vegetation cover the artefact sites were not able to be relocated. Sites 45-5-0563, 45-5-3159 and 45-5-3164 are located on dirt tracks but could not be relocated. Sites 45-5-3605, 45-5-3063 and 45-5-4599 were located in grassy areas and could not be relocated. Select photos of the site locations taken during the field survey are presented below.

One artefact was identified in this survey area during the site assessment. The isolated artefact was located on an access track on the edge of a creek terrace to the south of the large dam located in survey area 2. The artefact is located approximately 50 m to the south east of AHIMS site 45-5-0559, an open camp site which has been partially impacted by the St Marys wastewater augmentation works. This artefact is considered an extension of site 45-5-0559.

Figure 10: Site 45-5- 3163

Figure 11: Site 45-5-4599

Figure 12: Site 45-5-0563

Figure 13: Site 45-5-3159

Figure 14: Site 45-5-3164

Figure 15: Site 45-5-3605

3.8 Summary

Future development of the subject site will result in ground modification that may have the potential to disturb Aboriginal cultural objects in the form of stone artefacts. Much of the study area is located within 300 m of Ropes Creek, a permanent water course and a number of smaller drainage lines also transect the study area and drain into Ropes Creek.

A review of the previous archaeological and environment assessments of the study area indicated that the level of disturbance in the study area is variable and some areas contain natural soil profiles. High disturbance levels are in the vicinity of Lenore Drive in the south, the recent north-south pipeline construction in the west and the areas of former farm buildings, dam and stock yards in the centre of the property.

Seventeen registered sites were identified within the study area, an additional three sites were located within the study area during recent field work and 65 registered sites have been identified within 1 km of the study area.

Dense ground cover prevented the location of further artefacts, however the topography, general lack of disturbance, proximity to water and the presence of multiple sites in close proximity, suggests that

additional Aboriginal objects or sites are likely to be present within the study area. The summary of all known Aboriginal sites within the study area including current condition is presented in table 6 below.

Table 6: Summary of all Aboriginal sites within the study area including previous AHIMS

AHIMS #	Field Name	Site Feature	Survey Area	Relocated artefacts	Site integrity
45-5-0557	Blacktown Southwest 3 Eastern Creek	Artefact	3	No	Good
45-5-0559	Blacktown Southwest 7 Colyton	Artefact	3	Yes	Poor partially destroyed from pipeline
45-5-0560	Blacktown Southwest 8 Colyton	Artefact	3	No	Good
45-5-0562	Blacktown Southwest 10 Colyton	Artefact	3	No	Appears destroyed from Lenore Drive construction
45-5-0563	Blacktown Southwest 11 Colyton	Artefact	3	No	Poor on dirt track
45-5-3159	RCIF 2	Artefact	3	No	Fair, near Ropes Creek
45-5-3160	RCAS 8	Artefact	1	Yes	Poor partially destroyed from pipeline
45-5-3161	RCAS 7	Artefact	2	No	Fair
45-5-3162	RCAS 4	Artefact	3	No	Poor on dirt track
45-5-3163	RCAS 5	Artefact	3	No	Poor on dirt track
45-5-3164	RCAS 3	Artefact	3	No	Poor on dirt track
45-5-3165	RCAS 1	Artefact	2	No	Good, next to second order stream
45-5-3843	RCIF 1	Artefact	3	No	Appears destroyed from Lenore Drive construction
45-5-4192	Eastern Creek IF	Artefact	1	No	Poor on dirt track
45-5-4599	AIF 6	Artefact	3	No	Poor partially destroyed from pipeline
45-5-4600	AIF 7	Artefact	2	No	Poor from heavy earth works and disturbance
45-5-4605	AIF 5	Artefact	3	No	Poor on dirt track
TBC	Ropes Creek AS6	Artefact	1	Newly identified	Poor on dirt track
TBC	Ropes Creek AS7	Artefact	1	Newly identified	Poor on dirt track

TBC	Ropes Creek AS8	Artefact	2	Newly identified	Poor on dirt track

3.9 Aboriginal statement of significance

The Australia International Council on Monuments and Sites (ICOMOS) Burra Charter 2013 provides guidance for the assessment, conservation and management of places of cultural significance (cultural heritage places). The Burra Charter provides a definition of cultural significance as "aesthetic, historic, scientific, social or spiritual value for past, present or future generations".

- Cultural heritage places or sites can be assessed through the application of these five principle values.
- Social or cultural value (for Aboriginal sites this is assessed by Aboriginal people)
- Historical value
- Scientific/archaeological value (assessed mostly by archaeologists/heritage consultants)
- Spiritual Value (for Aboriginal sites this is assessed by Aboriginal people)
- Aesthetic value

While the Burra Charter does not include 'archaeological value' specifically it is noted that it can be considered as a sub-set of scientific or other values (Australia ICOMOS Practice Note The-Burra-Charter-and-Archaeological-Practice).

This section is a preliminary consideration of scientific and archaeological values for the project area. Also included are some preliminary comments regarding cultural values of the study area made by Steve Randall from Deerubbin Local Aboriginal Land Council during the field survey.

3.9.1 Scientific significance

Scientific or archaeological value may refer to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions. To understand the scientific value, data must be gathered and it may be necessary to carry out some form of testing or sampling. For example in the case of an archaeological site, this could be established by a test excavation.

3.9.2 Preliminary statement of scientific significance

Overall the twenty stone artefact scatters and isolated artefacts recorded within the site are common and representative for the region. However the subsurface potential for the study area is largely unknown. Archaeological studies have shown there are often many times more artefacts buried in archaeological deposits than what might be visible on the surface. Further archaeological investigation may reveal large deposits of buried artefacts that may be able to answer questions relating to regional archaeology or support development of local models of human occupation in the Ropes Creek area and wider Cumberland Plain.

Excavations conducted as part of the St Marys Waste Water Augmentation Works indicate that areas of higher ground within close proximity of waterways have the potential to hold high densities of subsurface archaeological material despite historic disturbances.

While archaeological potential within the study area is thought to be greatest within 100 m of the three waterways, particularly Ropes Creek, further archaeological investigation across all landform units within the study area should be undertaken to understand the nature, extent and significance of the archaeological resource. Potential subsurface deposits of artefacts may have research value. Such deposits may yield information on past human activities, subsistence, technology and behaviours and potentially the timing of these activities in the area.

3.9.3 Preliminary social or cultural significance

Steve Randall, representative of the Deerubbin Local Aboriginal Land Council (DLALC) indicated during the field assessment that the entire study area has cultural value to the Aboriginal community. Mr Randall has requested that further archaeological testing be conducted prior to any type of works or development being conducted within the study area. He has also requested that the site be properly fenced in order to prevent any further damage to sites through illegal rubbish dumping.

DLALC provided ELA will a letter report following the field survey. DLALC recommended that the study area be further investigated, in light of that previous assessment work and subsequent archaeological investigation of land within close proximity and within the study area led to several Aboriginal sites being located. A copy of this letter is provided in Appendix B.

3.10 Future development and management

Impacts to the study area are unknown at this stage. Any development of the study area has the potential to harm the 20 recorded AHIMS sites within the study area. If the study area is to be developed in the future, further archaeological investigation in the form of a test program should be undertaken. Test excavation should focus on archaeological sensitive landforms and in areas of low disturbance. Areas of high disturbance, such as the location of previous buildings, roads and the dam would be exempt from test excavation. The purpose of the program will be to understand the nature, extent and significance of the archaeological resource, so they may be better understood, documented, and where possible, conserved.

Any areas identified of high significance should be given strong consideration for conservation. Areas of low significance will require an AHIP prior to development.

Full Aboriginal community consultation will need to be undertaken prior to undertaking test excavation and the views of the community on cultural values should be taken into account in the management of the heritage resource.

4 Historical heritage assessment

4.1 Methodology

A historical and Aboriginal heritage assessment of the subject site was undertaken in 2005 (ERM 2005). At the time of the 2005 assessment, there were a number of standing structures within the study area. The recommendations in that report in regards to historic heritage are now obsolete due to the subsequent demolition of all buildings within the study area.

This historical heritage and archaeological assessment has been prepared in accordance with the NSW Heritage Branch guidelines 'Assessing Heritage Significance' (2001) and Assessing Significance for Historical Archaeological Sites and 'Relics' (2009). The philosophy and process adopted is guided by the *Australia ICOMOS Burra Charter* 1999 (revised 2013).

The following discussion is drawn in part from the *Western Sydney Employment Area Historic Heritage Desktop Assessment Final Report* (ELA, 2015), *Historical and Aboriginal Heritage Assessment Lot 4 DP 262213 Eastern Creek (ERM 2005)* and additional property-specific supplementary research. The following history aims to provide historical context for the project area. It is not intended to be an extensive ethnographic, archaeological or historical discourse.

A heritage register search was undertaken using the following databases: State Heritage Inventory, National Heritage Database and National Trust Heritage Register. The historic background review is based on an analysis of material held at the following repositories:

- State Library of NSW – Mitchell Library.
- NSW Land & Property Information subdivision and parish maps
- NSW Land & Property Information 1947 aerial photographic series
- NSW State Records.
- National Library of Australia.
- Photographic archives.

4.2 Historical context

4.2.1 European exploration and settlement

European occupation of the County of Cumberland began around 1792, with settlement expanding from Parramatta north-west to Windsor and Richmond. Early land grants issued by Governor Macquarie (c.1816-1817) encouraged settlement and pastoral improvements. Many of these grants were made to notable free settlers and emancipated convicts. Large land parcels ranging from a couple of hundred acres to over one thousand acres were also granted to some former government officials, while smaller parcels (usually less than one hundred acres) were granted to emancipated convicts and free settlers. Whilst some wealthier landholders concentrated on wheat and cattle, many of the landholders had smaller blocks sustaining multiple crops such as wheat, corn, barley and vegetables. Early farming ventures met with varying degrees of success, which may have been due to a lack of familiarity with the Australian climate. The type of farming undertaken is likely to have been, in part, dependant on the resources of the early land holders (AMBS 2010: 10).

4.2.2 John Thomas Campbell and Mount Philo

The project area is located in the Parish of Melville, within the County of Cumberland. The Parish of Melville has largely been subject to industrial activities and residential development. Several large historical land grants cut across present-day council and parish boundaries, such as Bayly Park, Mount

Philo, Erskine Park and Minchinbury. These grants established the settlement pattern and subsequent development of the area (Error! Reference source not found.**).**

John Thomas Campbell (1770-1830) was appointed Macquarie's secretary on 1 January 1810. He spent the next eleven years as Macquarie's chief assistant in the administration of the colony and was a loyal supporter of Macquarie's governorship. During his time serving in the colony, Campbell was granted large areas of land on which he farmed and bred cattle and horses. He gave his grant of 1100 acres next to Erskine Park (Portion 46, Parish of Melville, 17 August 1819) the name 'Mount Philo', which commemorated a libel case between Campbell and the Reverend Samuel Marsden (Casey & Lowe, 2002: 29). It appears unlikely that Campbell ever built on his Mount Philo property as he constructed a residence on his land at Agnes Banks, near Richmond. Campbell died at Sydney on 7 January 1830 and his heir sold the property in 1832 to Charles Roberts.

Figure 16 Approximate location of Project area overlaid on an undated early nineteenth century parish map. The project area is contained within John Thomas Campbell's grant. (Source: NSW Land & Property Information)

4.2.3 The Shepherd Family and Chatsworth

Thomas Shepherd settled in Sydney in 1826 and established the first garden nursery in the colony, naming it the Darling Nursery in honour of Governor Darling who had encouraged him to settle in New South Wales. The inner-city suburb of 'Darlington' beside the University of Sydney is the original site of Thomas Shepherd's nursery in the 1820s (*Dictionary of Sydney*, 2015). Shepherd was a practical gardener who encouraged the cultivation of local plants. He produced the first major plant catalogue, imported rare plants, designed gardens and delivered lectures (which were subsequently published) on the horticulture of Australia at the Mechanics' Institution, Sydney in1834 (Maiden, 1908).

Thomas Shepherd died in 1835 and, with the assistance of an overseer, his widow and young family continued the nursery at Chippendale. By the 1850s it was the flourishing business of Messrs Shepherd

and Co., managed by Shepherd's sons. The three brothers, Patrick Lindsay, David and Thomas William, expanded the business by moving their propagation nurseries away from the inner city. In 1856 they purchased the 1,100 acre Mount Philo estate at Eastern Creek and a further 200 acres of the Erskine Park estate (west of Rope's Creek) and called the estate Chatsworth. Chatsworth was used to grow flowers, propagate fruit trees, ornamental trees and shrubs, which were then sent to the Chippendale nursery for retail sale (Gelding, 1983: 10, in Casey & Lowe, 2002:30).

The Shepherd family's ownership of the property had a significant effect on the land in the form of modification including the construction of a house and associated buildings, the excavation of a large dam, terracing and the introduction of an irrigation system. Ropes Creek and a number of first order tributaries of Eastern Creek provided sufficient water to successfully run the business for around 50 years. An 1865 Directory called the property 'the famous Chatsworth nursery'. The land cultivated was slightly larger than the current study area. (ERM 2005: Appendix B4).

In 1865 Thomas William Shepherd transferred his one-third interest to his brothers David and Patrick Lindsay. David Shepherd and his wife Jane Sarah lived at Chatsworth with their seven children and managed the property and business. Patrick Lindsay Crawford Shepherd was Member of Parliament for the Nepean from 1874-1877 and was a Member of the Legislative Council from 1887-1903. He was also President of the Horticultural Society of New South Wales (Dictionary of Sydney). He continued to own part of the Chatsworth property, however in 1880 he moved his nursery interests to Bowral where he established P.L.C. Shepherd and Co, seedsmen and plant merchants.

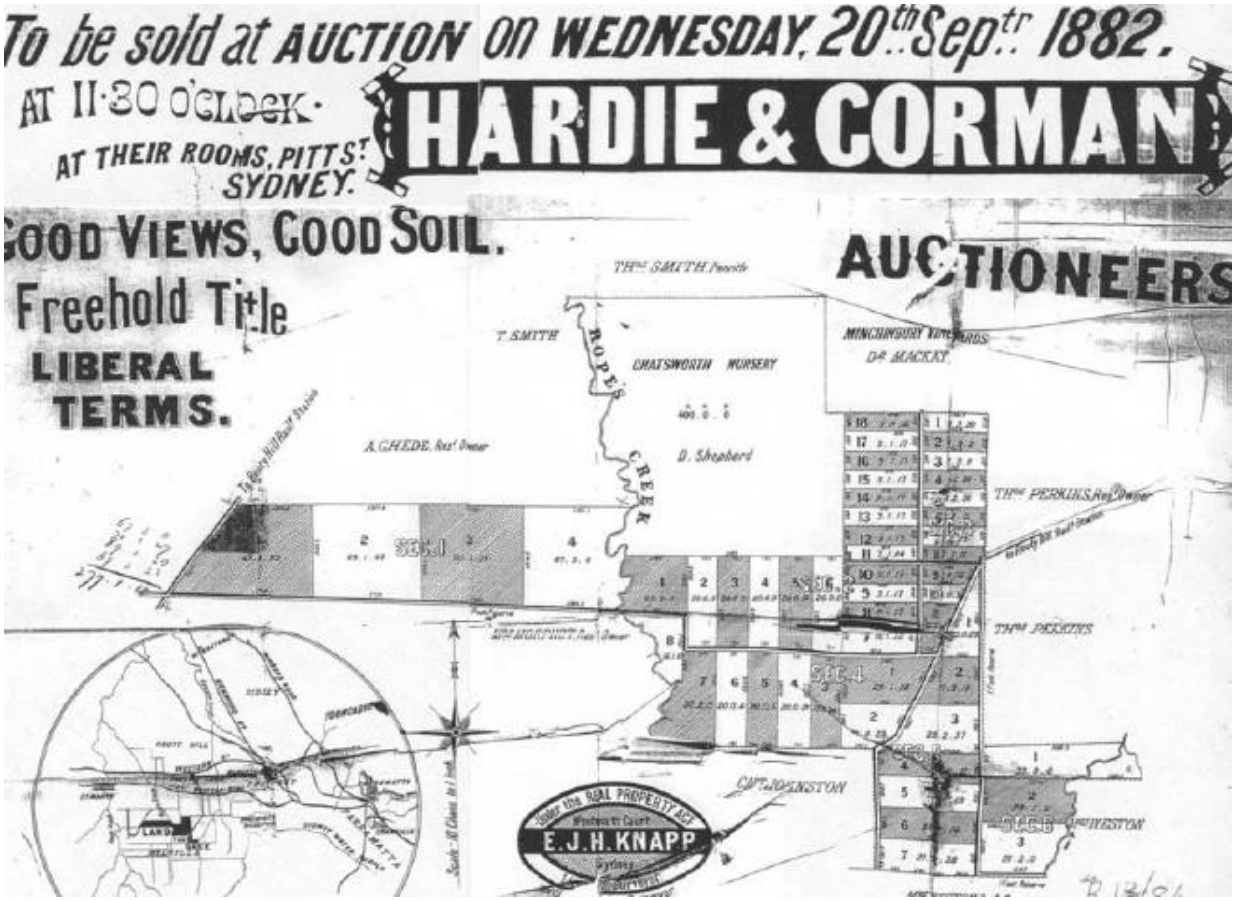

Figure 17 1882 auction notice from Hardie and Gorman of Shepherd's Chatsworth Estate (ML Subdivision plans R 13/86)

The southern portion of the Chatsworth Estate, consisting of approximately 1,000 acres, was offered for auction by Hardie and Gorman in September 1882. David and Patrick Shepherd retained the northern

portion of the estate. In 1885 Chatsworth estate consisted of 1,900 acres and was occupied by Messrs Shepherd and Co who had 12 horses, 32 cattle and nine pigs. Gertrude T. Masters, a tenant, occupied 20 acres and had 2 horses and 18 cattle (Gelding 1983, 14, in Casey and Lowe 2002:32). It appears that only a portion of the estate was under cultivation. The 1901 Census indicates that there were two households on Chatsworth Estate. L.R. Shepherd occupied one house with 2 male and 5 female occupants while H.A. Possie occupied the other with 3 male and 1 female occupant (1901 Census. District 62, Sub-district C, Nos 19 and 20).

Following the death of Patrick Lindsay Crawford Shepherd in 1903, his portion of Chatsworth was sold to Frederick Thomas Bigg of Mt Vernon, Liverpool, in 1905. A pastoral directory for 1920 noted that F.T. Bigg of Mt Vernon, Liverpool occupied 1357 acres and had 18 horses and 152 cattle (Sands Sydney NSW Directory 1920, p.118C). Bigg named his property Shady Island and it added to other land holdings he had in the area. Bigg did not construct a house on the property.

In December 1909 David Shepherd sold his 801 acre Chatsworth estate to Thomas Baker, a farmer of Wentworthville (Casey and Lowe 2002:42). The subject site is located on this portion of land. Baker owned a timber mill in at Rooty Hill Station and once he had moved to Chatsworth, began to cut out the remaining timber stands on the property. The family, including five children, lived in the Chatsworth homestead. In the 1920s he was grazing cattle, sheep and horses on the property. Thomas Baker died in 1934 followed by his wife in 1944. The Baker family retained the land until 1955 when William Thomas Collett Baker and I.W. Wainwright sold it to Burfield Pty Ltd, which soon after became Ray Fitzpatrick Quarries (Casey and Lowe 2002:43).

Figure 18: 1947 Aerial of the building and development of the area around the reservoir (Land and Property Information)

Aerial imagery from 1947 shows a number of buildings in the study area as well as areas of land that appear to be under cultivation to the south and west of the dam. Dairying, cattle and sheep grazing is also likely to have been undertaken. Four main building groups were extant on the site prior to 1947. These include:

- A single storey weatherboard house (homestead) on brick footings with hipped corrugated iron roof, front veranda supported by four timber posts and a brick chimney at the rear. A corrugated iron clad stable supported by timber posts and three fenced paddocks were located to the south of the homestead in addition to a large corrugated iron machinery shed. There were numerous other small buildings, yards and sheds associated with the house which is likely to have been the first homestead on the property built by the Shepherd family. This group of buildings were located approximately 75 m north of the reservoir and was identified as Item No. 210 in the Blacktown Heritage Study (but not a listed item in the Blacktown LEP 2015). Several additions to the original house were made to the rear at a later date. This building and those in close proximity were identified by ERM in 2005 as historic buildings 1, 2, 3 & 4.

- Two timber cottages with hipped iron roofs and brick chimneys are located 300 m to the east of the reservoir at the top of a rise. They are identified in the Blacktown Heritage Study as Item No. 211 & 212 (but not a listed item in the Blacktown LEP 2015). The cottages have additional outbuildings attached and the site is associated with a large elm tree. Both cottages were surrounded by a timber picket fence. These buildings were identified by ERM in 2005 as historic buildings 5 & 6. The cottages are likely to be associated with the later phase of Chatsworth nursery and likely to be constructed around 1900.

- A long narrow shed or barn with a gabled corrugated iron roof, two small gabled buildings associated and a fenced yard to the east. The buildings are located approximately 50 m south of the northern tributary of the study area and adjacent to a fenced agricultural allotment. They appear to be storage related. These buildings are identified in the Blacktown Heritage Study as Item No. 213 (but not a listed item in the Blacktown LEP 2015) and by ERM in 2005 as historic building 7.

- Substantially fenced cattle yards and a very small associated building were located south east of the homestead. The yards consist of a large square stone paved yard and two smaller rectangular grassed yards fenced with timber posts approximately 1.8 m high and extensively fastened with large metal bolts. This item was not identified in the Blacktown Heritage Study and not identified by ERM in their 2005 study.

Aerial imagery from 2004 shows the homestead surrounded by a fence and three mature Elm trees. Four large sheds and number of small outbuildings are included in the complex. By 2005 only the homestead and the large sheds survive and a year later the homestead and surrounding fence had been demolished and all building materials completely removed. The three surrounding Elm trees remain as a reminder of the location of the homestead. In 2007 the smallest of the three remaining sheds was demolished and by 2009 the stables had been removed. The final large (machinery) shed was partially demolished by 2011.

One of the cottages on the hill to the east of the homestead was demolished in 2006 and by 2013 the second cottage had collapsed or been demolished and building materials removed or spread across the site. The long shed to the north of the homestead was modified in 2005 to include two gabled wings and an outhouse. The agricultural area to the west was no longer in use and the area around the building was overgrown. In 2009 the building was dilapidated and by 2011 it had been demolished, however the fence lines and yards are still in place, although overgrown.

In 2004, the cattle yards had a large corrugated iron gabled roof building associated on the western side and a cattle ramp at the northwest corner. The building may be a shearing shed or a used for storage. There was also a small building on the eastern boundary of the yards. The large shed was demolished in 2006 and the small one in 2007. Building materials were left lying on the site. The site has since been subject to fire and vandalism and materials removed.

The property is currently in the ownership of the Department of Planning and the Environment and is still used for grazing cattle. The property appears to have been leased until around 2005 and has since been subject to squatting and vandalism.

4.3 Historical phases

Phase 1 – Plilo estate 1819-1855 - some vegetation clearing, fencing and stock grazing, no structures.

Phase 2 – Shepherd's Chatsworth estate 1856-1882 - dam construction, clearing, terracing and plant propagation, irrigation, levelling and construction of the house and some outbuildings. Most activity centres around the reservoir.

Phase 3 - Shepherd's Chatsworth estate 1883 -1905 – subdivision and sale of the southern part of the estate, alterations and additions to the homestead and outbuildings, clearance of more property as well as cattle grazing. Probable construction of the cottages on the hill.

Phase 4 - 1909-1955 - Baker ownership, clears timber from the site and tenants part pf the property. Additional cattle grazing and construction of the stables, machinery shed, stock yard and dairy.

Phase 5 – 1955-2016 property tenanted, cattle grazing and general lack of maintenance leading to demolition, collapse and vandalism of all built structures.

4.4 Heritage register search results

4.4.1 WHL, NHL, CHL and RNE

- There are no heritage items on the World Heritage List, National Heritage List, Commonwealth Heritage List or Register of the National Estate located within the project area or 1km buffer zone from its boundary.

4.4.2 State Heritage Inventory and State Heritage Register

- There are no heritage items within project area or buffer zone currently included on the SHI or SHR.

4.4.3 Blacktown LEP 2015

- There are no items listed within the study area on the Blacktown LEP 2015.
- Southridge (Residence), 1 Southridge Street, Lot 1551 DP 1180982, Eastern Creek is an heritage item on the Blacktown LEP 2015 (Item ID# I23) approximately 1.3km east of the project area.

4.4.4 Non-statutory considerations

- Residence Southridge Street, off Walgrove Road, Eastern Creek is on the National Trust Heritage Register.

The National Trust Heritage Register is a non-statutory listing on imposes no heritage approval or referral requirements for the current project. This is the cottage is listed on the Blacktown LEP 2015 and afforded protection therewith.

4.5 Previous consultancy-based heritage assessments

This section presents a review of previously undertaken heritage studies and reports. A number of heritage investigations have been undertaken in the areas comprising the project area. A review of

relevant heritage studies and reports has formed a major component of this assessment. These documents have been provided by the client.

Eco Logical Australia Pty Ltd 2015. *Western Sydney Employment Area – Historic Heritage Desktop Assessment*, prepared for Department of Planning & Environment NSW.

Eco Logical Australia Pty Ltd (ELA) was commissioned by the Department of Planning and Environment (DPE), NSW Government to prepare a Historical Heritage Desktop Assessment for the Broader Western Sydney Employment Area (WSEA). The aim of the study was to identify historic items and places which may exist within the WSEA, and outline a planning and management framework for such items and places.

A search of the NSW State Heritage Inventory (SHI) identified 14 heritage items within the WSEA project area and 35 heritage items within the 2 km search buffer of the boundaries (excluding items listed on the SHR). Seven [7] places on the State Heritage Register were identified within the 2 km search buffer from the boundary of WSEA project area. These items have been listed by local councils and are reflected in their respective LEPs. Some sites, particularly those related to water management are also listed on the Section 170 NSW State agency heritage register. Numerous areas were identified across the WSEA project area as having high archaeological potential related to early European settlement, as well as associated with NSW historical themes, such as defence, post-war advances in science, technology and communication.

Australian Museum Business Services Pty Ltd 2010. *Erskine Park Link Road - Heritage Impact Assessment*, Technical report prepared for Parsons Brinckerhoff Pty Ltd.

AMBS undertook an historical heritage assessment for the construction of a 3.1 km four-lane divided carriageway running east to west between Old Wallgrove Road and Lenore Lane to be developed as the Erskine Park Link Road the northwest sector of the WSEA Project area. The assessment report provided an historical overview of settlement including the evolution of early pattern of land grants, the development of pastoralism and agriculture, and the later nineteenth century development of Chatsworth nursery in the area.

The report assessed the study area as being of low archaeological research potential, based on field survey, and no constraints associated with the relics provision were identified as arising from the proposed development.

Joint Expert Report, Land and Environment Court of NSW Proceedings No. 30627 of 2006, Fitpatrick Pty Ltd v Minister for Planning: Old Wallgrove Road, Eastern Creek

This is a court document directly related to the findings in the ERM 2005 report. It is seminal to the consideration of the project area as it presents the differing views of two heritage experts (Dr Tim Owen, Prof. Richard Mackay) on the heritage values and management strategies for the site. The statements are now obsolete asall the buildings have been destroyed. Management strategies will be further discussed in Section 4.9.

ERM 2005. *Historical and Aboriginal Heritage Assessment of Lot 4 DP 262213, Eastern Creek*, prepared for DIPNR.

This report is the key existing study for the current assessment of the project area. In terms of historic heritage, the report established that the project area had a ‘moderate level of State significance’ through its direct association with the Shepherd family, who are significant in terms of Australian horticulture. A

number of historical heritage items were identified on the property including a homestead, two cottages, a dam, and terracing.

The report recommended that two 'Heritage Preservation zones', be established to protect the main concentration of Aboriginal and historical heritage sites. In regard to the historic hertage of the site, these recommendtions are now obolete as the buildings have ebeen destroyed. Management strategies will be further discussed in Section 4.9.

Casey & Lowe, 2002. *SEPP 59 Lands Eastern Creek Strategic Land Use Study - Non-Indigenous Heritage Study*, prepared for Blacktown City Council.

This key study was commissioned by Blacktown Council on behalf of the owners of some of the properties within its study area. Its aim was to identify and assess the non-indigenous (historic) heritage of the properties to inform the decision-making of the overall development of the SEPP 59 lands. The heritage study provides a good historical context for the current project area.

The survey did not identify any heritage items or places of historical archaeological potential within the current project area. It did, however, identify and assess five [5] built and archaeological sites within what was then referred to as the 'Austral property', which is to the east of the Project area. One of these sites is the Southridge house which is now a listed item on the Blacktown LEP 2015 Heritage Register (Schedule 5) and the National Trust register.

4.6 Site inspection and present condition

A site inspection was carried out on 23 February 2016. The site contains a number of historic landscape items and archaeological sites. The site comprises of mostly cleared and grassed rolling hills with some native regrowth mainly along creek lines. Stands of European plantings occur mostly in proximity to the reservoir and include mature African Olive (Olea europa ssp cuspidata), Elm (Ulnus), Holly (Ilex) and Oleander (Nenium oleander). Cyprus pines and bottlebrush were also planted accompanying the non-native species. The location of built structures and historical archaeological sites are associated with mature non-native trees and overgrown with blackberry, thistle and box thorn.

Figure 19: Exotic plantings including Oleander

Figure 20: Exotic plantings –African Olive

All buildings identified in the study area during the previous inspection by ERM in 2005 have now been demolished. The homestead site near the reservoir is in similar condition to all the other structures on the site with only some fencing and two posts of the machinery shed now standing. The building platform of

a shed, several concrete slabs, exotic trees, features associated with the stables and remnant building material is all that remains of the homestead and its supplementary structures.

The homestead was demolished din 2006. Building materials such as corrugated iron and timber posts are spread around the general area and there is widespread evidence of burning which appears to relate to vandalism and not bushfire. The homestead had brick footings and fireplace, however no brick is evident in the area, suggesting that the homestead was systematically demolished and the building materials were removed from the site. The stables adjacent to homestead were constructed of machine sawn timbers and the nails are not early. There is no evidence of artefacts, rubbish piles or the location of outhouses. Several features associated with the homestead such as rubbish piles and stone foundations that were identified in the 2005 survey were not relocated due to the dense grass cover across the site.

Figure 21: Remains machinery shed

Figure 22: Location of the homestead

Figure 23: Remains of the stables

Figure 24: Old tree planting in the area of the homestead

The location of two cottages on the hill now consists of remnant structural features and building material, some of which appears to have been subject to fire damage. The remains of two brick fire places are constructed of dry pressed shale brick which were commonly in use around 1900. Nothing of the timber clad hose remains apart from scattered boards and a small part of the roof frame with corrugated iron attached. All timbers are machine sawn. There is evidence of the front veranda and surrounding picket fence and a number of concrete slabs indicate later additions to the cottages. Two piles of bricks at the

rear of the cottage remains suggest bulldozing or stockpiling of materials. A below ground concrete cistern was also located to the south of the cottage remains which is likely to have been either a water supply or septic system. The site is overgrown with long grasses and box thorn and there is no evidence of the location of refuse piles or cess pits. Building materials suggest a construction date around 1900 with a number of later additions.

Figure 25: Remains of the cottage and roof structure

Figure 26: Remains of a chimney and concrete slab

Figure 27: Cottage and bathroom concrete slab

Figure 28: Cottage veranda

The location of the long shed to the north of the homestead is highly overgrown, however timber posts, fence lines, a concrete slab and stone foundations are evident. A large quantity of corrugated iron sheets are present, but it appears that most of the timber has been removed. No artefacts associated with the function of the building were evident.

Figure 29: Remains of the long shed footings

Figure 30: Corrugated iron remains of the long shed

The cattle yards to the east of the homestead once had an extensive series of well fenced yards with 1.8 m posts and four rails. Many of the posts have been sawn of, possibly for use as fire wood, and the entire area has been subject to widespread burning. The largest of the cattle yards is paved with stone (now substantially overgrown with grass) and appears to have been used as a dairy. The smaller yards are grassed and likely to have been holding pens. The footprint of a post 1947 building / shed is clear on the western side and a concrete slab and circular imprint of a tank is evident on the southern side. The remains of a cattle loading ramp are evident at the north western corner of the yards.

The reservoir has been created by excavation and addition of local soils. It is likely that the reservoir was created by the Shepherd brothers in the 1850s as a permanent source of water for the nursery. The reservoir collects water from ephemeral drainage lines near the creek and there is some evidence of natural channels from the creek being modified to feed the reservoir. Features such as a stone wall and terracing identified in the 2005 survey were not relocated due to the dense grass cover. Several other small dams or 'water pools' were noted across the site. It is not known if these are natural phenomena or man-made. No water was contained in them during the site inspection. There was a square concrete cistern measuring approx. 1.5 m x 1.5 m by 1.5 m deep, was located to the west of the former homestead and north of the dam and likely used for irrigation purposes.

Figure 31: Remains of the stockyards

Figure 32: Stone flagged enclosure - possible dairy

Figure 33: Concrete base for tank

Figure 34: Collapsed shed posts

Roads on the property have changed over time, some have been graded and used extensively, while some are no longer used and have been overgrown. The property is used by motor cross bike riders and large quantities of household rubbish have been dumped on the site. Inspection of historical aerial imagery demonstrated that the property also contains more trees and general vegetation than was present in 1947 and 2005. Much of this appears to be regrowth.

4.7 Archaeological potential

Historical archaeology is the study of the past using physical evidence in conjunction with historical sources. It focuses on the objects used by people in the past and the places where they lived and worked. It can tell us about the way things were made and used and how people lived their daily lives. Archaeology is not just about objects and remains. It is also about landscapes and links between sites. Archaeology is assessed in two ways, the potential for the site to retain an archaeological resource and the significance of that resource.

Figure 35: Historic archaeological sites (Six Maps)

Archaeological Potential is defined as:

> *The degree of physical evidence present on an archaeological site, usually assessed on the basis of physical evaluation and historical research. Common units for describing archaeological potential are:*
>
> - known archaeological features/sites (high archaeological potential);
> - potential archaeological features/sites (medium archaeological potential);
> - no archaeological features/sites (low archaeological potential).(Department of Urban Affairs and Planning 1996)

Four areas of archaeological potential (Figure 35) have been identified in the project area which are associated with previous standing structures. None of these items were listed on the Blacktown 1988 LEP as built items and none are now listed on the recently revised Blacktown City Council LEP 2015 as archaeological items.

The homestead that was located close to the reservoir is likely to be earliest building on Chatsworth estate. It is unknown when the first building on the property was constructed, however it is likely to have been in the mid to late 1850s as there would have been at least a caretaker on the property and the travelling time between the nursery in Darlington and Chatsworth was considerable at that time. David Shepherd and his family were living on the property in 1865 and probably earlier.

The site has the potential to contain a number of archaeological features and deposits. The main building appears to have been systematically demolished and materials removed, however it is possible that

foundations of the building and fireplace remain below ground. The original floor boards are unlikely to have been tongue in groove at this date and therefore there may also be the potential for an underfloor deposit, however this is likely to be disturbed during the demolition process. There were a number of additions to the rear of the original house and the foundations of these may also have survived. The only above ground indication of the location of the original homestead is the three surviving elm trees that were once adjacent to the house.

Figure 36 Aerial photography analysis of homestead group, 2004 (Google Earth)

Figure 37 Aerial photography analysis of homestead group, 2007 (Google Earth)

A number of other buildings were associated with the homestead which included stables, outbuildings, sheds, fenced yards and a garden. The function of all the buildings is not clear. Fence lines are still visible and the footprint of the stables and its associated yards can still be understood however it was constructed after 1947 on the location of an earlier building. Part of the large machine shed is still standing and several concrete slabs indicate the location of later buildings. A small shed to the south of the main house survived until 2007 however there is no evidence of it on the site. There were likely to have been a number of other structures associated with the house that are not visible in aerial images and below ground features such as cess pits, rubbish pits and wells that have survived the demolition process.

Much of the building materials of the two cottages on the hill remain on site. In 2007 one of the cottages was demolished and it appears that some of the building materials were piled behind the surviving structure. The current structure appears to have collapsed on itself and the position of associated outbuildings are easily located. Evidence of materials being salvaged and vandalised is clear. Below ground features such as rubbish and cess pits are likely to have survived as the site appears to have undergone little disturbance.

The footprint of the long shed to the north of the homestead can be seen, although somewhat obscured by the overgrown vegetation. Fence lines are clear, building materials are scattered around the vicinity and stone footings were observed. The function of this building is unknown, however it is likely to be associated with produce storage due to the location of a large paddock to the west which was under cultivation in the 1940s. The building predates the 1940s and was subject to alterations and additions. A concrete slab indicates alter internal additions.

The stock yards are unlikely to predate 1900 as there was limited cattle grazing on the site prior to that time. The 1947 aerial shows the yards in a slightly smaller configuration although he paved yard is present. It is likely that fencing and posts were replaced as needed and the configuration changed with

the requirements of time. The current yards include modern hardware such as nails, bolts, gates and fencing wire.

Figure 38: Aerial photography analysis of cottage group, 2007 (Google Earth)

Figure 39: Aerial photography analysis of cottage group, 2014(Google Earth)

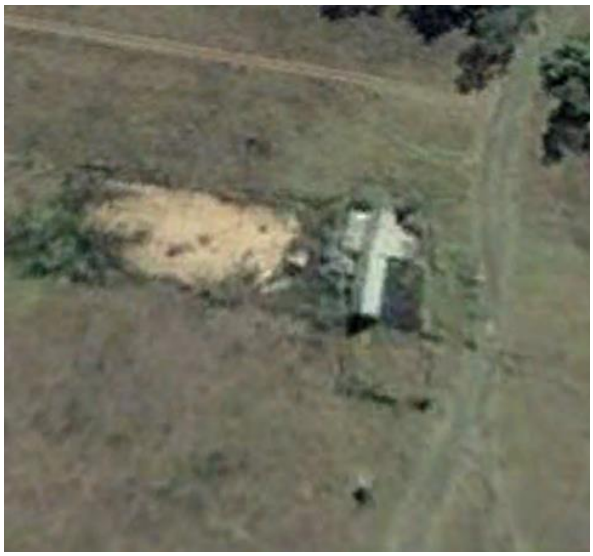

Figure 40: Aerial photography analysis of shed, 2006 (Google Earth)

Figure 41: Aerial photography analysis of shed, 2013 (Google Earth)

The subject site is assessed as having high potential for the survival of an archaeological resource relating to the occupation and development of the site over time.

4.8 Archaeological Significance

In NSW the process of finding out whether an item is important is called assessing significance.

Archaeological sites, which contain 'relics' as defined in the NSW Heritage Act, are managed like any other significant item of environmental heritage. They should be treated in the same way with the same level of consideration and assessment process as any other surviving physical evidence of the past such as buildings, works, precincts, landscapes or other places and items with potential or known heritage value. Significance is thus an expression of the cultural value afforded a place, site or item.

The Heritage Council of NSW has developed a set of seven criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. These include Historic, Social, Associative, Aesthetic, Scientific/Technical, Rarity and Representative.

Archaeological significance has long been accepted as linked directly to archaeological (or scientific) research potential:

> *A site or resource is said to be scientifically significant when its further study may be expected to help answer questions. That is scientific significance is defined as research potential*.[1]

There are two levels of heritage significance used in NSW: State and local.

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

The subject site is located on one of the earliest land grants in the area. Members of the Shepherd family lived on and developed the site from the 1850s and the land was an important and well known nursery for over 50 years. The site of the homestead was the area of earliest construction on the site. The homestead was the residence of only two families for 100 years and remained main house on the property until its demolition in 2006. The associated buildings, sheds and were associated with the day to day functioning of the nursery and later farm.

An archaeological resource relating to the original homestead, its occupation and the function of associated buildings would be historical significance. The subject site fulfils this criterion.

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

The site is associated with the Chatsworth Nursery and the Shepherd family, who were among the first and most prominent horticulturalists in Australia. The Shepherd family and in particular David Shepherd, who lived on the site made a significant contribution to the development of horticulture and the nursery business in NSW.

An archaeological resource relating to the occupation and activities of the Shepherd family on the site would be of historical significance. The subject site fulfils this criterion.

[1] Heritage Branch 2009 Assessing Significance for Historical Archaeological Sites and Relics (Bickford and Sullivan, 1984 pp 23–24).p:8

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

Any archaeological resource remaining on the site would have little potential for aesthetic significance and is unlikely to demonstrate aesthetic characteristics or a high degree of creative or technical achievement.

The archaeological resource of subject site does not fulfil this criterion.

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

The archaeological resource may be of interest to those that are concerned with local history and horticulture, however the site is unlikely to demonstrate a strong association with community or cultural groups.

The archaeological resource of subject site does not fulfil this criterion.

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

Historical archaeological material particularly that associated with the homestead may demonstrate change over time, building techniques, preferences, taste or availability of certain items and the function of spaces. The site may also contain evidence of land modification and the soils may contain evidence of plants grown on the site.

There is high potential for survival of relics associated with the homestead and this archaeological resource would be of scientific significance. The subject site fulfils this criterion.

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

Archaeological sites associated with vernacular homesteads, stables, stock yards and sheds on the outskirts of Sydney or in rural NSW are not rare, however the homestead is likely to have been constructed in the 1850s and is associated with early and well known nursery which are uncommon.

An archaeological resource relating to the early occupation and the nursery phase of the site would be rare. The subject site fulfils this criterion.

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

The archaeological resource remaining in the site could include evidence of clearing and pastoral activities, horticulture, family life and the general day to day functions of a rural property.

The archaeological resource of the site would be representative of the business opportunities and settlement outside of Sydney and regional townships in the mid to late 19th century.

Integrity

Historic documentation demonstrates that the subject site was undeveloped until the Shepherd ownership in the mid-1850s. The following 50 years saw modification of the landform for horticulture and the construction of associated residences, sheds, stables, stockyards and outbuildings. The development of

the site was not intensive and buildings were situated in only four localised areas. All the buildings have now been demolished or have collapsed due to vandalism and/or neglect. The homestead appears to have been subject to systematic demolition with most materials salvaged and removed from the site. Similarly one of the cottages on the hill appears to have been at least partially subject to a comparable process. Apart from the homestead, the archaeological resource across the site has been subject to minimal disturbance and should be mostly intact.

4.8.1 Levels of Significance

Documentary evidence for the history development of the site includes a range of photographic images, parish maps, historical descriptions and technical reports. The historical analysis undertaken for the site reveals that the potential for evidence of development and occupation of the site after 1850 is high. It appears that there were never any structures or significant activity on the subject site prior to this time. Due to the low level of disturbance the site has experienced over time, it is considered that the site is likely to contain intact or partially intact evidence relating to original topography, horticultural use, construction of early buildings and occupation debris.

Table 7: Archaeological Potential and Significance

Archaeological potential	Level of potential	Level of significance
Phase 1 - pre-1850 land use, clearing and fencing	Low	Local
Phase 2 - relating to the Shepherd occupation of the land 1855-1882 (prior to subdivision) including house and outbuilding construction, land modification and horticultural practices, water management, yard surfaces or deposits, dumps and pits, below ground features such as cess pits and entry or access roads. The archaeological resource associated with would be of local significance given the early date of the homestead and the historical importance of its owner.	High	Local
Phase 3 - land use dating from 1882 until around 1909 buildings such as the cottages on the hill, the long agricultural shed, the stables and the stock yards are common on rural properties and were all constructed around 1900. Despite their association with the development of the site, these items are unlikely to provide information not available from any other source.	High	None
Phase 4 - farming and grazing on the property between 1909 and 1955 is unlikely to contribute knowledge that no other site or resource can. Items such as these are common and the information would not be relevant to general questions about human history or other substantive questions relating to Australian history.	Low	None
Phase 5 - cattle grazing, lease of the property and decline of the buildings on the site.	Low	None

4.9 Statement of Significance

The subject site has local historical significance for its association with members of the Shepherd family who lived on and developed the site from the 1850s. The land was an important and well known nursery for over 50 years and the homestead was the residence of only two families for a period of 100 years.

The site has scientific significance as there is high potential for survival of relics associated with the homestead. This resource is likely to be intact and is assessed to be of local significance.

The archaeological resource of the site also has representative value as it demonstrates the business opportunities and settlement outside of Sydney and regional townships in the mid to late 19th century.

Figure 42: Area of historical archaeological sensitivity (dashed red line) and location of homestead (blue).

4.10 Mitigation of archaeological impacts

It has been concluded that there is high potential for an archaeological resource related to the original homestead and associated out buildings to survive on the site. This resource is considered to be of local significance.

The potential for archaeological remains of the cottages, the long shed to the north of the homestead and the stockyards is also assessed as high, however this resource is not considered to be archaeologically significant.

Future development of the site has not been proposed and therefore the potential impacts to the site are unknown. A heritage curtilage should be established around the sensitive homestead area, similar to that in Figure 41, that prevents and protects the archaeological resource from any impact or disturbance and conservers it *in situ*.

If development of the site were proposed, no ground disturbance works may proceed in areas identified as having historical archaeological potential without first obtaining an Excavation Permit pursuant to Section 139 of the *Heritage Act 1977*.

5 Conclusions and Recommendations

5.1 Conclusions

The key findings form the Aboriginal heritage assessment area as follows:

- 17 Aboriginal sites, all previously recorded artefact sites were identified on AHIMS search within the study area;
- 3 new Aboriginal artefact sites identified by ELA field survey;
- The 20 Aboriginal sites recorded for the study area are protected under the National Parks and Wildlife Act 1974 (NSW).
- Dense ground cover prevented the location of further artefacts, however the topography, general lack of disturbance, proximity to water and the presence of multiple sites in close proximity, suggests that additional Aboriginal objects or sites both on the surface and in subsurface archaeological deposits are likely to be present within the study area.
- Any future development of the subject site will result in ground modification that may have the potential to disturb Aboriginal cultural objects in the form of stone artefacts.

The key findings from the historical heritage assessment are as follows:

- The subject site is assessed as having high potential for the survival of an archaeological resource relating to the occupation and development of the homestead site over time.
- The archaeological resource is assessed as possessing local significance for association with the Chatsworth nursery and the Shepherd family.
- Despite their association with the development of the site, buildings such as the cottages on the hill, the long agricultural shed, the stables and the stock yards are not considered to contain a significant archaeological resource. These items are common on rural properties and were all constructed around or after 1900.

5.2 Recommendations

5.2.1 Aboriginal cultural heritage

- If development is proposed in the future, further archaeological investigation in the form of test excavation should be undertaken to understand the nature, extent and significance of archaeological resource within different landforms in the study area. Test excavation can be undertaken following the 'Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales' (DECCW 2010). A sampling strategy / methodology should be developed and the OEH notified prior to commencement of the test excavation.
- Prior to the undertaking of test excavation, Aboriginal community consultation must be undertaken as set out in the NPW Regulation and completed to the stage described in subclause 80C(6) of the Regulation.
- Areas of moderate or high significance identified should be prioritised for conservation. If this is not achievable, archaeological salvage excavation following issue of an AHIP under Section 90 of NPW Act would be required. An AHIP application would require the preparation of an Aboriginal Cultural Heritage Assessment (ACHA) and Archaeological Technical Report (ATR) and necessitate full Aboriginal community consultation following the document 'Aboriginal cultural heritage consultation requirements for proponents 2010' (DECCW 2010). Any areas of low

significance may be managed through surface salvage collection following issue of an AHIP under Section 90 of the NPW Act.

- As part of any future development consultation should be ongoing with Aboriginal stakeholders to determine cultural significance and the management of the Aboriginal heritage resource. A management plan may be developed to management the Aboriginal heritage resource and may include opportunities for interpretation through consultation with stakeholders.

- In the extremely unlikely event that human remains are found as part of future development, works should immediately cease and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the OEH should also be contacted at this time to assist in determining appropriate management.

- A copy of this report has been provided to DLALC.

5.2.2 Historical heritage

- The homestead archaeological site should be listed on the Blacktown LEP.

- A heritage curtilage should be established around the sensitive area similar to that in Figure 41 that prevents and protects the archaeological resource from any impact or disturbance and conservers it *in situ*. An Archaeological Management Plan should be developed to manage this resource.

- If development of the archaeologically sensitive area is proposed, no ground disturbance works may proceed in areas identified as having historical archaeological potential without first obtaining an Excavation Permit pursuant to Section 139 of the *Heritage Act 1977*.

- Preparation of a research design and excavation methodology for the excavation of the site should accompany an excavation permit application to the Heritage Division OEH.

- Following the archaeological investigation, an excavation report would be prepared detailing the findings of the investigation, along with a catalogue and analysis of recovered artefacts. These items could then be removed according to regulations. No state heritage items would be removed from the site.

- An interpretation plan be developed for the site as a whole outlining the history and heritage values.

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Appendix A : Draft Development Control Plan Ropes Creek Aboriginal and Historic Archaeology

As part of this assessment, ELA has prepared for the NSW Department of Planning and Environment a set of recommendations, objectives and development controls for inclusion in the DCP. The controls will be designed to satisfy section 8 of Schedule 4 of the WSEA SEPP which requires the DCP to address:

- The impact of the proposed development on Aboriginal and Historic heritage values, and
- Opportunities to offset impacts on areas of heritage significance.

Aboriginal and Historic heritage

Objectives

a. To manage Aboriginal and historic heritage values to ensure enduring conservation outcomes.

b. To ensure areas identified as archaeologically or culturally significant are managed appropriately.

c. Ensure that development is undertaken in a manner that acknowledges and/or protects sites of archaeological significance.

Controls – Aboriginal heritage

1. Development applications must identify any areas of Aboriginal heritage value that are within or adjoining the area of the proposed development, including any areas within the development site that are to be retained and protected (and identify the management protocols for these).

2. Developments or other activities that will impact on Aboriginal objects or places require an Aboriginal Heritage Impact Permit under Section 90 of the *National Parks and Wildlife Act 1974* and consultation with the Aboriginal parties following the Office and Environment and Heritage consultation guidelines.

3. Any development application that is within land that contains a known Aboriginal cultural heritage site, must consider and comply with the requirements of the *National Parks and Wildlife Act 1974*.

4. Where the necessary consents have already been obtained from the Office and Environment and Heritage, the development application must demonstrate that the development will be undertaken in accordance with any requirements of that consent.

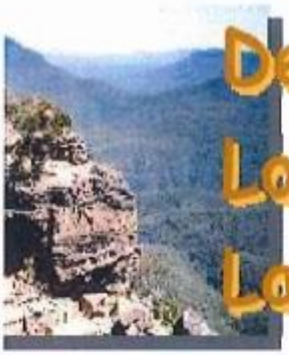
Controls - Historic heritage

5. Applications for subdivision and building on properties identified as including;
   (i) Historic archaeological sites or relics, or

(ii) have the potential for a historical archaeological resource, are to be accompanied by a historical archaeological assessment report from a suitably qualified archaeologist, in accordance with the guidelines prepared by the Office and Environment and Heritage undertaken to confirm the presence or absence of archaeological material. Where archaeological material is identified, the proposal will require approvals under the *Heritage Act 1977*.

Notes: Any works, development or other activity that will impact on a known site of Aboriginal cultural heritage significance will require approval under the *National Parks and Wildlife Act 1974*, in addition to any approval requirements of Council under the relevant Precinct Plan. Applicants should consult with the Office and Environment and Heritage to determine requirements for assessment and approval where developments or other works are to be carried out on or near Aboriginal heritage sites identified on the Aboriginal cultural heritage sites figure, in the relevant Precinct Schedule. Council or the Office and Environment and Heritage may require additional investigations to be undertaken as part of a development application to confirm the presence of Aboriginal cultural heritage on the land. Where works uncover items that may be Aboriginal cultural heritage, the applicant is to consult with the Office and Environment and Heritage to determine an appropriate course of action.

Appendix B : Comment from Land Council



Deerubbin Local Aboriginal Land Council

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Eco Logical Australia Pty Ltd
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SYDNEY NSW 2000

Our Ref: 2601

27 October 2015

SUBJECT: PROTECTION OF ABORIGINAL CULTURAL HERITAGE

Land bounded by M4 & Link Road & Ropes Creek
Minchinbury

Attention: Lyndon Paterson

A representative of the Deerubbin Local Aboriginal Land Council inspected the above mentioned location on 15th October 2015. An Aboriginal cultural heritage assessment was undertaken to evaluate the likely impact the future developments has on the cultural heritage of the land.

Although the findings were that, Aboriginal cultural materials were located during the walkover of the study area, Deerubbin Local Aboriginal Land Council, recommends that, the area be further investigated, particularly in light of the fact that previous assessment work and subsequent (archaeological) investigation of land within close proximity and within the study area, led to several Aboriginal sites being found

Yours Faithfully,

S Randall

(Steven Randall
Aboriginal Cultural Heritage Officer)

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