URBIS

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

290-308 ALDINGTON ROAD, 59-62 AND 63 ABBOTTS ROAD, KEMPS CREEK

Prepared for

ESR AUSTRALIA

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices the Traditional Owners on whose land we stand.

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EXECUTIVE SUMMARY

Urbis has been engaged by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, as well as 59-62 and 63 Abbotts Road, Kemps Creek, NSW (hereafter referred as the 'subject area') to accompany the State Significant Development Application (SSDA) for a warehousing and distribution centre within the study area. This ACHA Report (ACHAR) was prepared in accordance with the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.*

The subject area is located within the City of Penrith Local Government Area (LGA), approximately 37km west of the Sydney CBD (Figure 1 and Figure 2). It is approximately 32 hectares (ha) and is situated approximately 900m east of Kemps Creek on the west-facing slopes of the valley associated with that waterway. The subject area is currently utilised for agricultural purposes and includes the following:

- Four dwellings.
- Four agricultural sheds.
- Multiple dams.
- Fencing and other farm improvements.

It is bound on all sides by semi-rural properties. The north-west corner of the subject area has frontages to Aldington Road and Abbotts Road.

The Proponent is proposing to redevelop the subject area to provide a logistics park with 7 lots of warehouse and ancillary office floorspace.

Site preparatory works, including

- Demolition and clearing of all existing built form structures and vegetation;
- Bulk earthworks including 'cut and fill' to create flat development platforms for the proposed buildings, and topsoiling, grassing and site stabilisation works;
- Subdivision of the site into 7 individual allotments.
- Construction of a new industrial estate at the subject area comprising 7 allotments and a total GFA of 145,821m^2, including:
  - 139,621m^2 of warehousing floorspace; and
  - 5,950m^2 of ancillary office floorspace
- 1 new on-site retail cafe building comprising 200m^2 of floorspace;
- Construction of a new internal road layout and parking for 777 vehicles;
- Associated site servicing works and ancillary facilities, including OSD detention basin;
- Associated site landscaping; and
- Works-in-kind (WIK) arrangements through a Voluntary Planning Agreement (VPA) for external road upgrades including to Aldington Road and Abbots Road, and a new signalised intersection at Mamre Road and Abbotts Road.

The ACHAR conducted for the subject area concluded that:

- Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.
- There are no Aboriginal sites registered within the subject area and two sites registered within 1km of the subject area.
- The terrain of the subject area is undulating. An analysis of landforms present across the subject area identified a crests in the western and southern portion of the subject area, with simple slopes defining a series of open depressions to the which drain to the west into the Kemps Creek catchment.
- The subject area has been subject to localised moderate-high disturbance as a result of construction (dwellings, hardstands, sheds and poultry farm) and extensive market gardening in SU3.
- Within 63 Abbotts Road three Aboriginal artefacts were identified within the active, unsealed vehicle tracks. These include:
  - Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)
  - Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)
  - Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)
- Due to the hydrology and archaeologically sensitive landscape features, and the identification of surface artefacts the subject area retains moderate to high potential for the presence of Aboriginal archaeological resources.

Following the test excavation programme, the following additional conclusions were made:

- Altogether, thirteen (13) artefacts were recovered during the test excavation programme.
- The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests.
- The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area.
- While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation.
- Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.
- The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).
- The subject area has been assessed as likely containing high cultural value to local Aboriginal communities.
- The subject area has been assessed as possessing low historical value due to lack of historical connections.
- The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

Based on the conclusions of this assessment the proposed activity can proceed under the following recommendations:

Recommendation 1 – Surface Collection

Following SSDA approval and prior to construction, surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

- Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51'33.5"S, 150º47'57.7"E)
- Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51'28.6"S, 150º47'47.2"E)
- Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51'30"S, 150º47'47.9"E)

No further subsurface archaeological excavation is warranted.

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This process should be included in the Construction Environmental Management Plan (CEMP) and any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face-to-face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.
2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the Police, DPC and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

Recommendation 5 – RAP consultation

A copy of the final ACHA must be provided to all Project RAPs. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

1. INTRODUCTION

Urbis has been engaged by ESR Australia (the Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, as well as 59-62 and 63 Abbotts Road, Kemps Creek, NSW (hereafter referred as the 'subject area'). The ACHA informed the preparation of the present Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application 9080531.

1.1. SITE DESCRIPTION

The subject area is located within the City of Penrith Local Government Area (LGA), approximately 37km west of the Sydney CBD (Figure 1 and Figure 2). It is approximately 32ha and is situated approximately 900m east of Kemps Creek on the west-facing slopes of the valley associated with that waterway. The subject area is currently utilised for agricultural purposes and includes the following improvements:

- Four dwellings.
- Four agricultural sheds.
- Multiple dams.
- Fencing and other farm improvements.

It is bound on all sides by semi-rural properties. The north-west corner of the subject area has frontages to Aldington Road and Abbotts Road.

1.2. PROPOSED DEVELOPMENT

The Proponent is proposing to redevelop the subject area to provide a logistics park with 7 lots of warehouse and ancillary office floorspace (Figure 3).

Site preparatory works, include:

- Demolition and clearing of all existing built form structures and vegetation;
- Bulk earthworks including 'cut and fill' to create flat development platforms for the proposed buildings, and topsoiling, grassing and site stabilisation works;
- Subdivision of the site into 7 individual allotments.
- Construction of a new industrial estate at the subject area comprising 7 allotments and a total GFA of 145,821m^2, including:
  - 139,621m^2 of warehousing floorspace; and
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- Construction of a new internal road layout and parking for 777 vehicles;
- Associated site servicing works and ancillary facilities, including OSD detention basin;
- Associated site landscaping; and
- Works-in-kind (WIK) arrangements through a Voluntary Planning Agreement (VPA) for external road upgrades including to Aldington Road and Abbots Road, and a new signalised intersection at Mamre Road and Abbotts Road.

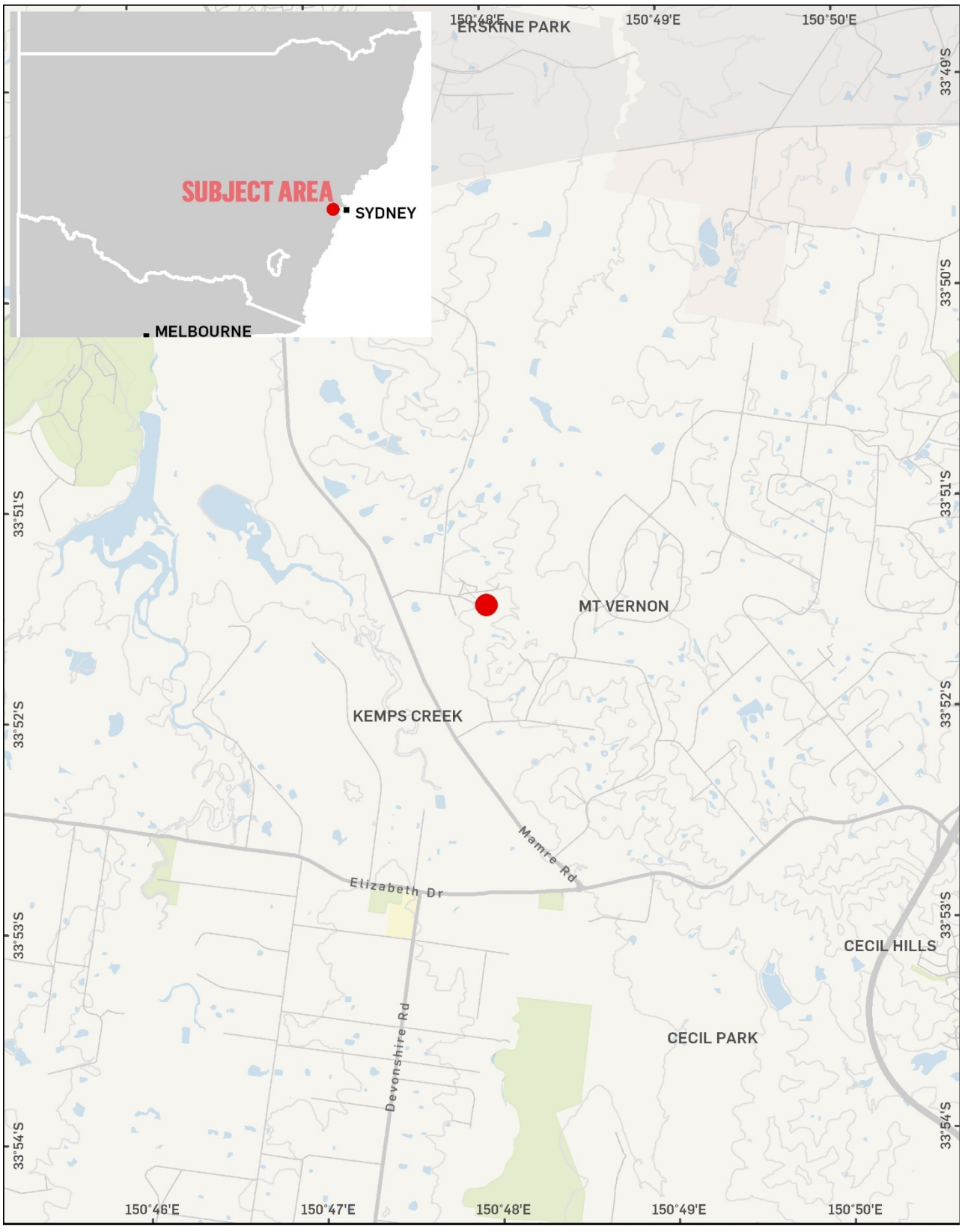


Figure 1 – Regional location

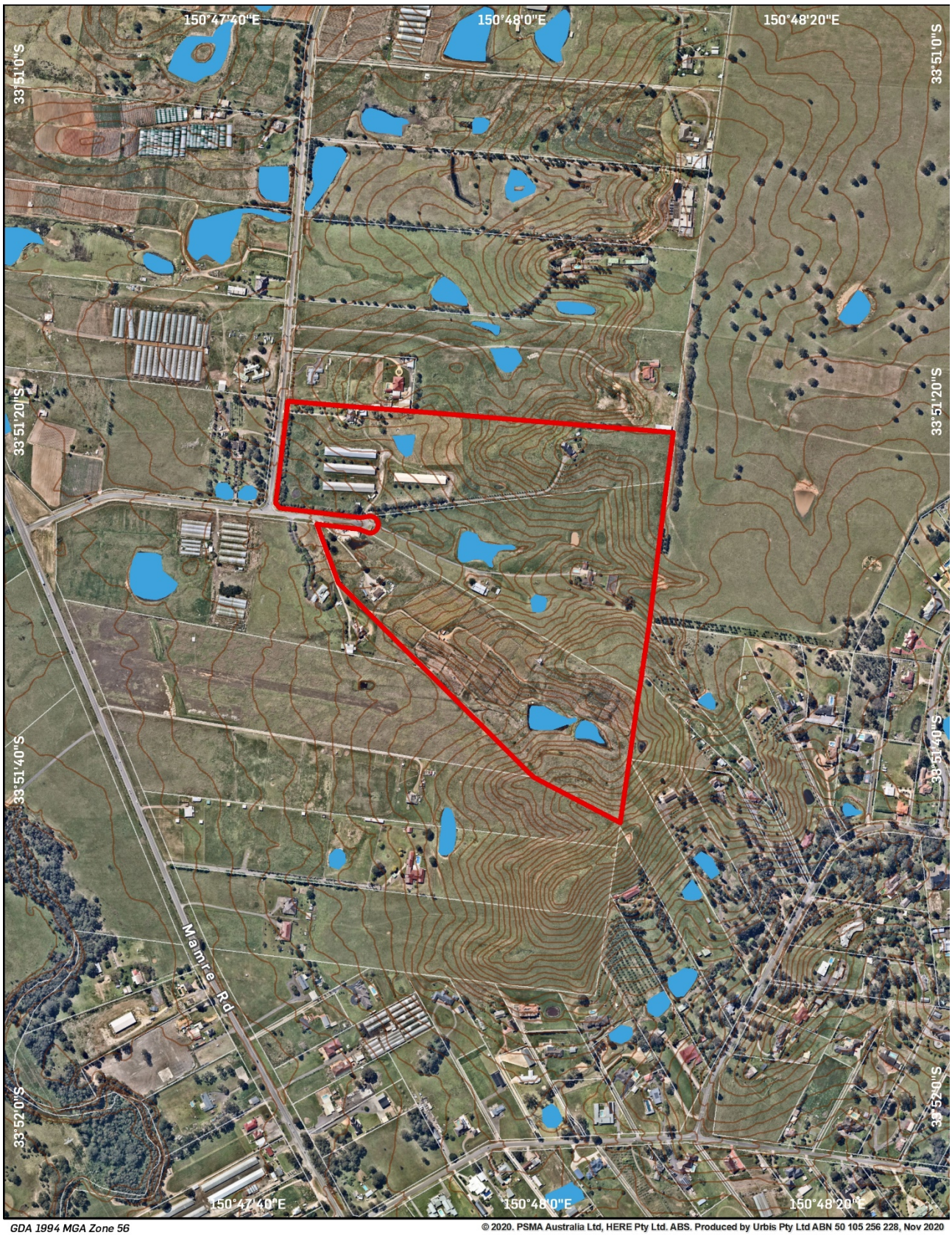


Figure 2 – Location of the subject area

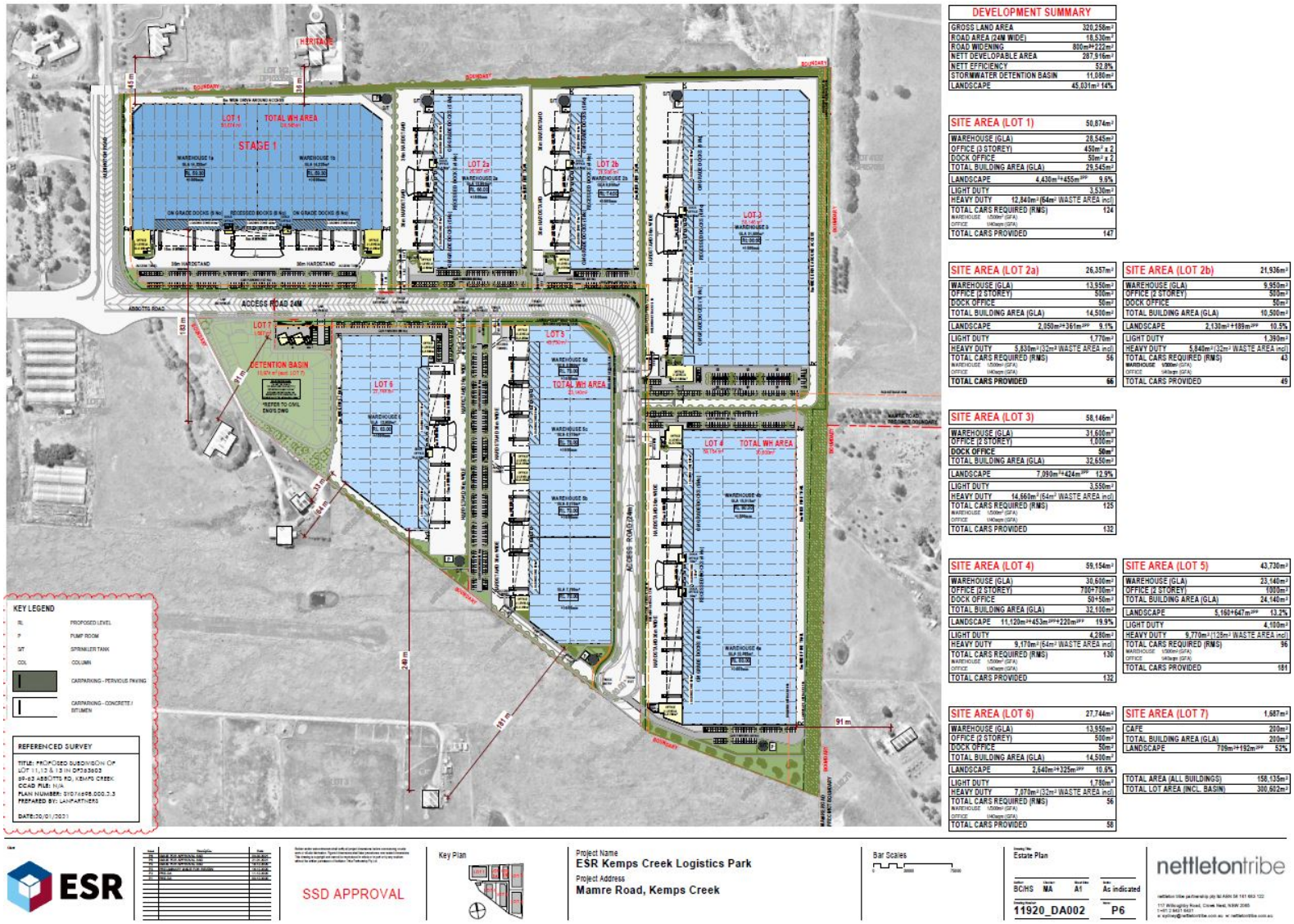


Figure 3 – Concept masterplan for subject area
Source: ESR Australia/Nettleton Tribe

1.3. RESPONSE TO SEARS

The ACHAR has been guided by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-9138102.

The SEARs require preparation of an ACHAR in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH, 2010). Any Aboriginal objects recorded as part of the Aboriginal Cultural Heritage Assessment must be documented and notified to the Aboriginal Heritage Information Management System (AHIMS) within Heritage NSW of the Department of Premier and Cabinet.

The specific requirements of the SEARs are identified in Table 1 with the corresponding section of this ACHAR.

Table 1 – SEARs requirements for and relevant report sections

Requirement No.	Requirement	Report Section
1	The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the *Code of Practice for Archaeological Investigation in NSW* (OEH 2010), and be guided by the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (DECCW 2011) and consultation with Heritage NSW.	Sections 2 and 4
2	Consultation with Aboriginal people must be undertaken and documented in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.	Section 3
3	Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to Heritage NSW	Sections 5
4	The assessment of Aboriginal cultural heritage values must include a surface survey undertaken by a qualified archaeologist. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the ACHAR.	Section 2

5	The ACHAR must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the project to formulate appropriate measures to manage unforeseen impacts.	Section 8
6	The ACHAR must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.	Section 8

1.4. STATUTORY CONTROLS

Management of Aboriginal objects is under the statutory control of the *National Parks and Wildlife Act 1974* (NPW Act) further regulation of the process is outlined in the *National Parks and Wildlife Regulations 2009* (NPW Reg). This ACHA has been carried out in accordance with Part 6 of the NPW Act and Part 8A of the NPW Reg. The ACHA was prepared according to the statutory guidelines under the NPW Act including:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra 3Charter).

1.4.1. State Environmental Planning Policy (Western Sydney Employment Area) 2009

The subject area is subject to the State Environmental Planning Policy (Western Sydney Employment Area) 2009, Schedule 5 of which provides relevant information on locally listed heritage items.

A search of the State Environmental Planning Policy (Western Sydney Employment Area) 2009 was undertaken on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage of the subject area. The following heritage items were identified in proximity to the subject area (Figure 4):

- Item 4: Brick farmhouse, 282 Aldington Road, Lot 142, DP 1033686
- Item 3: Gateposts to Colesbrook, 269–285 Mamre Road, Lot 8, DP 25350

1.4.2. Penrith Development Control Plan 2014

As legislated by the EP & A Act, each LGA is legally obliged to produce a Development Control Plan (DCP). Not all LGAs provide information regarding Aboriginal cultural heritage and specific development controls to protect Aboriginal cultural heritage.

Section 7.2 of the Penrith Development Control Plan 2014 addresses Aboriginal cultural heritage. This section identifies the following objective:

> *To preserve items and sites of Aboriginal archaeological significance located within the City of Penrith.*

The following controls relating to Aboriginal cultural heritage are stated in Section 7.2C of the Penrith DCP 2014:

> *1) If the development, including subdivision, but not strata subdivision, is on land identified as potentially archaeologically sensitive, an archaeological investigation is required with the development application. The Office of Environment and Heritage should be contacted for advice on survey needs and requirements.*

2) Despite (a) above, an archaeological assessment is required if the site area is 5 hectares or more. The archaeological assessment should determine whether or not Aboriginal archaeological resources are present on the site, and where appropriate, identify management principles to be implemented.

3) The requirements stated in (a) and (b) above will not apply to developments where there is no: a) disturbance of the soil, or b) construction works on the land. For the purposes of this section, any internal or external works to an existing building is not deemed to be construction work.

The present report is prepared to determine whether or not Aboriginal archaeological resources are present within the subject area and, if appropriate, identify management principles to be implemented, in fulfilment of the controls of Section 7.2C of the Penrith DCP 2014.

1.4.3. NSW State Heritage Register (SHR)

The State Heritage Register (SHR) lists items that have been assessed as being of State heritage significance to New South Wales. Items appearing on the SHR are granted protection under s.60 of the *Heritage Act 1977* (Heritage Act).

A search of the SHR was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.4.4. State Government Agency Conservation (Section 170) Registers

Section 170 of the Heritage Act requires that State Government Agencies establish and maintain a Heritage Conservation Register for heritage items located on land under their control or ownership. Items listed on the s.170 Register are listed on the State Heritage Inventory (SHI) and bound by the regulations of the Heritage Act.

A search of the SHI was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.4.5. Australian Heritage Database

The Australian Heritage Database contains information about more than 20,000 natural, historic and Indigenous places including: places in the World Heritage List, Places in the National Heritage List, places in the Commonwealth Heritage list; and places in the Register of the National Estate (non-statutory). The list also includes places under consideration, or that may have been considered for any one of these lists.

A search of the Australian Heritage Database was completed on 18 December 2020. The search did not identify any heritage or archaeological items within the curtilage or in the vicinity of the subject area.

1.5. OBJECTIVES

The objectives of this ACHA are to:

- Investigate the presence, or absence, of Aboriginal objects and/or places within and in close proximity to the subject area, and whether those objects and/or places would be impacted by the proposed development.
- Investigate the presence, or absence, of any landscape features that may have the potential to contain Aboriginal objects and/or sites and whether those objects and/or sites would be impacted by the proposed development.
- Document the nature, extent and significance of any Aboriginal objects and/or place and sites that may located within the subject area.
- Document consultation with the Registered Aboriginal Parties (RAPs) with the aim to identify any spiritual, traditional, historical or contemporary associations or attachments to the subject area and any Aboriginal objects and/or places that might be identified within the subject area.
- Provide management strategies for any identified Aboriginal objects and/or places or cultural heritage values.
- Provide recommendations for the implementation of the identified management strategies.
- Prepare a final Aboriginal Cultural Heritage Assessment Report (ACHAR) to be accompany SSD-9138102.

1.6. AUTHORSHIP

This ACHA has been prepared by Aaron Olsen, Urbis Consultant Archaeologist, Alexandra Ribeny, Urbis Consultant Archaeologist, Meggan Walker, Urbis Consultant Archaeologist, and Andrew Crisp, Urbis Senior Archaeologist, with review and quality control undertaken by Balazs Hansel, Urbis Associate Director Archaeology.

Aaron Olsen holds a Diploma of Arts (Archaeology) from the University of Sydney, a Bachelor of Science (Honours - First Class in Chemistry) and PhD (Chemistry) from the University of Newcastle and a Masters (Industrial Property) from the University of Technology Sydney.

Alexandra Ribeny holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney and a Master of Archaeological Science from the Australian National University and is currently a PhD candidate at the Australian National University.

Meggan Walker holds a Bachelor of Arts (Honours – First Class in Archaeology) from the University of Sydney.

Andrew Crisp holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney.

Balazs Hansel holds a Masters (History) from the University of Szeged in addition to Masters (Archaeology and Museum Studies) from the University of Szeged and is currently completing a PhD (Archaeology) at the University of Sydney.

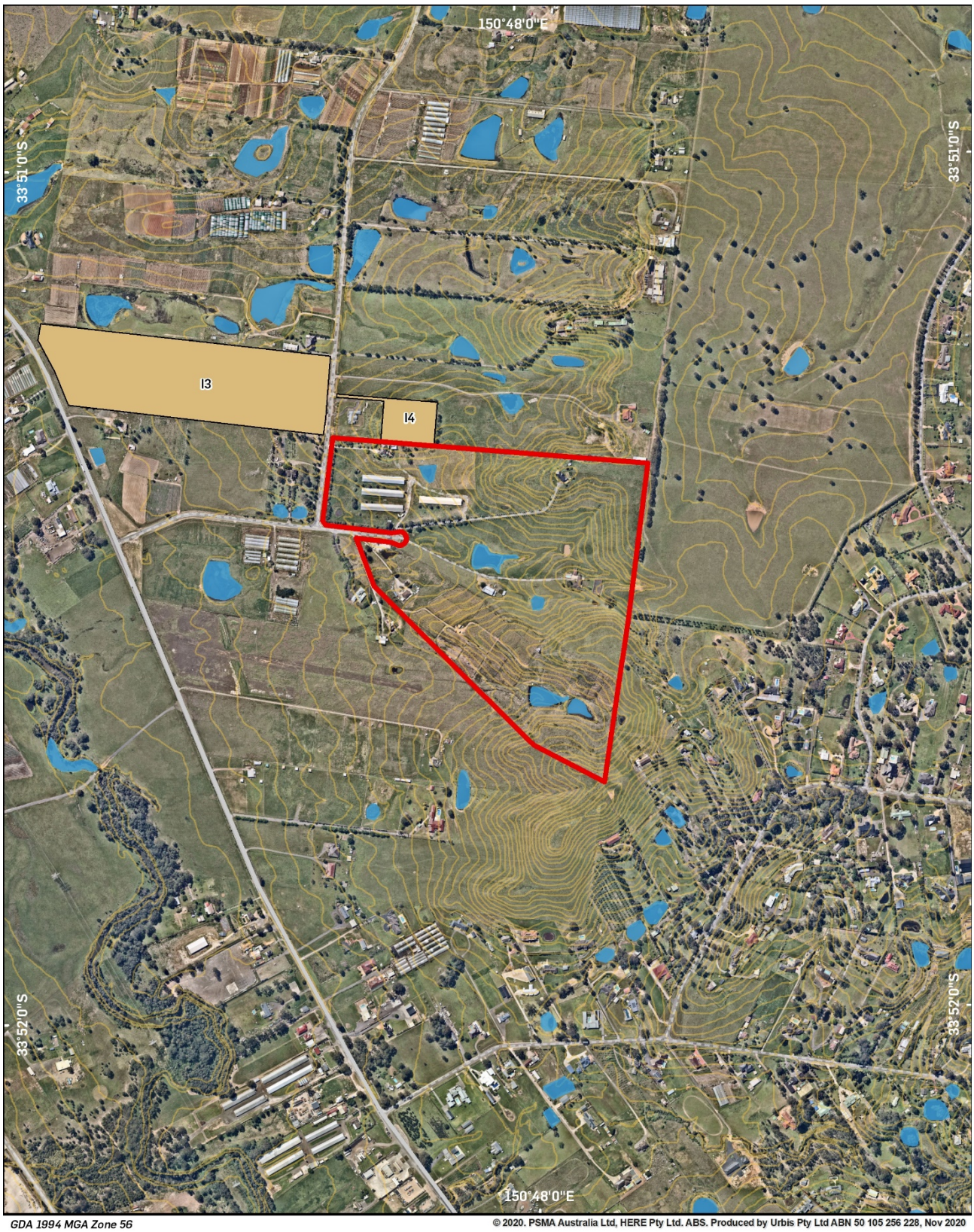


Figure 4 – Historical Heritage Items in the vicinity of the Subject Area.

2. ARCHAEOLOGICAL ASSESSMENT

2.1. ABORIGINAL ARCHAEOLOGICAL CONTEXT

This section comprises the summary of the archaeological background research for Aboriginal cultural heritage resources. This includes the search of the Aboriginal Heritage Information Management System (AHIMS) and previous archaeological investigations pertinent to the subject area and broader region.

2.1.1. Regional Background

The archaeological record provides evidence of the long occupation of Aboriginal people in Australia and the Sydney region. The oldest generally accepted date for a site in the Sydney basin is 17,800 years before present (BP), recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh (approximately 25km north-west of the present subject area). Radiocarbon dating of charcoal samples from sand sheet contexts in proximity to the Cooks River have suggest occupation as early as 40,000 years BP (JMCHM 2005). Older occupation sites along the now submerged coastline would have been flooded around 10,000 years BP, with subsequent occupation concentrating along the current coastlines and Cumberland Plain (Attenbrow 2010).

Due to the absence of written records, it is difficult to infer what Aboriginal life was like prior to the arrival of European settlers. Much of our understanding of Aboriginal life pre-colonisation is informed by the histories documented in the late 18th and early 19th century by European observers. These histories provide an inherently biased interpretation of Aboriginal life both from the perspective of the observer but also through the act of observation. The social functions, activities and rituals recorded by Europeans may have been impacted by the Observer Effect, also known as the Hawthorne Effect. The Observer/Hawthorne Effect essentially states that individuals will modify their behaviour in response to their awareness of being observed. With this in mind, by comparing/contrasting these early observations with archaeological evidence is possible to establish a general understanding of the customs, social structure, languages, beliefs and general of the Aboriginal inhabitants of the Sydney Basin (Attenbrow 2010).

Given the early contact with Aboriginal tribes in the Sydney region, more is known about these groups than those which inhabited regional areas. At the time of European contact, it is believed that the Darug (also spelt as Dharug or Daruk) people inhabited areas from the mouth of the Hawkesbury River west to Mount Victoria, taking in areas around Campbelltown, Liverpool, Camden, Penrith and Windsor (Tindale, 1974). Included within these territories is Kemps Creek and the present subject area. The Darug are considered to have been a woodland people whose diet consisted primarily of hunted land animals, such as kangaroos and emus, and also yams and other roots (Flynn 1997; Tench 1791).

The archaeological record is limited to materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 BP in the Sydney region (Attenbrow 2010:102). The archaeological record attests to the use of ground edge stone axes by the Darug people in general vicinity of the present subject area (e.g. AHIMS ID# 45-5-5186).

The Aboriginal population in the greater Sydney region at the time of European contact is estimated to have been between around 4000 and 8000 people. After European contact, Aboriginal people of the Cumberland Plain continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are several sites in Western Sydney where flaked glass has been recorded, for example at Prospect (Ngara Consulting 2003).

Based on the above background, it is possible that similar evidence of Aboriginal occupation is present within original and/or intact topsoils throughout the Cumberland plain, including within the present subject area.

Kohen, J. L. 1985, an Archaeological Survey of Industrial Land in the City of Blacktown. Report for Blacktown City Council

This assessment involved an analysis of archaeological surveys of industrial zoned land around the Blacktown City Council Area. Kohen acknowledged a distinct absence of archaeological information for the area at the time owing to limited interest in the Cumberland Plain prior to the introduction of legislative requirements for archaeological assessments in developments. Kohen established that the vast majority of Aboriginal sites within the area that demonstrate intensive occupation are located along creeks and streams which eventuate

at the Hawkesbury River, or on ridges sub-parallel to these waterways. Kohen also stated that extremely poor surface visibility factors inhibit the identification of artefacts, with sites almost always located in areas of erosion or exposure usually associated with creeks or disturbance. This concept has informed subsequent predictive models for the wider Cumberland Plain. Kohen argued that site density reflected the activity undertaken, with less dense sites likely reflective of one-off activities such as of tool repair.

Smith, L., 1989. Liverpool Release Areas: Archaeological Site Survey and Planning Study Liverpool Survey Report

Archaeological assessment of the Liverpool Release Areas. In this assessment Smith aimed to establish a spatial predictive model for the southern Cumberland Plain and to test whether the conclusions drawn for the northern Cumberland Plain apply. The 5 day survey program identified 26 previously unrecorded archaeological sites, with 19 scatters, 5 isolated finds and 2 scarred trees. Smith hypothesised that artefacts would be located within 50m of water sources and in lower densities than in the northern Cumberland Plain. Smith effectively surveyed 0.63% of the subject area on foot, once visibility conditions were accounted for (incidentally, Smith viewed visibility conditions as a primary factor in the locating of archaeological sites). Smith determined artefact scatters and isolated finds were located on almost all topographic features within the study area, with the exception of slopes. Smith found that 62% of sites occurred within 50m of a water source, with 53% within 10m and only 2 sites located at a distance greater than 100m. This assessment informed early predictive models for the Cumberland Plain and was formative in the development of Jo McDonald's (1992) predictive model widely applied today.

Jo McDonald Cultural Heritage Management (JMCHM), 1992. Archaeological Investigation of Project 12603, Cowpasture Rd, Hoxton Park, NSW Hoxton Park Archaeological Report

Archaeological assessment intended to investigate the archaeological potential within Precinct 4 of Hoxton Park Stage II Release Area, establish the archaeological significance of the site and determine any threats to areas of archaeological significance proposed by the development. This assessment was also used as an opportunity to test the predictive model established by Smith and Kohen. This assessment resulted in the recording of 147 artefacts in total, with silcrete the dominant raw material. The spatial location and density of artefacts recovered from these excavations, with highest density approximately 80-90m from the creek on higher ground, disputed previous claims about spatial distribution of sites within the Cumberland Plain region and led to the development of the currently accepted predictive model.

Australian Museum Business Services (AMBS), 1997. Cumberland Plain Regional Archaeological Study: Stage 1

In this assessment, AMBS identified their aims as to examine and assess the concept of representativeness for Aboriginal sites on the Cumberland Plain, to critically assess the planning framework and to produce guidelines on the recognition of silcrete artefacts. AMBS argued that the earlier developed predictive models were not adequately tested and further that there has been a serious issue with the identification of silcrete artefacts – in that items identified as silcrete artefacts at Plumpton Ridge were instead naturally fractured silcrete gravels. AMBS argue for a more scientific and analytical method of analysis and site predictive modelling, with the valid acknowledgement that lack of scientific method complicates the comparison of results and information. AMBS also argue that the nature of the conservation framework – where sites considered representative are afforded higher protections – is problematic due to subjectivity, with this issue also addressed through creating a more scientific and comparable method of analysis. AMBS advocate for more interpretative research designs rather than descriptive predictive models in archaeological approaches to the Cumberland Plain.

2.1.2. Previous Aboriginal archaeological investigations

Previous archaeological investigations may provide invaluable information on the spatial distribution, nature and extent of archaeological resources in a given area. While there are no readily available assessments of the subject area itself, there have been numerous archaeological investigations carried out in and around Kemps Creek. A summary of findings of the most pertinent to the subject area is provided in Table 2 below.

2.1.2.1. EMM Consulting (2020) – Mamre Road Precinct Aboriginal Heritage Study

EMM Consulting Pty Ltd (EMM) was engaged by the Department of Planning, Industry and Environment (DPIE) to prepare an Aboriginal Heritage Study (AHS) for the Mamre Road Precinct (Figure 5), within Western Sydney Employment Area (WSEA). The AHS will inform planning for the development of the Mamre Rd Precinct based on the final structure plan and provide inputs to the Development Control Plan (DCP) being prepared for the whole precinct. The AHS has been undertaken in broad accordance with DPIE Aboriginal heritage guidelines with some modifications to meet project timeframes and to more suitably address the early planning nature of the project. The AHS is currently on public exhibition.

The desktop and field survey investigations (Figure 6) for the EMM (2020) AHS demonstrated that the precinct is comparable with the wider cultural landscape of the Cumberland Plain. Archaeological evidence suggests that people utilised a wide range of resources across the region, and especially the silcrete raw materials from the Blacktown, Riverstone and Plumpton Ridge areas. These materials were moved along the major river systems across much of the Sydney Basin. Foci of occupation also appears to be primarily associated with the major river systems, although a transient use of all environments was known to occur. While a range of archaeological sites types are found across the Cumberland Plain reflecting these activities, much of the landscape constrains cultural material to stone artefacts located on the surface and/or in the upper soil profile. With specific reference to the study area, it is situated between two of the major river systems connecting the northern and southern parts of the Cumberland Plain, including Ropes Creek, Kemps Creek and South Creek. Previous investigations both within and near the study area confirm these wider models, which demonstrate a focus of past occupation along these waterways, and especially on elevated land near these resources.

A review of previously recorded sites in the region, show that 20 are documented within the Mamre Road Precinct. Of these, nine are erroneously located and situated in Erskine Park to the north, leaving 11 remaining in the Mamre Road Precinct (Figure 5). These are primarily situated along the edges of the main creek systems and/or on a ridgeline in the north of the Mamre Road Precinct. With one exception, #45-5-5188 - a high density artefact scatter on South Creek - the sites are all characterised as isolated objects and/or low-density artefact scatters (usually consisting of <10 artefacts). Excavations of several of these suggest that they are primarily found in shallow duplex and/or fabric contrast soil profiles commonly <30 cm deep, with rare examples extending to 60-80 cm.

EMM conducted a limited field investigation (which included the current subject area) due to access issues, identified a further two previously unidentified sites, MPR-01 (#45-5-0316) and MPR-02 (#45-5-0315), both consisting of low numbers of artefacts in the vicinity of Kemps Creek and Ropes Creek, respectively, and validating some of the previously documented sites.

In addition to the identified Aboriginal sites and objects, areas of archaeological potential were also identified. These included a 200m buffer around Ropes Creek, and a 100m buffer around Kemps Creek, South Creek and second order tributaries - the reduction in these latter areas relating to the local topography and significant disturbance in these locales. In all cases, it is considered that elevations, such as levees, terraces, etc, have a greater potential within these buffers for significant cultural material to be present (Figure 8). In addition, a number of ridgelines were also identified as having potential based on the AHS' findings and Aboriginal community feedback.

Based on the findings of the EMM (2020) AHS, the following recommendations were made:

- The exhibited structure plan does not require amendment based on the findings of this AHS. While cultural materials are identified within the study area and may be harmed as a result of the rezoning, areas identified as containing significant archaeological and cultural value would be largely unaffected.
- The Development Control Plan developed from the structure plan should include appropriate management requirements for Aboriginal heritage based on the findings of this study. These should include:
    - Any ground disturbance proposed in areas where cultural material has not been identified and/or is considered of low potential to occur should be subject to a due diligence investigation in accordance with DPIE and/or best practice guidelines (e.g. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*). The findings of the due diligence should guide future assessment and approval requirements for the activity (if any) (Figure 9).
    - Any ground disturbance proposed in areas where cultural material has been identified and/or is considered to have potential for them to occur (the current subject area) should be subject to an Aboriginal cultural heritage assessment or equivalent in accordance with DPIE and/or best

practice guidelines (eg *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*). The findings of the assessment should guide future assessment and approval requirements for the activity (if any).

- Any activity should undertake interpretive, educational and/or recognition opportunities to promote local Aboriginal culture, society and people.

– The AHS identified several Aboriginal objects and sites that are erroneously positioned within the Mamre Road Precinct in the Aboriginal Heritage Information Management System (AHIMS) database (45-5-3028 – 45-5-3036 inclusive). The AHIMS database should be notified and these sites correctly positioned to avoid future management issues for the precinct.

– If re-location of any element of the re-zoning, land release and/or development are proposed outside the area assessed in this study, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).

– A copy of the EMM (2020) report should be lodged with DPIE's AHIMS database, and each of the RAPs.

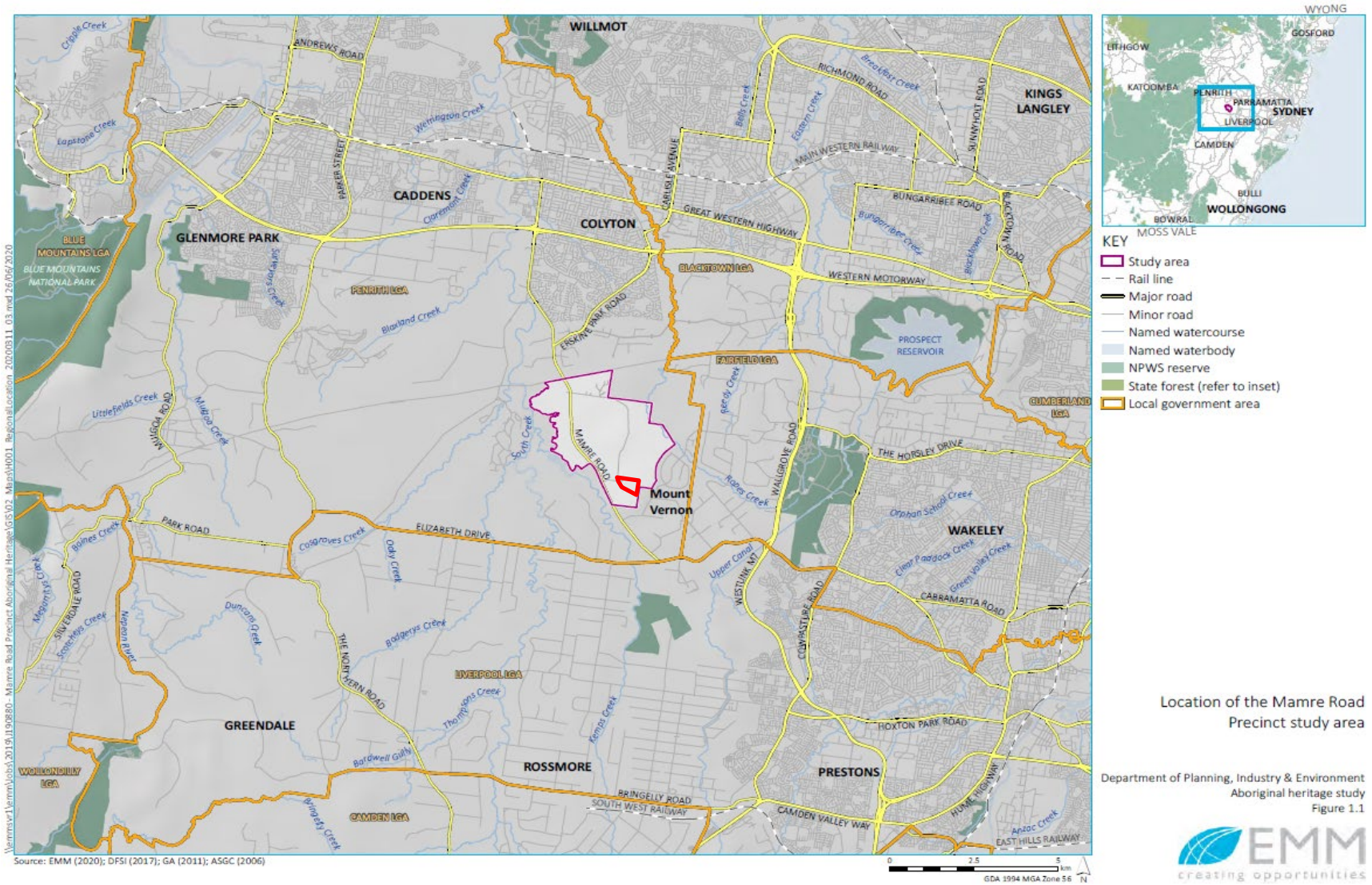


Figure 5 – EMM (2020) figure showing the location of the Mamre Road Precinct with the current subject area in red.

Source: EMM 2020

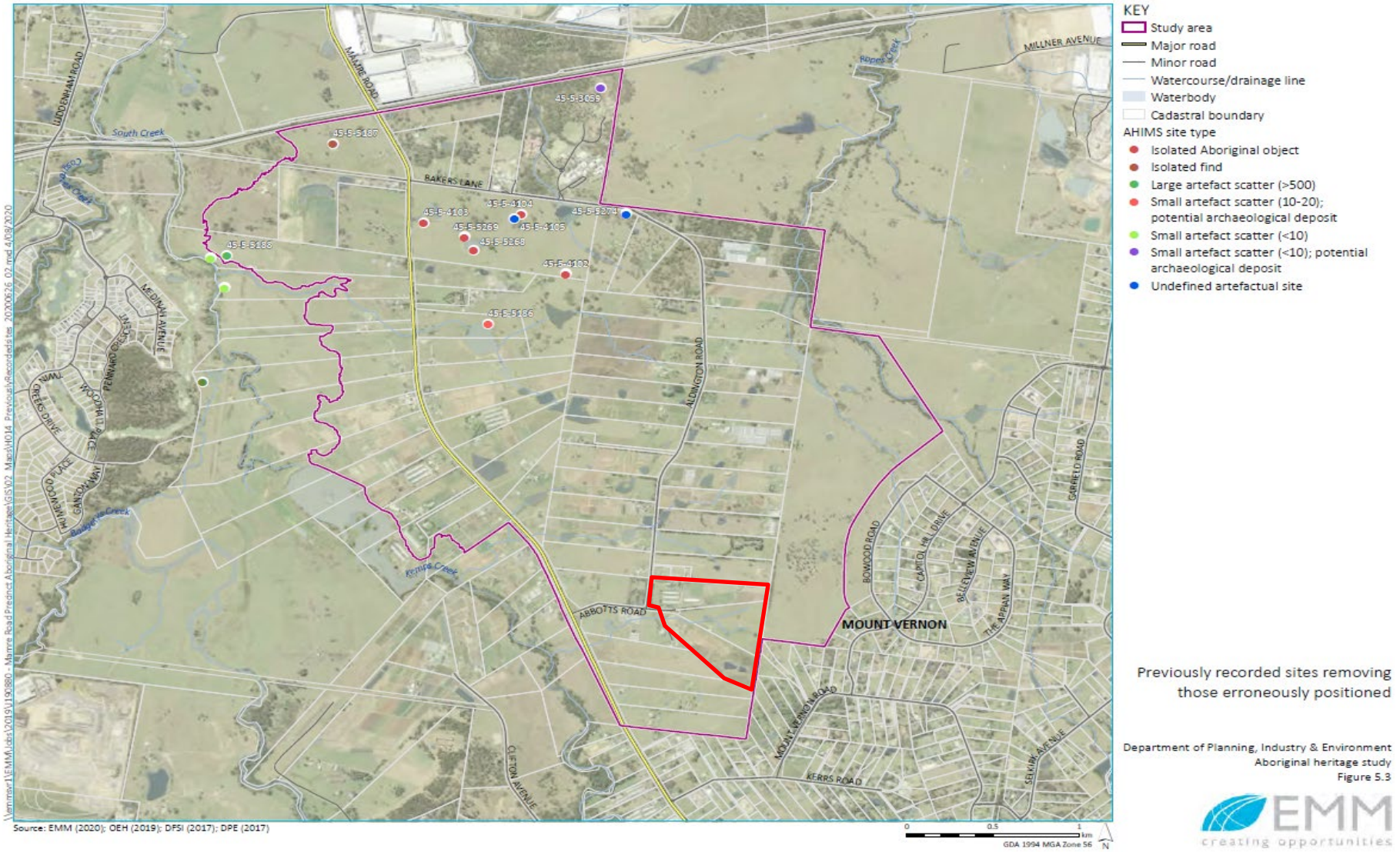
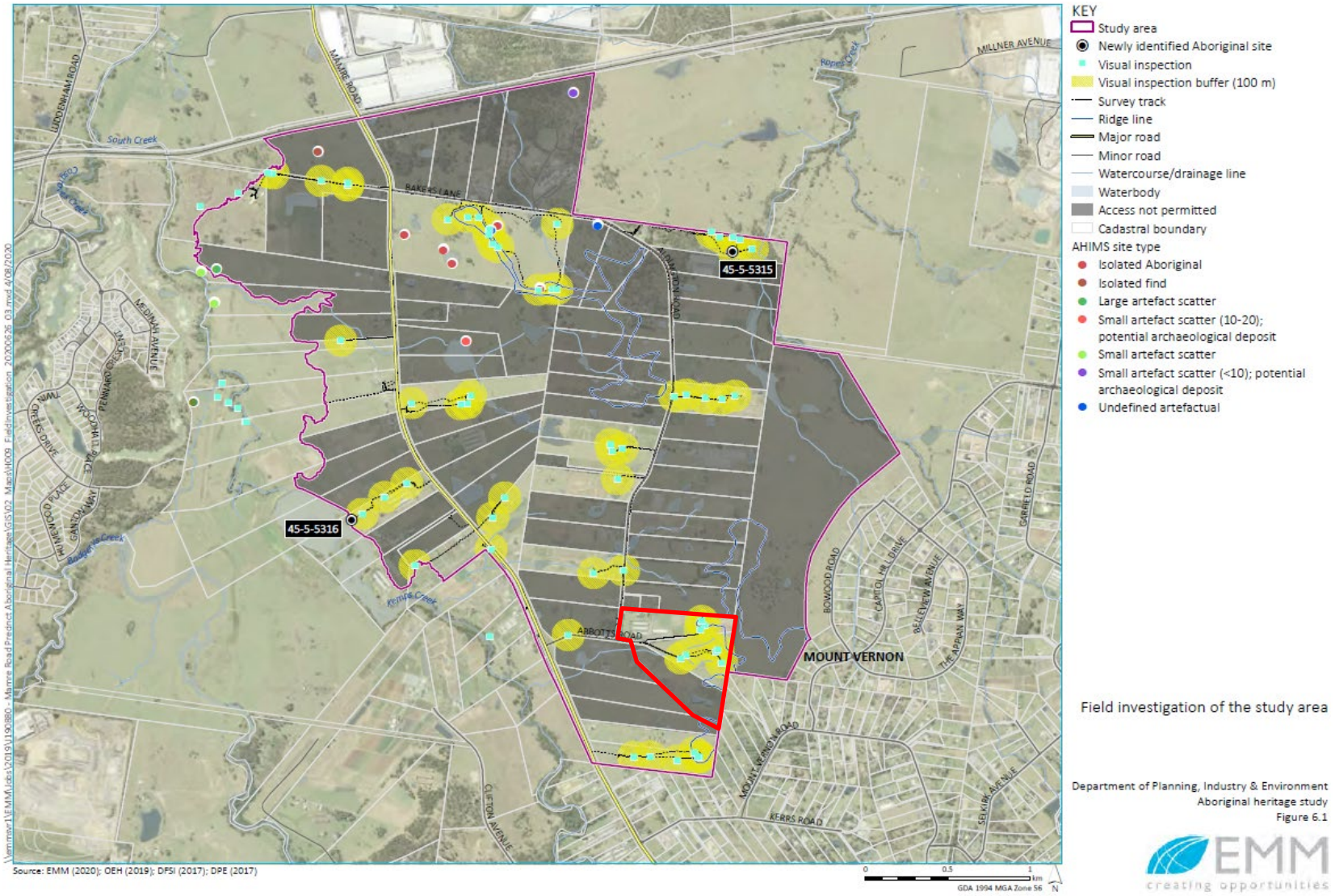


Figure 6 - EMM (2020) figure with erroneously positioned AHIMS sites removed, the current subject area is in red.

Source: EMM 2020



Field investigation of the study area

Department of Planning, Industry & Environment
Aboriginal heritage study
Figure 6.1

EMM
creating opportunities

Figure 7 - EMM (2020) figure showing the location of the EMM field inspection, the current subject area is in red.

Source: EMM 2020

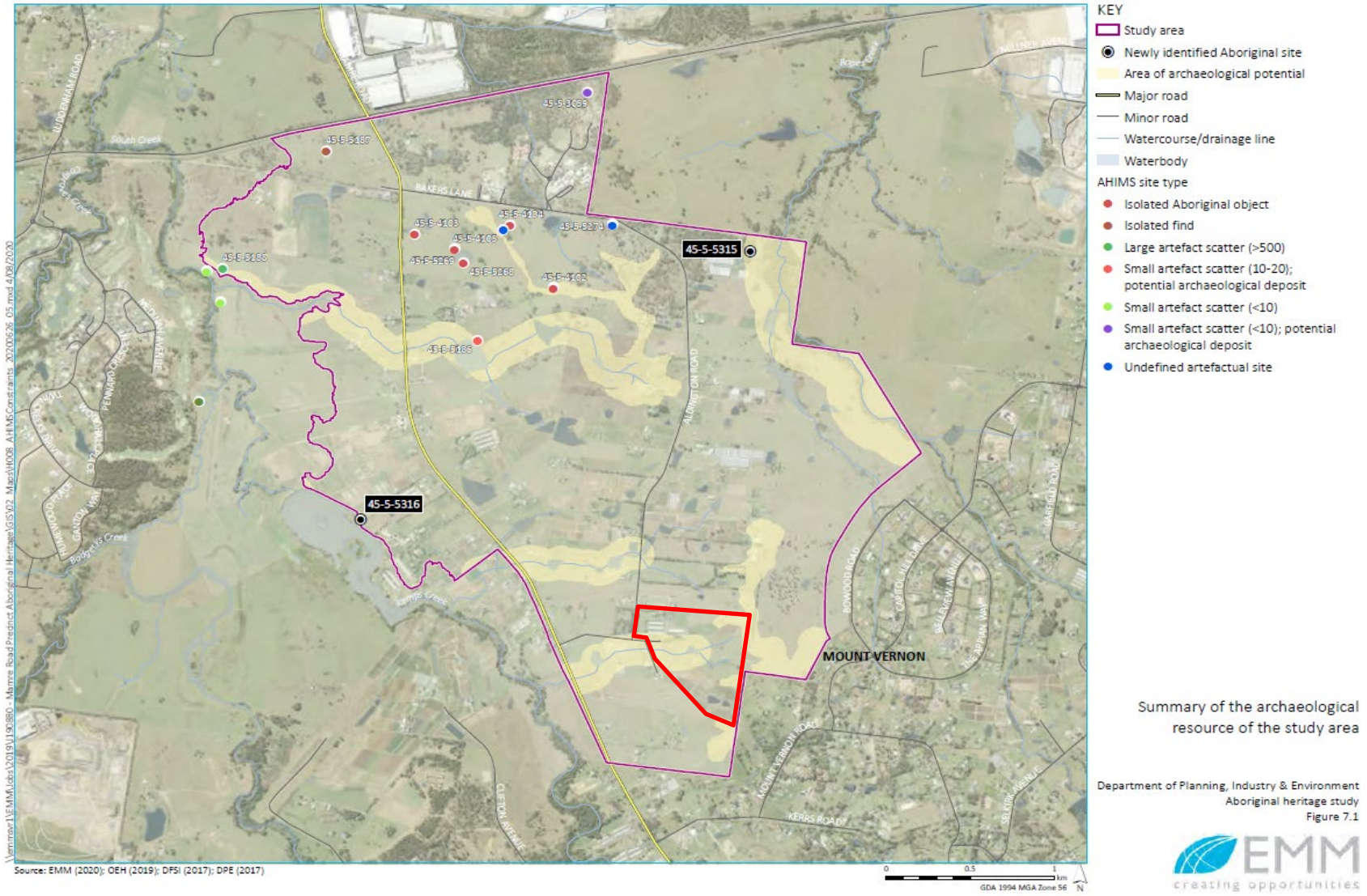


Figure 8 - EMM (2020) figure showing the summary of Aboriginal archaeological resources within the Mamre Road Precinct. The current subject area is in red.

Source: EMM 2020

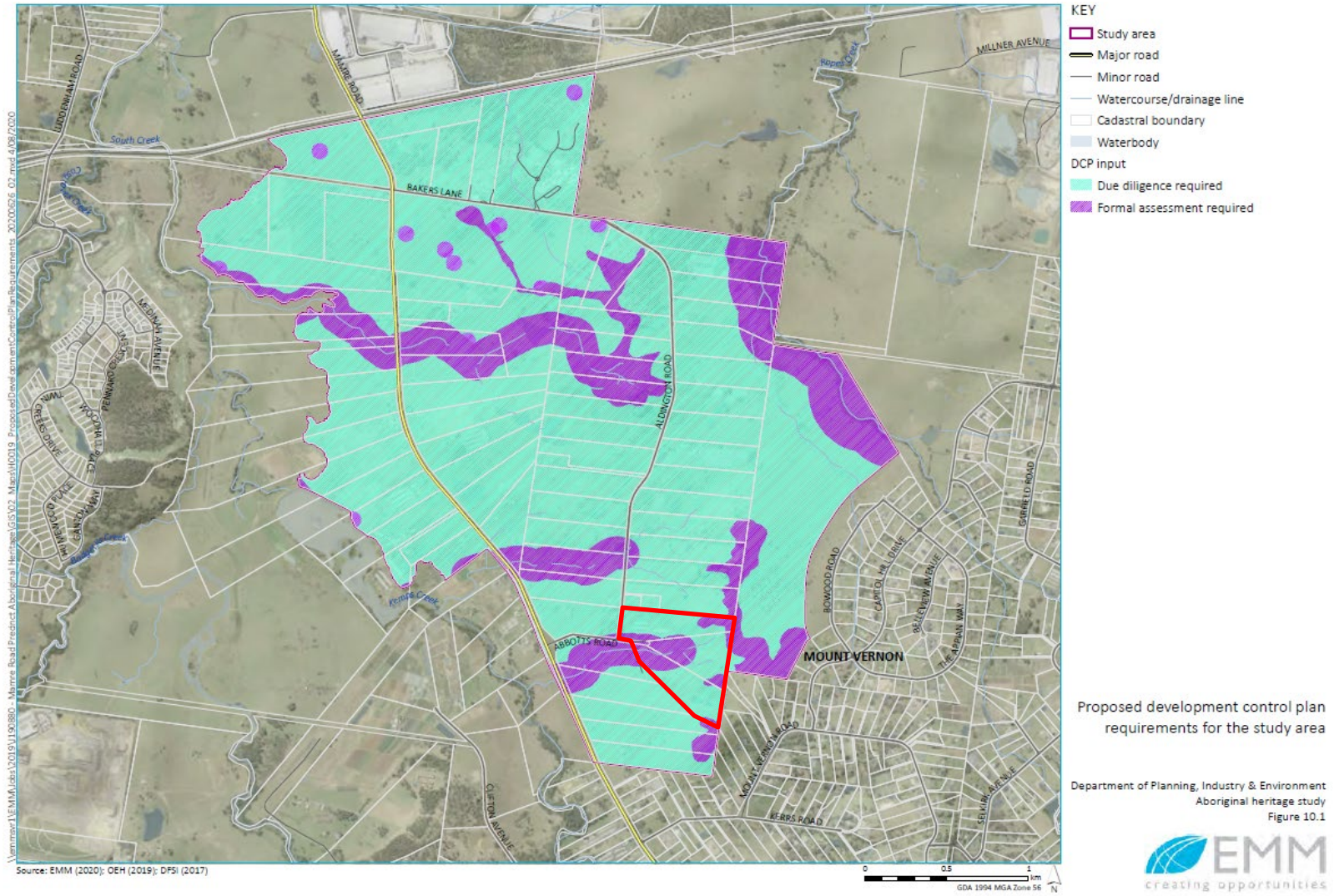


Figure 9 - EMM (2020) figure showing the proposed DCP Aboriginal archaeological requirements within the Mamre Road Precinct. The current subject area is in red.

Source: EMM 2020

Table 2 – Summary of previous Aboriginal archaeological investigations relevant to the subject area

Report	Summary	Relevance to Subject Area
2020, Urbis. Aboriginal Objects Due Diligence Assessment, 706-752 Mamre Road, Kemps Creek, NSW.	Aboriginal due diligence for 706-752 Mamre Road, Kemps Creek. This assessment identified 6 AHIMS sites within the subject area, with two erroneously recorded sites within the subject area. This is important as it identifies the potential for errors within the AHIMS system and supports the need to ground-truth AHIMS search results through field survey. The area was also identified as having low disturbance, and landscape features which identify archaeological sensitivity, with moderate archaeological potential on the basis of the presence of objects, landscape features, low disturbance and the survey results. An ACHA was recommended, which is this report.	• Approximately 2.3km to the north-west of the current subject area. • Identified two erroneously recorded AHIMS sites, and subsequently the need to conduct field investigation to confirm the recorded location of sites.
Artefact Heritage 2019a	Artefact undertook Mamre Road Precinct Aboriginal Constraints Assessment for Mirvac in relation to one of their sites. Artefact conducted a search of the AHIMS database, which identified 21 sites within the study area – all identified as of various densities of stone artefacts. They highlighted #45-5-2552 and #45-2-2553 as two culturally modified trees present on the western edge of the study area, and comment on the general rarity of remnant vegetation in the study area. In terms of sensitivity, they utilised the information from DPIE's archaeological guidelines, and highlighted areas in close proximity to water, as well as areas where intact subsurface deposits were considered to survive. In contrast, areas that had experienced extensive ground disturbance, such as market gardens were deemed less archaeologically sensitive, while creeks, including ephemeral first order streams were assessed as a sensitive landform. Where surface artefact sites were recorded on AHIMS, these locations were deemed to have the potential for additional artefacts either on the surface or in subsurface deposit.	• Approximately 1.5km north-west of the current subject area. • Identified remnant vegetation as rare within the landscape, with two culturally modified trees identified. • Areas including those in proximity to water as archaeologically sensitive, along with areas of low disturbance. • Surface artefacts deemed to be indicative of subsurface potential.
Artefact Heritage 2019b.	Artefact Heritage 2019b Artefact undertook a due diligence investigation of Lots 54-58 DP 259135 Mamre Road. Investigations consisted of a background review and brief site inspection. These found a cleared and often moderately disturbed landscape, including creation of substantial rural dams. Soil profiles presented were generally shallow, with a topsoil often <20 cm in thickness. These investigations	• Approximately 1.5km north-west of the current subject area.

	identified an artefact scatter (MAM AS1901) and an area of archaeological potential. The artefact scatter consisted of thirteen artefacts adjacent a tributary on the edge of an artificially created dam. Artefacts included a ground edge axe, nine silcrete flakes, two IMTC flakes and a quartzite flake. Based on these findings, and guided by low disturbance, a large area of archaeological potential was identified throughout the study area.	• Identified a correlation between high disturbance and low archaeological potential. • Where disturbance is minimal, potential is retained.
Biosis 2019. First Estate Access Road: Aboriginal Cultural Heritage Due Diligence Assessment, Final Report.	Aboriginal due diligence for 657-769 Mamre Road, Kemps Creek. The land use history of the site is consistent with that of the current subject area, being a semirural property, cleared of the majority of native vegetation and with a number of medium to large dams and low density residential and farm structures. Site surveys identified two artefact scatters and an isolated find within similar exposures to that found within the current subject area (associated with dams and similar surface disturbances). Three areas of archaeological potential were also identified in the western portion of the study area adjacent to South Creek and the north-eastern portion of the study area across a low rise adjacent to an open depression. Test excavations identified subsurface deposits in all three areas of potential, including a number of backed artefacts (dated to approx. 4,000-1,000 years before present). Archaeological assemblages were found a significant distance (over 500 m) from South Creek and high density subsurface archaeological deposits were associated with raised ground in proximity to a perennial water source.	• Approximately 3km north-west of the present subject area. • Surface archaeological expression may not correlate with subsurface deposits. • Archaeological deposits may be retained in land with a history of agricultural use. • Test excavation may be required to determine the level, significance and extent of archaeological deposits. • Archaeological deposits may be associated with waterways and elevated ground.
Biosis 2016. Mamre West Precinct Orchard Hills: Aboriginal Cultural Heritage Assessment Report.	Aboriginal Cultural Heritage Assessment for the Mamre West Precinct, Orchard Hills. A survey identified a new artefact scatter and areas of archaeological potential. Subsequent test excavation identified four artefact scatters, consisting of flakes, flaked pieces and cores. The primary raw material was silcrete, with a lesser amount of chert. Elevated portions of the area in close proximity to water sources were considered to have high cultural significance.	• Approximately 4.5km north-west of the present subject area. • Aboriginal objects associated with elevated ground and waterways. • Silcrete identified as a common raw material in the area.
Dominic Steele Consulting Archaeology (DSCA) 2010.	Dominic Steel Consulting Archaeology (DSCA) prepared a combined Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment for PJEP Environmental Planning on Behalf of LOGOS Property for a proposed future industrial development of an approximate 52 ha parcel of land (Lot 1 DP 104958) located at 708 Mamre	• Approximately 3km north-west of the present subject area. • The contemporary approach to Aboriginal Cultural Heritage

Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment, LOGOS Kemps Creek Logistics Project.	Road, Kemps Creek (the current subject area). The assessment was in response to the issued Department of Planning Director-General's Requirements (DGR's) for the site. The conclusions of the Aboriginal assessment were: ▪ Prior to the investigation there were no previously documented sites within the study area; ▪ The coordinates for a number of AHIMS sites incorrectly placed them within the subject area but were confirmed to be located to the north and beyond the subject area; ▪ A small number of isolated finds and open scamp sites were identified in exposures within the subject area (45-5-4102, 45-5-4103, 45-5-4104, 45-5-4105); ▪ The archaeological potential associated with the four identified artefact sites was considered low by DSCA despite the statement "…it may be expected that further artefacts may occur in the locality, it is unlikely that they will be in situ but would rather be identified in eroded and/or disturbed recovery contexts." ▪ A tree within the subject area was noted by Aboriginal stakeholders as being a possible scarred tree. Independent advice provided by a qualified arborist suggests the tree is highly unlikely to display Aboriginal scarification on the basis maximum age of the tree (160 years old), the age of the scar (up to 50 years old) and the frequency of wounds of this shape on similar tree specimens. ▪ Archaeological investigations within the catchment between Kemps and Ropes Creek have revealed low-density distributions of Flaked stone artefacts	Assessments is more robust and conservative than assessments such as that undertaken by DSCA (2010). • The assessment by DSCA (2010) failed to appropriately address the Aboriginal archaeological heritage constraints within the subject area. This is a direct result of the legislative framework around Aboriginal sites that archaeological investigations must address are artefact based rather than context/disturbance based. • Four separate surface archaeological sites were identified in addition to the statement that further subsurface assemblages may be present within the site. • Urbis recommends that subsurface archaeological investigation is warranted to determine the extent and nature of the archaeological assemblage within the current subject area.
DSCA 2004. Aboriginal Heritage Conservation Action Plan, Application for a S90 Heritage Impact Permit Consent with Salvage & Collection,	Aboriginal Heritage Conservation Action Plan and application for s.90 Heritage Impact Permit for Twin Creeks Estate, Ludenham Road, Luddenham. This assessment involved salvage and collection of previously identified sites. Different conservation zones were identified on the basis of archaeological resources and proposed works/level of impact. Within Zone A, for example, where proposed impact was low, conservation measures involved the construction of temporary barriers, with conservation of original landform and existing vegetation.	• Approximately 3.5km north-west of the present subject area. • Identified zones of conservation on the basis of resource and level of impact.

Twin Creeks Estate, Luddenham Road, Luddenham, New South Wales.	In other areas, where impact would be higher (for example in Zones D and E), conservation measures included the collection of artefacts.	• Proposed the retention of landform and vegetation in high-sensitivity areas.
Appleton, J 2002. The archaeological investigation of Lot 2, DP 120673, the site of a proposed new clay and shale extraction area, Old Walgrove Road, Horsley Park, west of Sydney, NSW.	Archaeological assessment involving survey at Old Walgrove Road, Horsley Park. The study identified two previously unknown sites, both isolated stone artefacts, and a PAD associated with one of the sites. Two areas were also identified as Potentially Archaeological Sensitive and further investigation of these areas was recommended.	• Approximately 4.5km north-east of the present subject area. • Isolated artefact sites may occur near permanent or semi-permanent creeks. • Sites may survive in disturbed contexts.
DSCA 2001. Archaeological Research Design for three sites (#45-6-1772, 1774 & 1777) within land between Luddenham & Mamre Roads, Luddenham, New South Wales.	Archaeological Research Design for three previously identified sites between Luddenham & Mamre Roads, Luddenham. The three sites which form the subject of this ARD were open camp sites, with the purpose of this report to provide a preliminary framework for sub-surface testing, analysis and assessment to manage the archaeological resource. This assessment identified no development was to be sited within 20m of the Cosgrove Creek, or South Creek. This assessment recommended archaeological testing to sample areas of sensitivity, with testing in land zoned as low-moderate, moderate and high sensitivity. Testing was proposed across the landforms present on the site including creek floodplains, minor slopes, hill slopes, minor spurs, and lower ridge contexts. This report did not detail the results of this testing.	• Approximately 3km west of the present subject area. • Provided a framework for testing and management of archaeological resources. • Testing to sample areas of sensitivity zoned as low-moderate, moderate and high. • Testing across all landforms.
Jo McDonald Cultural Heritage Management 2001.	Archaeological survey report for a site at 1503 Elizabeth Drive, Kemps Creek, the development of Nolans Quarry. One PAD site was identified as a result of the survey, on the basis of land use disturbance, one one Isolated Find (quartz flake) present on the surface. The potential for identification of other sites was reduced by previous activties including land clearance and bulldozing which may have destroyed archaeological materials.	• Approximately 1.5km south-west of the present subject area. • Disturbance may destroy archaeological materials.

Survey for Aboriginal Sites, 1503 Elizabeth Drive, Kemps Creek.	Test excavation was recommended to understand the density and extent of artefacts associated with the PAD due to low ground surface visibilty.	• GSV impacts the potential for surface artefacts to be identified and recorded.
Jo McDonald Cultural Heritage Management 2000. Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision, "Austral Site" – Mamre Road, Erskine Park, NSW.	Archaeological survey report for the "Austral Brick Company" site, Erskine Park. The survey identified six new artefact scatters and three isolated artefacts within or adjacent to the subject area. All sites were within 150m of a waterway and were dominated by silcrete artefacts. Aboriginal objects were found in areas of disturbance due to vegetation clearance, erosion, vehicle activity, livestock activity and bulldozing for dam construction.	• Approximately 3.5km north of the subject area. • Aboriginal objects are frequently associated with waterways. • Silcrete is the dominant raw material used for stone artefacts in the area. • Sites may survive in disturbed contexts.
DSCA 1999. Archaeological Survey Report for Land Between Luddenham & Mamre Roads, Luddenham, New South Wales	Survey report for a 350ha study area generally bounded by South Creek and Luddenham Road, but also extending to the east of South Creek. The survey identified five previously unidentified artefact scatters and one isolated find. The sites were generally located in association with waterways and ridges. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic.	• Approximately 3.5km north-west of the present subject area. • Aboriginal objects are frequently associated with waterways and high ground. • Silcrete is the dominant raw material used for stone artefacts in the area. • Sites may survive in disturbed contexts.
Dallas, M 1988. Preliminary archaeological study: Luddenham Equestrian Centre, Luddenham Road, Erskine Park, NSW	Archaeological report for a 354ha study area in Erskine Park bounded by South Creek and Luddenham Road. A survey identified 12 artefact scatter sites located within the study area. The sites were located in association with Cosgrove Creek or South Creek, or on the ridge to the west of South Creek. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion.	• Approximately 3.5km north-west of the present subject area. • Aboriginal objects are frequently associated with waterways and high ground. • Silcrete is the dominant raw material used for stone artefacts in the area. • Sites may survive in disturbed contexts.

2.1.3. Aboriginal Heritage Information Management System (AHIMS)

The Aboriginal Heritage Information Management System (AHIMS) database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Premier and Cabinet (DPC) under Section 90Q of the *National Parks and Wildlife Act 1974* (NPW Act). Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. The terms 'Aboriginal sites', 'AHIMS sites' and 'sites' are used herein to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

2.1.3.1. Registered Sites in or near the Subject Area

The search identified no registered Aboriginal sites within the subject area. The nearest sites are AHIMS ID# 45-5-0604 and 45-5-0605, which are the only sites within 1km of the subject area. Both sites are artefact scatters located along a minor tributary of Ropes Creek. The artefacts consisted of silcrete and indurated mudstone flaked pieces. One silcrete core was also located. Both sites have been subject to a consent to destroy,(permit 694 for AHIMS ID#45-5-0604 and Consent 450009 for AHIMS ID#45-5-0605) and marked as destroyed sites.

2.1.3.2. Registered Sites in the Extensive Search Area

The search of the AHIMS was carried out on 05 November 2020 (AHIMS Client Service ID: 546950) for an area of approximately 7km x 7km.

Altogether 117 Aboriginal objects and 0 Aboriginal places were identified within the search area.

The search found **no** registered Aboriginal objects within or adjacent to the subject area.

Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

Three sites were identified as 'not recorded' and one identified as 'not a site'. These were excluded from the below analysis, thus bringing the total to 113. Details of the Extensive AHIMS search are provided in Table 3 below and the original AHIMS extensive search is included in Appendix 3.

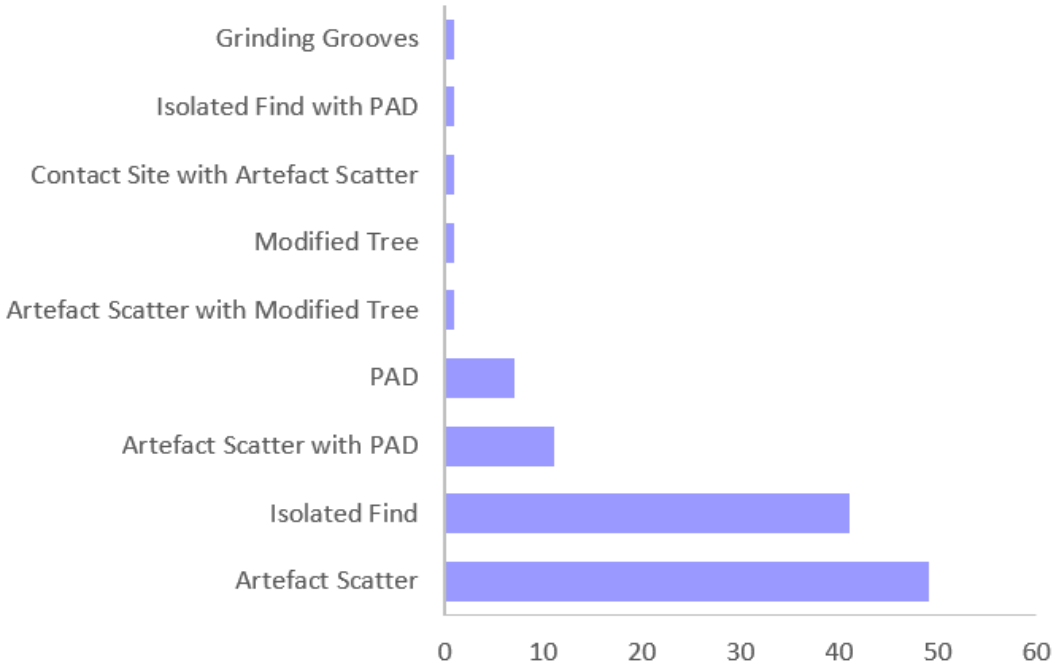


Figure 10 – Graph depicting the results of the AHIMS search (CSID: 546950)

Table 3 - Results of AHIMS search (Client Service ID: 546950)

Site Type	Number	Percentage
Artefact Scatter	49	43.36%
Isolated Find	41	36.28%
Artefact Scatter with PAD	11	9.73%
PAD	7	6.19%
Artefact Scatter with Modified Tree	1	0.88%
Modified Tree	1	0.88%
Contact Site with Artefact Scatter	1	0.88%
Isolated Find with PAD	1	0.88%
Grinding Grooves	1	0.88%
TOTAL	**113**	**100%**

'Closed context' sites are those which occur within rock shelters, and include site types such as shelters by themselves, or with art, middens, and/or artefact scatters. The occurrence of outcroppings of sandstone is generally low within the search area, with the underlying geology primarily Wianamatta Group Ashfield Shale and Bringelly Shale formations. This accounts for the absence of registered closed-context sites across the surrounding area, or sites such as engravings or grinding grooves (of which there was 1 site registered within the search area, comprising 0.88% of results) which occur upon sandstone outcrops. 'Open context' sites, sites which occur outside of rock shelters, comprised 100% (n=113) of identified site types.

92% (n=104) of identified sites contained confirmed culturally modified lithics. 6.19% (n=7) of sites contained Potential Archaeological Deposits (PADs) alone. PADs typically represent areas where the environmental context and level of disturbance are such that subsurface remains are deemed to be likely, and the registering of PADs is usually followed by test excavation which will either realise this potential through the identification of sites, or result in the de-registering of the area due to the absence of materials. PADs are typically registered within areas where deposits indicative of habitation are anticipated to occur.

The other remaining site types include the 1 grinding groove site, and a modified tree comprising 0.88% (n=1). Culturally modified trees are trees with scars indicative of the removal of bark for the creation of tools, canoes and baskets which typically do not survive archaeologically due to their materiality. Modified trees are rare in the archaeological record due to European land clearance.

Artefact scatter sites are sites with multiple culturally modified lithics within a 10m area. This is the most frequently identified site type across the search area, comprising 55% (n=62) of identified sites. Artefact scatters range in size; from small, low intensity, 'background' scatter, to large scatters of hundreds of artefacts, with accompanying materials which would indicate use of the area for long term habitation purposes. Accompanying materials include PADs (n=11), modified tree (n=1) or contact sites (n=1). Contact sites are sites indicative of contact between Europeans and Aboriginal groups, typically in the form of flaked glass or ceramic within Aboriginal contexts.

Isolated find sites are sites which contain only one artefact, typically located in a disturbed context. They are also common throughout the search area, comprising 37% (n=42) of identified site types, where they occurred either on their own or with PADs.

No midden or burial sites are present within the search results. Middens are common in coastal areas, or areas in close proximity to waterways where aquatic subsistence resources could be extracted and processed. Burials are typically located within proximity to culturally modified trees or buried in sand dunes.

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area. It lists recorded sites identified during previous archaeological survey effort. The wider surroundings of the subject area have experienced various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

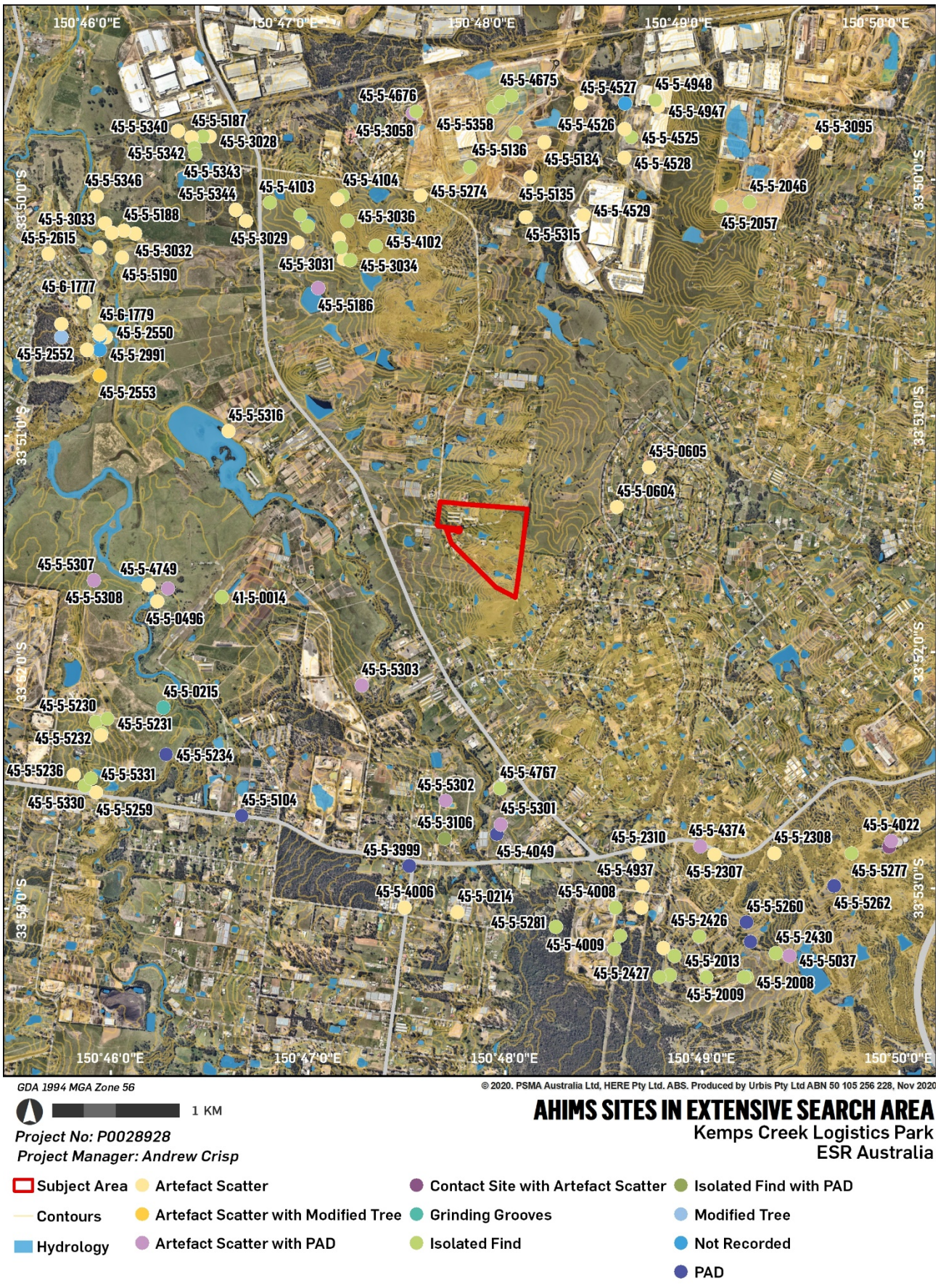


Figure 11 – Registered Aboriginal sites in extensive search area

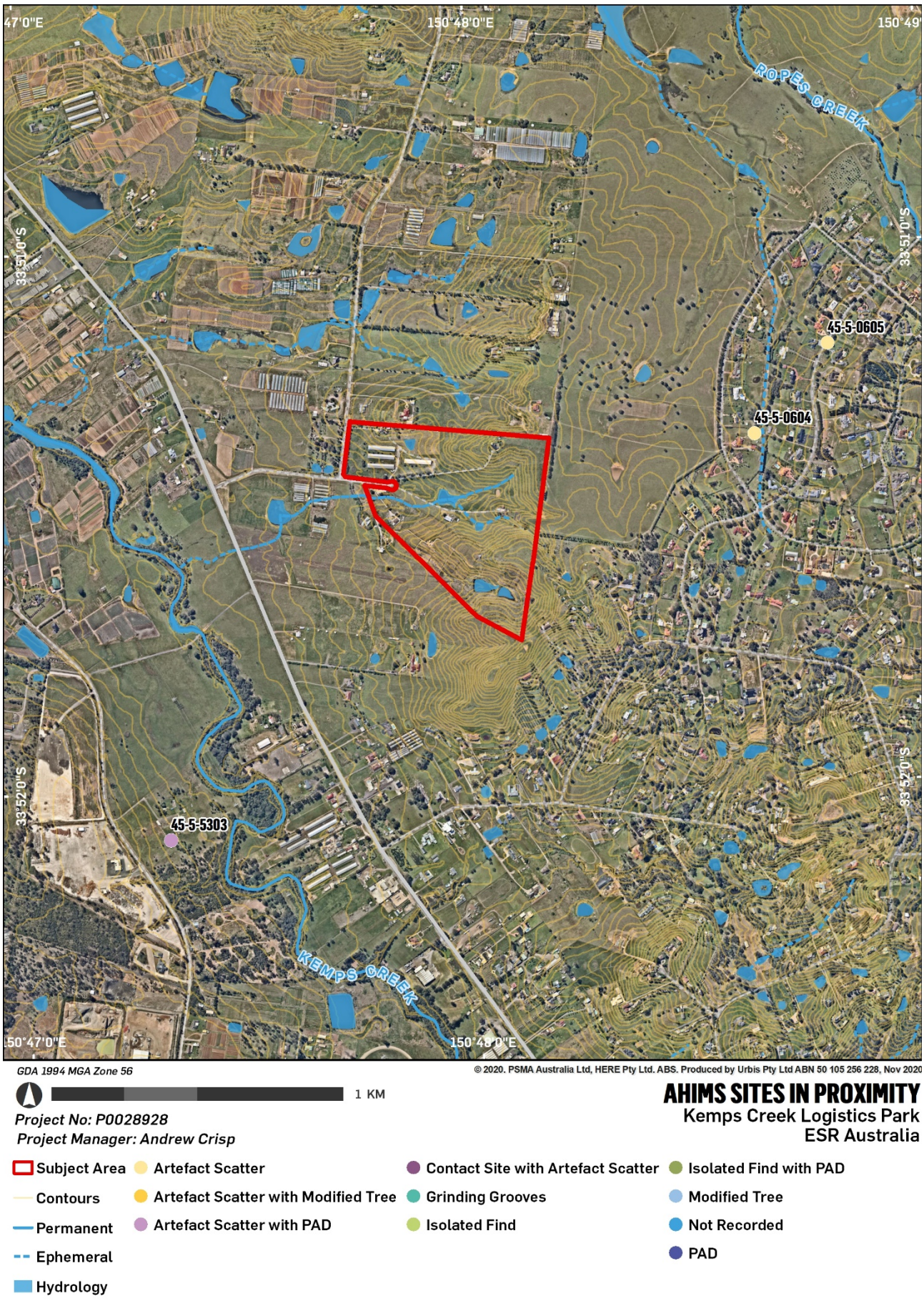


Figure 12 – Registered Aboriginal sites in proximity to the subject area

2.2. LANDSCAPE ANALYSIS

2.2.1. Geology and Soils

The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. The region consists of mostly low rolling hills and wide valleys.

There are two soil landscapes identified within the subject area (Figure 13), the Luddenham soil landscape and the Blacktown soil landscape.

The Luddenham Soil Landscape is present across the majority of the subject area, with the exception of the north-western corner along Aldington Road. This soil landscape is described as residing upon Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale consists of laminite and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, and laminite. Between these two shale members is the Minchinbury Sandstone consisting of fine to medium-grained lithic quartz sandstone. Soils are described as shallow (<100m) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70-150cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. Dominant soil materials include Friable dark brown loam, Hard setting brown clay loam, whole coloured strongly pedal clay, mottled grey plastic clay and apedal brown sandy clay.

The Blacktown Soil Landscape is present in the north-western corner of the subject area. This is described as residing upon gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Soils are described as shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11, Dy3.11) on lower slopes and in areas of poor drainage. Dominant soil materials include friable brownish-black loam, hard setting brown clay loam, strongly pedal mottled brown light clay, and light grey plastic mottled clays.

The depth of natural soils is relevant to the potential for archaeological materials to be present, especially in areas where disturbance is high. In general, as disturbance increases, archaeological potential decreases.

2.2.2. Hydrology

The subject area includes a number of minor waterways running westward from elevated ground on its eastern boundary. The confluence of these waterways is in the centre of the subject area forms a tributary of Kemps Creek, which is located approximately 1km west of the subject area. These waterways have been dammed for agricultural purposes. The majority of the subject area is within 200m of one or more of these waterways, increasing the archaeological potential for Aboriginal objects.

2.2.3. Vegetation and Resources

The subject area currently comprises cleared agricultural land with replanted trees along roads and in the vicinity of buildings.

Vegetation within the Luddenham Soil Landscape is typified by extensively cleared open forest (dry sclerophyll forest). Dominant tree species include *Eucalyptus maculate* (spotted gum) and *E. moluccana* (grey box). Lesser occurrences of *E. fibrosa* (broad-leaved ironbark), *E. crebra* (narrow-leaved ironbark), *E. tereticornis* (forest red gum) and *E. longifolia* (woollybutt) occur. Understorey shrub species include *Bursaria spinosa* (blackthorn), *Breynia oblongifolia* (coffee bush), *Allocasuarina torulosa* (forest oak), *Acacia implexa* (hickory) and *Clerodendrum tomentosum* (hairy clerodendrum).

Vegetation within the Blacktown Soil Landscape is typified by almost completely cleared open-forest and open-woodland (dry sclerophyll forest). The original woodland and open-forest were dominated by *Eucalyptus tereticornis* (forest red gum), *E. crebra* (narrow-leaved ironbark), *E. moluccana* (grey box) and *E. maculata* (spotted gum).

The open forests of the Luddenham and Blacktown Soil Landscapes would likely have provided a suitable hunting ground for Aboriginal people.

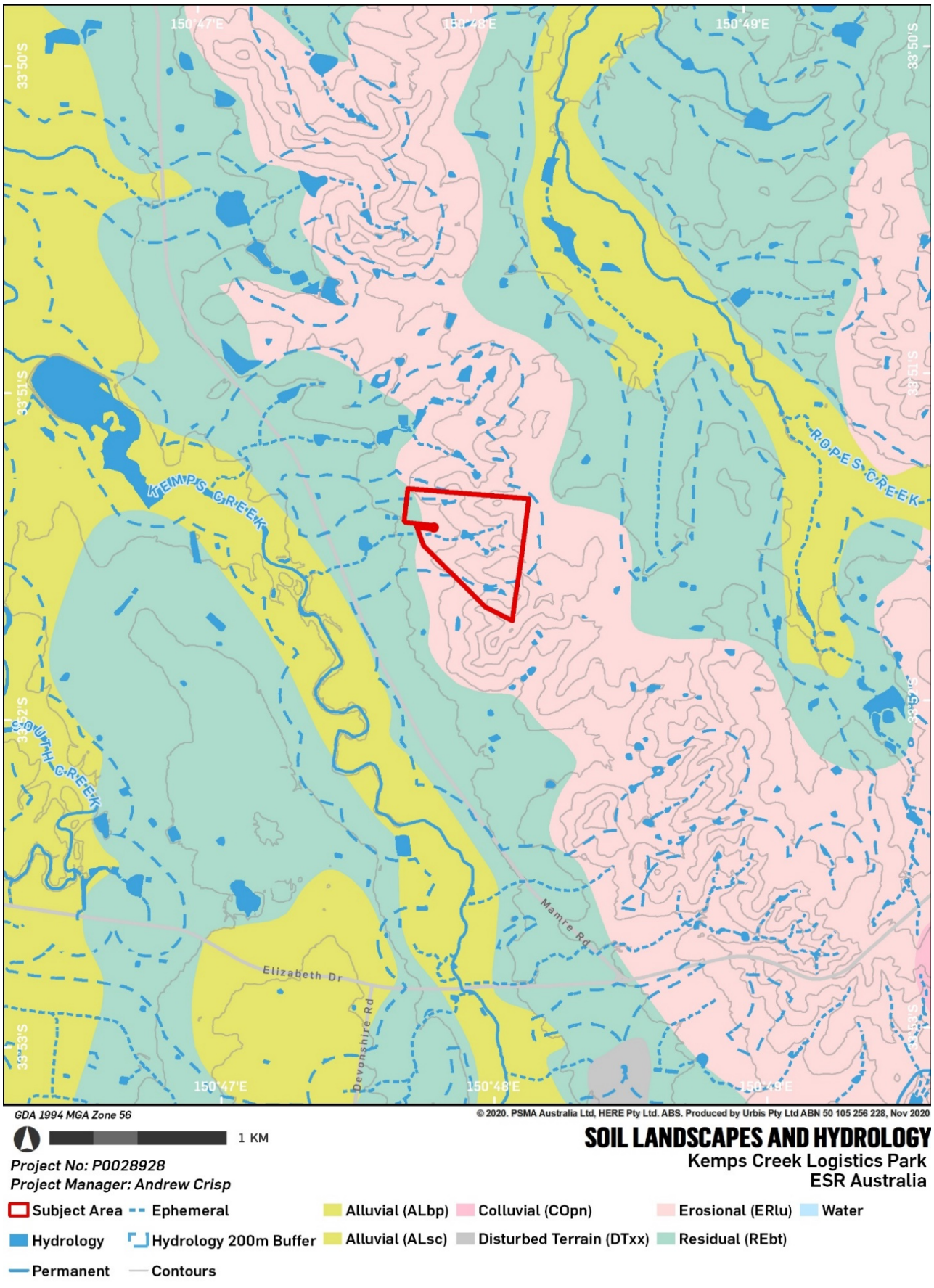


Figure 13 – Soils landscapes and hydrology

2.2.4. Topography

There are varying morphological types of landform elements (see Figure 14 and Figure 15). The Australian Soil and Land Survey Field Handbook (CSIRO, 2009) identifies ten landform element types. These types are presented in Table 4 below.

Table 4 – Landform definitions

Type	Definition
Crest (C)	Landform element that stands above all, or almost all, points in the adjacent terrain. It is characteristically smoothly convex upwards in downslope profile or in contour, or both. The margin of a crest element should be drawn at the limit of observed curvature.
Hillock (H)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being less than the width of the landform element.
Ridge (R)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being greater than the width of the landform element.
Simple Slope (S)	Slope element adjacent below a crest or flat and adjacent above a flat or depression.
Upper Slope (U)	Slope element adjacent below a crest or flat but not adjacent above a flat or depression.
Mid Slope (M)	Slope element not adjacent below a crest or flat and not adjacent above a flat or depression.
Lower Slope (L)	Slope element not adjacent below a crest or flat but adjacent above a flat or depression.
Flat (F)	planar landform element that is neither a crest nor a depression and is level or very gently inclined (<3% tangent approximately).
Open Depression (vale) (V)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave and their margins should be drawn at the limit of observed curvature.
Closed Depression (D)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards, and their margins should be drawn at the limit of observed curvature.

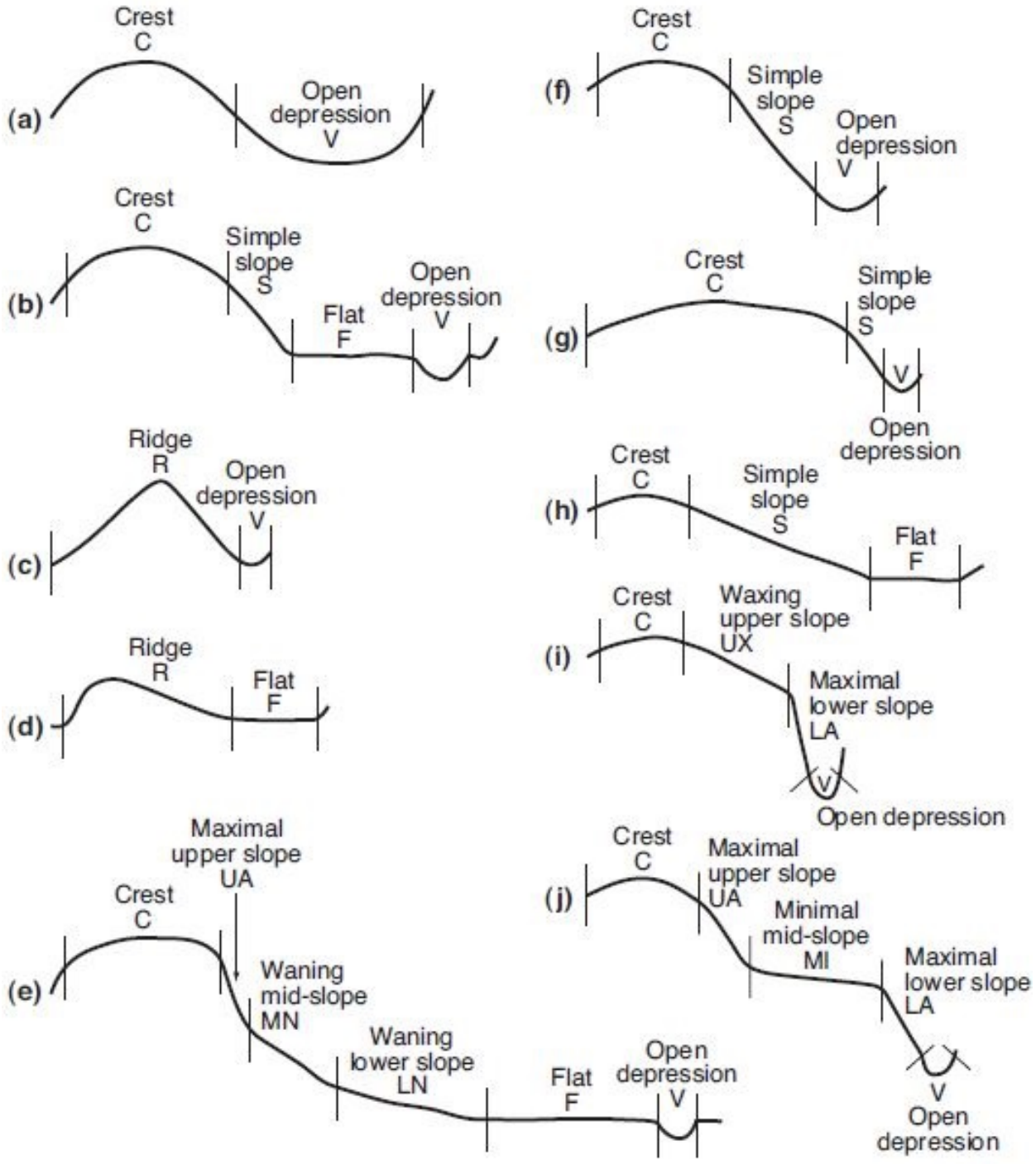


Figure 14 – Landform type
Source: CSIRO, 2009

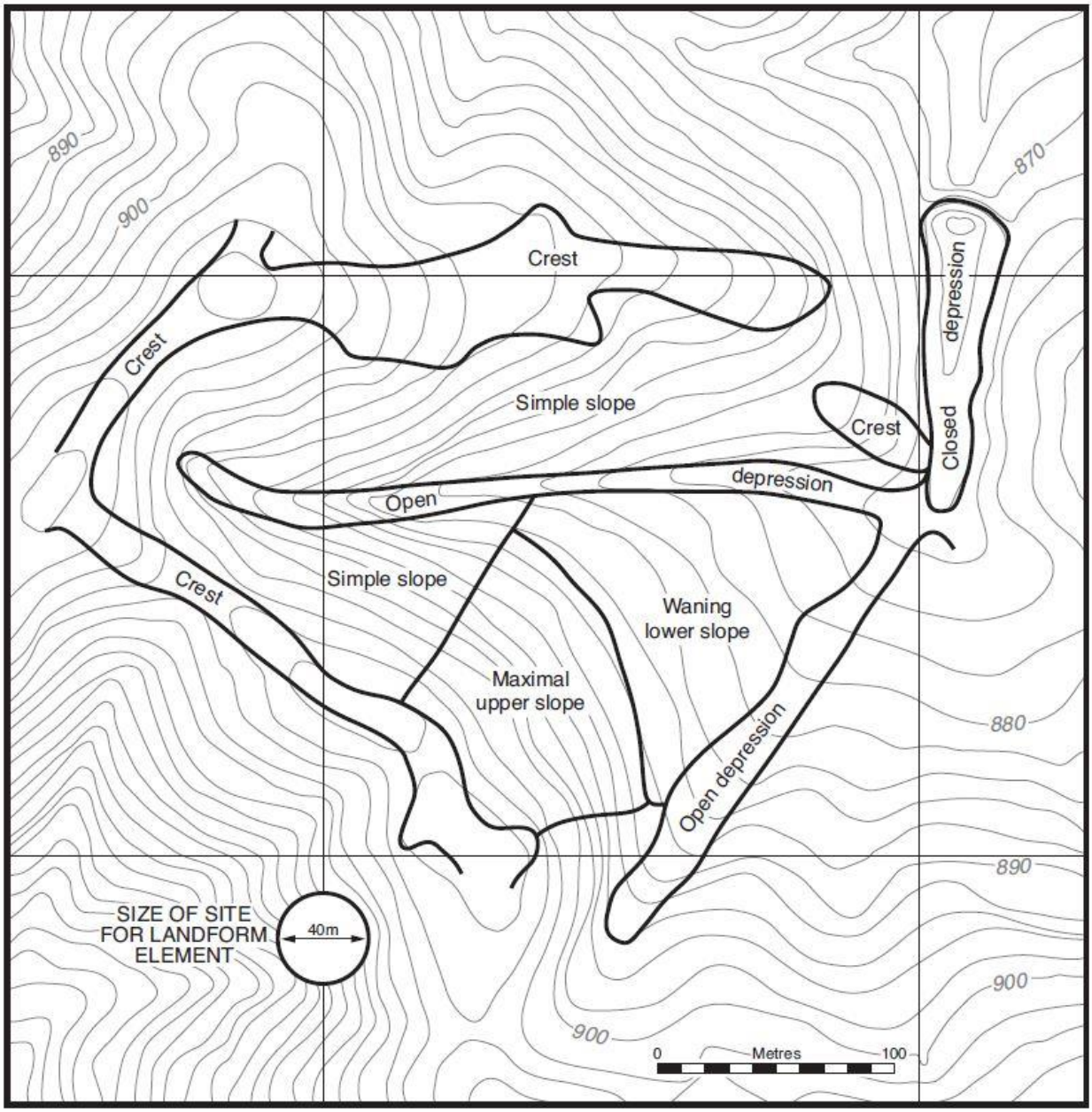


Figure 15 – Landform pattern
Source: CSIRO, 2009

An analysis of landforms across the site identified a series of east to west ridge/crests, with maximal, simple and waning slopes leading to a series of open depressions draining to the west.

2.2.5. Geotechnical Analysis

2.2.5.1. Alliance Geotechnical 2019, *Geotechnical Investigation Report for the Proposed Industrial Subdivision at 290-308 Aldington Road, Kemps Creek*, prepared for ESR Group

A geotechnical investigation undertaken by Alliance Geotechnical Pty Ltd (AG) for ESR Group (the client) for the proposed industrial subdivision at 290-308 Aldington Road, Kemps Creek NSW 2178 Lot 13 in DP253503 (the site).

The geotechnical investigation was carried out to address the following project objectives:

- Geotechnical subsurface profile and groundwater conditions;
- Determine geotechnical constraints which are likely to be encountered during construction of the development;
- Suitable footing types and associated geotechnical design parameters;
- Provide recommendations regarding excavations, bulk earthworks and temporary shoring systems;
- Provide recommendations for retaining wall design; and,
- CBR design values and pavement subgrade preparation.

The works included (Figure 16) but were not limited to:

- Borehole drilling using a track-mounted rig to undertake the drilling of seven (7) boreholes in selected locations;
- Standard Penetration Tests (SPTs) carried out at 1.5m depth intervals to assess the soil consistency in depth of select boreholes;
- Dynamic Cone Penetrometer (DCP) tests to assess the soil consistency of shallow subsoil; and,
- Collect soil samples for soil laboratory tests, comprising:
  - Four (4) California Bearing Ratio (CBR)
  - Four (4) Atterberg Limits
  - Two (2) Soil Aggressivity.

Table 5 – Summary of subsurface profile

Unit	Description	Depth to top of unit	Thickness
Topsoil/fill	Topsoil Fill: Silty Clay to Clay, low to medium plasticity, trace sand and gravel (In BH4: Sandy Gravel)	0.0	0.1-0.5
Residual	Silty CLAY to CLAY, medium to high plasticity	0.1-0.5	0.5-3.5
Bedrock	SHALE, extremely to highly weathered, with frequent clay bands (inferred as Class V or better)	0.8-2.2	--

Source: Alliance Geotechnical Pty Ltd 2019

Alliance Geotechnical ENGINEERING | ENVIRONMENTAL | TESTING Manage the earth, eliminate the risk	Borehole Location Plan				
	Client Name:	ESR Group	N	Figure / Drawing Number:	9687-GR-1-A
	Project Name:	Proposed Industrial Subdivision		Figure / Drawing Date:	21/10/2019
	Project Location:	290-308 Aldington Road, Kemps Creek NSW 2178		Report Number:	9687-GR-1-1

Figure 16 – Alliance Geotechnical borehole location plan, 290-308 Aldington Road, Kemps Creek.

Source: Alliance Geotechnical 2019

2.2.5.2. Douglas Partners 2019, *Report on Preliminary Geotechnical Investigation Proposed Industrial Subdivision 59-63 Abbotts Road, Kemps Creek,* prepared for ESR Australia

A preliminary geotechnical investigation was undertaken prior to the purchase of the site for a proposed industrial subdivision at 59 - 63 Abbotts Road, Kemps Creek. The investigation was commissioned by ESR Australia (ESR) and was undertaken in by Douglas Partners Pty Ltd (DP).

The aim of the subsurface investigation was to provide preliminary information on the subsurface conditions for pre-purchase due diligence purposes and conceptual planning including:

- Subsurface conditions including groundwater if encountered;
- Likely site classification in accordance with AS 2870;
- Excavations, batter slopes and retaining wall design parameters;
- Site preparation and earthworks
- Suitable footing types and tentative design parameters for high level footings and piles;
- Flexible pavement subgrade design parameters;
- Earthquake site factor in accordance with AS 1170.4;
- Potential for soil salinity and aggressivity to buried structures; and
- Anticipated land use difficulties and potential solutions.

The field work comprised a site walkover inspection by a geotechnical engineer and the excavation of 22 test pits (TP1 to TP22) and five boreholes (BH1 to BH5, with BH3 incomplete due to limited accessibility). See Figure 17 below.

Table 6 – General succession of strata summary

Strata	Description
Topsoil Fill and Fill	Silty clay filling in TP1, TP2, TP3, TP5, TP16, TP16DW and TP19 to depths of up to 2.3 m (TP1) near the western residence and along the northernmost creek line including: plastic, porcelain and construction and demolition rubble (TP1); bricks (TP2), charcoal (TP3); building rubble, asbestos containing material (ACM), ceramic tiles and brick (TP16); and brick, terracotta, plastic, metal and ACM (TP19).
Topsoil	Silty clay with and rootlets in all test pits and boreholes with the exception of the pits detailed above, to depths in the range 0.1 – 0.6 m;
Residual fill	Stiff brown silty clay/clay of medium – high plasticity below topsoil and/or fill to depths of more than 2.5 m in most test pits other than TP1, TP16DW and TP19; and sandy clay to depths of greater than 3 m in TP9, TP10, TP11 and TP15 in the south east and east of the site.
Bedrock	Initially very low to low strength weathered shale, siltstone and sandstone in Pits TP6, TP8 TP10. TP13 and TP20, and boreholes BH1, BH2, BH3, BH4, and BH5, from depths of 0.7 m. The rock generally increased in strength with depth to medium or high strength, with variable strength layers of extremely low to low strength. In BH 4 was typically low strength with some medium or high strength layers

Source: Douglas Partners 2019

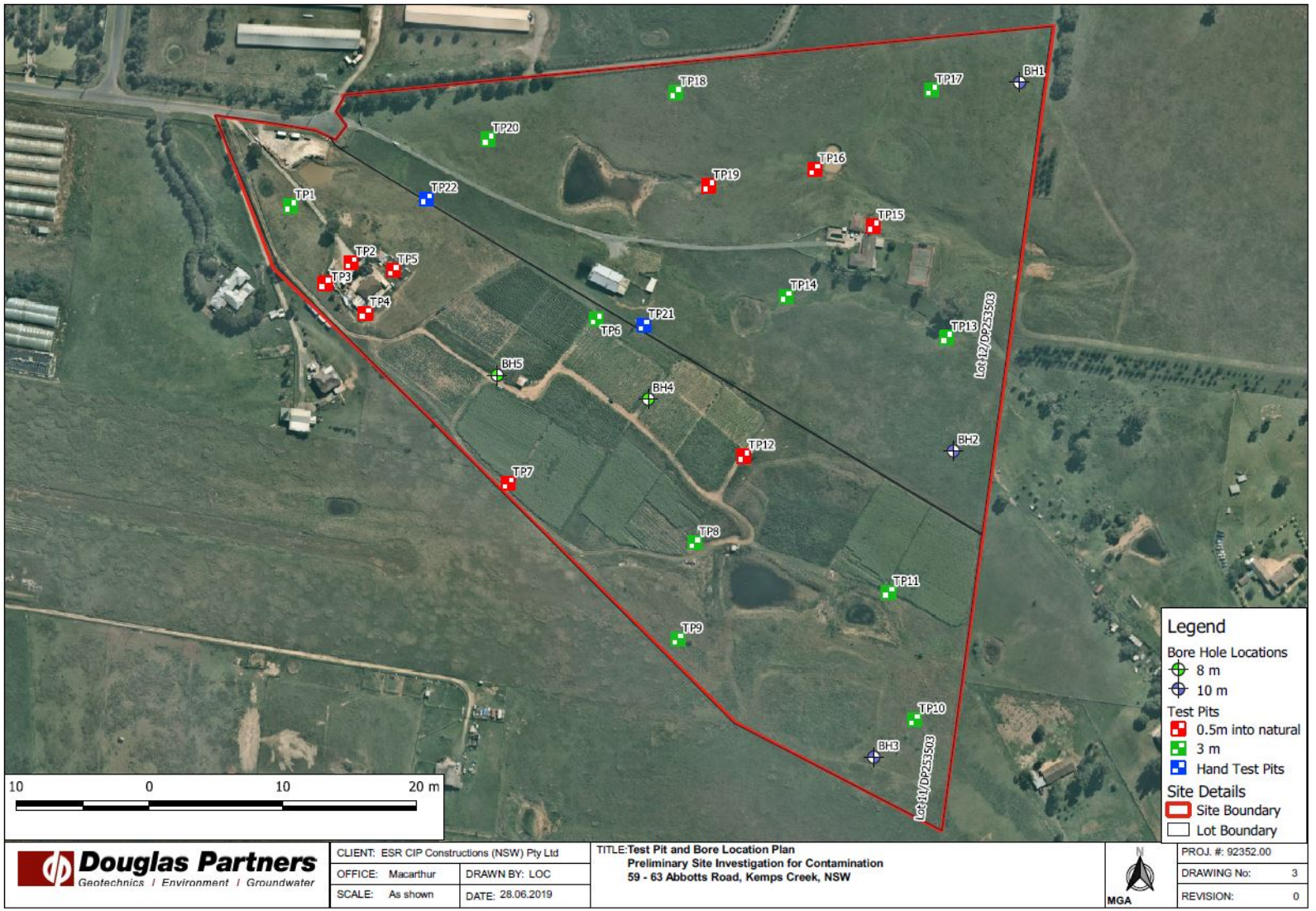


Figure 17 – Douglas Partners test pit and borehole location plan, 59-63 Abbotts Road, Kemps Creek.

Source: Douglas Partners 2019

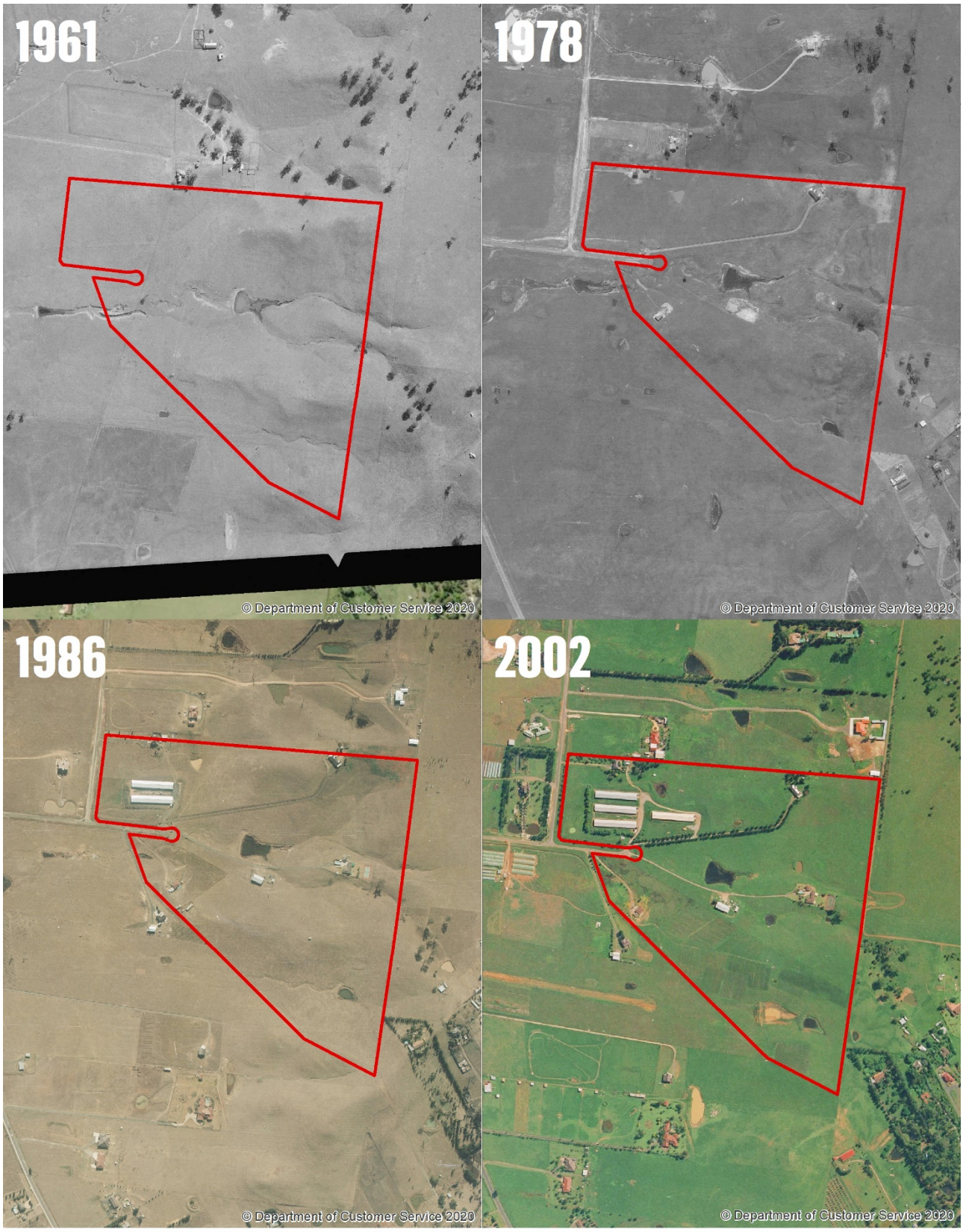
2.3. HISTORICAL LAND USE

Ground disturbance caused by historical land use may significantly reduce Aboriginal archaeological potential. Aerial images from 1961, 1978, 1986 and 2002 (Figure 18) were visually analysed to develop an understanding of historical land use and ground disturbance within the subject area (Table 7).

It is apparent from the historic aerial imagery that the historical land use of the subject area has been used primarily for agricultural purposes. Historical development of the subject area has caused localised high levels of ground disturbance (dam construction), while the majority of the subject area has been subject to low to moderate levels of physical impact (vegetation clearance, agricultural uses and building construction). In conjunction with the shallow soil profile of the present subject area, the observed levels of historical ground disturbance may reduce archaeological potential.

Table 7 – Analysis of historical aerials

Year	Observation
1961	The subject area has been almost entirely cleared of larger vegetation, with the exception of several isolated trees. A fence running in a generally north-south direction is dissects the western portion of the subject area and forms a T-junction with another fence running west towards Mamre Road. A generally north-south aligned dirt road or path also dissects the western portion of the subject area, lying to the east of the fences. A dam has been constructed on tributary of Kemps Creek, which rises in the elevated ground of the eastern portion of the subject area and runs in a generally westward direction through the middle of the subject area.
1978	The previous fence lines and dirt road/path running through the subject area are no longer visible. Two further dams have been built in the north western portion and south eastern portion. The land in which the subject area has been sub-divided, with Aldington and Abbotts Roads having been built at the western boundaries of the subject area. Driveways running from a cul-de-sac at the end of Abbotts Road to residential buildings that have been constructed in the north-eastern and western portion of the subject area. A further building has been constructed in the western portion of the subject area along the northern boundary, with a driveway connecting it Aldington Road. Disturbed areas of land immediately to the south of the original dam and on the higher ground to the east of the dam appear to be preparation for construction of further buildings.
1986	The disturbed areas of land immediately to the south of the original dam and on the higher ground to the east of the dam are now occupied by buildings. A driveway is now visible connecting these buildings to the Abbotts Road cul-de-sac. The eastern building is residential and includes a swimming pool, tennis court and landscaping. Fence lines are now visible defining the boundaries of the three separate lots within the subject area. Two large agricultural buildings have been constructed in the north-western portion of the subject area and are connected by a driveway to the Abbotts Road cul-de-sac and to the building on the northern boundary by a dirt road or path. Some minor landscaping is visible around the building on the northern boundary of the north-western portion
2002	Two further agricultural buildings have been constructed in the north-western portion of the subject area adjacent the two earlier buildings a further access driveway is visible. Some revegetation around buildings, driveways and roads has occurred, particularly in the norther portion. Four smaller dams have been built, mostly upstream from the earlier dams. A patchwork of striations across much of the southern lot of the subject area indicate cultivation for agricultural purposes.



GDA 1994 MGA Zone 56

50 M

Project No: P0028928

Project Manager: Andrew Crisp

Subject Area

HISTORICAL AERIAL PHOTOGRAPHS
Kemps Creek Logistics Park
ESR Australia

Figure 18 – Historical aerial photographs

2.4. PREDICTIVE MODEL

The *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* requires that an appropriate predictive model be used when undertaking an ACHA. A predictive model is used to estimate the nature and distribution of evidence of Aboriginal land use in a subject area. The results produced by a predictive model can be used to identify potential archaeological deposits (PADs).

A predictive model should consider variables that may influence the location, distribution and density of sites, features or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform and cultural resources. The following predictions for the subject area have been formulated on the basis of previous assessments, regional models and the AHIMS data provided in Section 2.1.3.

There are several site types which are known to occur within New South Wales. These site types and their likelihood to occur within the subject area are evaluated in Table 9 below.

The general process archaeologists employ to determine the likelihood of any particular site type (artefact scatter, shelter, midden etc) to occur within a given subject area requires the synthesis of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permeant water.
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

The combination of these would give us an indication of various levels of possibility of finding archaeological resource within a given area. Please refer to Table 8 below for an example of the indicative process of determining the likelihood of a given site occurring within a subject area.

Table 8 – Indicative process of determining the likelihood of a given site occurring within a subject area

Likelihood	Indicative subject area context	Indicative action
High	Low level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Moderate	Moderate level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.

Likelihood	Indicative subject area context	Indicative action
Low	High level of disturbance, presence of one archaeologically sensitive landform (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc).	Employ chance finds procedure and works can continue without further archaeological investigation.
Nil	Complete disturbance, complete removal of natural soil landscape, zero archaeologically sensitive landform, geological or soil features. Zero previously recorded archaeological sites.	Employ chance finds procedure and works can continue without further archaeological investigation.

Table 9 – Predictive Model

Site type	Description	Potential	Justification
Artefact Scatters/ Camp Sites	Artefact scatters/camp sites represent past Aboriginal occupation and possible stone knapping activities and include archaeological remains such as stone artefacts and potentially hearths. This site type usually appears as surface accumulation 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 and elevated land along or adjacent to rivers and creeks.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. 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 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.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.

Site type	Description	Potential	Justification
PAD	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, ridge tops and sand dune systems.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Scarred Trees	Scarred trees are the results of the stripping-off the bark by Aboriginal people for various reasons, 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 (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar that can heal by the regrowth of the bark or remain an exposed scar for a prolonged period. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.	Nil	▪ Historical vegetation clearance in the subject area has removed all original trees.
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 other stones creates grooves in the rock; these are usually found on	Low	▪ It is unlikely that the exposed sandstone outcrops required for

Site type	Description	Potential	Justification
	flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet grinding to occur.		this site type would occur within the subject 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 of 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.	Low	▪ Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial 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.	Low	• The subject area is not situated on soft, sandy soils. • The subject area does not include any visible rock overhangs suitable as shelters.
Contact site	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.	Low	• Contact sites in the area are possible due to early European settlement. • Historical land-use in the subject area reduces the potential for these sites.
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where	Nil to low	• The subject area is not situated near the coast. • The lower order tributary within the subject area is not conducive to this type of site.

Site type	Description	Potential	Justification
	edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.		
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic Figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	• The subject area does not include any visible sandstone outcrops or rock overhangs. • It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Nil to low	• The subject area does not include any visible rock overhangs. • It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

2.5. ARCHAEOLOGICAL RESEARCH DESIGN

The purpose of a research design is to provide and direct a reasonable foundation for management decisions of an archaeological or cultural heritage site or place as well as satisfying regulatory requirements through a standardised process. All related future archaeological studies and analyses stand to benefit if guided by clear linkage of study goals, relevant theory, data and methods. Application of a research design is international best practice and plays a vital role in the planning process.

This research design follows a test excavation under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010). The purpose of the test excavation is to obtain information about nature and extent of subsurface artefacts and any archaeological features at this location. This information will be used to better to understand the significance of the archaeology at this location and to better guide its management.

The below Archaeological Research Design (ARD) has been developed to provide a framework to investigate the nature and origin of the potential archaeological resource within the subject area.

This ARD has been designed based on the results of the Aboriginal Cultural Heritage Assessment Report (ACHAR), particularly the results of the archaeological background research and predictive model.

This ARD has been prepared to cover the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

In order to fulfil the objectives of the ARD, the following indicative research questions have been formulated:

1. Is there a subsurface archaeological deposit present?
2. If an archaeological deposit present, how can it be interpreted?
    - What is the spatial and vertical extent of the deposit?
    - What is the integrity and condition of the deposit?
    - What are the physical attributes and compositions of the deposit (eg. stone artefacts, features, remains of original environment, contact period artefacts)?
    - What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?
    - Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?
    - Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?
3. Can the archaeological deposit be interpreted in a local context?
    - Are there similarities or differences with nearby archaeological sites?
    - Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?
4. Can the archaeological deposit be interpreted in the regional context?
    - Where did the raw materials originate from?
    - Is there any indication of trade in connection of raw material procurement?
    - How does the assemblage compare to other archaeological sites within the region?
5. Do the results if the archaeological excavation changes the scientific and cultural significance of the site?
    - What is the scientific and cultural value of the assemblage?
    - How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

2.6. TEST EXCAVATION METHODOLOGY

The test excavations will be undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation will also aim to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the methodology for the proposed test excavation programs. According to the Code of Practice "*test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area*".

The test excavation will include:

- The initial Stage 1 of testing will include the excavation of up to 100 (one hundred) 50 cm by 50 cm test pits at a spacing of 20m on a number of separate transects.
- The location of the transects (Figure 19 below) has been informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The area indicated with the yellow dashed polygon in 63 Abbotts Road requires clarification regarding access and scheduling (active market garden) to conduct the required, up to, 40 (forty) test pits. Clearance of portions of the sugar cane will be required prior to excavation being undertaken.
- The location and number of transects and test pits will be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal officers on site.
- All excavated material will be wet sieved through a 5mm metal sieve station.

2.6.1. Test Excavation Stage 1

- The test pits shall be excavated by hand (inclusive of trowels, shovels and other hand tools) along each transects at intervals of 20m.
- The first test pit within each transect and/or landform shall be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform and/or potential archaeological deposit shall then be excavated in either 10cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).
- All test pits will be excavated using the above methods in each transect before any further adjustment is made to the transect or additional pits are excavated.
- All excavated soil will be sieved through 5mm nested sieves using wet sieving method.
- Following the completion of Stage 1, the Excavation Director (Andrew Crisp) will make the decision whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.
- At the completion of Stage 1 Urbis will inform the proponent (ESR) whether it has been determined that Stage 2 test excavation is required. The Excavation Director (Andrew Crisp) will determine whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources. ***This would extend the test excavation program into a minimum third week. Written sign off from the proponent is required prior to beginning of Stage 2.***

2.6.2. Test Excavation Stage 2

- Test pits may be expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits would be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.
- Additional 50cm x 50cm test pits may be placed at an interval of 3, 5 or 10m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological

resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outlined above.

- Expansion test pits may be combined and excavated as necessary in 50cm x 50cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is $3m^2$.

2.6.3. General Procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the Potential Archaeological Deposit or landform unit area being investigated.
- All excavated soil shall be sieved in 5 mm sieves using wet sieving method.
- Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.
- Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.
- Test excavation units shall be backfilled as soon as practicable, to be organised by the proponent. Alternatively, if manual collapse of the test pits is deemed appropriate this will be agreed to prior to the test excavation program.
- An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.
- Test excavations shall cease when enough information* has been recovered to adequately characterise the objects/assemblage(s) present with regard to their nature and significance.

*Enough information is defined by DPC as meaning "*that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not*" (DECCW 2010a).

Figure 19 - Subject area (red polygon) with identified surface artefact locations (stars), areas of identified high disturbance (red), drainage line/open depression (blue), ridge (purple) and simple slope (green). A systematic grid of test pits will be established at 20m intervals along each indicative transect (white).

2.6.4. Post-Excavation Analysis

All collected materials shall be temporarily held at the Urbis office, where they shall be analysed and catalogued by Urbis archaeological staff using the standard artefact curation protocol of the Australian Museum. Selected artefacts or representative samples will be photographed and included and further analysed in detail in the report. The collection shall be analysed using *A Record in Stone* (Holdaway & Stern 2004) and other contemporary methods.

2.6.5. Care and control

A strategy for management of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs. The RAPs are invited to provide comment on the long-term management of artefacts.

Artefacts identified and collected during test excavations will be temporarily held in a lockable, secure location at the Urbis Sydney office (ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA) where they shall be catalogued and analysed by an Urbis archaeologist / artefact specialist.

Following completion of artefact cataloguing and analysis any artefacts recovered during test excavations and subsequent salvage excavations (if necessary) will be moved to the agreed long-term keeping place as soon as practicable in accordance with:

Requirement 26 “Stone artefact deposition and storage” in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (24 September 2010.

2.6.6. Archaeological Technical Report

The purpose of the archaeological investigation and accompanying Archaeological Technical Report (ATR) is to understand the presence, nature and extent of the Aboriginal archaeological resource within the areas of proposed works. The cataloguing and analysis of the recovered artefacts will inform the scientific, cultural and historical significance of the site and in turn management of the heritage resource.

The ATR will be produced in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and attached as an appendix to this Aboriginal cultural Heritage Report (ACHAR).

2.7. ARCHAEOLOGICAL SURVEY RESULTS

A field survey of the subject area was undertaken on 16th February 2021 by Urbis Senior Archaeologist Andrew Crisp, with three RAP site officers in attendance. Representatives are listed in Table 10 below.

Table 10 – RAP survey attendees

RAP Group	Representative
Deerubbin Local Aboriginal Land Council (DLALC)	Steven Randall
Deerubbin Local Aboriginal Land Council (DLALC)	Kevin Meredith
Deerubbin Local Aboriginal Land Council (DLALC)	Jack Donovan

The study area was walked on foot with opportunistic inspection of areas of surface exposure. Landforms identified as having a potential for containing a subsurface archaeological deposit were identified. The archaeological survey was undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a).

In accordance with the Code of Practice the study area was surveyed according to survey units, landforms, and landscapes. All survey units are described in Table 11, shown in Figures 20-22 and sampled landform areas are described in Table 12.

The field survey was undertaken in generally overcast, rainy conditions with conditions clearing toward the second half of the survey. The field survey was undertaken via pedestrian transects with individuals distanced at approximately 5-10m where possible, and archaeologist with GPS tracker at end of the group.

The coverage of the field survey as shown by GPS data is represented in Figure 20 below. Small portions of the subject area were inaccessible due to livestock and canine activity (see red hashed portions in Figure 20).

Generally, visibility was low across the subject area due to grass and vegetation coverage, with visibility limited to areas of exposure resulting from disturbance including paths and vehicle tracks, dams, small erosion scours and livestock rutting/erosion around the base of trees.

The survey data is represented in Figure 20 and Figure 21 below with each survey unit discussed in Sections 2.8.1-2.8.4 below.

Information regarding identified Aboriginal sites during the survey is provided in Section 2.7.3.

Table 11 – Field Survey Data – Survey Coverage

Survey Unit	Landform	Unit Area (m^2)	Visibility %	Exposure %	Effective Coverage (m^2)	Effective Coverage %
1	Crest and Simple Slope	50800	20%	20%	2032	4%
2	Crest, Open Depression and Simple Slope	20325	20%	10%	406.5	2%
3	Crest and Simple Slope	46675	10%	30%	1400.25	3%
4	Simple Slope	4675	10%	10%	46.75	1%

During the course of the survey disturbance was noted and areas of potential were recorded. The test excavation will target undisturbed landforms within close proximity to freshwater, locations of newly identified Aboriginal sites and areas considered to be moderately to highly disturbed (control area). Three previously unidentified sites were recorded as a result of the survey (refer to Section 2.7.3).

Table 12 - Field Survey Data – Landform Summary

Landform	Landform Area (m^2)	Area Effectively Surveyed (m^2)	Percentage of Landform Effectively Covered	Number of Aboriginal Sites	Number of Artefact Features
Crest	42350	1694	4%	1	1
Simple Slope	79850	3194	4%	2	2
Open Depression	1400	56	4%	0	0

Figure 20 – Archaeological survey GPS tracks

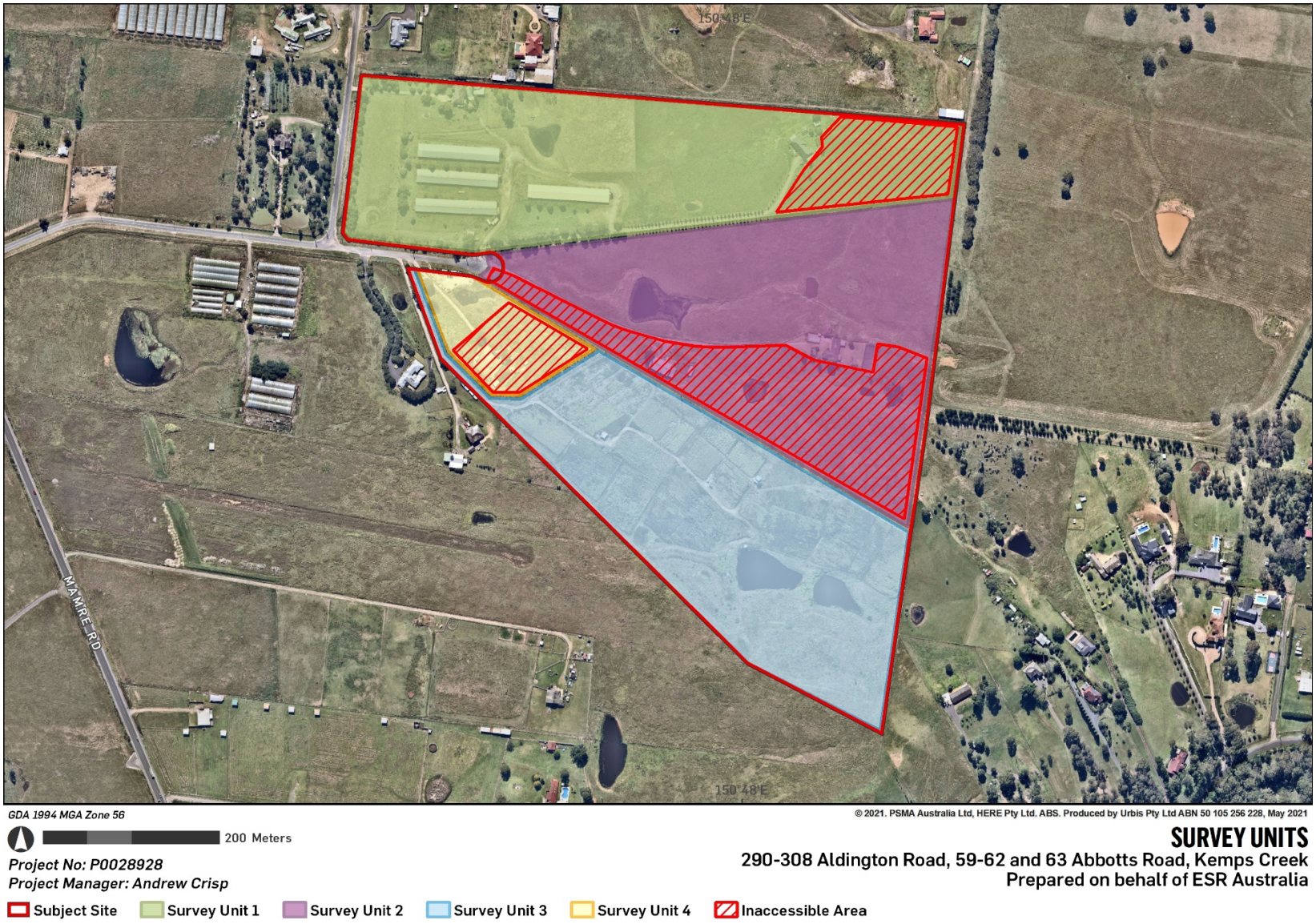


Figure 21 – Archaeological Survey Units – red hatched portions of subject area inaccessible due to livestock and/or canine activity.

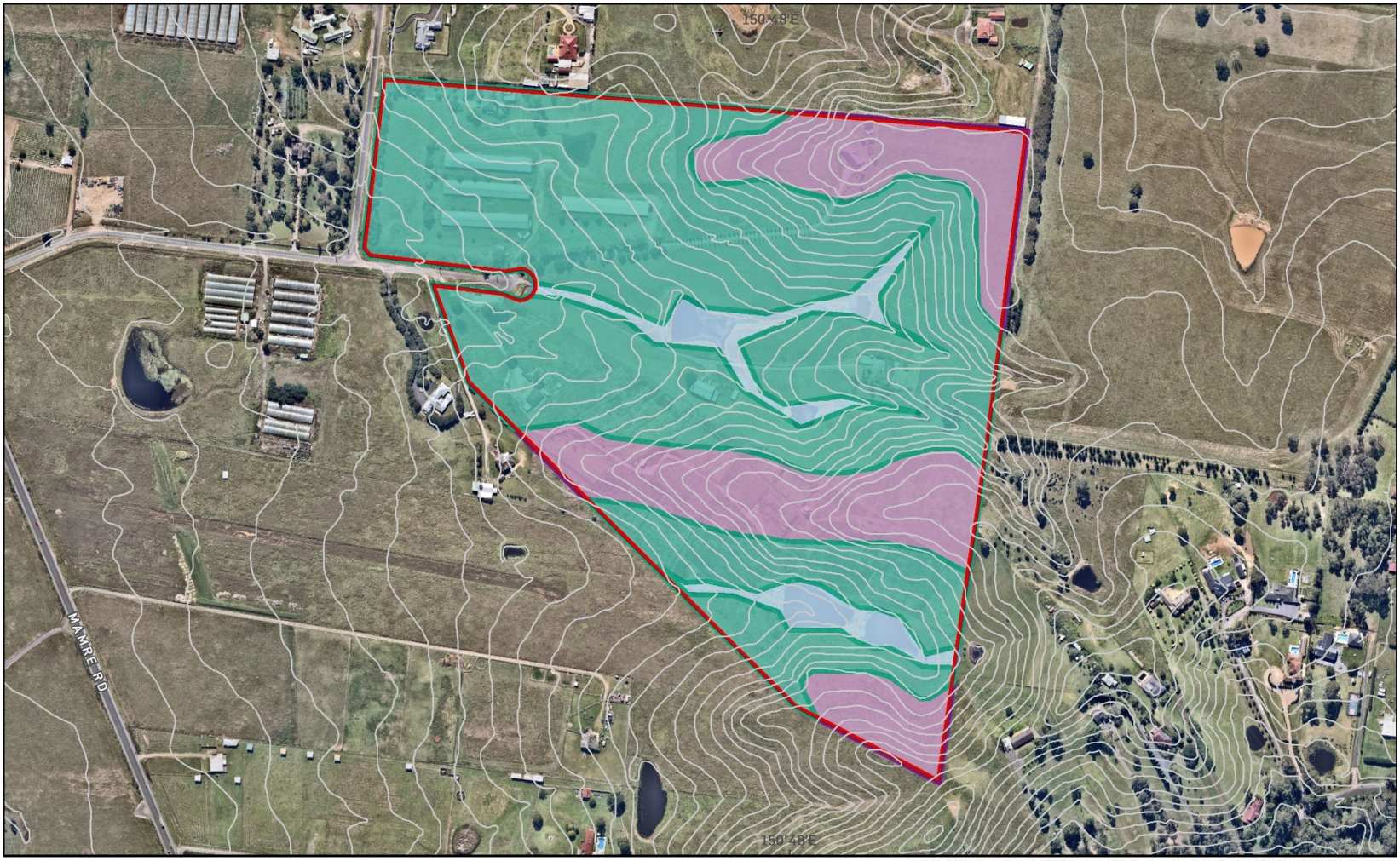


Figure 22 – Landforms

2.7.1. Survey Unit 1

Survey Unit 1 (SU1) incorporates 90-308 Aldington Road, Kemps Creek NSW (Lot 13 DP253503).

The eastern portion of SU1 is dominated by a crest landform with the topography of the SU sloping down toward the west into the Kemps Creek catchment. On the eastern crest is situated a small domestic dwelling.

The western half of SU1 contains simple slopes with the western portion of SU1 dominated by a decommissioned poultry farm (truncated landform, four large sheds, silos, vehicle tracks).

SU 1 was heavily grassed with some bordering light vegetation and trees. Visibility in SU 1 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, livestock impacts at the base of trees and in association with the poultry farm structures.

No Aboriginal sites were identified in Survey Unit 1.

Figure 23 – View east from rear of dwelling.

Figure 24 – Dwelling on crest.

Figure 25 – View west down crest toward poultry farm.

Figure 26 – View from eastern end of crest down onto poultry farm.

Figure 27 – Indicative shot of poultry farm.

Figure 28 – View west along hill slope to west and north of poultry farm.

2.7.2. Survey Unit 2

Survey Unit 2 (SU2) incorporates 59-62 Abbotts Road, Kemps Creek NSW (Lot 12 DP253503).

The eastern portion of SU2, similar to SU1, is dominated by a number of crest landforms with the topography of the SU sloping down toward the west into the Kemps Creek catchment. The centre of SU2 is dominated by a forked open depression draining to the west. On the eastern crest is situated a small domestic dwelling and the southern hillslope is situated a small, shed complex.

The majority of SU2 contains simple slopes associated with the three-crest landform in the eastern portion of the SU.

SU2 was heavily grassed. Visibility in SU2 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, livestock impacts at the base of trees and in association with the dwelling/sheds.

No Aboriginal sites were identified in Survey Unit 2.

Figure 29 – View south across SU2.

Figure 30 – View east across SU2.

Figure 31 – Crest, slope and open depression landforms within SU2.

Figure 32 – View south-west over large dam.

Figure 33 – Indicative shot of open depression/drainage line.

Figure 34 – View of limited exposure adjacent to dam.

2.7.3. Survey Unit 3

Survey Unit 3 (SU3) incorporates the eastern portion of 63 Abbotts Road, Kemps Creek NSW (Lot 11 DP253503).

The SU3 is dominated by two east-west crest landforms with the topography of the SU sloping down toward the west into the Kemps Creek catchment. The south-eastern portion of SU3 is dominated by an open depression draining to the west. The entire SU is utilised as an active market garden, currently growing sugar cane and other crops.

SU3 is densely cropped with visibility limited entirely to unsealed vehicle tracks. Visibility in SU3 was low, at approximately 10%.

Three Aboriginal sites were identified in Survey Unit 3. All sites were identified within the unsealed vehicle access track running the crest at the centre of the SU. These sites include:

- Isolated Find 01 – proximal flake fragment (grey silcrete) (33º51'33.5"S, 150º47'57.7"E)
- Isolated Find 02 – angular fragment (grey silcrete) (33º51'28.6"S, 150º47'47.2"E)
- Isolated Find 03 – medial flake fragment (grey silcrete) (33º51'30"S, 150º47'47.9"E)

Figure 35 – Indicative shot of current height and density of sugar cane crop in SU3

Figure 36 – Indicative level and type of exposure within SU3

Figure 37 – View north from SU3 across SU2 and SU1.

Figure 38 – View south from northern crest to southern crest in SU3.

Figure 39 – Location of IF-1 in vehicle track on crest

Figure 40 – IF-1 proximal flake fragment (grey silcrete)

Figure 41 – Indicative shot of exposure along vehicle access track

Figure 42 – General location of IF-2 and IF-3 on access track to south of SU4

Figure 43 – IF-2 angular fragment (grey silcrete)

Figure 44 – IF-3 medial flake fragment (grey silcrete)

2.7.4. Survey Unit 4

Survey Unit 4 (SU4) incorporates the north-western portion 63 Abbotts Road, Kemps Creek NSW (Lot 11 DP253503) fronting onto the road easement.

The eastern portion of SU4 contains small dams and a residential dwelling. The western portion of the SU abutting the road easement is currently utilised as a hard stand laydown yard for timber and construction elements.

SU4 contains simple slopes sloping down to the north-west. SU4 was heavily grassed and contains a large hardstand area. Visibility in SU4 was low, at approximately 10%. Exposures were associated with the areas of disturbance including the dam embankments.

No Aboriginal sites were identified in Survey Unit 4.

Figure 45 – Indicative shot of dwelling from rear. Aspect north-west.

Figure 46 – View of dam on north side of driveway

Figure 47 – Hardstand area

Figure 48 – View south-east along driveway

Figure 49 – View of dam on north side of driveway

Figure 50 – Indicative view of southern portion of SU4

2.8. TEST EXCAVATION RESULTS

The archaeological test excavation of the subject area was conducted in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

The ten-day test excavation of Lots 11, 12 and 13 in DP 253503 was undertaken over the 19th–23rd and 26th-30th April and 3rd May 2021 and detailed analysis is provided in the attached Archaeological Technical Report.

2.9. SUMMARY

Conclusions from analysis of the AHIMS results, previous archaeological reports, preliminary site inspection, landscape analysis and predictive modelling are as follows:

- Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.
- There are no Aboriginal sites registered within the subject area and two sites registered within 1km of the subject area.
- The terrain of the subject area is undulating. An analysis of landforms present across the subject area identified a crests in the western and southern portion of the subject area, with simple slopes defining a series of open depressions to the which drain to the west into the Kemps Creek catchment.
- The subject area has been subject to localised moderate-high disturbance as a result of construction (dwellings, hardstands, sheds and poultry farm) and extensive market gardening in SU3.
- Within 63 Abbotts Road three Aboriginal artefacts were identified within the active, unsealed vehicle tracks. These include:
  - Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)
  - Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)
  - Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)
- Due to the hydrology and archaeologically sensitive landscape features, and the identification of surface artefacts the subject area retains moderate to high potential for the presence of Aboriginal archaeological resources.
- Altogether, thirteen (13) artefacts were recovered during the test excavation programme.
- The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests.
- The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area.
- While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation.
- Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.

3. ABORIGINAL CONSULTATION

In administering its statutory functions under Part 6 of the *NSW National Parks and Wildlife Act 1974*, the Department of Premier and Cabinet (DPC) requires that Proponent consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within any given development area in accordance with Clause 80c of the NSW National Parks and Wildlife Regulation, 2009.

The DPC maintains that the objective of consultation with Aboriginal communities about the cultural heritage values of Aboriginal objects and places is to ensure that Aboriginal people have the opportunity to improve ACHA outcomes by (DECCW 2010a):

- Providing relevant information about the cultural significance and values of Aboriginal objects and/or places.
- Influencing the design of the method to assess cultural and scientific significance of Aboriginal objects and/or places.
- Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal objects and/or places within the proposed subject area.
- Commenting on draft assessment reports before they are submitted by the Proponent to the DPIE.

Consultation in line with the Consultation Requirements (DECCW 2010) is a formal requirement where a Proponent is aware that their development activity has the potential to harm Aboriginal objects or places. The DPC also recommends that these requirements be used when the certainty of harm is not yet established but a proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

The Consultation Requirements outline a four-stage consultation process that includes the following:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 - Presentation of information about the proposed project.
- Stage 3 - Gathering information about the cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The document also outlines the roles and responsibilities of the DPC, Registered Aboriginal Parties (RAPs) including Local and State Aboriginal Land Councils, and proponents throughout the consultation process.

To meet the requirements of consultation it is expected that proponents will:

- Bring the RAPs, or their nominated representatives, together and be responsible for ensuring appropriate administration and management of the consultation process.
- Consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal objects(s) and/or places(s).
- Provide evidence to the DPIE of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the RAPs.
- Accurately record and clearly articulate all consultation findings in the final ACHAR.
- Provide copies of the cultural heritage assessment report to the RAPs who have been consulted.

The consultation process undertaken to seek active involvement from relevant Aboriginal representatives for the project followed the current NSW statutory guideline, namely, the Consultation Requirements. Section 1.3 of the Consultation Requirements describes the guiding principles of the document. The principles have been derived directly from the principles section of the *Australian Heritage Commission's Ask First: A guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002).

The following outlines the process and results of the consultation conducted during this assessment to ascertain and reflect the Aboriginal cultural heritage values of the subject area.

3.1. STAGE 1: NOTIFICATION OF PROJECT PROPOSAL AND REGISTRATION OF INTEREST

3.1.1. Government Organisation Contact

The aim of Stage 1 is to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area.

A search of the Native Title Tribunal was undertaken on 2nd November 2020. This search identified the subject area as freehold tenure, which extinguishes Native Title.

To identify Aboriginal people who may be interested in registering as Aboriginal parties for the project, the organisations stipulated in Section 4.1.2 of the Consultation Guidelines were contacted (refer to Table 13).

Table 13 – Contacted Organisations

Organisation	Date notification sent	Date Response Received
National Native Title Tribunal	2 November 2020	2 November 2020
Office of the Registrar, Aboriginal Land Rights Act 1983	2 December 2020	3 December 2020
Heritage NSW, Department of Premier and Cabinet	6 November 2020	3 December 2020
NTS Corp	6 November 2020	n/a
Deerubbin Local Aboriginal Land Council	6 November 2020	n/a
Local Land Services, Greater Sydney	6 November 2020	n/a
Penrith City Council	6 November 2020	n/a

The template for the emails sent to the above-mentioned organisations is at Appendix C. A total of 61 Aboriginal groups and individuals with an interest in the subject area were identified following this stage. These groups were contacted, with further information presented at Section 3.1.2 below.

3.1.2. Registration of Interest

In accordance with Section 4.1.3 of the Consultation Guidelines, letters were sent to the 61 Aboriginal groups and individuals via email or post on 4 December 2020 (depending on the method identified by each group), to notify them of the proposed project. A total of 55 were sent via email, with six by express post. The letters included a brief introduction to the project and the project location and set a deadline of 31 December 2020 for registration, in accordance with the 14-day minimum requirement. The letter template is included in Appendix C.

A total of 24 groups registered interested in the project as a result of this phase (Table 14). Acknowledgement emails were sent by Urbis to all respondents to confirm registration had been received.

Table 14 – Stage 1 Consultation – Registration of Interest

Organisation/Individual	Contact Person
Deerubbin Local Aboriginal Land Council	Steven Randall
A1 Indigenous Services	Carolyn Hickey
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood
Barking Owl Aboriginal Corporation	Jody Kulakowski
Biamanga	Janaya Smith

Organisation/Individual	Contact Person
Clive Freeman	Clive Freeman
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Cullendulla	Corey Smith
Didge Ngunawal Clan	Lillie Carroll & Paul Boyd
Goobah Developments	Basil Smith
Gulaga	Wendy Smith
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Merrigarn	Shaun Carroll
Muragadi Heritage Indigenous Corporation	Jesse Johnson
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson & Ryan Johnson
Murramarang	Roxanne Smith
Tocomwall	Danny Franks
Waawaar Awaa Aboriginal Corporation	Rodney Gunther
Wailwan Aboriginal Group	Philip Boney
Wurrumay Pty Ltd	Vicky Slater
Butucarbin Aboriginal Corporation	Lowanna Gibson
Ngambaa Cultural Connections	Kaarina Slater
Woronora Platwau Gundangara Elders Council	Kayla Williamson

3.1.3. Public Notice

In accordance with Section 4.1.3 of the Consultation Guidelines, an advertisement was placed in a local newspaper, The Koori Mail. The advertisement will be published in the 16 December 2020 edition, and registration was open until 31 December 2020, providing 14 days to register an interest in accordance with the Consultation Requirements. A copy of the advertisement is included in Appendix C.

3.1.4. Provision of RAP List

A list of all Registered Aboriginal Parties (RAPs) was provided to the DPC and Deerubbin Local Aboriginal Land Council on the 18th January 2021 (see Appendix C).

3.2. STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROJECT

The aim of Stage 2 is to provide registered Aboriginal parties with information about the scope of the proposed project, and the proposed cultural heritage assessment process. A Stage 2/3 Information Pack which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to registered Aboriginal parties via email on 15 January 2021. A response to the Stage 2/3 Information Packet was requested by 12 February 2021.

The Information Pack was prepared as a combination of Stage 2 and 3 of the Consultation Guidelines, and included the following information:

- Project overview, location and purpose.
- Proposed works.
- Brief environmental and historical background.
- Notification of the site inspection.
- Protocol of gathering information on cultural heritage significance.
- Request for comment on methodology and recommendations for site investigation, and request for any cultural information the respondent wished to share.
- The letter is included in Appendix C of this report.

3.3. STAGE 3: GATHERING INFORMATION ABOUT THE PROPOSED PROJECT

Stage 3 is concerned with gathering feedback on a project, proposed methodologies, and obtaining any cultural information that registered Aboriginal parties wish to share. This may include ethno-historical information, or identification of significant sites or places in the local area.

Five responses were received to the Stage 2 and 3 Information Pack. These responses are included in Appendix C and addressed in Table 15 below.

Table 15 – RAP responses to the Stage 2/3 Information Pack

RAP	Response	Urbis Response
Goobah, Basil Smith	Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of 290-308 Aldington Road, Kemps Creek. This is to confirm that we support the above proposed redevelopment and also confirm that we are traditional owners, we have participated in many surveys in western and greater Sydney including {WSA} Western Sydney Airport, Mt Gilead and many more, we have attached my insurances with our rate of pay of (redacted) and wish to be considered for field work with the redevelopment of 290-308 Aldington Road, Kemps Creek, please confirm.	Acknowledged, we will keep all RAPs informed.
Murramarang, Roxanne Smith	This is to confirm that we support stages 2 and 3 for this project and want to be kept informed on any further developments	Acknowledged, we will keep all RAPs informed.
Murra Bidgee Mullangari, Ryan Johnson	I have read the project information and methodology for the above project. I endorse the recommendations made.	Acknowledged.
A1 Indigenous Services, Carolyn Hickey	I am the founder of A1 INDIGENOUS SERVICES PTY LTD I represents, a group of Indigenous youth and Indigenous job seekers, A1 is designed to help provide employment and training opportunities	Acknowledged.
Biamanga, Janaya Smith	Please keep me informed on any further developments	Acknowledged, we will keep all RAPs informed.

3.4. STAGE 4: REVIEW OF DRAFT ACHA REPORT

The aim of Stage 4 of the community consultation process is to prepare and finalise an ACHAR with input from Registered Aboriginal Parties.

A draft of the present ACHAR was sent to RAPs via email on 20 May 2021 with comment on the draft ACHAR requested by 17 June 2021, allowing 28 days for response. It is noted that the time allowed for comment should reflect the size and complexity of the project.

One response was received to the Stage 4 draft ACHAR. This response is included in Appendix C and addressed in Table 16 below.

Table 16 – RAP responses to the Stage 4 Draft ACHAR

RAP	Response	Urbis Response
Kamilaroi Yankuntjatjara Working Group	"Thank you for your ACHA for 290- 308 Aldington Road, Kemps Creek, us Aboriginal people have walked this land for tens of thousands of years and we continue to do so today. We hold a deep connection to the land, skies and water ways. We would like to agree to your recommendations, will there be an interpretation plan for this project? We look forward to working alongside you on this project."	Urbis acknowledges the deep connection Aboriginal hold with the landscape and environment. As part of the project, the, the subject area will include native plantings.

4. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

4.1. METHODS OF ASSESSING HERITAGE SIGNIFICANCE

Heritage significance is assessed by considering each cultural, or archaeological site, against the significance criteria set out in the Assessment Guidelines. In all case, the assessment of significance detailed below is informed by the Aboriginal community, which is documented in this report. If any culturally sensitive values were identified they would not be specifically included in the report, or made publicly available, but would be documented and lodged with the knowledge holder providing the information.

4.2. ASSESSMENT FRAMEWORK

The Burra Charter (Australia ICOMOS 1999) defines the basic principles and procedure to be observed in the conservation of important places. It provided the primary framework within which decisions about the management of heritage sites should be made. The Burra Charter defines cultural significance as being derived from the values listed below.

4.2.1. Social or Cultural value

Social or cultural value refers to the spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural values is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always a consensus about a place's social or cultural value. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural values can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation and specific information provided by Aboriginal people specifically for the investigation.

When recording oral history:

- Identify who was interviewed and why.
- Document the time, place and date the interview was conducted.
- Describe the interview arrangements (the number of people present, recording arrangements, information access arrangements).
- Provide a summary of the information provided to the person being interviewed.
- Summarise the information provided by each person interviewed.

More information on conducting oral history projects can be found in OEH's publication *Talking history: oral history guidelines*.

Occasionally information about social value may not be forthcoming. In these circumstances, document the consultation process but make it clear in the discussions and conclusions about social value that this was the case.

4.2.2. Historic value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain a sufficient understanding of historic values.

4.2.3. Scientific (Archaeological) value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which may contribute to further understanding and information (Australian ICOMOS 1988).

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to OEH's *Code of practice for archaeological investigation of Aboriginal objects in NSW*.

Scientific significance, also referred to as archaeological significance, is determined by assessing an Aboriginal heritage site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies.

Criteria for archaeological significance have been developed in accordance DPIE guidelines, as shown in, Table 17 below.

Table 17 – Scientific (archaeological) significance criteria

Significance Criteria	Description
Research Potential	Does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
Representativeness	How much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
Rarity	Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
Education Potential	Does the subject area contain teaching sites or sites that might have teaching potential?
Condition	What is the condition of the site? Does it appear to have been impacted/altered?

4.2.4. Aesthetic value

This refers to sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australian ICOMOS 1988).

4.3. IDENTIFYING VALUES

The information collected in the background review of the project can be used to help identify these values. The review of background information and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why any identified Aboriginal objects are in this location, along with contemporary uses of the land.

Information gaps are not uncommon and should be acknowledged. They may require further investigation to adequately identify the values present across the subject area. It may be helpful to prepare a preliminary values map that identifies, to the extent of information available, the:

- Known places of social, spiritual, cultural value, including natural resources of significance.
- Known historic places.
- Known Aboriginal objects and/or declared Aboriginal places.

- Potential places/areas of social, spiritual, cultural value, including natural resources, historic or archaeological significance.

Places of potential value that are not fully identified or defined should be included as 'sensitive' areas to target further investigation.

4.4. ASSESSING VALUES AND SIGNIFICANCE

This stage is used to assess and discuss the cultural significance of the values identified during the identification and assessment of cultural significance by consulting Aboriginal people and to prepare a statement of significance. The assessment of values is a discussion of what is significant and why. An assessment of values is more than simply restating the evidence collected during the background review and identification of values stages of the project. Rather, the assessment should lead to a statement of significance that sets out a succinct summary of the salient values that have been identified.

The assessment and justification in the statement of significance must discuss whether any value meets the following criteria (NSW Heritage Office 2001):

- Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons? – social value.
- Is the subject area important to the cultural or natural history of the local area and/or region and/or state? – historic value.
- Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state? – scientific (archaeological) value.
- Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state? – aesthetic value.
- Assessment of each of the criteria (above) should be graded in terms that allow the significance to be described and compared; for example, as high, moderate, or low. In applying these criteria, consideration should be given to:
- Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness: how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity: is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential: does the subject area contain teaching sites or sites that might have teaching potential?

Then discuss what is significance and why – this should be summarised into a statement of significance. Thus, the statement of significance is a succinct summary of the salient values drawn from the identification of values.

4.4.1. Assessment of Cultural Heritage Significance and Values

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (project RAPs) was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the project RAPs were invited to provide comment and input into this ACHAR and to the assessment of cultural heritage significance and values presented therein.

Kamilaroi Yankuntjatjara Working Group have noted the deep connection that Aboriginal people hold with the land and have questioned whether the project includes an interpretation plan.

The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.

4.4.2. Assessment of Scientific (Archaeological) Significance

In accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, and in consultation with representatives of the local Aboriginal community, the following assessment of the scientific (archaeological) significance of identified sites within the subject area has been prepared.

An archaeological scientific assessment is currently being undertaken for the subject area and will presented in detail as part of an attached Archaeological Technical Report. Background research suggests that the subject area has been previously disturbed by market gardening and pastoral activities which may have impacted upon the integrity of subsurface archaeological deposits within the study area, and therefore the scientific significance of the subject area.

The archaeological assessment included a field investigation which resulted in the identification of three surface artefact sites (IF-1, IF-2 and IF AHIMS pending) areas of moderate archaeological potential (Ridge/Crest landforms and Simple Slopes/Terraces adjacent to water courses) which would be impacted by the proposed development.

Test excavations recovered thirteen (13) artefacts from within the subject area. The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests. The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area. While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation. Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.

The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).

4.5. STATEMENT OF SIGNIFICANCE

The following statement of significance are based on the results of the Aboriginal Cultural Heritage Assessment including site survey and test excavation (to be completed). The statement of significance will be updated following completion of proposed archaeological test excavation program.

The significance of sites was assessed in accordance with the following criteria:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.*

The combined use of these guidelines is widely considered to represent the best practice for assessments of Aboriginal cultural heritage.

The subject area contains numerous crest and simple slope landforms associate with minor tributaries flowing westward. These landforms are considered areas of moderate archaeological potential due to being elevated landforms adjacent to known resource locations. Surface artefact sites (IF-1, IF-2 and IF-3) were identified in the southern portion of the subject area and may indicate surface expression of wider subsurface deposits within the subject area. As such, it is likely that the subject area contains subsurface archaeological deposits.

The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.

The subject area has been assessed as possessing low historical value due to lack of historical connections.

The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).

5. IMPACT ASSESSMENT

5.1. POTENTIAL HARM

This section identifies the potential impacts to cultural heritage arising from the proposal, including demolition, excavation, and construction phases. Harm can be direct or indirect, defined by the Assessment Guidelines as:

- Direct harm – may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavation, flood mitigation measures.
- Indirect harm – may affect sites or features located immediately beyond or within the area of the proposed activity. Examples include, but are not limited to, increased impact on art in a shelter from increased visitation, destruction from increased erosion and changes in access to wild food resources.

Strategies to avoid or minimise harm to Aboriginal heritage in the subject area are discussed below in Section 6.

5.2. LIKELY IMPACTED VALUES

A summary of the potential impacts of the proposed works on known Aboriginal sites within the subject area is provided in Table 18 below.

Table 18 – Summary of potential archaeological impact

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
Pending	Isolated Find 01 (IF-1)	Low	Direct	Total	Total loss of value
Pending	Isolated Find 02 (IF-2)	Low	Direct	Total	Total loss of value
Pending	Isolated Find 03 (IF-3)	Low	Direct	Total	Total loss of value
Pending	Aldington Road Subsurface Assemblage	Low	Direct	Total	Total loss of value

6. AVOIDING AND MINIMISING HARM

Avoidance of impact is the preferred mitigation and management strategy, and should be implemented where practicable. The identified Aboriginal sites within the study area has been considered in relation to the proposed works. Impacts to the sites will be unavoidable due to the requirement for bulk earthworks and associated activities.

6.1. SURFACE COLLECTION

Following SSDA approval and prior to construction surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)

Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)

Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)

6.2. REPATRIATION OR DEPOSITION IN KEEPING PLACE

Through consultation with the RAPs a decision will be made as to the destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of artefacts

Through the ACHA process a determination will be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards. The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to ’Country’. Following construction of proposed development the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

7. CONCLUSIONS

The present ACHAR was prepared as per the relevant section of the *National Parks and Wildlife Act 1974* (NPW Act) and the *National Parks and Wildlife Regulations 2009* (NPW Reg) and in accordance to the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water* (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter.

The ACHA process included:

- A comprehensive background research of all available archaeological and cultural heritage information for the subject area in context with the scope of the project.
- Analysis and interpretation of the background research.
- Archaeological field survey of the subject area.
- Consultation with the Registered Aboriginal Parties (RAPs).
- Site inspection and meeting with the RAPs.
- Archaeological test excavation (program to be completed)
- Summarising of results and providing recommendations for the proposed development in relation to Aboriginal cultural heritage and archaeological resources.

The ACHAR concluded that:

- Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.
- There are no Aboriginal sites registered within the subject area and two sites registered within 1km of the subject area.
- The terrain of the subject area is undulating. An analysis of landforms present across the subject area identified a crests in the western and southern portion of the subject area, with simple slopes defining a series of open depressions to the which drain to the west into the Kemps Creek catchment.
- The subject area has been subject to localised moderate-high disturbance as a result of construction (dwellings, hardstands, sheds and poultry farm) and extensive market gardening in SU3.
- Within 63 Abbotts Road three Aboriginal artefacts were identified within the active, unsealed vehicle tracks. These include:
  - Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)
  - Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)
  - Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)
- Due to the hydrology and archaeologically sensitive landscape features, and the identification of surface artefacts the subject area retains moderate to high potential for the presence of Aboriginal archaeological resources.

Following the test excavation programme, the following additional conclusions were made:

- Altogether, thirteen (13) artefacts were recovered during the test excavation programme.

- The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests.
- The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area.
- While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation.
- Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.
- The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).
- The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.
- The subject area has been assessed as possessing low historical value due to lack of historical connections.
- The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

8. RECOMMENDATIONS

Based on the conclusions of this assessment the proposed activity can proceed under the following recommendations:

Recommendation 1 – Surface Collection

Following SSDA approval and prior to construction, surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

- Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51'33.5"S, 150º47'57.7"E)
- Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51'28.6"S, 150º47'47.2"E)
- Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51'30"S, 150º47'47.9"E)

No further subsurface archaeological excavation is warranted.

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face-to-face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.
2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the Police, DPC and site representatives.

5. Works are not to recommence until the find has been appropriately managed.

Recommendation 5 – RAP consultation

A copy of the final ACHA must be provided to all Project RAPs. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

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DISCLAIMER

This report is dated 17 June 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of ESR AUSTRALIA **(Instructing Party)** for the purpose of an Aboriginal Cultural Heritage Assessment **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A BASIC AND EXTENSIVE AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : ESR Kemps Ck 7km

Client Service ID : 546950

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street
Sydney New South Wales 2000

Attention: Aaron Olsen

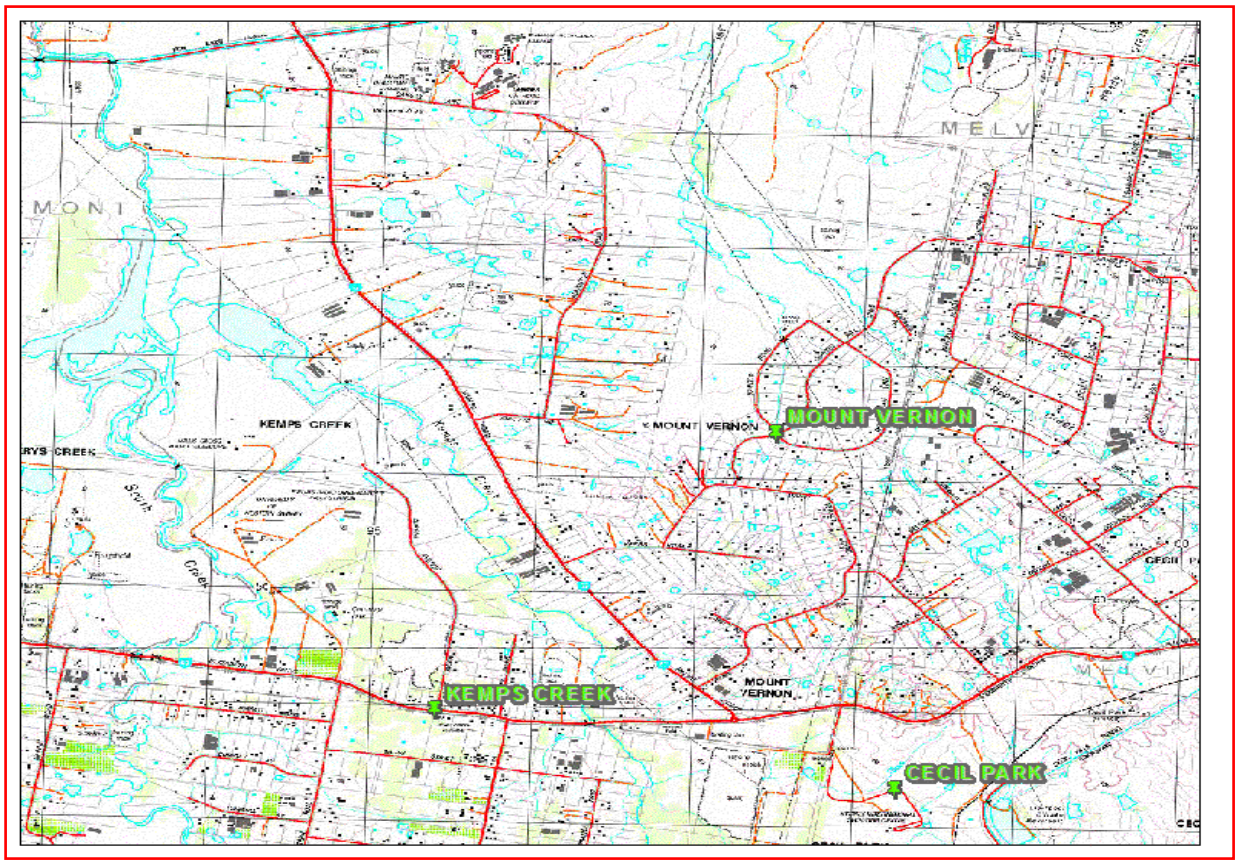
Email: aolsen@urbis.com.au

Date: 02 November 2020

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 November 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

117	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2057	PGH1;Monier PGH;	GDA	56	298268	6254015	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2046	PGH2;Monier PHG;	GDA	56	298493	6254045	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2008	SC4;Cecil Park Shooting Complex;	AGD	56	298360	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2009	SC5 Cecil Park Shooting Complex	AGD	56	298340	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2011	SC3;Cecil Park Shooting Complex;	AGD	56	298050	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2012	SC2;Cecil Park Shooting Complex;	AGD	56	297760	6247810	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2013	SC1;Cecil Park Shooting Complex;	AGD	56	297800	6247960	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2426	IFSC 11;Cecil Park;	AGD	56	297990	6248110	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2427	IFSC 10;Cecil Park;	AGD	56	297680	6247790	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2429	CPSC 3;Cecil Park;	AGD	56	297710	6248020	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2430	IFSC 7;Cecil Park;	AGD	56	298590	6247980	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**	4577	
45-5-2711	CDG1	AGD	56	293300	6252800	Open site	Valid	Artefact : -		1345,1539,4737
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-3999	PAD 2001-6	GDA	56	295825	6248852	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4006	Artefact Scatter PAD 2007-4	GDA	56	295792	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4007	Artefact Scatter 2008-4	GDA	56	297641	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4008	Isolated Object 2009-5	GDA	56	297443	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-4009	Isolated Object 2010-5	GDA	56	297432	6248202	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4010	Isolated Object 2011-5	GDA	56	297479	6248304	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4022	Artefact Scatter PAD 2023-846	GDA	56	299598	6249047	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams,Mr.Mattl					**Permits**	4577	
45-5-4049	PAD 2054-6	GDA	56	296512	6249100	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4675	Oakdale West Isolated Find (OW IF 2)	GDA	56	296627	6254876	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-4676	Oakdale West Isolated Find 3	GDA	56	295882	6254754	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-5259	Elizabeth Drive AFT 1	GDA	56	293377	6249426	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor					**Permits**		
45-5-5260	Wylde MTB PAD1	GDA	56	298467	6248411	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5261	Wylde MTB PAD2	GDA	56	298498	6248258	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5262	Wylde MTB PAD 3	GDA	56	299151	6248697	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5274	Bakers Lane SLR AFT 1	GDA	56	295915	6254097	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**		
45-5-5268	Kemps Creek IF-02	GDA	56	295030	6253859	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5269	Kemps Creek IF-01	GDA	56	294976	6253943	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5281	Cross Street Kemps Creek AFT 1	GDA	56	296973	6248376	Open site	Valid	Artefact : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**	4577	
45-5-5230	Elizabeth Precinct Isolated Find 03 (EPIF 03)	GDA	56	293375	6249980	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5231	Elizabeth Precinct Isolated Find 02 (EPIF 02)	GDA	56	293466	6250004	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5232	Elizabeth Precinct Isolated Find 01 (EPIF 01)	GDA	56	293416	6249892	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5233	Elizabeth Precinct Artefact Scatter 01 (EPAS 01)	GDA	56	293412	6249873	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5301	Kemps Creek East (KCE) PAD	GDA	56	296543	6249177	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5302	Kemps Creek West (KCW) PAD	GDA	56	296110	6249360	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5303	Kemps North West (KNW) PAD	GDA	56	295455	6250265	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5306	South Creek East (SCE)	GDA	56	293940	6251020	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5307	South Creek West T1 (SCW T1)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - North Sydney,Mr.Andrew Costello					**Permits**		
45-5-5308	South Creek West T2 (SCW T2)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5315	MRP-OS2	GDA	56	296737	6253925	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
45-5-5316	MRP-OS1	GDA	56	294413	6252254	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5234	Elizabeth Precinct PAD 03	GDA	56	293924	6249724	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					Permits		
45-5-5235	Elizabeth Precinct PAD 02	GDA	56	293927	6249529	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5236	Elizabeth Precinct PAD 01	GDA	56	293200	6249565	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5277	Cecil Park Water Reservoir AFT 1	GDA	56	299289	6248948	Open site	Valid	Artefact : -		
Contact		Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits	4577	
45-5-2568	CGD5	AGD	56	293300	6253500	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2561	GLC1	GDA	56	299580	6249001	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Annie Nicholson,Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Ge					Permits	4577
45-5-2550	CGD1	AGD	56	293350	6252800	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2552	CGD3	AGD	56	293000	6252800	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2553	CGD4	AGD	56	293300	6252500	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2554	CGD2	AGD	56	293000	6252900	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2307	P-CP9	AGD	56	298110	6248750	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2308	P-CP8	AGD	56	298580	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2310	KC/ED2;	AGD	56	297520	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-0604	Cecil Park 1	AGD	56	297350	6251470	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**	694	
45-5-0605	Cecil Park 2	AGD	56	297600	6251780	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**		
45-6-1775	Lec 9;	AGD	56	293200	6252700	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1777	Lec10;	AGD	56	293180	6253070	Open site	Valid	Artefact : -	Open Camp Site	1345,97496,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	1586,2056	
45-6-1778	Lec 11;	AGD	56	293300	6252820	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1779	Lec 12;	AGD	56	293300	6252850	Open site	Valid	Artefact : -	Open Camp Site	1345,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	2056	
45-5-0214	Kemps Creek;	AGD	56	296100	6248300	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0215	South Creek	AGD	56	293800	6249900	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	362
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0496	Fleurs1 Fleurs Radio Telescope	AGD	56	293750	6250730	Open site	Valid	Artefact : -	Open Camp Site	961,1018,98435
	Contact	**Recorders**	University of Sydney					**Permits**		
45-5-3058	EV1	AGD	56	295751	6254547	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Jim Wheeler					**Permits**		
45-5-3028	EPTA3	AGD	56	294160	6254370	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3029	EPTA4	AGD	56	294850	6253540	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3030	EPTA5	AGD	56	295170	6253570	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3031	EPTA6	AGD	56	295210	6253410	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3032	EPTA10	AGD	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3033	EPTA11	AGD	56	293340	6253690	Open site	Valid	Artefact : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3034	EP-I 1	AGD	56	295260	6253400	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3035	EP-I 2	AGD	56	295190	6253500	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3036	EP-I 3	AGD	56	295240	6253710	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3095	PGH3	GDA	56	299004	6254512	Open site	Valid	Artefact : 2		103366
	Contact T Russell	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA),Noeleen Curran,Kelleher Nightingal					**Permits**		
45-5-2991	TCE 1	AGD	56	293300	6252700	Open site	Valid	Artefact : -		99352
	Contact T Russell	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	2056	
45-5-4102	Kemps Creek IF1	GDA	56	295565	6253701	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4103	Kemps Creeks IF2	GDA	56	294737	6254040	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4104	Kemps Creek (logosoc1)	GDA	56	295307	6254094	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4105	Kemps Creek (logosoc2)	GDA	56	295265	6254066	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4525	Oakdale South IF2	GDA	56	297566	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4526	Oakdale South AS2	GDA	56	297513	6254618	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4527	Oakdale South IF1	GDA	56	297516	6254817	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4528	Oakdale South AS3	GDA	56	297508	6254390	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4529	Oakdale South AS4	GDA	56	297190	6253944	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4947	Oakdale South AS5	GDA	56	297775	6254796	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		
45-5-4948	Oakdale South IF3	GDA	56	297752	6254842	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5104	PAD 2	GDA	56	294516	6249243	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5133	Oakdale West 18 Isolated Find 01	GDA	56	296303	6254317	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5134	Oakdale West 18 Artefact Scatter 02	GDA	56	296886	6254515	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5135	Oakdale West 18 Artefact Scatter 03	GDA	56	296777	6254242	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5136	Oakdale West 18 Isolated Find 02	GDA	56	296659	6254589	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5137	Oakdale West 18 Artefact Scatter 01	GDA	56	297167	6254820	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5187	MSP-01	GDA	56	294210	6254558	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5188	MSP-02	GDA	56	293594	6253823	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5189	MSP-03	GDA	56	293501	6253805	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5190	MSP-04	GDA	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5037	UC AS 23	GDA	56	298800	6248150	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Ms.Fenella Atkinson					**Permits**	4303	
41-5-0014	M12-AS-04	GDA	56	294361	6250957	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - Newcastle,Miss.Chelsea Jones					**Permits**		
45-5-5186	Mamre Road Artefact Scatter 1901 (MAM AS1901)	GDA	56	295114	6253373	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-2615	Area D	AGD	56	292900	6253450	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	1586	

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-3106	Kemps Creek (KC PAD 1)	AGD	56	296000	6248875	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : 1		97456,98064
	Contact T Russell	**Recorders**	Jo McDonald Cultural Heritage Management see GML						**Permits**	
45-5-4374	CP AS1	GDA	56	298104	6249004	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.josh madden						**Permits**	
45-5-4937	M12-AS-01	GDA	56	297650	6248694	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Neville Baker,Sydney Water-Parramatta						**Permits**	
45-5-4749	M12 A4	GDA	56	293785	6251051	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-4767	M12 A5	GDA	56	296537	6249457	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-5330	Elizabeth Precinct Isolated Find 05 (EP IF 05)	GDA	56	293287	6249478	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5331	Elizabeth Precinct Isolated Find 04 (EP IF 04)	GDA	56	293336	6249535	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5358	OW 19 IF 2	GDA	56	296486	6254788	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5359	OW 19 IF 1	GDA	56	296535	6254830	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5340	MSP-05	GDA	56	294016	6254604	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5341	MSP-06	GDA	56	294123	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5342	MSP-07	GDA	56	294146	6254469	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5343	MSP-08	GDA	56	294155	6254417	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5344	MSP-09	GDA	56	294469	6253984	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5345	MSP-10	GDA	56	294548	6253896	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5346	MSP-11	GDA	56	293382	6254091	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

APPENDIX B REGISTERED ABORIGINAL PARTY CONSULTATION LOG

Date	Time	Type	Contacted	Contacted Individual	Contacted by	Contacted by Individual	Subject	Reply	Follow-up needed?	Person actioned	Comment
Stage 1 Agency notice											
2/11/2020	12:11pm	email	NNTT	n/a	Urbis	Aaron Olsen (AO)	Stage 1.1 Request	n/a	No	n/a	n/a
2/11/2020	7:16pm	email	Urbis	AO	NNTT	n/a	Stage 1.1 RESPONSE	No Native Title	No	n/a	n/a
6/11/2020	12:53pm	email	NTSCORP	n/a	Urbis	Andrew Crisp (AC)	Stage 1.2 Notice	n/a	No	n/a	n/a
6/11/2020	12:53pm	email	ORALRA	n/a	Urbis	AC	Stage 1.2 Notice	n/a	No	n/a	n/a
6/11/2020	12:53pm	email	DPC	n/a	Urbis	AC	Stage 1.2 Notice	n/a	No	n/a	n/a
6/11/2020	12:53pm	email	GSLLS	n/a	Urbis	AC	Stage 1.2 Notice	n/a	No	n/a	n/a
6/11/2020	12:53pm	email	Penrith Council	n/a	Urbis	AC	Stage 1.2 Notice	n/a	No	n/a	n/a
6/11/2020	12:56pm	email	DLALC	n/a	Urbis	AC	Stage 1.2 Notice	n/a	No	n/a	n/a
3/12/2020	3:07pm	email	Urbis	AC	DPC	Paul Houston	Stage 1.2 RESPONSE	n/a	No	n/a	n/a
Stage 1 RAP notice/advertisement											
4/12/2020	2:08pm	email / letter	61 potential RAPs	n/a	Urbis	AO	Stage 1.3 Notice	n/a	No	n/a	n/a
4/12/2020	2:10pm	email	Urbis	AC	DNC	Lilly Carroll	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
4/12/2020	2:19pm	email	Urbis	AO	Murra Bidgee	Ryan Johnson	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
4/12/2020	2:21pm	email	Urbis	AO	Merrigarn	Shaun Carroll	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
4/12/2020	2:22pm	email	Urbis	AO	Muragadi	Jesse Johnson	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
4/12/2020	4:45pm	email	Urbis	AC	Waawaar Awaa		Stage 1.3 RESPONSE	n/a	No	n/a	n/a
6/12/2020	12:02pm	email	Urbis	AO	Clive Freeman	Clive Freeman	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
6/12/2020	1:51pm	email	Urbis	AC	Aragung	Jamie Eastwood	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
6/12/2020	6:45pm	email	Urbis	AC	A1	Carolyn Hickey	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
7/12/2020	2:22pm	email	Urbis	AO	KYWG	Phil Kahn	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
7/12/2020	3:46pm	email	Urbis	AC	Tocomwall	Danny Franks	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	8:50am	email	Urbis	AC	Goobah	Basil Smith	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	10:05am	email	Urbis	AC	Biamanga	Janaya Smith	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	10:11am	email	Urbis	AC	Murramarang		Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	10:27am	email	Urbis	AC	Cullendulla	Corey Smith	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	12:09pm	email	Urbis	AC	Gunjeewong	Cherie Carroll Turrise	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
8/12/2020	12:09pm	email	Urbis	AC	Corroboree	Marilyn Carroll-Johnson	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
13/12/2020	11:20pm	email	Urbis	AC	Barking Owl	Jody Kulakowski	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
14/12/2020	8:11pm	email	Urbis	AO	Gulaga	Wendy Smith	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
18/12/2020	7:28pm	email	Urbis	AO	Wailwan	Phil Boney	Stage 1.3 RESPONSE	n/a	No	n/a	n/a
28/12/2020	7:25am	email	Urbis	AC	Woronora Plateau Gundangara Elders Council	Kayla Williamson	Stage 1.3 RESPONSE	n/a	No	MW	n/a
31/12/2020	4:00pm	email	Urbis	AC	Ngambaa Cultural Connection	Kaarina Slater	Stage 1.3 RESPONSE	n/a	No	MW	n/a
31/12/2020	4:17pm	email	Urbis	AC	Wurrumay	Vicky Slater	Stage 1.3 RESPONSE	n/a	No	MW	n/a
4/01/2021	3:40pm	email	Urbis	AC	Butucarbin	Lowanna Gibson	Stage 1.3 RESPONSE	n/a	No	MW	n/a
12/01/2021	10:30am	Email	Urbis	AC	Yulay Cultural Services	Airka Jalomaki	Stage 1.3 Response	Stage 1.3 Invitation to Register	N	MW	n/a
Stage 2 and 3											
15/01/2021	11:45am	email	All RAPs	N/A	Urbis	MW	Stage 2 & 3 Letter	set to 12th Feb 2021	Y - 2 week reminder	MW	N/A
15/01/2021	11:55am	email	Corroboree Corp, DNC, Gunjeewong, Muragai, MurrabidgeeMullangari, James Eastwood, Clive Freeman, Tocomwall	N/A	Urbis	MW	Stage 2 & 3 Letter	set to 12th Feb 2021	Y - 2 week reminder	MW	Re-sent due to file attachment too large for inboxes
18/01/2021	9:28am	email	LALC/DPC	N/A	Urbis	MW	Stage 1.6 letter	n/a	n/a	MW	N/A
19/01/2021	9:42am	email	Urbis	MW	Goobah	Basil Smith	Stage 2 & 3 Letter	Read and supports, are traditional owners	n/a	MW	N/A
19/01/2021	1:11pm	email	Urbis	MW	Murramarang	Roxanne Smith	Stage 2 & 3 Letter	read and support, want to be kept informed	n/a	MW	N/A
9/02/2021	9:15am	email	Urbis	MW	MurraBidgeeMullangari	Ryan Johnson	Stage 2 & 3 Letter	Read and endorsed recommendations	n/a	MW	N/A
9/02/2021	2:40pm	email	Urbis	MW	Biamanga	Janaya Smith	Stage 2 & 3 Letter	"please keep me informed on any further developments"	n/a	MW	N/A
11/02/2021	8:11pm	email	Urbis	MW	A1	Carolyn Hickey	Stage 2 & 3 leter	reviewed,supports, keep informed.	N/A	MW	N/A
Stage 4											
20/05/2021	10:37am	email	All RAPs	N/A	Urbis	AO	Stage 4 Draft ACHAR/ATR	Response deadline 17 June 2021	No	AO	n/a
15/06/2021	12:26pm	email	Urbis	AO	KYWG	Kadibulla Khan	Stage 4 RESPONSE	Thank you for your ACHA for 290- 308 Aldington Road, Kemps Creek, us Aboriginal people have walked this land for tens of thousands of years and we continue to do so today. We hold a deep connection to the land, skies and water ways. We would like to agree to your recommendations, will there be an interpretation plan for this project?, we look forward to working alongside you on this project.	No	AO	n/a

APPENDIX C REGISTERED ABORIGINAL PARTY CONSULTATION DOCUMENTATION

From:	Aaron Olsen
To:	GeospatialSearch@nntt.gov.au
Cc:	Andrew Crisp; Alexandra Ribeny
Subject:	Search Request for Lots 11, 12 and 13 in DP 253503 (Our Ref: P0028928)
Date:	Monday, 2 November 2020 12:11:00 PM
Attachments:	Search Form Request for Search of Tribunal Registers 2020.docx image002.png image004.png image006.png image008.png image010.png

Good morning

Please find attached a search request for the Native Title Tribunal for Lots 11, 12 and 13 in DP 253503, at 290-308 Aldington Road, Kemps Creek, NSW.

If you have any questions or need any further information, please let me know.

Kind regards

AARON OLSEN
HERITAGE ASSISTANT
D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au

SHAPING CITIES AND COMMUNITIES

URBIS

ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. **Click here to read Urbis' response to COVID-19.**

National Native Title Tribunal

Request for Search of Tribunal Registers

Search for overlapping interests i.e.: Is there a native title claim, determination or land use agreement over this land?
Please note: the NNTT cannot search over freehold land.
For further information on freehold land: Click Here (NNTT website)

1. Your details

NAME:	Aaron Olsen
POSITION:	Assistant Archaeologist
COMPANY/ORGANISATION:	Urbis
POSTAL ADDRESS:	Level 8, 123 Pitt Street, Sydney, NSW, 2000
TELEPHONE:	
EMAIL:	aolsen@urbis.com.au
YOUR REFERENCE:	P0028928
DATE OF REQUEST:	2/11/2020

2. Reason for your request

Are you a party to a native title proceeding? ☐ Yes ☒ No

Please provide Federal Court/Tribunal file number/or application name: _____

OR

Do you need to identify existing- native title interests to comply with the *Native Title Act 1993* (Cth) or other State/Territory legislation? ☒ Yes ☐ No

Please provide brief details of these obligations here: Aboriginal Cultural Heritage Assessment

3. Identify the area to be searched

If there is insufficient room below, please send more information on a Word or Excel document.

Mining tenure

State/Territory: _____

Tenement ref/s: _____

OR

Crown land / non-freehold tenure

Tenure type: ☒ Lease ☐ Reserve or other Crown land

State/Territory: New South Wales

Lot and plan details: Lots 11, 12 and 13 in DP 253503

Pastoral Lease number or name: -

Other details: (Town/County/Parish/ Section/Hundred/Portion): **Kemps Creek/Cumberland/Melville**

Email completed form to: GeospatialSearch@nntt.gov.au

From: Geospatial Search Requests
To: Aaron Olsen
Cc: Andrew Crisp; Alexandra Ribeny
Subject: RE: SR20/1144 - Search Request for Lots 11, 12 and 13 in DP 253503 (Our Ref: P0028928)
Date: Monday, 2 November 2020 7:16:29 PM
Attachments: image012.png
image013.png
image014.png
image015.png
image016.png

UNCLASSIFIED

Native title search – *NSW Parcels – Lots 11-13 on DP253503*
Your ref: *P0028928* - **Our ref:** *SR20/1144*

Dear Aaron Olsen**,**

Thank you for your search request received on 02 November 2020 in relation to the above area. Based on the records held by the National Native Title Tribunal as at 02 November 2020 it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

- Schedule of Native Title Determination Applications
- Register of Native Title Claims
- Native Title Determinations
- Indigenous Land Use Agreements (Registered and notified)

At the time this search was carried out, there were **no relevant entries** in the above databases.

Cadastral Data as at: 01/07/2020

Parcel ID	Feature Area SqKm	Tenure	NNTT file number	Name	Category	Percent Selected Feature
11//DP253503	0.1102	FREEHOLD	No overlap			0.00%
12//DP253503	0.1049	FREEHOLD	No overlap			0.00%
13//DP253503	0.1047	FREEHOLD	No overlap			0.00%

For more information about the Tribunal's registers or to search the registers yourself and obtain copies of relevant register extracts, please visit our website.

Information on native title claims and freehold land can also be found on the Tribunal's website here: Native title claims and freehold land .

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to the "Area covered by claim" section of the relevant Register Extract or Schedule Extract and any maps attached.

Search results and the existence of native title
Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

The Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards,

Geospatial Searches
National Native Title Tribunal | Perth
Email: GeospatialSearch@nntt.gov.au | **www.nntt.gov.au**

From: Aaron Olsen <aolsen@urbis.com.au>
Sent: Monday, 2 November 2020 9:11 AM
To: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Cc: Andrew Crisp <acrisp@urbis.com.au>; Alexandra Ribeny <aribeny@urbis.com.au>
Subject: SR20/1144 - Search Request for Lots 11, 12 and 13 in DP 253503 (Our Ref: P0028928)

Good morning

Please find attached a search request for the Native Title Tribunal for Lots 11, 12 and 13 in DP 253503, at 290-308 Aldington Road, Kemps Creek, NSW.

If you have any questions or need any further information, please let me know.

Kind regards

AARON OLSEN
HERITAGE ASSISTANT
D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au

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SYDNEY NSW 2000

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Urbis Pty Ltd
ABN 50 105 256 228

6 November 2020

To whom it may concern,

290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1.2

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached figures). The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

The ACHA is to be carried out in accordance with relevant guidelines under the *National Parks and Wildlife Act 1974* (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The SSDA will be seeking approval for Lot 1-7 building and use. The proposal would include the development (Refer to Figure 3) of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities.

The proponent can be contacted via:

Riley Sampson
Assistant Development Manager
ESR Australia
Level 29, 20 Bond Street
Sydney NSW 2000
P: 02 9506 1411
E: riley.sampson@esr.com

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people. The community consultation will include:

- Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH* (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;

- Undertaking consultation with Aboriginal people and document in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the OEH's Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you be aware of any Aboriginal persons and/or organisations that may hold an interest in the project, please provide their details at your earliest convenience and preferably by **20 November 2020** in writing to:

Andrew Crisp
Senior Archaeologist
Urbis
Level 8 123 Pitt Street,
Sydney, NSW, 2000
E: acrisp@urbis.com.au

Urbis, on behalf of the proponent, will write to each Aboriginal person or group whose details are provided to notify them of the proposed project and invite them to register an interest in the community consultation process.

Please be advised that, as per the Consultation Requirements, the proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and the Department of Premier and Cabinet unless the person or group specifies that they do not want their details released.

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

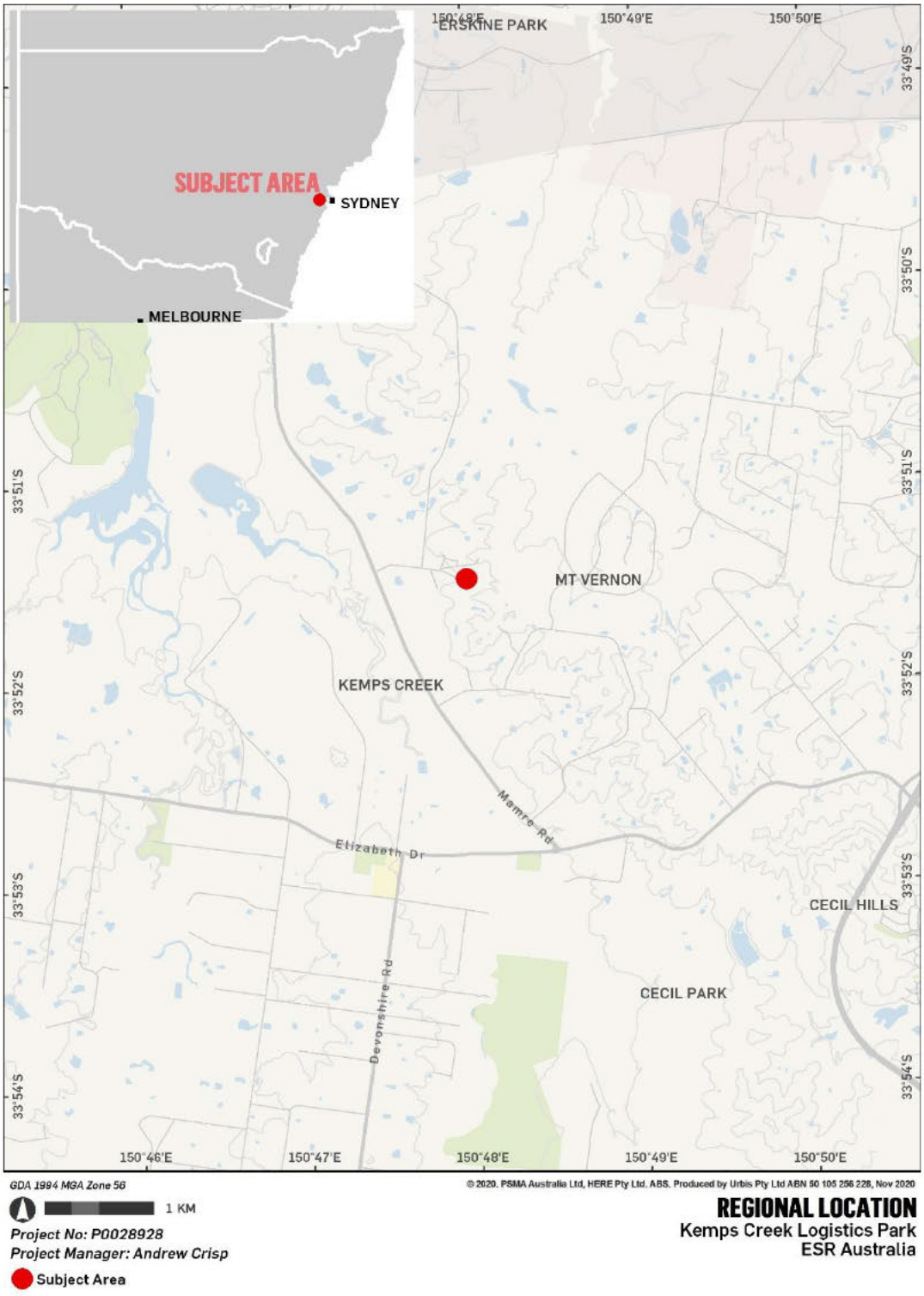


Figure 1 – Regional location of the subject area

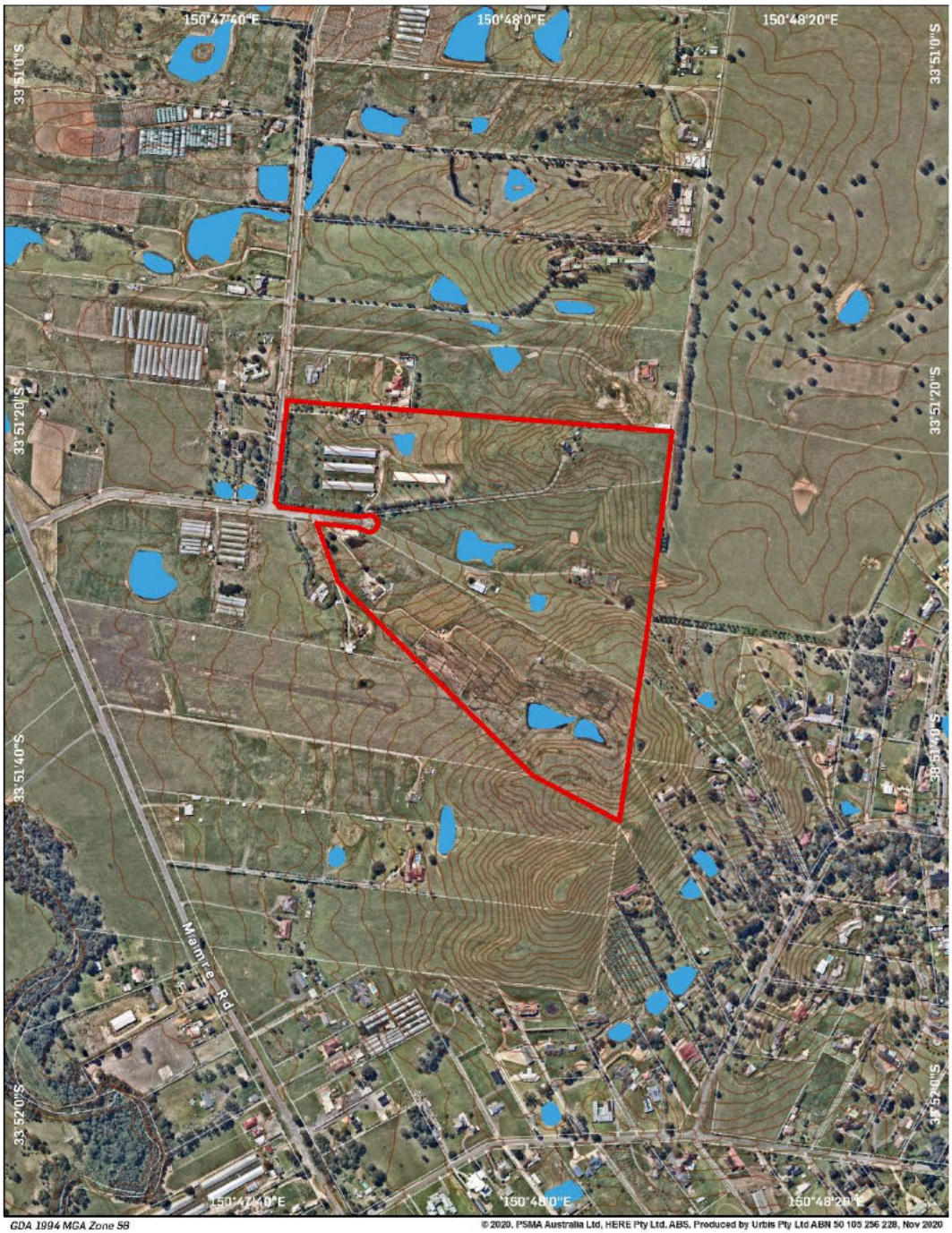


Figure 2 – Location of the subject area

Figure 3 Concept Master Plan – BME57E-003

Source: ESR

Premier & Cabinet
NSW GOVERNMENT

Reference: DOC20/995712-1

Andrew Crisp
Urbis
Level 8, 123 Pitt Street
SYDNEY NSW 2000
acrisp@urbis.com.au

RE: Request for information on Aboriginal stakeholders for an Aboriginal cultural heritage assessment for 290-308 Aldington Road, Kemps Creek, NSW

Dear Andrew,

Thank you for your letter of 2 December 2020 about Aboriginal cultural heritage consultation for 290-308 Aldington Road, Kemps Creek, NSW, within the Penrith local government area. I appreciate the opportunity to provide input.

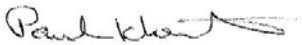
Please find enclosed a list of known Aboriginal parties for the Penrith local government area (Attachment 1) that we consider likely to have an interest in the proposal. Note this is not an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with the '*Aboriginal cultural heritage consultation requirements for proponents 2010'* (the CRs).

We would also like to take this opportunity to remind the proponent and consultant to:

- Ensure that consultation is fair, equitable and transparent. If the Aboriginal parties express concern or are opposed to parts of or the entire project, we expect that evidence will be provided to demonstrate the efforts made to find common ground between the opponents and the proponent.

If you have any questions about this advice, please do not hesitate to contact me via paul.houston@environment.nsw.gov.au or 02 68835361.

Yours sincerely



Paul Houston
Aboriginal Heritage Planning Officer
Aboriginal Cultural Heritage Regulation - Northern
Heritage NSW
Department of Premier and Cabinet
3 December 2020

ATTACHMENT A

Table 1: List of Aboriginal stakeholder groups within the Penrith LGA. - that may have an interest in the project; provided as per the "OEH Aboriginal cultural heritage requirement for proponents 2010".

Organisation/ Individual	Contact Name	Email Address/ Fax / Phone	Postal Address	Additional information
Yulay Cultural Services	Arika Jalomaki (Manager)	[redacted]		
Muragadi Heritage Indigenous Corporation	Jesse Johnson			
Barraby Cultural Services	Lee Field (Manager)			

Yurrandaali Cultural Services	**Bo Field (Manager)**	[redacted]	
Deerubbin Local Aboriginal Land Council	**Kevin Cavanagh**		
Darug Tribal Aboriginal Corporation			
Darug Land Observations	**Jamie Workman and Anna Workman**		
Darug Custodian Aboriginal Corporation	**Justine Coplin**		
Gunjeewong Cultural Heritage Aboriginal Corporation	**Cherie Carroll Turrise**		
Corroboree Aboriginal Corporation	**Marilyn Carroll-Johnson**		
Murra Bidgee Mullangari Aboriginal Corporation	**Darleen Johnson** **Ryan Johnson**		
Bidjawong Aboriginal	**James Carroll**		

Corporation		[redacted]	
Kamilaroi Yankuntjatjara Working Group	**Phil Khan**		
Darug Aboriginal Cultural Heritage Assessments	**Gordon Morton**		
Warragil Cultural Services	**Aaron Slater (Manager)**		
A1 Indigenous Services	**Carolyn Hickey**		
Amanda Hickey Cultural Services	**Amanda Hickey**		
Widescope Indigenous Group	**Steven Hickey and Donna Hickey**		
Dhinawan Culture & Heritage Pty Ltd	**Stephen Fields**		
HSB Consultants	**Patricia Hampton**		
Rane Consulting	**Tony Williams**		
Anthony Williams			

Gunyuu	**Kylie Ann Bell**	[redacted]	
Walbunja	**Hika Te Kowhai**		
Badu	**Karia Lea Bond**		
Goobah Developments	**Basil Smith**		
Wullung	**Lee-Roy James Boota**		
Yerramurra	**Robert Parson**		
Nundagurri	**Newton Carriage**		
Murrumbul	**Mark Henry**		
Jerringong	**Joanne Anne Stewart**		
Pemulwuy CHTS	**Pemulwuy Johnson**		
Bilinga	**Simalene Carriage**		
Munyunga	**Kaya Dawn Bell**		
Wingikara	**Hayley Bell**		
Minnamunnung	**Aaron Broad**		

Walgalu	**Ronald Stewart**	[redacted]	
Thauaira	**Shane Carriage**		
Dharug	**Andrew Bond**		
Gulaga	**Wendy Smith**		
Callendulla	**Corey Smith**		
Murramarang	**Roxanne Smith**		
DJMD Consultancy	**Darren Duncan**		
Butucarbin Aboriginal Corporation	**Jennifer Beale**		
Didge Ngunawal Clan	**Lillie Carroll** **Paul Boyd**		
Ginninderra Aboriginal Corporation	**Steven Johnson and Krystle Carroll**		
Wailwan Aboriginal Group	**Philip Boney**		
Barking Owl Aboriginal Corporation	**Mrs Jody Kulakowski (Director)**		

Darug Boorooberongal Elders Aboriginal Corporation	**Paul Hand (chairperson)**	[redacted]	
B.H. Heritage Consultants	**Ralph Hampton** **Nola Hampton**		
Ngambaa Cultural Connections	**Kaarina Slater**		
Goodradigbee Cultural & Heritage Aboriginal Corporation,	**Caine Carroll**		
Mura Indigenous Corporation	**Phillip Carroll**		
Aragung Aboriginal Cultural Heritage Site Assessments	**Jamie Eastwood**		
Waawaar Awaa Aboriginal Corporation	**Rodney Gunther**		
Clive Freeman	**Clive Freeman**		
Galamaay Cultural Consultants (GCC)	**Robert Slater**		
Wurrumay Pty Ltd	**Kerrie Slater and Vicky**		

	Slater	[redacted]	
Tocomwall	**Scott Franks**		
Biamanga	**Seli Storer**		
Thoorga Nura	**John Carriage (Chief Executive Officer)**		

URBIS

ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

4 November 2020

To whom it may concern,

290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

The SSDA will seek approval for Lots 1-7 building and use (refer Figure 3 below). The proposal would include the development of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities. The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.

The ACHA is to be carried out in accordance with relevant guidelines under *the National Parks and Wildlife Act 1974* (NPW Act), including *the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Riley Sampson
Assistant Development Manager
ESR Australia
Level 29, 20 Bond Street
Sydney NSW 2000
E: riley.sampson@esr.com

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

URBIS

- Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH* (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;
- Undertaking consultation with Aboriginal people and document in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you wish to register your interest in this project, please respond in writing by clearly stating your interest and nominating a contact person by 31 **December 2020**. Please send responses to the following:

Andrew Crisp
Senior Consultant
Urbis
acrisp@urbis.com.au
Level 8 123 Pitt Street,
Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and The Department of Premier and Cabinet unless the person or group specifies that they do not want their details released.

Please be further advised that in accordance to Section 3.4 of the Consultation Requirements, inclusion in the consultation process does not automatically result in paid site assessment. The decision on who is engaged for delivering particular services is decided by the proponent and will be based on a range of considerations including skills, relevant experience, and providing necessary certificates of currency.

Please do not hesitate to contact us I you have any questions.

Yours sincerely,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

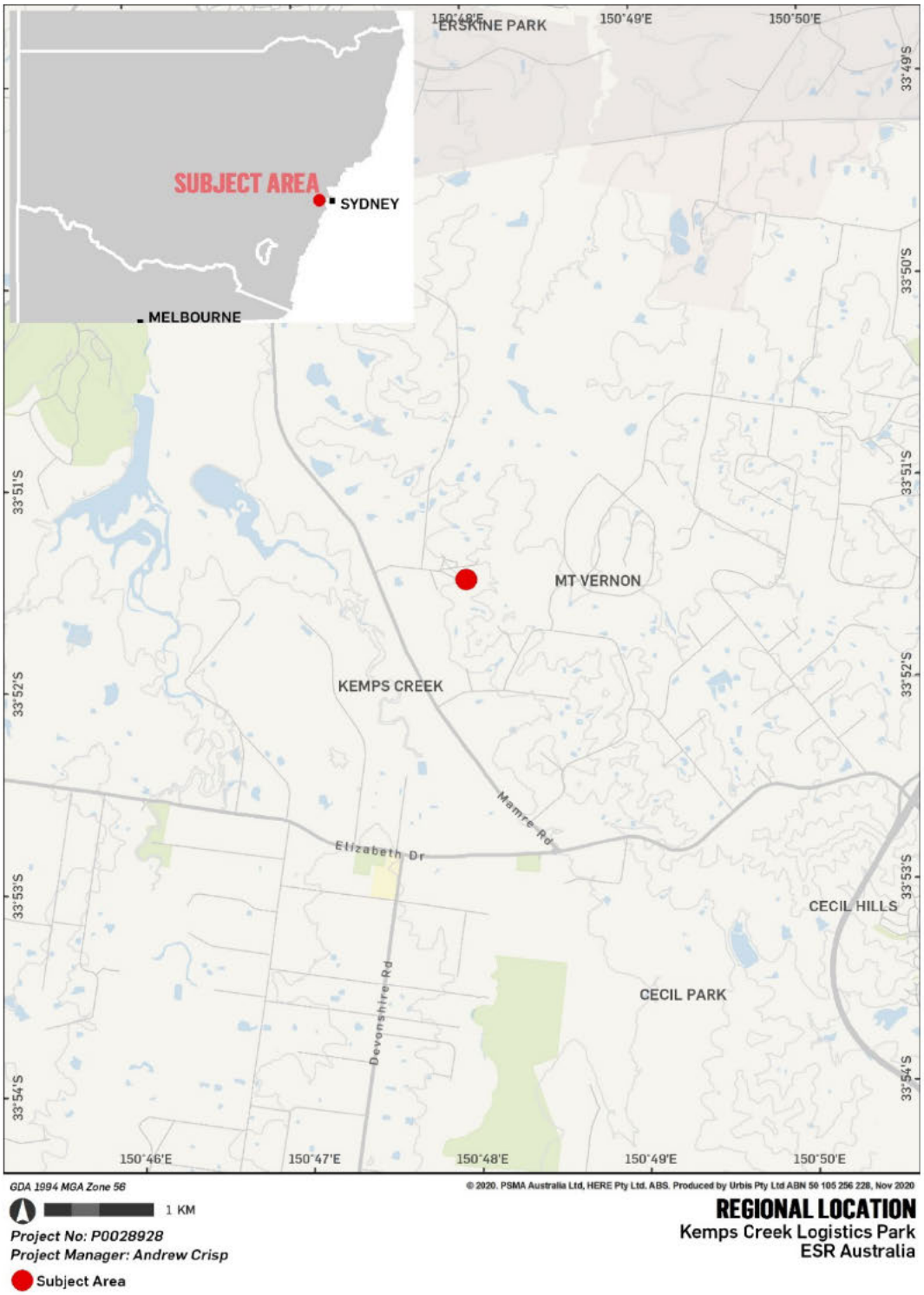


Figure 1 – Regional location of the subject area

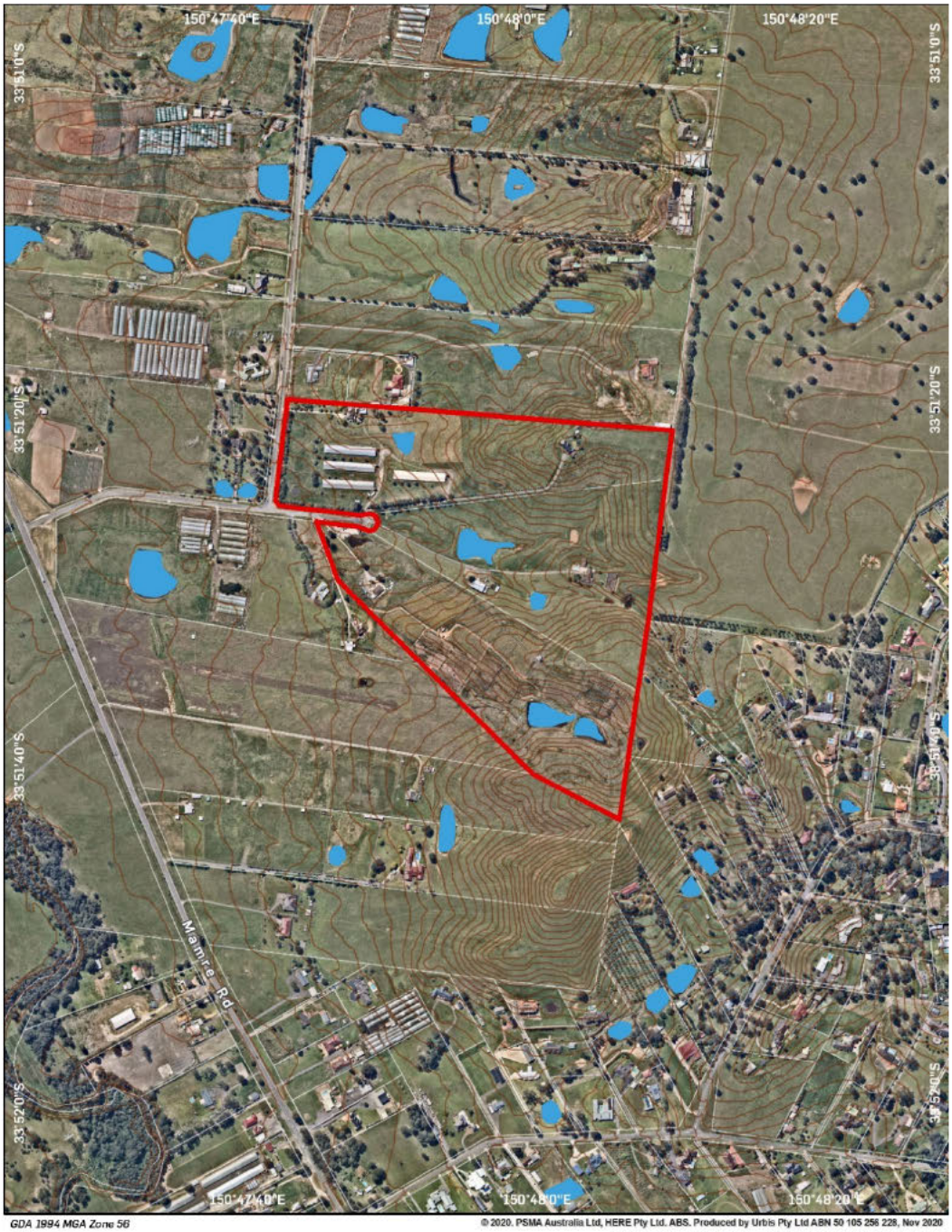


Figure 2 – Location of the subject area

Figure 3 – Concept Masterplan of proposal

Source: Concept Masterplan, ESR, 21/10/2020

ESR Logistics Park Development/Kemps Creek NSW
Aboriginal Cultural Heritage Assessment – Community Consultation Stage 1

ESR Australia (the Proponent) are preparing a State Significant Development Application (SSD-9138102) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, Kemps Creek, NSW (hereafter referred as the subject area) which will involve the development of a logistics park. Urbis is assisting the Proponent in undertaking an Aboriginal Cultural Heritage Assessment (ACHA) to accompany the SSDA. The proponent can be contacted directly via:

Riley Sampson
Assistant Development Manager
ESR Australia
Level 29, 20 Bond Street
Sydney NSW 2000
E: riley.sampson@esr.com

In accordance with Section 4.1.3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)* and Clause 80C of the *NSW National Parks and Wildlife Regulation 2009*, the Proponent is seeking the registration of Aboriginal persons or groups who may hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) that may be present in the subject area.

The purpose of community consultation with Aboriginal people is to assist the Proponent in the preparation of the ACHA, potential test excavation program and the assessment of the cultural heritage significance of the subject area.

Please register your interest in writing to the contact details provided below by 5.00pm 31st December 2020.

Andrew Crisp
Senior Consultant
Urbis Pty Ltd
acrisp@urbis.com.au
Level 8 123 Pitt Street,
Sydney, NSW, 2000.

Please be advised that the Proponent is required to forward the names of Aboriginal persons and groups who register an interest to Deerubbin Local Aboriginal Land Council and Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet, unless the person or group specifies that they do not want their details released.

From:	Andrew Crisp
To:	Aaron Olsen
Subject:	FW: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Monday, 7 December 2020 9:10:12 AM
Attachments:	A1.PL2021.pdf A1.WC2021.pdf image002.png image004.png image006.png image008.png image010.png image019.png image020.png image021.png image022.png image023.png

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ANDREW CRISP
SENIOR CONSULTANT

D +61 2 8233 7642
T +61 2 8233 9900
E acrisp@urbis.com.au

SHAPING CITIES AND COMMUNITIES

URBIS

ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. **Click here to read Urbis' response to COVID-19.**

Urbis recognises the tradi ional owners of the land on which we work.
Learn more about our **Reconciliation Action Plan.**

From: Carolyn .H <[redacted]
Sent: Sunday, 6 December 2020 6:45 PM
To: Andrew Crisp <acrisp@urbis.com.au>
Subject: Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

INDIGENOUS SERVICES PTY LTD

Contact: Carolyn Hickey

[redacted]

Hi,

Thank you for your email, I would like to register in being involved in all levels of consultation for this project, such as, Meetings, Reports, Sharing Cultural Information, and available Field Work.

I am a traditional owner.

I've had many years' experience in helping preserve Aboriginal cultural heritage on projects, I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area.

I have attached A1 *Indigenous Services Insurances.*

Please feel free to contact me on details supplied

Kind Regards,

Carolyn Hickey

From: Aaron Olsen <aolsen@urbis.com.au>

From: James Eastwood
To: Andrew Crisp
Subject: Aldington Road
Date: Sunday, 6 December 2020 1:51:19 PM
Attachments: 2AE8E796DA9D4D6E96115F928AD16866.jpg
GIO Mobile Business Protect Certificate of Currency GPM004786956 (2).pdf
Workers Insurance Certificate of Currency.pdf
ARAGUNG Pay Rate.docx

Dear Andrew

Thank you for your recent invitation to register for Aboriginal Community Consultation **RE:290 - 308 Aldington Road Kemps Creek - Aboriginal Cultural Heritage Assessment Stage 1 Invitation to Register**. Aragung Aboriginal Cultural Heritage Site Assessments is please to accept your invitation . As Aragung is a Aboriginal organisation that has traditional links to the proposed archaeological study area, Aragung would like to be considered to be involved in all aspects of this project - including future meetings, archaeological field surveys , archaeological test excavations - and to supply our First Nations cultural Knowledge and feed back towards this project from a local Aboriginal community view point.

please find attach all necessary up to date insurance details and pay rate should Aragung Cultural services be required thank you

kind regards
contact Co/ Jamie Eastwood
[redacted]

BARKING OWL ABORIGINAL CORPORATION ICN: 8822

[redacted]

13/11/2020

Dear Andrew,

RE: 290-308 ALDINGTON RD KEMPS CREEK ACHA CONSULTATION

We would like to register interest for community consultation and any fieldwork if required.

The area is an important part of our culture due to previous generations living in and around the area, we maintain a special connection and responsibility as the current generation.

We can provide fit and hardworking site officers with current white cards and all PPE.

Members put forward have experience in a variety of community consultation projects.

We can provide copies of relevant certificates of currency for insurances on request.

Please contact by email barkingowlcorp@gmail.com or phone 0410 601 451 if additional information is required.

Kind regards

Jody Kulakowski
BOAC

Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 A...

Reply | Reply All | Forward | ...

B Biamanga [redacted]
To Andrew Crisp

Tue 8/12/2020 10:05 AM

Follow up. Start by Tuesday, 8 December 2020. Due by Tuesday, 8 December 2020.

Please accept my expression of interest with the above project and wish to be kept in the loop with any further developments regarding this project

--

Kind Regards
Janaya Smith
Chief Executive Officer
Biamanga

Meggan Walker

From: Andrew Crisp
Sent: Monday, 11 January 2021 9:42 AM
To: Meggan Walker
Subject: Fw: registration for projects

Follow Up Flag: Follow up
Flag Status: Flagged

From: Butucarbin Heritage [redacted]
Sent: Monday, 4 January 2021 3:40 PM
To: Andrew Crisp <acrisp@urbis.com.au>
Subject: registration for projects

Hi Andrew,
If possible, I would like to register, on behalf of Butucarbin, for the projects in relation to: Orchardleigh Street; the Australian Wool Culture Centre; Aldington Road, Kemps Creek and; Tafe NSW.

Apologies for the late notice. I have been on Christmas break since mid-late December and have only started checking and responding to emails today. Please let me know if this is possible.

Best wishes,

--
Lowanna Gibson
Project Manager for Butucarbin Cultural Heritage Assessments
B.A Archaeology/Anthropology USYD
Juris Doctor Candidate UTS

From: Clive Freeman
To: Aaron Olsen
Subject: Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date: Sunday, 6 December 2020 12:01:52 PM

Hi team,

I would like to register an interest in the project. Please let me know if you need anything further including my certificate of currency.

Kind regards

Clive Freeman
Managing Director
Freeman&marx PtyLtd

Sent from my iPhone

> On 4 Dec 2020, at 2:08 pm, Aaron Olsen <aolsen@urbis.com.au> wrote:
>
> Good afternoon
>
> Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.
>
> Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.
>
> The SSDA will seek approval for Lots 1-7 building and use (see attached Figure 3). The proposal would include the development of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities. The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.
>
> The ACHA is to be carried out in accordance with relevant guidelines under the *National Parks and Wildlife Act 1974* (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.
>
> The Proponent can be contacted via:
>
> Riley Sampson
> Assistant Development Manager
> ESR Australia
> Level 29, 20 Bond Street
> Sydney NSW 2000

From: Corroboree Aboriginal Corporation
To: Aaron Olsen; Andrew Crisp
Subject: Re: EOI 290-308 ALDINGTON ROAD, KEMPS CREEK
Date: Tuesday, 8 December 2020 12:09:28 PM

Andrew Crisp

Senior Consultant

Urbis

acrisp@urbis.com.au

Level 8 123 Pitt Street,

Sydney, NSW, 2000.

Dear Andrew

Re: Expression of Interest - 290-308 ALDINGTON ROAD, KEMPS CREEK

Please register Corroboree Aboriginal Corporation. My dad, grandparents and other family members have lived in the area and family including myself currently reside in the areas and surrounding areas. We are registering in a full capacity. We are aboriginal people who are culturally aware. We have the necessary ability, awareness, experience, skills, insight and the knowledge to identify artefacts on field work. And as Aboriginal People we connect thru the land, thru our ancestors and our heritage. Therefore we are able participate on all levels. We have worked with many archaeologists across a broad landscape. We have consulted with your company on previous projects. We have all the relevant insurances and safety gear. We are all fit and adapt to a vast landscape.Contact is preferred via email: ***corroboreecorp@bigpond.com.*** *The* contact number, email and contact person is also listed in the signature. **Please do not disclose any of our details to LALC nor publish our correspondence for LALC to peruse.** Please only note our corporation details i.e. our name and only for registration purposes. As noted our details are not to be passed on/disclosed to LALC. We understand your need for confirmation of our corporations name on your lists for registered stakeholders, in that we have responded for inclusion, to participate on all levels. The use of our name as registered party, is fine, however non-disclosure of our actual correspondence, please. Just our name and contact details as registered stakeholders for your records and proponents. Thanks.

Kind regards
Marilyn Carroll-Johnson - Director
Corroboree Aboriginal Corporation [redacted]

Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 A...

Reply | Reply All | Forward | ...

C

Cullendulla <[redacted]>

To Andrew Crisp

Tue 8/12/2020 10:27 AM

Follow up. Start by Tuesday, 8 December 2020. Due by Tuesday, 8 December 2020.

This is my expression of interest with the above project, please keep me informed.

--

Kind Regards
Corey Smith
Cultural Heritage Officer
Cullendulla

From:	lilly carroll
To:	Aaron Olsen
Cc:	Andrew Crisp
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Friday, 4 December 2020 2:10:29 PM
Attachments:	image008.png image010.png image002.png image004.png image006.png

---

Hi Andrew

DNC would like to register an interest into 290-308 Aldington Rd Kemps Creek

Sent from Yahoo Mail for iPhone

On Friday, December 4, 2020, 2:08 pm, Aaron Olsen <aolsen@urbis.com.au> wrote:

> Good afternoon
>
> Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.
>
> Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.
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>
> The Proponent can be contacted via:

Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbott...

Reply | Reply All | Forward | ...

Tue 8/12/2020 8:50 AM

Goobah <goobahchts@gmail.com>
To Andrew Crisp

Follow up. Start by Tuesday, 8 December 2020. Due by Tuesday, 8 December 2020.

Please accept my expression of interest with the above area and wish to be kept informed of any further developments

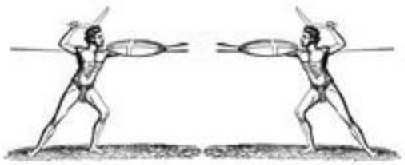
--

Regards

Basil Smith
Chairperson/CEO
GOOBAH

Contact Details:

[redacted]



From:	Gulaga
To:	Aaron Olsen
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Monday, 14 December 2020 8:11:21 PM
Attachments:	image002.png image004.png image006.png image008.png image010.png

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Please accept my registration for the following project Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW**Kind Regards**

Wendy Smith
Cultural Heritage Officer
Gulaga
[redacted]

On Fri, Dec 4, 2020 at 2:08 PM Aaron Olsen <aolsen@urbis.com.au> wrote:

> Good afternoon
>
> Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.
>
> Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.
>
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>
> The ACHA is to be carried out in accordance with relevant guidelines under the *National Parks and Wildlife Act 1974* (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations

From:	Cherie Carroll Turrise
To:	Aaron Olsen
Cc:	Andrew Crisp
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Tuesday, 8 December 2020 12:09:03 PM
Attachments:	image002.png image006.png image004.png image010.png image008.png

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Attention: Andrew

Re: Registering interest 290-308 ALDINGTON ROAD, KEMPS CREEK

Please register our corporation for full process on this project. We are aboriginal people. We are all Aboriginal Cultural Heritage Site Officers. We have our history & stories passed down by our Elders. We have assisted in surveys, salvage & consulting in with archaeologists over a vast number of years. We are experienced in the field of identifying artefacts, Including our learned history and knowledge passed down by our Elders. We appreciate the opportunity to be part of protecting and preserving our Aboriginal heritage. We are very proud of our heritage passed to us by our Elders and our Ancestors. We are therefore pleased with being a part of this research and provide our experience in cultural heritage input.
The potential to contain evidence of Aboriginal of actual occupation on the specific project area and provide cultural links to our past ancestors is of great value and significance. Our organisation has a current public liability insurance policy and OHS compliant and all members hold white cards and all the required safety gear.
All our members are Aboriginal and very experienced in the identification of Aboriginal artefacts and we have consulted with numerous Archeologists in surveys including excavation/fieldwork. We are very passionate about land and conservation matters to which some of members are currently studying cultural heritage. We hold strong links to our our ancestors, our culture and our heritage.
Please note we do not want our details forwarded to LALC, please do not release our correspondence nor any details.
Please update Email:gunjeewong@yahoo.com.au
and phone number Mob: 0438 428 805. Please forward a copy of project to my postal address: 15 Burton Road PORTLAND NSW 2847 and to this email. Please remove any other phone numbers and emails as per ORIC website & OEH. My details have also been updated with all the relevant requirements.

Sincerely
Cherie (Carroll) Turrise
Aboriginal Heritage Custodian
[redacted]

On Friday, December 4, 2020, 2:08 pm, Aaron Olsen <aolsen@urbis.com.au> wrote:

> Good afternoon
>
> Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred

From:	philip khan
To:	Aaron Olsen
Subject:	RE: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Monday, 7 December 2020 2:22:24 PM
Attachments:	0CA8188AE1F84D90A6DD8B6AB2D503DB.png B3A8900616CF4EF9A7E66A9D0033681C.png 34C359431C784DAFAB5C33DB0D3C1144.png E29461BDE1064468B629AA6F928D9C04.png 247C650BC1224C79BFE2398B2EAB364C.png Public Liability Kamilaroi 2020 to 2021 20million cover.pdf Workers Comp Insurance for Kamilaroi Yankuntjatjara Working Group Pty Ltd.pdf

Hi Aaron,

Thank you for informing us that **Urbis** will be involved in an Aboriginal Cultural Heritage Assessment at **290-308 Aldington Rd, Kemps Creek** &, that you are inviting Aboriginal organisations to register, if they wish too be involved in the community consultation process.

As a senior Aboriginal person for the past 40yrs, I actively participate in the protection of the Aboriginal Cultural Heritage throughout the Sydney Basin, & particularly throughout Western Sydney, on behalf of Kamilaroi Yankuntjatjara Working Group I wish to provide to you my organisation's registration of interest.

I wish to be involved & participate in all levels of consultation/project involvement. I wish to attend all meetings, participate in available field work & receive a copy of the report.

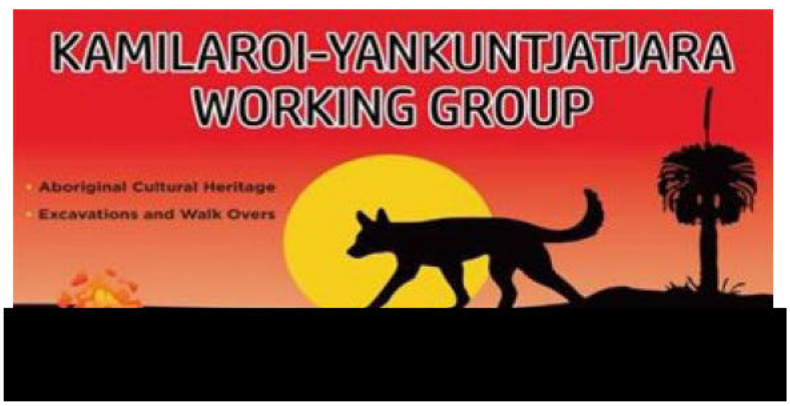
I have attached a copy of Kamilaroi Yankuntjatjara Working group's Public Liability Insurance & Workers Compensation certificate.

[redacted]

Our RAPS have up to 15yrs Cultural Heritage experience in – field work which involves manual excavation (digging), sieving , identifying artefacts, setting up transits, setting up equipment, packing equipment, site surveys & attending meetings.

Should you wish me to provide further information, please do not hesitate to contact me on [redacted]

Kind Regards
Phil Khan



Sent from Mail for Windows 10

From: Shaun Carroll
To: Aaron Olsen
Subject: 290-308 ALDINGTON ROAD, KEMPS CREEK
Date: Friday, 4 December 2020 2:20:35 PM

Hi Aaron

Please register Merrigarn for the above project, we have done many projects in the area.

Kind regards,

Shaun

From:	jesse johnson
To:	Aaron Olsen
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Friday, 4 December 2020 2:22:30 PM
Attachments:	image010.png image008.png image006.png image004.png image002.png

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Hi Aaron
I would like to register our corporation for the above project, we have been doing aboriginal cultural heritage projects in the area and surrounding areas for over 26 years, we look forward to working with you on this project.
Kind regards
Jesse Johnson
[redacted]

On Friday, 4 December 2020, 02:08:07 pm AEDT, Aaron Olsen <aolsen@urbis.com.au> wrote:

Good afternoon

Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

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The Proponent can be contacted via:

Riley Sampson

From:	Darleen Johnson
To:	Aaron Olsen
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Friday, 4 December 2020 2:19:29 PM
Attachments:	image006.png image008.png image002.png image004.png image010.png

---

Dear Aaron
We have lived in area all our lives and have been doing aboriginal cultural heritage projects for over 26 years. Please register our organisation for the above project.
Kind regards
Ryan Johnson
0475565517

On Friday, 4 December 2020, 02:08:06 pm AEDT, Aaron Olsen <aolsen@urbis.com.au> wrote:

Good afternoon

Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

The SSDA will seek approval for Lots 1-7 building and use (see attached Figure 3). The proposal would include the development of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities. The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.

The ACHA is to be carried out in accordance with relevant guidelines under the *National Parks and Wildlife Act 1974* (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Riley Sampson

Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 A...

Reply | Reply All | Forward | ...

M

Murramarang [redacted]

To Andrew Crisp

Tue 8/12/2020 10:11 AM

Follow up. Start by Tuesday, 8 December 2020. Due by Tuesday, 8 December 2020.

Expression of Interest, please keep me informed on any further developments

--

Kind Regards
Roxanne Smith
Cultural Heritage Officer
Murramarang

Meggan Walker

From: Andrew Crisp
Sent: Monday, 11 January 2021 9:43 AM
To: Meggan Walker
Subject: Fw: EOI - ESR Logistics Pk Development/ Kemps Creek Community Consultant Stage 1

Follow Up Flag: Follow up
Flag Status: Completed

From: Kaarina Slater <ngambaaculturalconnections@hotmail.com>
Sent: Thursday, 31 December 2020 4:00 PM
To: Andrew Crisp <acrisp@urbis.com.au>
Subject: Re: EOI - ESR Logistics Pk Development/ Kemps Creek Community Consultant Stage 1

Andrew Crisp
Senior Consultant
Urbis Pty Ltd

Ngambaa Cultural Connection would like to register an interest for the above project.
Have a ancestral connection to the project area & Having the experience in determining the significance of Aboriginal Artefacts objects and Places. Understanding of the Methodology & Assessment Reports. Currently reside in the project area.
Current Insurances

Kind Regards

Kaarina Slater
Manager.

290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CO...

Reply | Reply All | Forward | ...

Mon 7/12/2020 3:46 PM

DF

Danny Franks [redacted]

To Andrew Crisp

Follow up. Start by Tuesday, 8 December 2020. Due by Tuesday, 8 December 2020.

Hi Andrew,

Please accept this Email as Tocomwall's ROI. We would like to be engaged commercially in all field work that may arise out of this assessment.

We do not want our contact details forwarded to the LALC.

regards,

Danny Franks

Cultural Heritage Manager

Tocomwall Pty Ltd

[redacted]

From:	Rodney Gunther
To:	Andrew Crisp; riley.sampson@esr.com
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Friday, 4 December 2020 4:45:21 PM
Attachments:	image001.gif image002.png image004.png image006.png image008.png image010.png Workers Insurance Certificate of Currency.pdf Certificate of Currency.pdf

---

Hi Andrew,

Please register Waawaar Awaa Aboriginal Corporation for the proposed Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW.

Waawaar Awaa Aboriginal Corporation is a local organisation situated in South Western Sydney.

Waawaar Awaa Aboriginal Corporation site officers are young and fit and have the skills, relevant experience to undertake any archaeological fieldwork. Waawaar Awaa Aboriginal Corporation has the necessary certificates of currency (attached).

Waawaar Awaa Aboriginal Corporation have an experienced cultural knowledge holder, Mr Barry Gunther whom has an extensive knowledge of Aboriginal culture, Archaeological experience, project management and a deep understanding of the legislative processes involved in the Archaeological assessment process.

regards

Rodney Gunther

On Fri, Dec 4, 2020 at 2:08 PM Aaron Olsen <aolsen@urbis.com.au> wrote:

> Good afternoon
>
> Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.
>
> Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application

From:	Phillip Boney
To:	Aaron Olsen
Subject:	Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER
Date:	Friday, 18 December 2020 7:28:20 PM
Attachments:	image002.png image004.png image006.png image008.png image010.png

Hi Aaron,

I would like to express my interest in this project. Given that this project is not far from where I have been residing for the last 23 years.

Regards, Phil Boney
Wailwan Aboriginal Group

From: Aaron Olsen <aolsen@urbis.com.au>
Sent: Thursday, 3 December 2020 7:07 PM
Cc: Andrew Crisp <acrisp@urbis.com.au>
Subject: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Good afternoon

Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

The SSDA will seek approval for Lots 1-7 building and use (see attached Figure 3). The proposal would include the development of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities. The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.

The ACHA is to be carried out in accordance with relevant guidelines under the *National Parks and Wildlife Act 1974* (NPW Act), including the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Riley Sampson
Assistant Development Manager
ESR Australia

Meggan Walker

From: Andrew Crisp
Sent: Monday, 11 January 2021 9:43 AM
To: Meggan Walker
Subject: Fw: ESR Logistics, Kemps Creek

Follow Up Flag: Follow up
Flag Status: Flagged

From: Kayla Williamson [redacted]
Sent: Monday, 28 December 2020 7:25 AM
To: Andrew Crisp <acrisp@urbis.com.au>
Subject: ESR Logistics, Kemps Creek

Hi Andrew

Woronora Plateau Gundangara Elders Council would like to register for consultation for the development of ESR Logistics Park at Kemp's Creek. WPGEC worked at badgerys creek with KNC for a period of 6 months for the Western Sydney Airport Development.

Please send all correspondence to:

[redacted]

Or

[redacted]

Regards
Kayla Williamson
[redacted]

Meggan Walker

From: Andrew Crisp
Sent: Monday, 11 January 2021 9:43 AM
To: Meggan Walker
Subject: Fw: EOI - ESR Logistics Pk Development/ Kemps Creek Community Consultant Stage 1

Follow Up Flag: Follow up
Flag Status: Flagged

From: Vicky slater <[redacted]
Sent: Thursday, 31 December 2020 4:17 PM
To: Andrew Crisp <acrisp@urbis.com.au>
Subject: Re: EOI - ESR Logistics Pk Development/ Kemps Creek Community Consultant Stage 1

Andrew Crisp
Senior Consultant
Urbis Pty Ltd

Dear Andrew.

Wurrumay Pty Ltd would like to register an interest for the above project.

We have well over 18yrs experience in aspects in Culture & Heritage.
Experience in determining the significance of Aboriginal Artefacts objects and places as well as Understanding of the Methodology and Assessment Reports.

Experience Indigenous Site Officer's whom reside within the project area.

Current Insurances.

Kind Regards

Vicky Slater
Manager

Meggan Walker

From: Andrew Crisp
Sent: Tuesday, 12 January 2021 10:47 AM
To: Meggan Walker
Subject: FW: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Follow Up Flag: Follow up
Flag Status: Completed

FYI

ANDREW CRISP
SENIOR CONSULTANT

D +61 2 8233 7642
T +61 2 8233 9900
E acrisp@urbis.com.au

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ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

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Learn more about our **Reconciliation Action Plan.**

From: Arika Jalomaki [redacted]
Sent: Tuesday, 12 January 2021 10:30 AM
To: Aaron Olsen <aolsen@urbis.com.au>
Cc: Andrew Crisp <acrisp@urbis.com.au>
Subject: Re: 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Dear Andrew,

Yulay Cultural service's would like to register our interest in the above project.

Kind regards,

Meggan Walker

From: Meggan Walker
Sent: Monday, 18 January 2021 9:28 AM
To: heritagemailbox@environment.nsw.gov.au
Cc: Balazs Hansel; Andrew Crisp
Subject: Kemps Creek Logistics Park - ACHA- Stage 1.6 (Our ref #P0028928)
Attachments: DPC_Stage1.6_KempsCreek_F01.pdf

Hi all,

Please see attached the Stage 1.6 – List of RAP and notification letter for our project at Kemps Creek Logistics Park, 290-208 Aldington Road, Kemps Creek.

Please let us know if you have any questions.

Kind regards,

MEGGAN WALKER
CONSULTANT

D +61 2 8233 7626
T +61 2 8233 9900
E mwalker@urbis.com.au

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SYDNEY NSW 2000

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Urbis Pty Ltd
ABN 50 105 256 228

15 January 2021

Department of Premier and Cabinet
Heritage NSW
Aboriginal Branch
heritagemailbox@environment.nsw.gov.au

To whom it may concern,

STAGE 1.6 - ABORIGINAL CULTURAL HERITAGE ASSESSMENT –KEMPS CREEK LOGISTICS PARK – LIST OF REGISTERED ABORIGINAL PARTIES AND NOTIFICATION LETTER

In accordance with Section 4.1.6 of the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010) please find below the compiled list of Registered Aboriginal Parties (RAPs) and notification letter under Section 4.1.3 for the abovementioned project .

Table 1 – List of Registered Aboriginal Parties

Name	Contact	Updated
Deerubbin Local Aboriginal Land Council	Steve Randall	Y-contact
A1 Indigenous Services	Carolyn Hickey	N
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood	N
Barking Owl Aboriginal Corporation	Mrs Jody Kulakowski (Director)	N
Biamanga	Janaya Smith	N
Clive Freeman	Clive Freeman	N
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	N
Cullendulla	Corey Smith	N
Didge Ngunawal Clan	Lillie Carroll / Paul Boyd	N
Goobah Developments	Basil Smith	N

Name	Contact	Updated
Gulaga	Wendy Smith	N
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise	N
Kamilaroi Yankuntjatjara Working Group	Phil Khan	N
Merrigarn	Shaun Carroll	N
Muragadi Heritage Indigenous Corporation	Jesse Johnson	N
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson / Ryan Johnson	N
Murramarang	Roxanne Smith	N
Tocomwall	Danny Franks	N
Waawaar Awaa Aboriginal Corporation	Rodney Gunther	N
Wailwan Aboriginal Group	Philip Boney	N
Wurrumay Pty Ltd	Vicky Slater	N
Butucarbin Aboriginal Corporation	Lowanna Gibson	Y - contact
Ngambaa Cultural Connections	Kaarina Slater	N
Woronora Platwau Gundangara Elders Council	Kayla Williamson	N

Please do not hesitate to contact us should you have any queries in relation to the provided information.

Yours sincerely,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

APPENDIX A NOTIFICATION LETTER

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ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000

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Urbis Pty Ltd
ABN 50 105 256 228

4 November 2020

To whom it may concern,

290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL CULTURAL HERITAGE ASSESSMENT – ABORIGINAL COMMUNITY CONSULTATION STAGE 1 – INVITATION TO REGISTER

Please be advised that your contact details have been provided by the Department of Premier and Cabinet (DPC) in accordance with Section 4.1.2 of the Aboriginal cultural heritage consultation requirements for proponents (DECCW, 2010) (hereafter referred as the Consultation Requirements) as a potential Aboriginal stakeholder who may have interest in registering to the abovementioned project.

Urbis has been commissioned by ESR Australia (the Proponent) to conduct an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road & 59-63 Abbotts Road, Kemps Creek, NSW (hereafter referred to as the subject area) (see attached Figure 1 and Figure 2).The ACHA will accompany the State Significant Development Application (SSD-9138102) for the development of logistics park within the subject area.

The SSDA will seek approval for Lots 1-7 building and use (refer Figure 3 below). The proposal would include the development of 7 lots for 167,028 m^2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities. The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.

The ACHA is to be carried out in accordance with relevant guidelines under *the National Parks and Wildlife Act 1974* (NPW Act), including *the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). The assessment would detail any potential Aboriginal cultural heritage resources within the subject area and provide recommendations regarding management of those resources.

The Proponent can be contacted via:

Riley Sampson
Assistant Development Manager
ESR Australia
Level 29, 20 Bond Street
Sydney NSW 2000
E: riley.sampson@esr.com

In accordance with the *Aboriginal cultural heritage consultation requirements for proponents (DEECW 2010)* (the Consultation Requirements) and Clause 80C of the NSW National Parks and Wildlife Regulation 2009, the Proponent will conduct a community consultation process with registered Aboriginal people to assist with the preparation of the ACHA to inform the EIS and comply with the anticipated SEARs requirements including:

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- Identifying and describing the Aboriginal cultural heritage values that exist across the subject area in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW OEH* (2010), and documenting these in an Aboriginal Cultural Heritage Assessment Report (ACHAR) which may include the need for surface survey and test excavation;
- Undertaking consultation with Aboriginal people and document in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW);
- The preparation of the ACHAR to support the SSDA, demonstrating attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts; and
- Recording of any Aboriginal objects in line with the requirements of the Aboriginal Heritage Information Management System (AHIMS) that may be identified within the subject area.

In accordance with Section 4.1.2 of the Consultation Requirements, Urbis proposes to compile a list of Aboriginal people and organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places that may exist within the subject area.

Should you wish to register your interest in this project, please respond in writing by clearly stating your interest and nominating a contact person by 31 **December 2020**. Please send responses to the following:

Andrew Crisp
Senior Consultant
Urbis
acrisp@urbis.com.au
Level 8 123 Pitt Street,
Sydney, NSW, 2000.

Please be advised that, as per the Consultation Requirements, the Proponent is required to forward the names of Aboriginal persons and groups who register an interest (Registered Aboriginal Parties) to the Deerubbin Local Aboriginal Land Council and The Department of Premier and Cabinet unless the person or group specifies that they do not want their details released.

Please be further advised that in accordance to Section 3.4 of the Consultation Requirements, inclusion in the consultation process does not automatically result in paid site assessment. The decision on who is engaged for delivering particular services is decided by the proponent and will be based on a range of considerations including skills, relevant experience, and providing necessary certificates of currency.

Please do not hesitate to contact us I you have any questions.

Yours sincerely,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

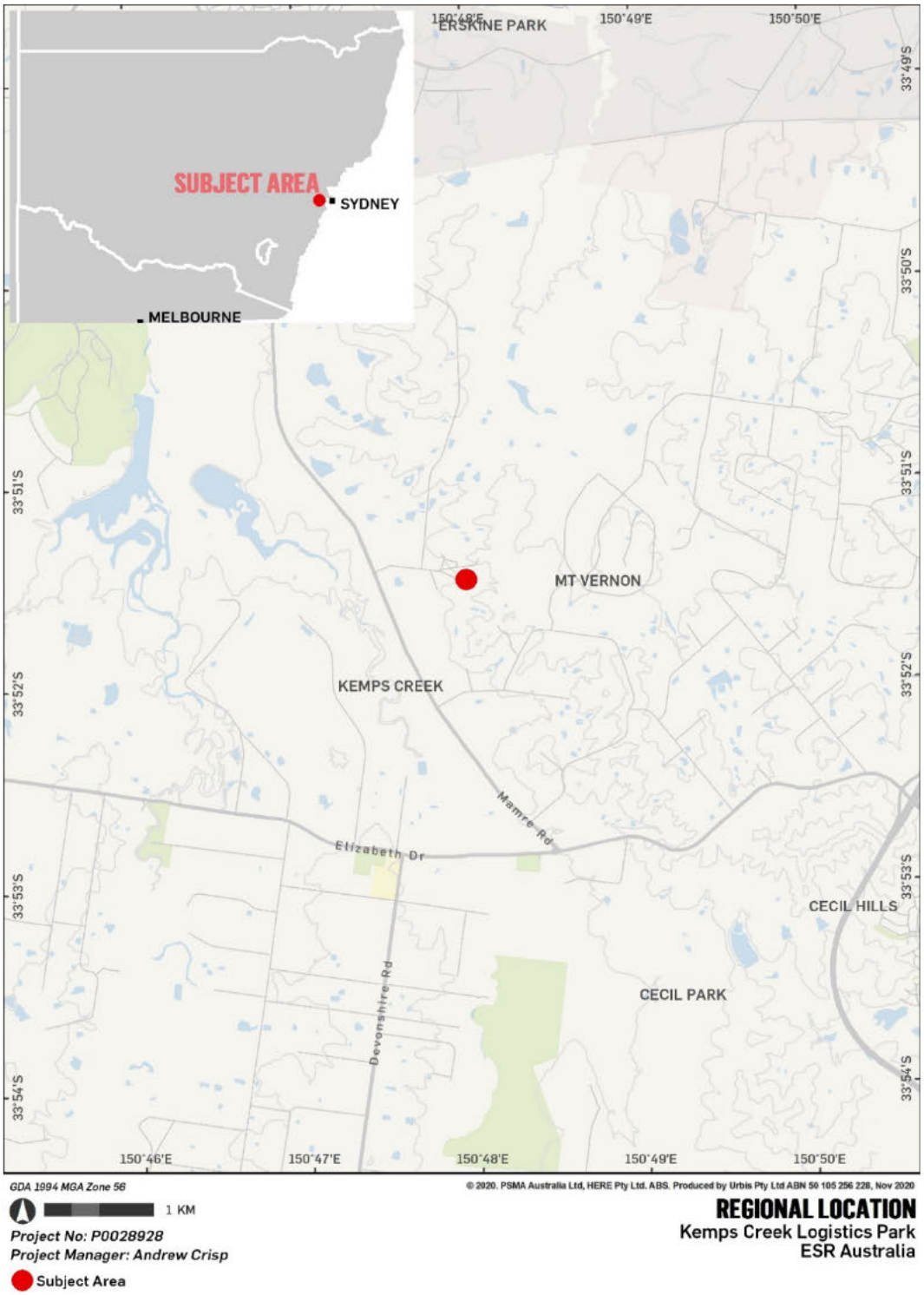

Figure 1 – Regional location of the subject area

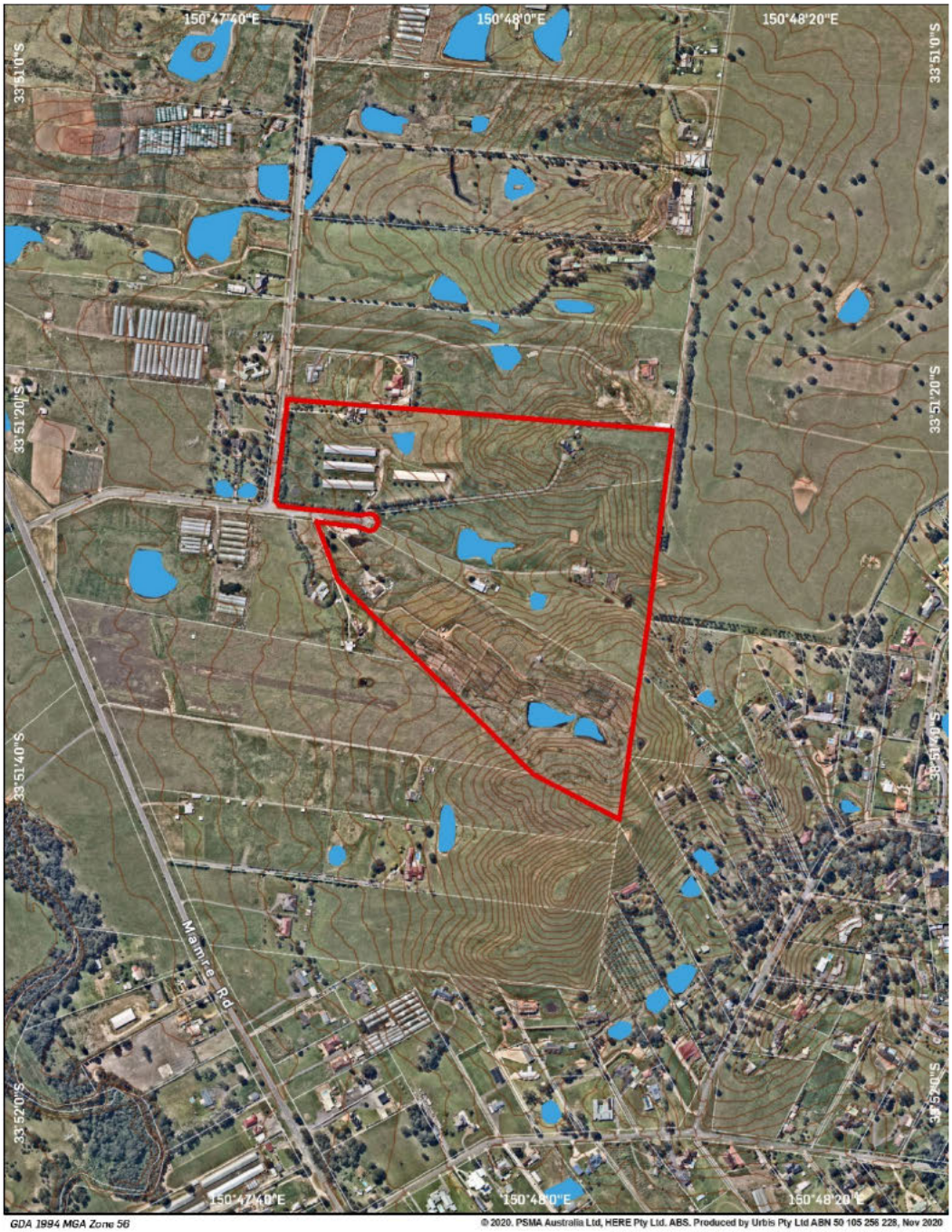

Figure 2 – Location of the subject area

Figure 3 – Concept Masterplan of proposal

Source: Concept Masterplan, ESR, 21/10/2020

Meggan Walker

From: Meggan Walker
Sent: Monday, 18 January 2021 9:28 AM
To: Reception@deerubbin.org.au
Cc: Balazs Hansel; Andrew Crisp
Subject: Kemps Creek Logistics Park - ACHA- Stage 1.6 (Our ref #P0028928)
Attachments: LALC_Stage1.6_KempsCreek_F01.pdf

Hi all,

Please see attached the Stage 1.6 – List of RAP and notification letter for our project at Kemps Creek Logistics Park, 290-208 Aldington Road, Kemps Creek.

Please let us know if you have any questions.

Kind regards,

MEGGAN WALKER
CONSULTANT

D +61 2 8233 7626
T +61 2 8233 9900
E mwalker@urbis.com.au

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SYDNEY NSW 2000

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ABN 50 105 256 228

15 January 2021

To whom it may concern,

RE: ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR PROPOSED REDEVELOPMENT OF 290-308 ALDINGTON ROAD, KEMPS CREEK - ABORIGINAL COMMUNITY CONSULTATION STAGE 2 PRESENTATION OF INFORMATION AND STAGE 3 GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

1. BACKGROUND

Thank you for registering your interest in the Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of 290-308 Aldington Road, Kemps Creek, NSW. In accordance with Section 4.2 and 4.3 of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010) (hereafter referred as the Consultation Requirements), please find in this document a summary of information on the proposed development and the protocol for providing cultural heritage information during the ACHA. Please note that more detailed information will be provided in due course and as part of the developing ACHA.

2. LOCATION OF DEVELOPMENT

The proposed development is located at Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, Kemps Creek, NSW (hereafter referred to as the 'subject area') (see Figure 1 and Figure 2).

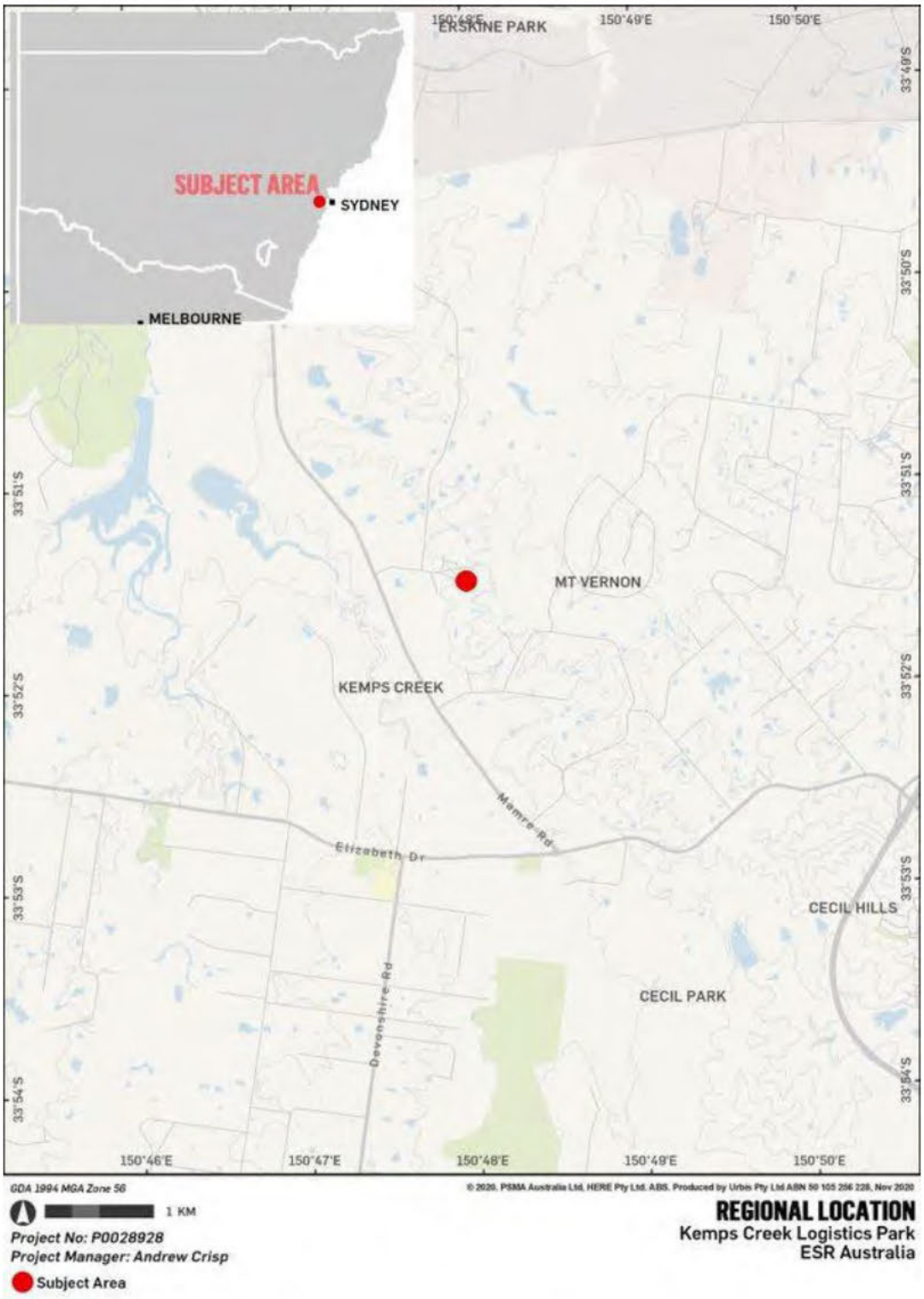

Figure 1 – Regional location.

Figure 2 – Location of the subject area.

3. DESCRIPTION OF THE DEVELOPMENT

Urbis has been commissioned by ESR Australia (the proponent) to produce an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development (SSD-9138102). This ACHA will accompany an Environmental Impact Statement (EIS) for the proposed works.

The proposal would include the development of 7 lots for 167,028 m2 of warehouse and office floor space, parking and hardstand areas, landscaping, services and utilities (refer Figure 3 below). The proposed works would include demolition and bulk earthworks, vegetation removal and construction of internal roads and warehouse buildings.

Figure 3 – Concept Masterplan of proposal.

Source: Concept Masterplan, ESR, 02/12/2020

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4. ARCHAEOLOGICAL CONTEXT

This section comprises the summary of the archaeological background research completed to date for Aboriginal cultural heritage resources including the search of the Aboriginal Heritage Information Management System (AHIMS) and additional archaeological background information.

4.1. ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS)

The AHIMS database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Planning, Industry and Environment (DPIE) under Section 90Q of the *National Parks and Wildlife Act 1974* (NPW Act).

The search of the AHIMS was carried out on 05 November 2020 (AHIMS Client Service ID: 546950) for an area of approximately 7km^2.

Altogether 117 Aboriginal objects and 0 Aboriginal places were identified within the search area.

The search found **no** registered Aboriginal objects within or adjacent to the subject area.

Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

Three sites were identified as 'not recorded' and one identified as 'not a site'. These were excluded from the below analysis, thus bringing the total to 113. Details of the Extensive AHIMS search are provided in Table 1 below and the original AHIMS extensive search is included in Appendix 3.

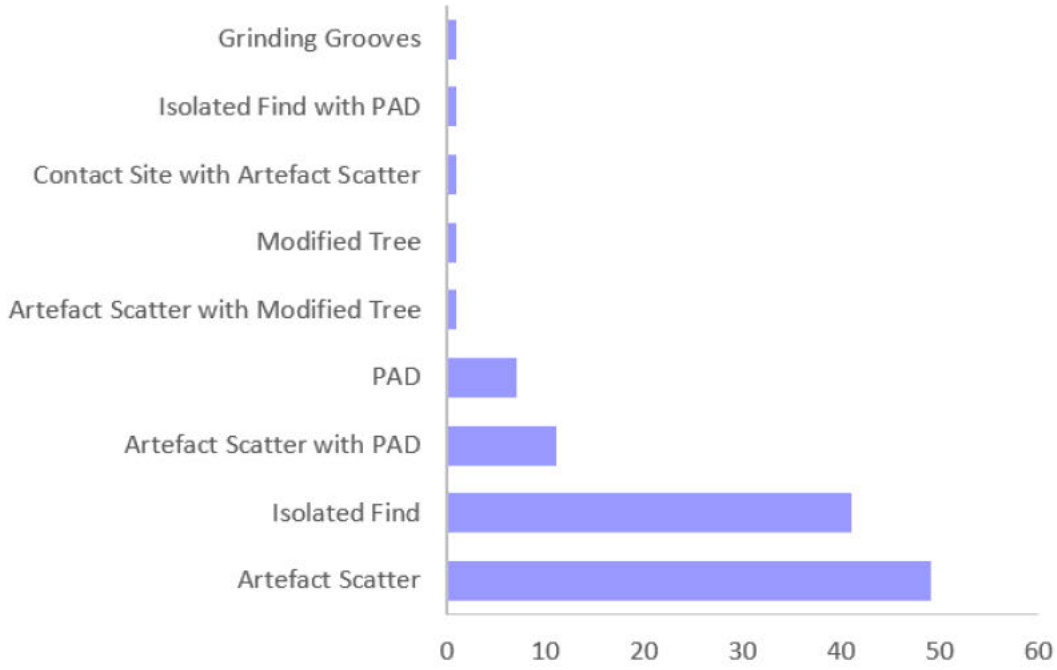

Figure 4 – Graph depicting the results of the AHIMS search (CSID: 546950).

Table 1 - Results of AHIMS search (Client Service ID: 546950)

Site Type	Number	Percentage
Artefact Scatter	49	43.36%
Isolated Find	41	36.28%
Artefact Scatter with PAD	11	9.73%
PAD	7	6.19%
Artefact Scatter with Modified Tree	1	0.88%
Modified Tree	1	0.88%
Contact Site with Artefact Scatter	1	0.88%
Isolated Find with PAD	1	0.88%
Grinding Grooves	1	0.88%
TOTAL	**113**	**100%**

'Closed context' sites are those which occur within rock shelters, and include site types such as shelters by themselves, or with art, middens, and/or artefact scatters. The occurrence of outcroppings of sandstone is generally low within the search area, with the underlying geology primarily Wianamatta Group Ashfield Shale and Bringelly Shale formations. This accounts for the absence of registered closed-context sites across the surrounding area, or sites such as engravings or grinding grooves (of which there was 1 site registered within the search area, comprising 0.88% of results) which occur upon sandstone outcrops. 'Open context' sites, sites which occur outside of rock shelters, comprised 100% (n=113) of identified site types.

92% (n=104) of identified sites contained confirmed culturally modified lithics. 6.19% (n=7) of sites contained Potential Archaeological Deposits (PADs) alone. PADs typically represent areas where the environmental context and level of disturbance are such that subsurface remains are deemed to be likely, and the registering of PADs is usually followed by test excavation which will either realise this potential through the identification of sites, or result in the de-registering of the area due to the absence of materials. PADs are typically registered within areas where deposits indicative of habitation are anticipated to occur.

The other remaining site types include the 1 grinding groove site, and a modified tree comprising 0.88% (n=1). Culturally modified trees are trees with scars indicative of the removal of bark for the creation of tools, canoes and baskets which typically do not survive archaeologically due to their materiality. Modified trees are rare in the archaeological record due to European land clearance.

Artefact scatter sites are sites with multiple culturally modified lithics within a 10m area. This is the most frequently identified site type across the search area, comprising 55% (n=62) of identified sites. Artefact scatters range in size; from small, low intensity, 'background' scatter, to large scatters of hundreds of artefacts, with accompanying materials which would indicate use of the area for long term habitation purposes. Accompanying materials include PADs (n=11), modified tree (n=1) or contact sites (n=1). Contact sites are sites indicative of contact between Europeans and Aboriginal groups, typically in the form of flaked glass or ceramic within Aboriginal contexts.

Isolated find sites are sites which contain only one artefact, typically located in a disturbed context. They are also common throughout the search area, comprising 37% (n=42) of identified site types, where they occurred either on their own or with PADs.

No midden or burial sites are present within the search results. Middens are common in coastal areas, or areas in close proximity to waterways where aquatic subsistence resources could be extracted and processed. Burials are typically located within proximity to culturally modified trees or buried in sand dunes.

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area. It lists recorded sites identified during previous archaeological survey effort. The wider surroundings of the subject area have experienced various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

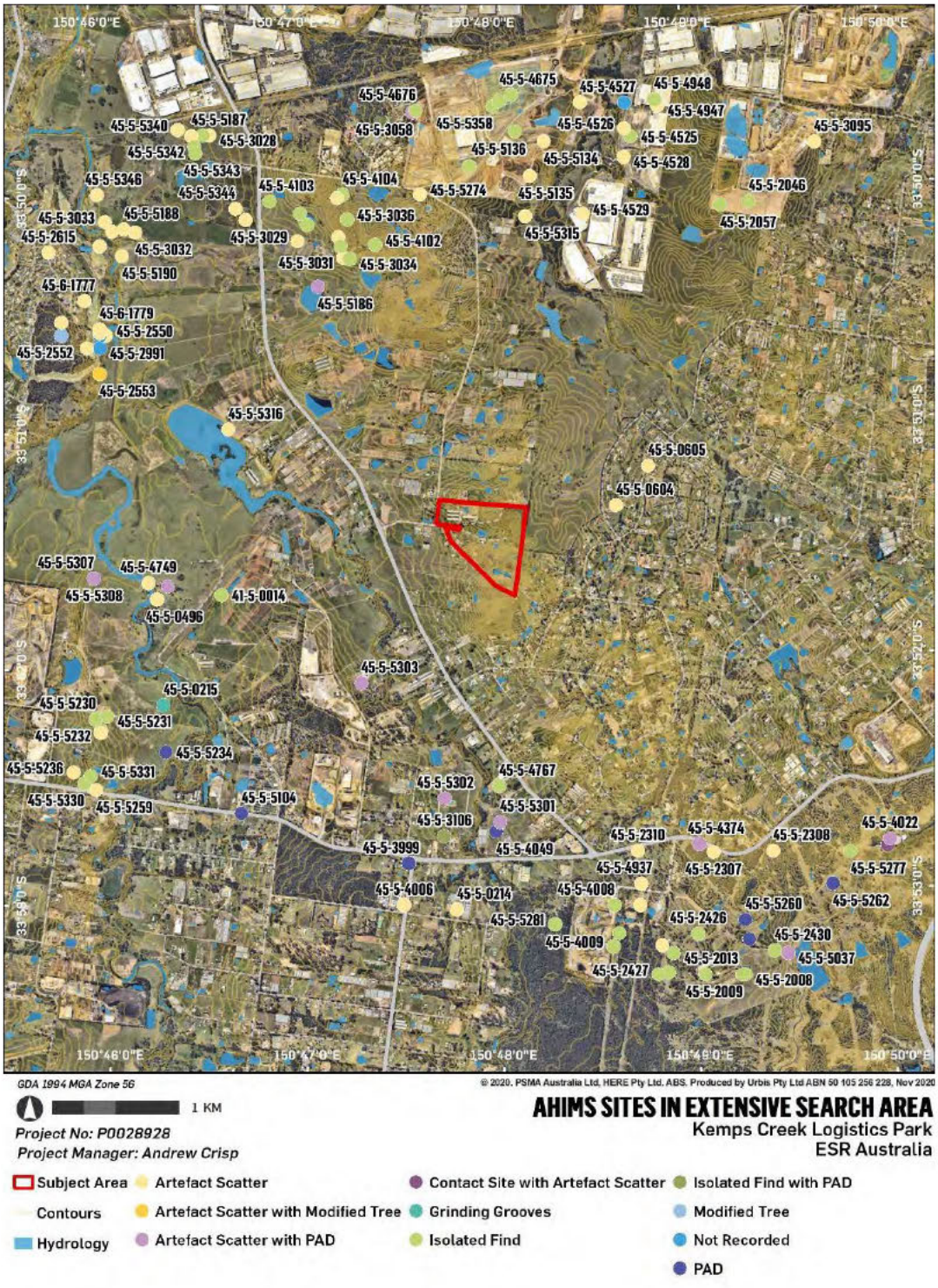

Figure 5 – Registered AHIMS Sites.

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4.2. PREVIOUS ARCHAEOLOGICAL WORKS

Regional Context

The following regional archaeological assessments have informed the development of predictive models for the Cumberland Plain.

Kohen, J. L. 1985, an Archaeological Survey of Industrial Land in the City of Blacktown. Report for Blacktown City Council

This assessment involve an analysis of archaeological surveys of industrial zoned land around the Blacktown City Council Area. Kohen acknowledged a distinct absence of archaeological information for the area at the time owing to limited interest in the Cumberland Plain prior to the introduction of legislative requirements for archaeological assessments in developments. Kohen established that the vast majority of Aboriginal sites within the area that demonstrate intensive occupation are located along creeks and streams which eventuate at the Hawkesbury River, or on ridges sub-parallel to these waterways. Kohen also stated that extremely poor surface visibility factors inhibit the identification of artefacts, with sites almost always located in areas of erosion or exposure usually associated with creeks or disturbance. This concept has informed subsequent predictive models for the wider Cumberland Plain. Kohen argued that site density reflected the activity undertaken, with less dense sites likely reflective of one-off activities such as of tool repair.

Smith, L., 1989. Liverpool Release Areas: Archaeological Site Survey and Planning Study Liverpool Survey Report

Archaeological assessment of the Liverpool Release Areas. In this assessment Smith aimed to establish a spatial predictive model for the southern Cumberland Plain and to test whether the conclusions drawn for the northern Cumberland Plain apply. The 5 day survey program identified 26 previously unrecorded archaeological sites, with 19 scatters, 5 isolated finds and 2 scarred trees. Smith hypothesised that artefacts would be located within 50m of water sources and in lower densities than in the northern Cumberland Plain. Smith effectively surveyed 0.63% of the subject area on foot, once visibility conditions were accounted for (incidentally, Smith viewed visibility conditions as a primary factor in the locating of archaeological sites). Smith determined artefact scatters and isolated finds were located on almost all topographic features within the study area, with the exception of slopes. Smith found that 62% of sites occurred within 50m of a water source, with 53% within 10m and only 2 sites located at a distance greater than 100m. This assessment informed early predictive models for the Cumberland Plain and was formative in the development of Jo McDonald's (1992) predictive model widely applied today.

Jo McDonald Cultural Heritage Management (JMCHM), 1992. Archaeological Investigation of Project 12603, Cowpasture Rd, Hoxton Park, NSW Hoxton Park Archaeological Report

Archaeological assessment intended to investigate the archaeological potential within Precinct 4 of Hoxton Park Stage II Release Area, establish the archaeological significance of the site and determine any threats to areas of archaeological significance proposed by the development. This assessment was also used as an opportunity to test the predictive model established by Smith and Kohen. This assessment resulted in the recording of 147 artefacts in total, with silcrete the dominant raw material. The spatial location and density of artefacts recovered from these excavations, with highest density approximately 80-90m from the creek on higher ground, disputed previous claims about spatial distribution of sites within the Cumberland Plain region and led to the development of the currently accepted predictive model.

Australian Museum Business Services (AMBS), 1997. Cumberland Plain Regional Archaeological Study: Stage 1

In this assessment, AMBS identified their aims as to examine and assess the concept of representativeness for Aboriginal sites on the Cumberland Plain, to critically assess the planning framework and to produce guidelines on the recognition of silcrete artefacts. AMBS argued that the earlier developed predictive models were not adequately tested and further that there has been a serious issue with the identification of silcrete artefacts – in that items identified as silcrete artefacts at Plumpton Ridge were instead naturally fractured silcrete gravels. AMBS argue for a more scientific and analytical method of analysis and site predictive modelling, with the valid acknowledgement that lack of scientific method complicates the comparison of results and information. AMBS also argue that the nature of the conservation framework – where sites considered representative are afforded higher protections – is problematic due to subjectivity, with this issue also addressed through creating a more scientific and comparable method of analysis. AMBS advocate for more interpretative research designs rather than descriptive predictive models in archaeological approaches to the Cumberland Plain.

Local Archaeological Context

Previous archaeological investigations may provide invaluable information on the spatial distribution, nature and extent of archaeological resources in a given area. While there are no readily available assessments of the subject area itself, there have been numerous archaeological investigations carried out in and around Kemps Creek. A summary of findings of the most pertinent to the subject area is provided in Table 2 below.

EMM Consulting (2020) – Mamre Road Precinct Aboriginal Heritage Study

EMM Consulting Pty Ltd (EMM) were engaged by the Department of Planning, Industry and Environment (DPIE) to prepare an Aboriginal Heritage Study (AHS) for the Mamre Road Precinct within Western Sydney Employment Area (WSEA). The AHS will inform planning for the development of the Mamre Rd Precinct based on the final structure plan and provide inputs to the Development Control Plan (DCP) being prepared for the whole precinct. The AHS has been undertaken in broad accordance with DPIE Aboriginal heritage guidelines with some modifications to meet project timeframes and to more suitably address the early planning nature of the project. The AHS is currently on public exhibition.

The desktop and field survey investigations for the EMM (2020) AHS demonstrated that the precinct is comparable with the wider cultural landscape of the Cumberland Plain. Archaeological evidence suggests that people utilised a wide range of resources across the region, and especially the silcrete raw materials from the Blacktown, Riverstone and Plumpton Ridge areas. These materials were moved along the major river systems across much of the Sydney Basin. Foci of occupation also appears to be primarily associated with the major river systems, although a transient use of all environments was known to occur. While a range of archaeological sites types are found across the Cumberland Plain reflecting these activities, much of the landscape constrains cultural material to stone artefacts located on the surface and/or in the upper soil profile. With specific reference to the study area, it is situated between two of the major river systems connecting the northern and southern parts of the Cumberland Plain, including Ropes Creek, Kemps Creek and South Creek. Previous investigations both within and near the study area confirm these wider models, which demonstrate a focus of past occupation along these waterways, and especially on elevated land near these resources.

A review of previously recorded sites in the region, show that 20 are documented within the Mamre Road Precinct. Of these, nine are erroneously located and situated in Erskine Park to the north,

leaving 11 remaining in the Mamre Road Precinct. These are primarily situated along the edges of the main creek systems and/or on a ridgeline in the north of the Mamre Road Precinct. With one exception, #45-5-5188 - a high density artefact scatter on South Creek - the sites are all characterised as isolated objects and/or low-density artefact scatters (usually consisting of <10 artefacts). Excavations of several of these suggest that they are primarily found in shallow duplex and/or fabric contrast soil profiles commonly <30 cm deep, with rare examples extending to 60-80 cm.

EMM conducted a limited field investigation (which included the current subject area) due to access issues, identified a further two previously unidentified sites, MPR-01 (#45-5-0316) and MPR-02 (#45-5-0315), both consisting of low numbers of artefacts in the vicinity of Kemps Creek and Ropes Creek, respectively, and validating some of the previously documented sites.

In addition to the identified Aboriginal sites and objects, areas of archaeological potential were also identified. These included a 200m buffer around Ropes Creek, and a 100m buffer around Kemps Creek, South Creek and second order tributaries - the reduction in these latter areas relating to the local topography and significant disturbance in these locales. In all cases, it is considered that elevations, such as levees, terraces, etc, have a greater potential within these buffers for significant cultural material to be present. In addition, a number of ridgelines were also identified as having potential based on the AHS' findings and Aboriginal community feedback.

Based on the findings of the EMM (2020) AHS, the following recommendations were made:

- The exhibited structure plan does not require amendment based on the findings of this AHS. While cultural materials are identified within the study area and may be harmed as a result of the rezoning, areas identified as containing significant archaeological and cultural value would be largely unaffected.
- The Development Control Plan developed from the structure plan should include appropriate management requirements for Aboriginal heritage based on the findings of this study. These should include:
    - Any ground disturbance proposed in areas where cultural material has not been identified and/or is considered of low potential to occur should be subject to a due diligence investigation in accordance with DPIE and/or best practice guidelines (e.g. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*). The findings of the due diligence should guide future assessment and approval requirements for the activity (if any).
    - Any ground disturbance proposed in areas where cultural material has been identified and/or is considered to have potential for them to occur (the current subject area) should be subject to an Aboriginal cultural heritage assessment or equivalent in accordance with DPIE and/or best practice guidelines (eg *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*). The findings of the assessment should guide future assessment and approval requirements for the activity (if any).
    - Any activity should undertake interpretive, educational and/or recognition opportunities to promote local Aboriginal culture, society and people.
- The AHS identified several Aboriginal objects and sites that are erroneously positioned within the Mamre Road Precinct in the Aboriginal Heritage Information Management System (AHIMS) database (45-5-3028 – 45-5-3036 inclusive). The AHIMS database should be notified and these sites correctly positioned to avoid future management issues for the precinct.

- If re-location of any element of the re-zoning, land release and/or development are proposed outside the area assessed in this study, further assessment of the additional area(s) should be undertaken to identify and appropriately manage Aboriginal objects/sites/places that may be in this additional area(s).
- A copy of the EMM (2020) report should be lodged with DPIE's AHIMS database, and each of the RAPs.

- Table 2 – Summary of previous Aboriginal archaeological investigations relevant to the subject area

Report	Summary
2020, Urbis. Aboriginal Objects Due Diligence Assessment, 706-752 Mamre Road, Kemps Creek, NSW.	Aboriginal due diligence for 706-752 Mamre Road, Kemps Creek. This assessment identified 6 AHIMS sites within the subject area, with two erroneously recorded sites within the subject area. This is important as it identifies the potential for errors within the AHIMS system and supports the need to ground-truth AHIMS search results through field survey. The area was also identified as having low disturbance, and landscape features which identify archaeological sensitivity, with moderate archaeological potential on the basis of the presence of objects, landscape features, low disturbance and the survey results. An ACHA was recommended.
Artefact Heritage 2019a	Artefact undertook Mamre Road Precinct Aboriginal Constraints Assessment for Mirvac in relation to one of their sites. Artefact conducted a search of the AHIMS database, which identified 21 sites within the study area – all identified as of various densities of stone artefacts. They highlighted #45-5-2552 and #45-2-2553 as two culturally modified trees present on the western edge of the study area, and comment on the general rarity of remnant vegetation in the study area. In terms of sensitivity, they utilised the information from DPIE's archaeological guidelines, and highlighted areas in close proximity to water, as well as areas where intact subsurface deposits were considered to survive. In contrast, areas that had experienced extensive ground disturbance, such as market gardens were deemed less archaeologically sensitive, while creeks, including ephemeral first order streams were assessed as a sensitive landform. Where surface artefact sites were recorded on AHIMS, these locations were deemed to have the potential for additional artefacts either on the surface or in subsurface deposit.
Artefact Heritage 2019b.	Artefact Heritage 2019b Artefact undertook a due diligence investigation of Lots 54-58 DP 259135 Mamre Road. Investigations consisted of a background review and brief site inspection. These found a cleared and often moderately disturbed landscape, including creation of substantial rural dams. Soil profiles presented were generally shallow, with a topsoil often <20 cm in thickness. These investigations identified an artefact scatter (MAM AS1901) and an area of archaeological potential. The

Report	Summary
	artefact scatter consisted of thirteen artefacts adjacent a tributary on the edge of an artificially created dam. Artefacts included a ground edge axe, nine silcrete flakes, two IMTC flakes and a quartzite flake. Based on these findings, and guided by low disturbance, a large area of archaeological potential was identified throughout the study area.
Biosis 2019. First Estate Access Road: Aboriginal Cultural Heritage Due Diligence Assessment, Final Report.	Aboriginal due diligence for 657-769 Mamre Road, Kemps Creek. The land use history of the site is consistent with that of the current subject area, being a semirural property, cleared of the majority of native vegetation and with a number of medium to large dams and low density residential and farm structures. Site surveys identified two artefact scatters and an isolated find within similar exposures to that found within the current subject area (associated with dams and similar surface disturbances). Three areas of archaeological potential were also identified in the western portion of the study area adjacent to South Creek and the north-eastern portion of the study area across a low rise adjacent to an open depression. Test excavations identified subsurface deposits in all three areas of potential, including a number of backed artefacts (dated to approx. 4,000-1,000 years before present). Archaeological assemblages were found a significant distance (over 500 m) from South Creek and high density subsurface archaeological deposits were associated with raised ground in proximity to a perennial water source.
Biosis 2016. Mamre West Precinct Orchard Hills: Aboriginal Cultural Heritage Assessment Report.	Aboriginal Cultural Heritage Assessment for the Mamre West Precinct, Orchard Hills. A survey identified a new artefact scatter and areas of archaeological potential. Subsequent test excavation identified four artefact scatters, consisting of flakes, flaked pieces and cores. The primary raw material was silcrete, with a lesser amount of chert. Elevated portions of the area in close proximity to water sources were considered to have high cultural significance.
Dominic Steele Consulting Archaeology (DSCA) 2010. Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment, LOGOS Kemps Creek Logistics Project.	Dominic Steel Consulting Archaeology (DSCA) prepared a combined Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment for PJEP Environmental Planning on Behalf of LOGOS Property for a proposed future industrial development of an approximate 52 ha parcel of land (Lot 1 DP 104958) located at 708 Mamre Road, Kemps Creek (the current subject area). The

Report	Summary
	assessment was in response to the issued Department of Planning Director-General's Requirements (DGR's) for the site. The conclusions of the Aboriginal assessment were: Prior to the investigation there were no previously documented sites within the study area; The coordinates for a number of AHIMS sites incorrectly placed them within the subject area but were confirmed to be located to the north and beyond the subject area; A small number of isolated finds and open scamp sites were identified in exposures within the subject area (45-5-4102, 45-5-4103, 45-5-4104, 45-5-4105); The archaeological potential associated with the four identified artefact sites was considered low by DSCA despite the statement "…it may be expected that further artefacts may occur in the locality, it is unlikely that they will be in situ but would rather be identified in eroded and/or disturbed recovery contexts." A tree within the subject area was noted by Aboriginal stakeholders as being a possible scarred tree. Independent advice provided by a qualified arborist suggests the tree is highly unlikely to display Aboriginal scarification on the basis maximum age of the tree (160 years old), the age of the scar (up to 50 years old) and the frequency of wounds of this shape on similar tree specimens. Archaeological investigations within the catchment between Kemps and Ropes Creek have revealed low-density distributions of Flaked stone artefacts
DSCA 2004. Aboriginal Heritage Conservation Action Plan, Application for a S90 Heritage Impact Permit Consent with Salvage & Collection, Twin Creeks Estate, Luddenham Road, Luddenham, New South Wales.	Aboriginal Heritage Conservation Action Plan and application for s.90 Heritage Impact Permit for Twin Creeks Estate, Ludenham Road, Luddenham. This assessment involved salvage and collection of previously identified sites. Different conservation zones were identified on the basis of archaeological resources and proposed works/level of impact. Within Zone A, for example, where proposed impact was low, conservation measures involved the construction of temporary barriers, with conservation of original landform and existing vegetation. In other areas, where impact would be higher (for example in Zones D and E), conservation measures included the collection of artefacts.

Report	Summary
Appleton, J 2002. The archaeological investigation of Lot 2, DP 120673, the site of a proposed new clay and shale extraction area, Old Walgrove Road, Horsley Park, west of Sydney, NSW.	Archaeological assessment involving survey at Old Walgrove Road, Horsley Park. The study identified two previously unknown sites, both isolated stone artefacts, and a PAD associated with one of the sites. Two areas were also identified as Potentially Archaeological Sensitive and further investigation of these areas was recommended.
DSCA 2001. Archaeological Research Design for three sites (#45-6-1772, 1774 & 1777) within land between Luddenham & Mamre Roads, Luddenham, New South Wales.	Archaeological Research Design for three previously identified sites between Luddenham & Mamre Roads, Luddenham. The three sites which form the subject of this ARD were open camp sites, with the purpose of this report to provide a preliminary framework for sub-surface testing, analysis and assessment to manage the archaeological resource. This assessment identified no development was to be sited within 20m of the Cosgrove Creek, or South Creek. This assessment recommended archaeological testing to sample areas of sensitivity, with testing in land zoned as low-moderate, moderate and high sensitivity. Testing was proposed across the landforms present on the site including creek floodplains, minor slopes, hill slopes, minor spurs, and lower ridge contexts. This report did not detail the results of this testing.
Jo McDonald Cultural Heritage Management 2001. Survey for Aboriginal Sites, 1503 Elizabeth Drive, Kemps Creek.	Archaeological survey report for a site at 1503 Elizabeth Drive, Kemps Creek, the development of Nolans Quarry. One PAD site was identified as a result of the survey, on the basis of land use disturbance, one one Isolated Find (quartz flake) present on the surface. The potential for identification of other sites was reduced by previous activties including land clearance and bulldozing which may have destroyed archaeological materials. Test excavation was recommended to understand the density and extent of artefacts associated with the PAD due to low ground surface visibilty.
Jo McDonald Cultural Heritage Management 2000. Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision,	Archaeological survey report for the “Austral Brick Company” site, Erskine Park. The survey identified six new artefact scatters and three isolated artefacts within or adjacent to the subject area. All sites were within 150m of a waterway and were dominated by silcrete artefacts. Aboriginal objects were found in areas of disturbance

Report	Summary
"Austral Site" – Mamre Road, Erskine Park, NSW.	due to vegetation clearance, erosion, vehicle activity, livestock activity and bulldozing for dam construction.
DSCA 1999. Archaeological Survey Report for Land Between Luddenham & Mamre Roads, Luddenham, New South Wales	Survey report for a 350ha study area generally bounded by South Creek and Luddenham Road, but also extending to the east of South Creek. The survey identified five previously unidentified artefact scatters and one isolated find. The sites were generally located in association with waterways and ridges. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic.
Dallas, M 1988. Preliminary archaeological study: Luddenham Equestrian Centre, Luddenham Road, Erskine Park, NSW	Archaeological report for a 354ha study area in Erskine Park bounded by South Creek and Luddenham Road. A survey identified 12 artefact scatter sites located within the study area. The sites were located in association with Cosgrove Creek or South Creek, or on the ridge to the west of South Creek. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion.

4.3. SUMMARY OF ARCHAEOLOGICAL CONTEXT

The conclusions from the summary of the AHIMS results and previous reports are the following:

- No Aboriginal objects and/or places are registered on AHIMS within the subject area.
- Dominant site types include artefact scatters, or sies containing stone artefacts. No close context sites are registered within the vicinity of the subject area.
- However, the AHIMS database is known to have erroneous data for this area and any results must be checked through site survey, particularly for sites registered within proximity to a subject area.
- While intact natural soils may be present within urban environments, they may not necessarily contain Aboriginal archaeological objects as landscape factors play a decisive role in Aboriginal utilisation of the land prior to European occupation.
- While disturbance may impact the likelihood for Aboriginal archaeological materials to survive on the surface, *in situ* deposits may remain below imported fill.
- Ground surface visibility impacts the ability for archaeological materials to be identified on the surface. Absence of surface expression does not necessarily correlate with absence of archaeological materials, and areas of sensitivity in accordance with the Cumberland Plain Regional Predictive Model may need to be explored further.
- Within the regional context of the subject area, registered Aboriginal sites tend to be located within proximity of waterways and along ridge lines and ridge tops.
- Where harm cannot be avoided, conservation zones should be established which ensure the retention of a portion of the original landform and landscape for future interpretation and the protection of archaeological materials. This should be established in areas of the highest sensitivity.

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5. ENVIRONMENTAL CONTEXT

The environmental context of the subject area is significant as the current predictive model for the Cumberland Plain (within which the subject area falls) predicates that Aboriginal sites are more or less likely to occur on the basis of the presence or absence of environmental factors such as topography, geology and soils, hydrology and disturbance.

5.1. TOPOGRAPHY

The subject area is surrounded by a landscape of gently undulating rises with gradients of 5-20%. The subject area is located within a low-lying plain.

An analysis of landforms present across the site identified a crest in the north-eastern corner, with maximal upper slopes defining a series of open depressions to the west which transition into a waning lower slope.

5.2. GEOLOGY AND SOILS

The subject area is located within the Sydney Basin Bioregion. The underlying geology of the region consists of Wianamatta Group Ashfield Shale and Bringelly Shale formations. Between these two shale members is the Minchinbury Sandstone consisting of fine to medium-grained lithic quartz sandstone.

The subject area is located within both the Luddenham (lu) and Blacktown (bt) soil landscapes.

The Luddenham soil landscape consists of undulating to rolling low hills on Wianmatta Group shales, often associated with Minchinbury Sandstone. Soils consist of shallow (<100 cm) dark podzolic soils or massive earthy clays on crests; moderately deep (70-150 cm) red podzolic soils on upper slopes, moderately deep (<150 cm) yellow podzolic soils and prairie soils on lower slopes and drainage lines.

The Blacktown soil landscape consists of shallow to moderately deep (>100 cm) hardsetting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.

The depth of natural soils is relevant to the potential for archaeological deposits to be present, especially in areas where disturbance is high. Most of the Kemps Creek area is moderately - highly disturbed as a result of agricultural and industrial activities throughout the 20th Century.

5.3. HYDROLOGY

Hydrology is an important factor in any analysis of environmental factors and their contribution to archaeological potential. The predictive model for the Cumberland Plain developed across the 1980s-late 1990s and supported by more recent assessments (see Sections 10) theorises that proximity to permanent watercourses was a primary factor in the determination of locations for habitation. While the primacy of environmental determinism as a theory for the determination of predictive models to understand Aboriginal use of the land has been challenged in recent years (Owen, 2015), areas in proximity to watercourses are generally considered to be archaeologically sensitive. This includes the alluvial plains of watercourses and ridgelines and elevated areas above waterways.

The southern component of the subject area contains a tributary of Kemps Creek. The subject area is also located approximately 100 metres south of a tributary of Kemps Creek. Kemps Creek is located approximately 750 metres to the west of the subject area.

5.4. VEGETATION

As is evident from historic aerial photographs (Figure 7) the subject area has been cleared of vegetation.

The Luddenham (lu) soil landscape was originally characterised by open forest (dry sclerophyll forest). Dominant tree species included *Eucalyptus maculata* (spotted gum) and *E. moluccana* (grey box) and a more limited occurrence of *E. fibrosa* (broad-leaved ironbark), *E. crebra* (narrow-leaved ironbark), *E. tereticornis* (forest red gum) and *E. longifolia* (woollybutt) occur. Understorey shrub species include *Bursaria spinosa* (blackthorn), *Breynia oblongifolia* (coffee bush), *Allocasuarina torulosa* (forest oak), *Acacia implexa* (hickory) and *Clerodendrum tomentosum* (hairy clerodendrum). Grasses are commonly *Aristida vagans* (speargrass), *Entolasia marginata* (bordered panic), *Eragrostis leptostachya* (paddock lovegrass) and *Themeda australis* (kangaroo grass).

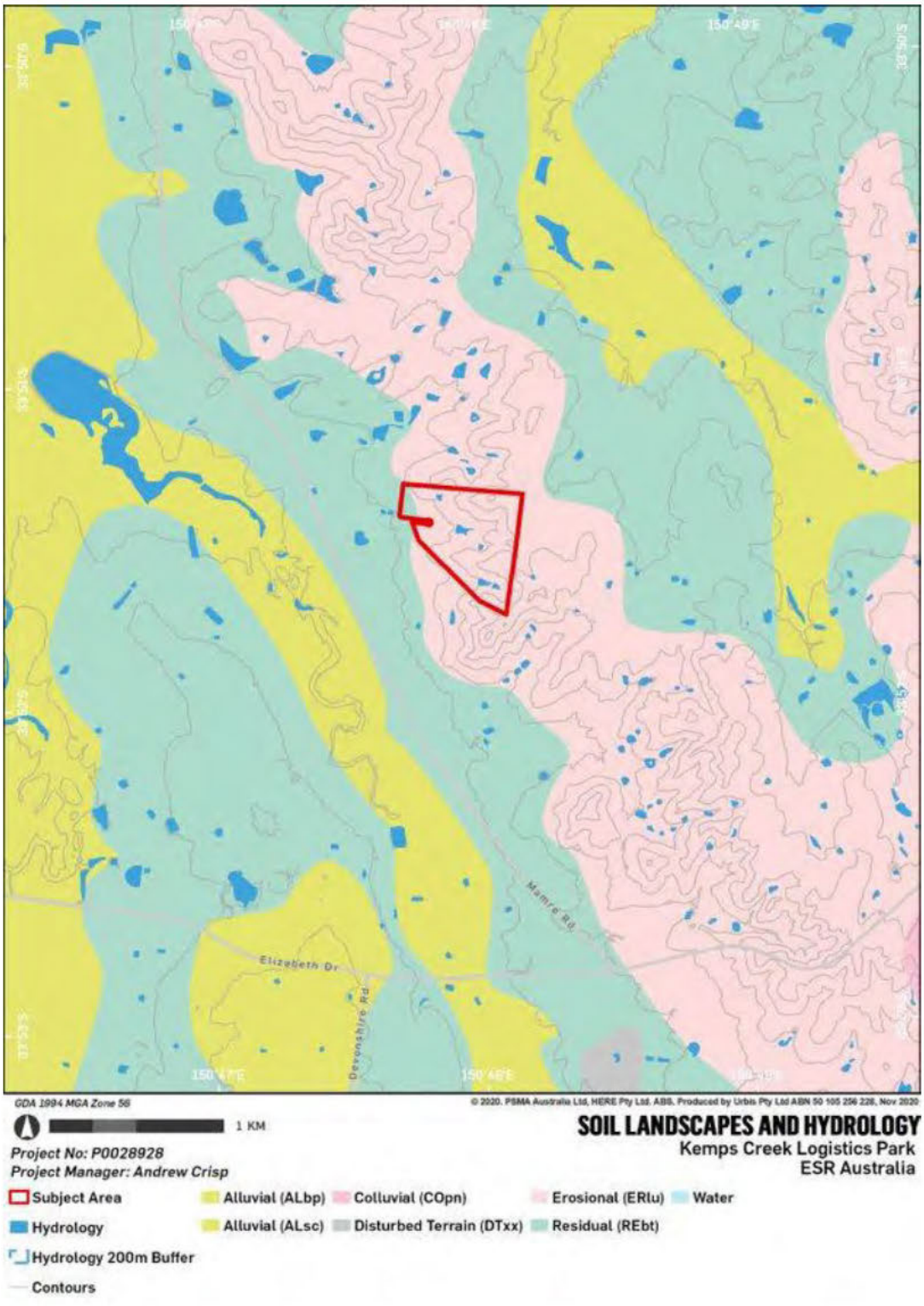

Figure 6 – Soil Landscapes and Hydrology.

5.5. SUMMARY OF ENVIRONMENTAL CONTEXT

The following presents a summary of environmental factors for the subject area:

- The terrain of the subject area is undulating. An analysis of landforms present across the subject area identified a crest in the north-eastern corner, with maximal upper slopes defining a series of open depressions to the west which transition into a waning lower slope.
- The subject area is located within both the Luddenham (lu) and Blacktown (bt) soil landscapes. These soil landscapes are shallow to moderately deep (<100-150cm).
- The southern component of the subject area contains a tributary of Kemps Creek. The subject area is also located approximately 100 metres south of a tributary of Kemps Creek. Kemps Creek is located approximately 750 metres to the west of the subject area.
- The subject area has been cleared of vegetation, but original vegetation would likely have been open dry sclerophyll forest.

Due to the surrounding hydrology and landscape features, the subject area retains potential for the presence of Aboriginal archaeological resources.

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6. PAST ABORIGINAL LAND USE

Aboriginal people have lived in the Sydney area for more than 20,000 years. The oldest securely dated site in the greater Sydney region is 17,800 years before present (yBP), which was recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh. Evidence of Aboriginal occupation has been found dated to 50-60,000 years before present (yBP) at Lake Mungo in western NSW, so it is likely that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates we have at present. The archaeological material record provides evidence of this long occupation, but also provides evidence of a dynamic culture that has changed through time.

Aboriginal groups were not known to keep written records prior to the arrival of European colonisers in 1788. Therefore, the historical record is dominated by European views on Aboriginal people following settlement, rather than the voices of these groups and individuals themselves, and it is difficult to ascertain details of life prior to European arrival. These histories provide an inherently biased interpretation of Aboriginal life, which is not only distorted by the European lens but also by the observer effect wherein individuals are known to behave differently when being observed as opposed to when on their own. Archaeological data and ethnographic information provides additional records for how Aboriginal people may have utilised the landscape.

The subject area falls within the traditional lands of the Dharug (also spelt *Darug* or *Dharuk)* Aboriginal group. This name refers to the language spoken by groups who resided within the wider area and was attributed to this area following 1870 (Attenbrow, 2010). The Aboriginal groups which occupied the greater Penrith region were Darug speaking groups of the hinterland dialect. R. H. Matthews described the boundaries of Dharug land as follows:

> *"The Dharruk speaing people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury Rivber, and inland to what is now Windsor, Penrith, Campbelltown and intervening town…Dialect was spoken at Campbelltown, Liverpool, Camden, Penrith and possibly as far as east Sydney"* (R. H. Matthews, cited in Attenbrow, 2010).

Like all Aboriginal groups, the Darug people lived on and with Country – the land provided and was protected. Coastal Darug groups subsisted on primarily shellfish and employing different hunting techniques to those who occupied the Hinterland (Biosis, 2019). Floral resources available included various Acacia, melaleuca banksia, grevillea and hakea species, providing food but also gum and wood for the manufacture of tools and implements (Dixson, 1999). Vegetation communities and waterways such as Kemps and South Creeks also supported a variety of faunal resources including kangaroos, possums, wombats, birds, reptiles and aquatic animals (DSCA, 2004).

With the arrival of European colonists, the Cumberland Plain was progressively cleared to form agricultural land. As the bushland was removed, Aboriginal groups were displaced following conflict and violence between settlers and Aboriginal people competing for the same resources. Europeans also brought with them disease, such as smallpox, which had a heavy toll on the Aboriginal communities (Evidence, 1835; Collins, 1798).

While European settlement did heavily impact the Traditional Owners of the wider Penrith region, it did not decimate populations as popular narrative would suggest. Aboriginal people continued to live in the area, adapting to the changes brought by settlement. The fight for recognition was a political one. On 26th January1938, a "Day of Mourning" protest was held, following campaigns by Aboriginal individuals including Jack Patten, William Cooper and Pearl Gibbs who fought for civil rights including the right to vote and representation in Parliament. This struggle was long fought, and Aboriginal and

Torres Strait Islanders were granted the right to vote Australia wide by 1965. Aboriginal people were recognised in the census and subject to Commonwealth laws following the referendum for Indigenous Rights in 1967. Aboriginal people across Australia continue to fight for recognition. In February 2008, then Prime Minister Kevin Rudd delivered an address apologising for the mistreatment of Aboriginal people throughout history and committing to closing the gap, recognising Aboriginal cultures as "the oldest continuing cultures in human history" (Rudd, 2008). In contemporary times, respect for Aboriginal people and connection to Country continues to grow. Despite attempts to eradicate Aboriginal people throughout the 19th and 20th centuries, Aboriginal communities continue to thrive across Australia, and Aboriginal individuals play a vital role in all levels of society.

7. HISTORICAL LAND USE

The development of facilities within the subject area has caused substantial levels of ground disturbance. This is demonstrated through the analysis of historic aerials. Historic aerial images from 1961, 1978, 1986 and 2002 were analysed to develop an understanding of disturbance (see Figure 7). A summary of this analysis is included in Table 3.

Table 3 - Analysis of historical aerials

Year	Observation
1961	The subject area has been almost entirely cleared of larger vegetation, with the exception of several isolated trees. A fence running in a generally north-south direction is dissects the western portion of the subject area and forms a T-junction with another fence running west towards Mamre Road. A generally north-south aligned dirt road or path also dissects the western portion of the subject area, lying to the east of the fences. A dam has been constructed on tributary of Kemps Creek, which rises in the elevated ground of the eastern portion of the subject area and runs in a generally westward direction through the middle of the subject area.
1978	The previous fence lines and dirt road/path running through the subject area are no longer visible. Two further dams have been built in the north western portion and south eastern portion. The land in which the subject area has been sub-divided, with Aldington and Abbotts Roads having been built at the western boundaries of the subject area. Driveways running from a cul-de-sac at the end of Abbotts Road to residential buildings that have been constructed in the north-eastern and western portion of the subject area. A further building has been constructed in the western portion of the subject area along the northern boundary, with a driveway connecting it Aldington Road. Disturbed areas of land immediately to the south of the original dam and on the higher ground to the east of the dam appear to be preparation for construction of further buildings.
1986	The disturbed areas of land immediately to the south of the original dam and on the higher ground to the east of the dam are now occupied by buildings. A driveway is now visible connecting these buildings to the Abbotts Road cul-de-sac. The eastern building is residential and includes a swimming pool, tennis court and landscaping. Fence lines are now visible defining the boundaries of the three separate lots within the subject area. Two large agricultural buildings have been constructed in the north-western portion of the subject area

Year	Observation
	and are connected by a driveway to the Abbotts Road cul-de-sac and to the building on the northern boundary by a dirt road or path. Some minor landscaping is visible around the building on the northern boundary of the north-western portion
2002	Two further agricultural buildings have been constructed in the north-western portion of the subject area adjacent the two earlier buildings a further access driveway is visible. Some revegetation around buildings, driveways and roads has occurred, particularly in the norther portion. Four smaller dams have been built, mostly upstream from the earlier dams. A patchwork of striations across much of the southern lot of the subject area indicate cultivation for agricultural purposes.

Summary

In summary, the subject area has been subject to moderate-high disturbance as a result of historical agricultural and industrial land use. Analysis of historical aerial photographs has revealed that a number of dwellings, agricultural buildings, dams and roads have been established within the subject area.

It is considered likely that this disturbance will have impacted the archaeological potential of the subject area. The presence of the Blacktown Soil Landscape and the shallow nature of the natural soil profile, it is considered unlikely that intact natural soil deposits will occur.

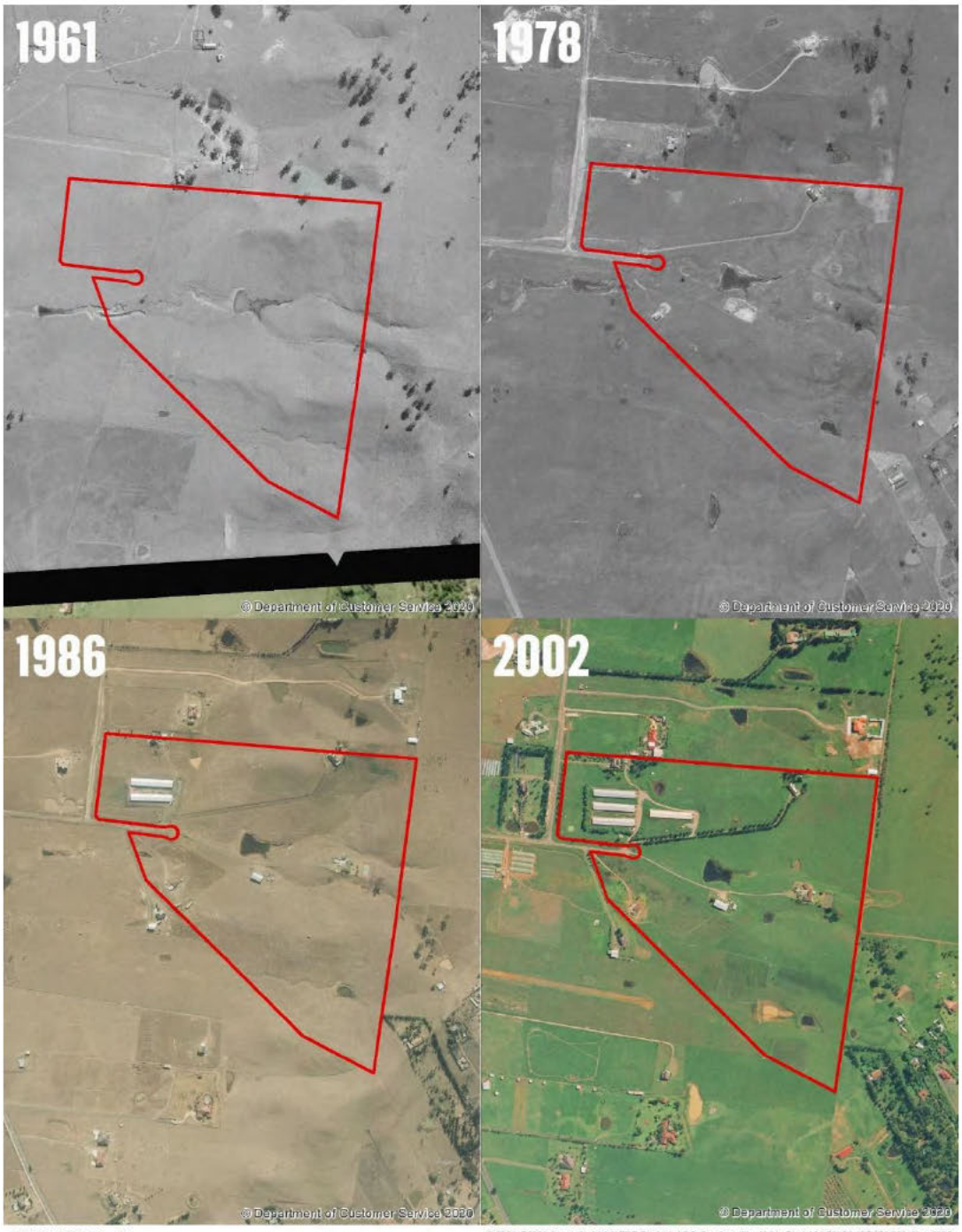

Figure 7 – Historic Aerial Photographs.

8. SCOPE AND METHODOLOGY FOR THE ACHA

8.1. SCOPE

The ACHA will be prepared in accordance with the legislative requirements of the NPW Act and the following guidelines:

- *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH, 2011).
- *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013.*

The ACHA will:

- Synthesise the results of the technical investigation including the environment, existing Aboriginal cultural heritage and archaeological resources in the vicinity of the subject area;
- Include detailed research into the historical land use and impacts on the subject area;
- Include community consultation and any Aboriginal cultural heritage values identified, in compliance with the consultation requirements (DECCW, 2010);
- Include an assessment of significance of any Aboriginal objects or Aboriginal cultural heritage values that may exist within the subject area; and
- Include an impact assessment and provide management and mitigation measures to inform the SSDA application.

8.2. PROPOSED METHODOLOGY

The ACHA will follow the general methodology described below:

- Desktop assessment, including synthesising and evaluating background information of archaeological resources, existing and past environment and developing a predictive model.
- Consultation with the Registered Aboriginal Parties (RAPs) throughout the preparation of the ACHA.
- On-site meeting including site inspection of the subject area with the RAPs to allow for ample opportunity for cultural information to be provided and for the RAPs to familiarise themselves with the subject area and discuss the archaeological approach.

  Note: This will be subject to Covid-19 social distancing measures, as applied by both the Federal and State governments, as well as those established by the client and Urbis.
- Preparation of draft ACHA synthesising all information collected during the process and providing the draft to the proponent and the RAPs for comments.
- Incorporate all comments and finalise the ACHA.

9. ABORIGINAL COMMUNITY INPUT POINTS FOR THE ACHA PROCESS

Urbis welcomes input and information from the RAPs at any stage throughout the entire process of the ACHA. In line with the Consultation Requirements, the main input points for the consultation are the following:

- During Stage 2 - Presentation of information about the proposed project (this project information and methodology).
- During Stage 3 - Gathering information about cultural significance (this methodology and throughout the assessment process).
- During site inspection in consultation with and approval from the proponent.
- During Stage 4 - Review of the draft ACHA.

10. GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

In accordance with Section 4.3 of the Consultation Requirements, Urbis welcomes any information on cultural heritage and cultural significance of the subject area. Urbis is seeking information on cultural values and archaeological significance of the subject area, including:

- Whether there are any Aboriginal objects of cultural value to Aboriginal people in and near the subject area.
- Whether there are any places of cultural value to Aboriginal people in the area of the proposed project (whether they are Aboriginal places declared under s.84 of the NPW Act or not). This will include places of social, spiritual and cultural value, historic places with cultural significance, and potential places/areas of historic, social, spiritual and/or cultural significance.

Please also consider the following when providing information:

- Do you have information on any Aboriginal objects within or near the subject area?
- Do you or somebody you know have information of cultural values, stories in relation to the subject area and if that information can be shared?

In order to comply with the Consultation Requirements, streamline information provided during Stage 2 and 3, and to inform the proponent for the field inspection component, Urbis would like to collect information from you in relation to the following:

1. Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. Have you ever lived in or near the subject area? If you are a Traditional Owner, please state this clearly.

2. Representing your community members: Please state who you or your organisation represents. Do you or your organisation represent other members of the Aboriginal community? If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the proponent and Urbis.

3. Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.

4. Schedule of Rates: Please provide your Certificate of Currency including Product and Public Liability Insurance and Worker's Compensation. Please also include a schedule of rates (hourly/half day/day) for fieldwork participation, and include any expenses you may expect to incur, and these will be sought to be reimbursed. Please note that it is for the discretion for the proponent to decide if they invite RAPs for site works and the consultation process does not guarantee paid employment.

Please find the above list at the end of this document in Appendix 4 for your convenience to fill-out and send back to Urbis.

Please note that in accordance with Section 3.4 of the Consultation Requirements consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to the proponent through a contractual arrangement; however, this is separate from consultation. The proponent is not obliged to employ those Aboriginal people registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

11. SENSITIVE CULTURAL INFORMATION – MANAGEMENT PROTOCOL

If you or your organisation has sensitive or restricted public access information for determining or managing the heritage values of the subject area, it is proposed that the proponent will manage this information (if provided by the Aboriginal community) in accordance with a sensitive cultural information management protocol. It is anticipated that the protocol will include making note of and managing the material in accordance with the following key limitations as advised by Aboriginal people at the time of the information being provided:

- Any restrictions on access of the material.
- Any restrictions on communication of the material (confidentiality).
- Any restrictions on the location/storage of the material.
- Any cultural recommendations on handling the material.
- Any names and contact details of persons authorised within the relevant Aboriginal group to make decisions concerning the Aboriginal material and degree of authorisation.
- Any details of any consent given in accordance with customary law.
- Any access and use by the RAPs of the cultural information in the material.

Please consider the above list when providing your recommendations regarding any culturally sensitive information.

12. CRITICAL TIMELINES

Critical timelines for the ACHA are outlined in Table 4 below. Please note that some of these timeframes are estimates at this stage in the process and are provided to allow forward planning of personnel and resources.

Table 4 – Critical timelines.

Project Stage	Due Date
Stage 2 and 3: Provision of comments on the provided project information and proposed methodology (this document).	Within 28 days from delivery of this document, by Close of Business **12th February 2021**
Stage 3: Site survey (if agreed to by proponent).	On or after **13th February 2021**
Stage 4: Provision of the draft ACHA report (including the proposed management and mitigation measures) to the RAPs.	Within 2 business days of the site inspection or two weeks of test excavation (if required).
Stage 4: Provision of comments on draft ACHA report.	Within 28 days from delivery of the draft ACHA to RAPs.
Stage 4: Finalisation of the ACHA report including the consideration of all comments and feedback.	Within one week of the closing of the comment period for the draft ACHA report.

Please provide the requested information by Close of Business 12th February 2021. Comments received after this date might be excluded from the draft ACHA. Please provide your comments in writing to:

Meggan Walker
Urbis Pty Ltd
Level 8
Angel Place
123 Pitt Street
Sydney, 2000 NSW
Email: mwalker@urbis.com.au

Yours sincerely,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

URBIS

BIBLIOGRAPHY

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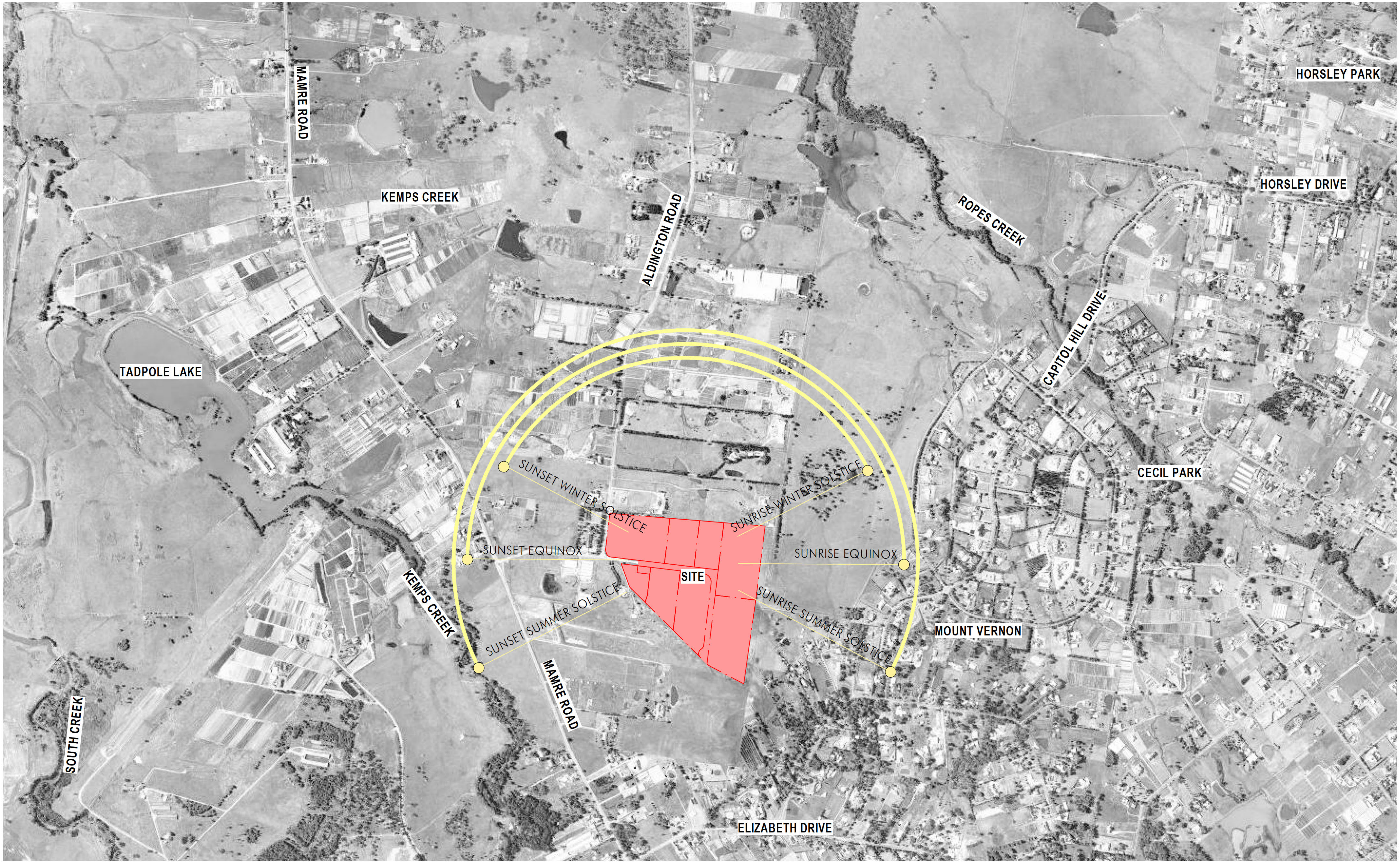
APPENDIX 1 – LANSCAPE PLAN



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Client

ESR

Issue	Description	Date
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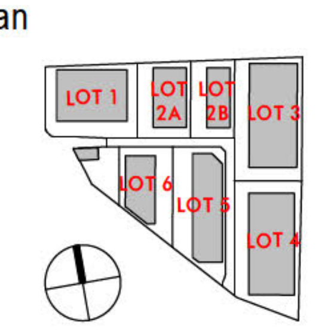
Key Plan



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ESR Kemps Creek Logistics Park

Project Address
Mamre Road, Kemps Creek

Bar Scales
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Drawing Title:
Location Plan

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Drawing Number:	Issue:
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DEVELOPMENT SUMMARY

GROSS LAND AREA	318,834m^2
ROAD AREA (24M WIDE)	18,530m^2
ROAD WIDENING	800m^2+222m^2
NETT DEVELOPABLE AREA	288,305m^2
NETT EFFICIENCY	52.5%
STORMWATER DETENTION BASIN	10,977m^2

SITE AREA (LOT 1)	50,996m^2
WAREHOUSE (GLA)	28,645m^2
WAREHOUSE (GFA)	26,665m^2
OFFICE (3 STOREY)	450m^2 x 2
TOTAL BUILDING AREA (GLA)	29,545m^2
TOTAL BUILDING AREA (GFA)	27,565m^2
SITE EFFICIENCY	57.9%
LIGHT DUTY	3,575m^2
HEAVY DUTY	12,600m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	124
TOTAL CARS PROVIDED	147

SITE AREA (LOT 2a)	26,365m^2
WAREHOUSE (GLA)	13,950m^2
WAREHOUSE (GFA)	12,740m^2
OFFICE (2 STOREY)	500m^2
DOCK OFFICE	50m^2
TOTAL BUILDING AREA (GLA)	14,500m^2
TOTAL BUILDING AREA (GFA)	13,290m^2
SITE EFFICIENCY	54.9%
LIGHT DUTY	1,750m^2
HEAVY DUTY	5,775m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	56
TOTAL CARS PROVIDED	68

SITE AREA (LOT 2b)	21,945m^2
WAREHOUSE (GLA)	9,950m^2
WAREHOUSE (GFA)	8,740m^2
OFFICE (2 STOREY)	500m^2
DOCK OFFICE	50m^2
TOTAL BUILDING AREA (GLA)	10,500m^2
TOTAL BUILDING AREA (GFA)	9,290m^2
SITE EFFICIENCY	47.8%
LIGHT DUTY	1,350m^2
HEAVY DUTY	5,775m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	43
TOTAL CARS PROVIDED	50

SITE AREA (LOT 3)	58,302m^2
WAREHOUSE (GLA)	31,600m^2
WAREHOUSE (GFA)	29,400m^2
OFFICE (2 STOREY)	1,000m^2
DOCK OFFICE	50m^2
TOTAL BUILDING AREA (GLA)	32,650m^2
TOTAL BUILDING AREA (GFA)	30,450m^2
SITE EFFICIENCY	56%
LIGHT DUTY	3,650m^2
HEAVY DUTY	14,600m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	125
TOTAL CARS PROVIDED	132

SITE AREA (LOT 4)	59,257m^2
WAREHOUSE (GLA)	30,700m^2
WAREHOUSE (GFA)	28,280m^2
OFFICE (2 STOREY)	700+700m^2
TOTAL BUILDING AREA (GLA)	32,100m^2
TOTAL BUILDING AREA (GFA)	29,680m^2
SITE EFFICIENCY	54.1%
LIGHT DUTY	4,420m^2
HEAVY DUTY	9,050m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	130
TOTAL CARS PROVIDED	132

SITE AREA (LOT 5)	43,706m^2
WAREHOUSE (GLA)	23,140m^2
WAREHOUSE (GFA)	21,276m^2
OFFICE (2 STOREY)	1000m^2
TOTAL BUILDING AREA (GLA)	24,140m^2
TOTAL BUILDING AREA (GFA)	22,276m^2
SITE EFFICIENCY	52.9%
LIGHT DUTY	4,075m^2
HEAVY DUTY	9,190m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	96
TOTAL CARS PROVIDED	181

SITE AREA (LOT 6)	27,730m^2
WAREHOUSE (GLA)	13,950m^2
WAREHOUSE (GFA)	12,520m^2
OFFICE (2 STOREY)	500m^2
DOCK OFFICE	50m^2
TOTAL BUILDING AREA (GLA)	14,500m^2
TOTAL BUILDING AREA (GFA)	13,070m^2
SITE EFFICIENCY	52.2%
LIGHT DUTY	1,793m^2
HEAVY DUTY	7,030m^2
TOTAL CARS REQUIRED (RMS) WAREHOUSE 1/300m^2 (GFA) OFFICE 1/40sqm (GFA)	56
TOTAL CARS PROVIDED	60

SITE AREA (LOT 7)	1,710m^2
CAFE	200m^2
TOTAL BUILDING AREA (GLA)	200m^2

TOTAL AREA (ALL BUILDINGS)	158,135m^2
TOTAL LOT AREA (INCL. BASIN)	300,988m^2

TOTAL AREA (ALL BUILDINGS)	174,187^2

*concept masterplan/ 277086 BM57E-003 (A) / 21.10.2020

Client: ESR

Issue	Description	Date
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P1	PRE-DA	03.12.2020

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Key Plan

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Client

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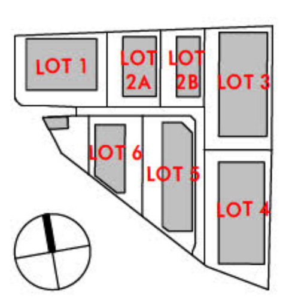

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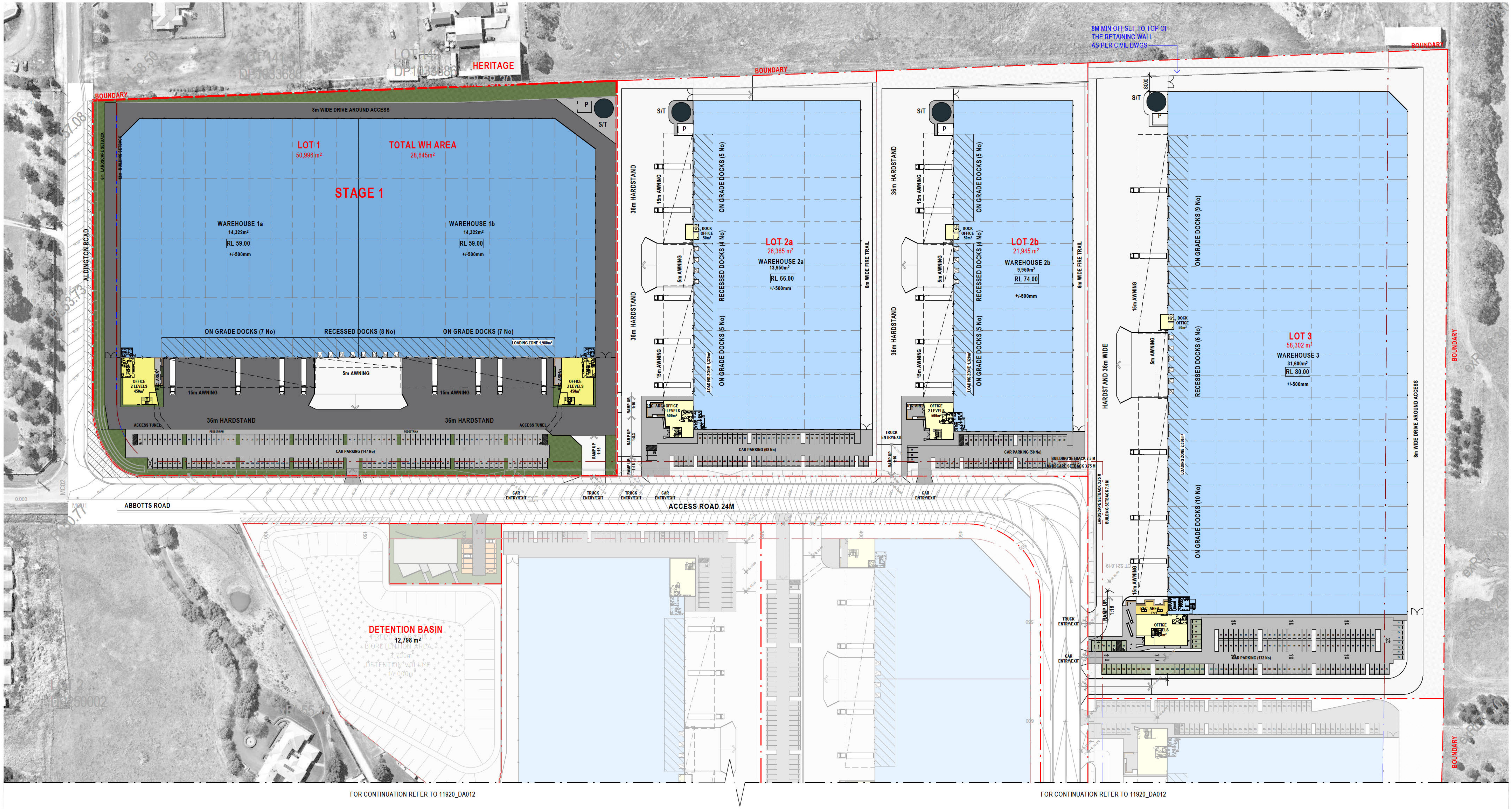

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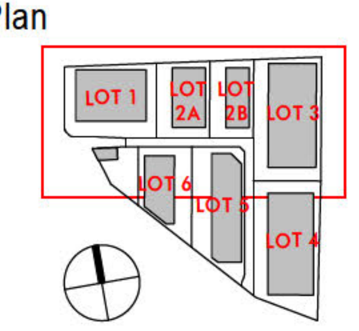

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Issue: **P3**

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1 LOT 1, 2 & 3 ROOF
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Issue	Description	Date
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P1	PRE-DA	25.11.2020

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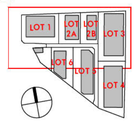

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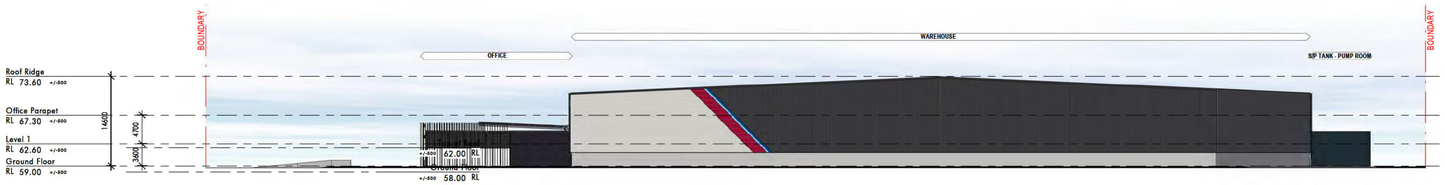

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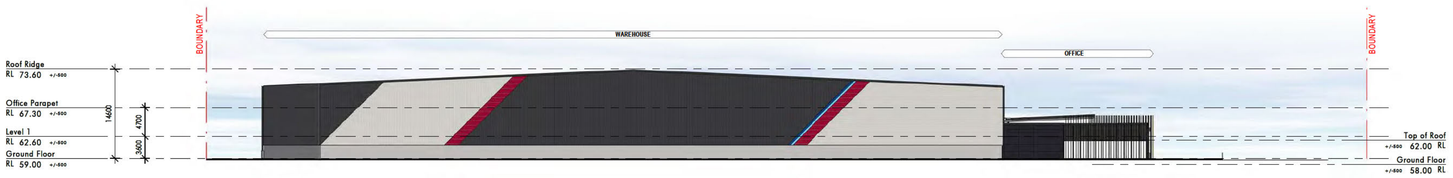

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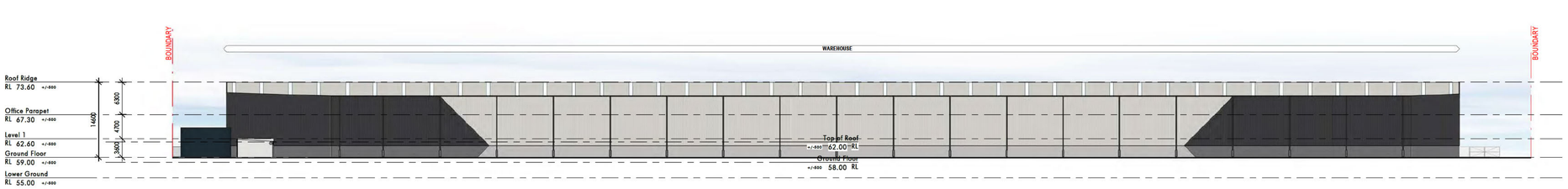

3 LOT 1 WAREHOUSE NORTH ELEVATION
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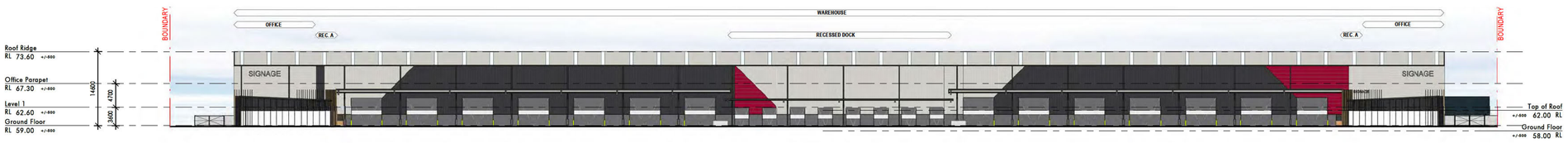

2 LOT 1 WAREHOUSE SOUTH ELEVATION
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Client

ESR

Issue	Description	Date
P1	PRE-DA	11.12.2020

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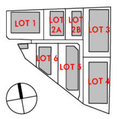
Key Plan



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Drawing Number: **11920_DA022**

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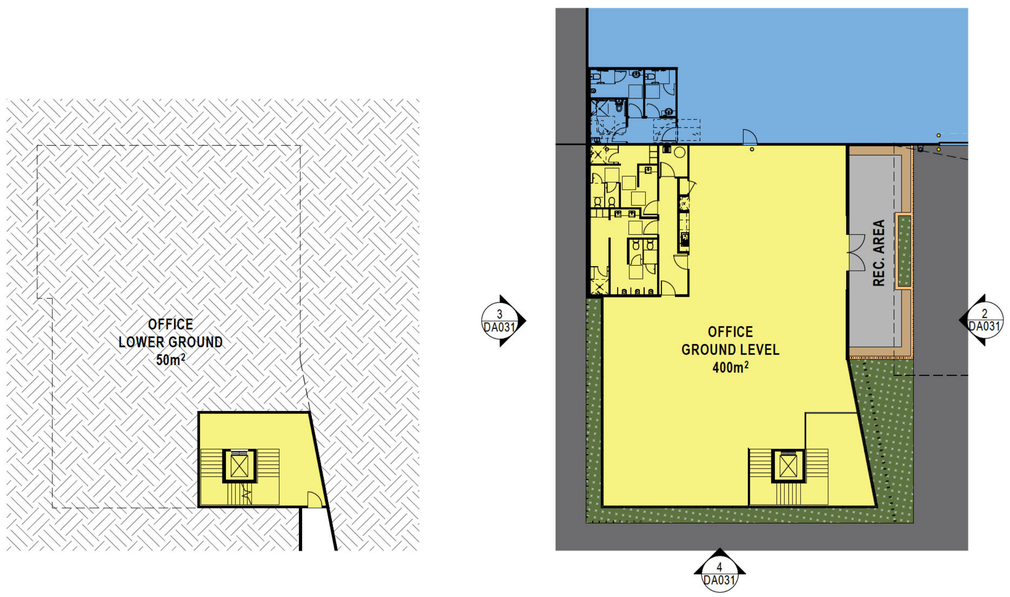

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1 : 200

1 DA031 OFFICE 1a - GROUND LEVEL
1 : 200

2 DA031 OFFICE 1a - EAST ELEVATION
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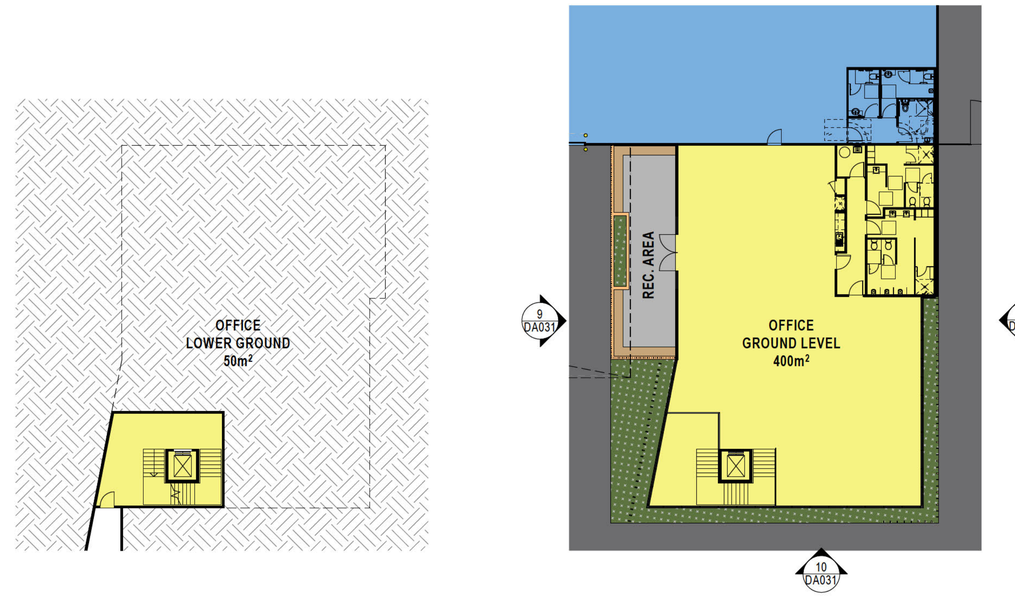
3 DA031 OFFICE 1a - WEST ELEVATION
1 : 200

4 DA031 OFFICE 1a - SOUTH ELEVATION
1 : 200



7 DA031 OFFICE 1b - LOWER GROUND
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6 DA031 OFFICE 1b - GROUND LEVEL
1 : 200

8 DA031 OFFICE 1b - EAST ELEVATION
1 : 200

9 DA031 OFFICE 1b - WEST ELEVATION
1 : 200

10 DA031 OFFICE 1b - SOUTH ELEVATION
1 : 200

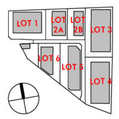
Client

ESR

Issue	Description	Date
P1	PRE-DA	11.12.2020

DRAFT

Key Plan



Project Name
ESR Kemps Creek Logistics Park

Project Address
Mamre Road, Kemps Creek

Bar Scales
0 4000 10000

Drawing Title:
Office Plans & Elevations - LOT1

Author:	Checker:	Sheet Size:	Scale:
BC/HS	MA	A1	1 : 200

Drawing Number: **11920_DA031**

Issue: **P1**

nettletontribe

nettleton tribe partnership pty ltd ABN 58 161 683 122

117 Willoughby Road, Crows Nest, NSW 2065
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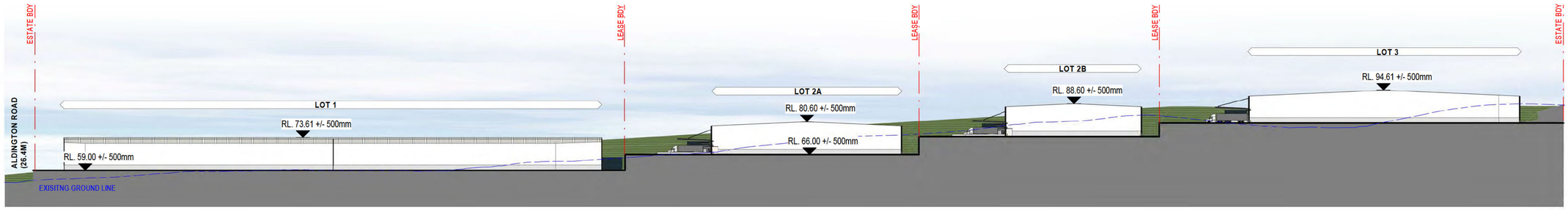
e: sydney@nettletontribe.com.au w: nettletontribe.com.au



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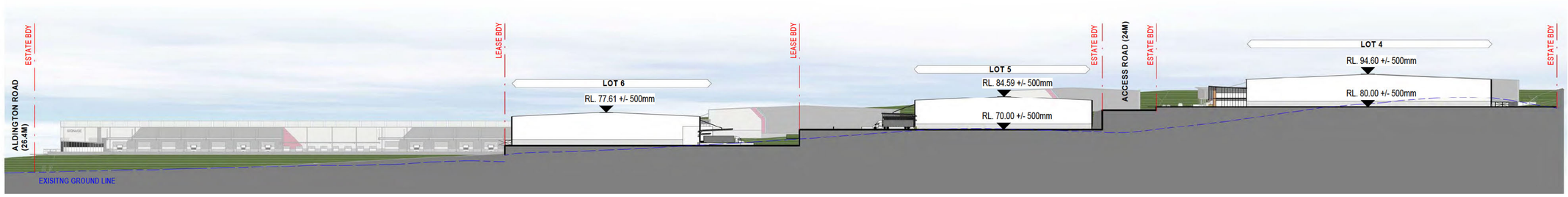

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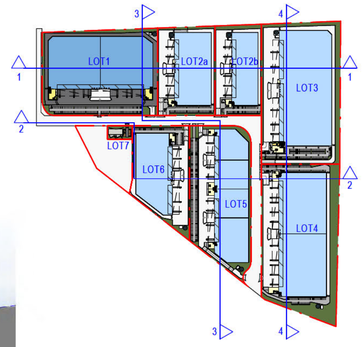

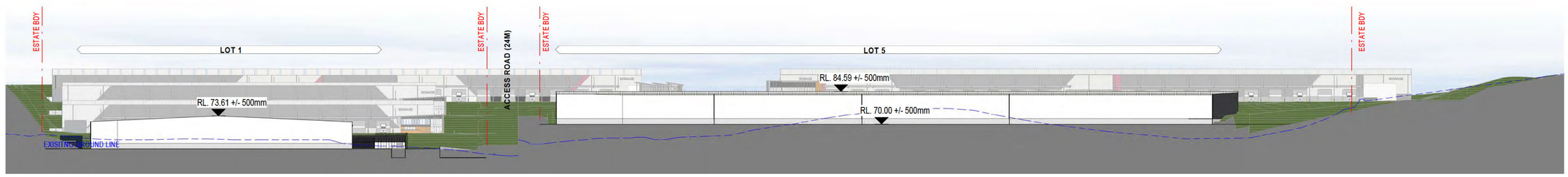

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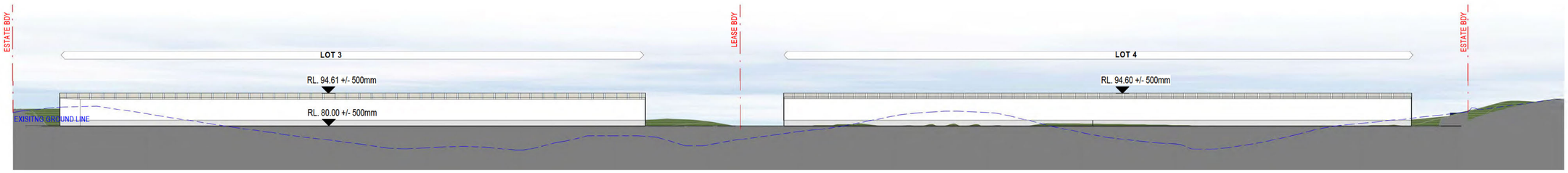

4 SITE SECTION 4
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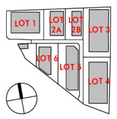
Client

ESR

Issue	Description	Date
P2	PRE-DA	11.12.2020
P1	PRE-DA	25.11.2020

DRAFT

Key Plan



Project Name
ESR Kemps Creek Logistics Park

Project Address
Mamre Road, Kemps Creek

Bar Scales
0 20000 50000

Drawing Title:
Site Sections - Sheet 1

Author: BC/HS
Checker: MA
Sheet Size: A1
Scale: As indicated
Drawing Number: 11920_DA041
Issue: P2

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APPENDIX 2 – AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : ESR Kemps Ck 7km

Client Service ID : 546950

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street
Sydney New South Wales 2000

Attention: Aaron Olsen

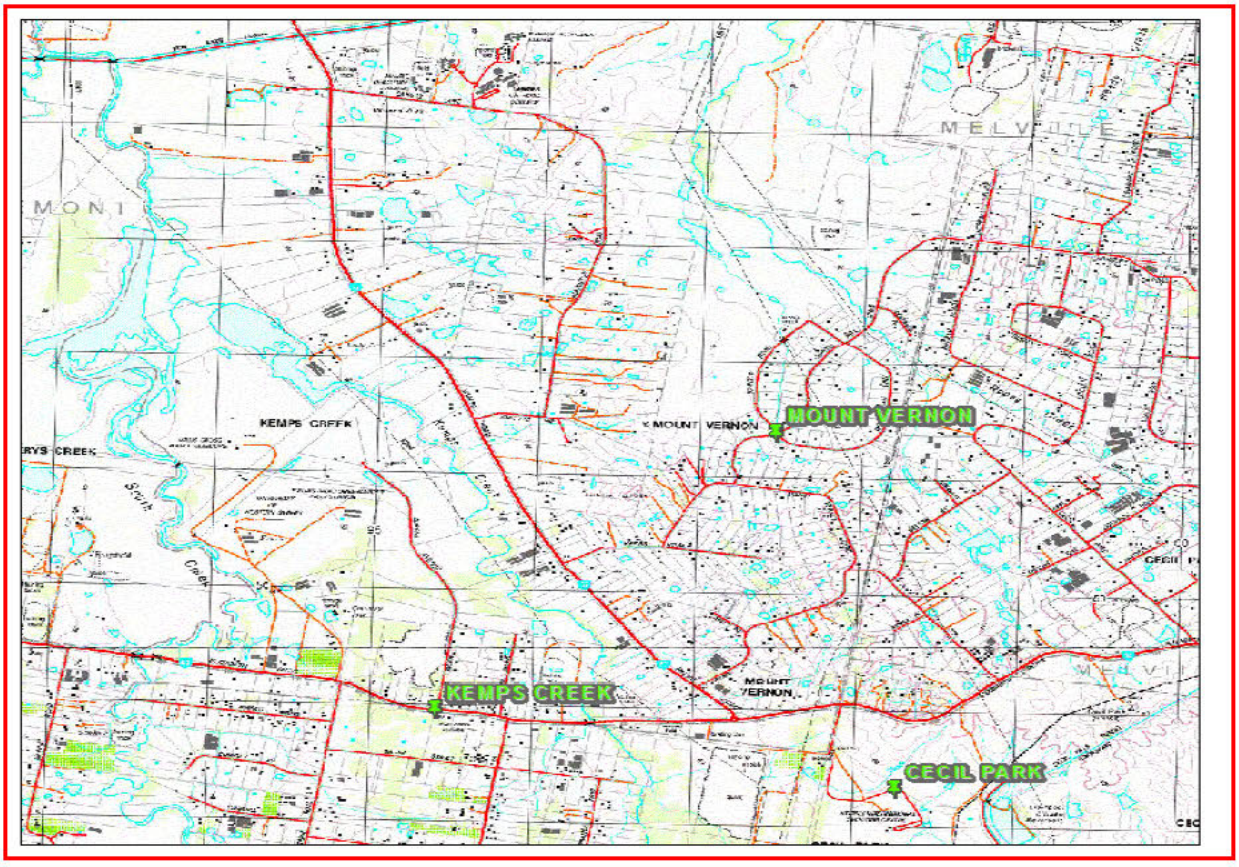
Email: aolsen@urbis.com.au

Date: 02 November 2020

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 November 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

117	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2057	PGH1;Monier PGH;	GDA	56	298268	6254015	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2046	PGH2;Monier PHG;	GDA	56	298493	6254045	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2008	SC4;Cecil Park Shooting Complex;	AGD	56	298360	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2009	SC5 Cecil Park Shooting Complex	AGD	56	298340	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2011	SC3;Cecil Park Shooting Complex;	AGD	56	298050	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2012	SC2;Cecil Park Shooting Complex;	AGD	56	297760	6247810	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2013	SC1;Cecil Park Shooting Complex;	AGD	56	297800	6247960	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2426	IFSC 11;Cecil Park;	AGD	56	297990	6248110	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2427	IFSC 10;Cecil Park;	AGD	56	297680	6247790	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2429	CPSC 3;Cecil Park;	AGD	56	297710	6248020	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2430	IFSC 7;Cecil Park;	AGD	56	298590	6247980	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**	4577	
45-5-2711	CDG1	AGD	56	293300	6252800	Open site	Valid	Artefact : -		1345,1539,4737
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-3999	PAD 2001-6	GDA	56	295825	6248852	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4006	Artefact Scatter PAD 2007-4	GDA	56	295792	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4007	Artefact Scatter 2008-4	GDA	56	297641	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4008	Isolated Object 2009-5	GDA	56	297443	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-4009	Isolated Object 2010-5	GDA	56	297432	6248202	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4010	Isolated Object 2011-5	GDA	56	297479	6248304	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4022	Artefact Scatter PAD 2023-846	GDA	56	299598	6249047	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams,Mr.Mattl					**Permits**	4577	
45-5-4049	PAD 2054-6	GDA	56	296512	6249100	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4675	Oakdale West Isolated Find (OW IF 2)	GDA	56	296627	6254876	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-4676	Oakdale West Isolated Find 3	GDA	56	295882	6254754	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-5259	Elizabeth Drive AFT 1	GDA	56	293377	6249426	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor					**Permits**		
45-5-5260	Wylde MTB PAD1	GDA	56	298467	6248411	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5261	Wylde MTB PAD2	GDA	56	298498	6248258	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5262	Wylde MTB PAD 3	GDA	56	299151	6248697	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5274	Bakers Lane SLR AFT 1	GDA	56	295915	6254097	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**		
45-5-5268	Kemps Creek IF-02	GDA	56	295030	6253859	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5269	Kemps Creek IF-01	GDA	56	294976	6253943	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5281	Cross Street Kemps Creek AFT 1	GDA	56	296973	6248376	Open site	Valid	Artefact : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**	4577	
45-5-5230	Elizabeth Precinct Isolated Find 03 (EPIF 03)	GDA	56	293375	6249980	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5231	Elizabeth Precinct Isolated Find 02 (EPIF 02)	GDA	56	293466	6250004	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5232	Elizabeth Precinct Isolated Find 01 (EPIF 01)	GDA	56	293416	6249892	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5233	Elizabeth Precinct Artefact Scatter 01 (EPAS 01)	GDA	56	293412	6249873	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5301	Kemps Creek East (KCE) PAD	GDA	56	296543	6249177	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5302	Kemps Creek West (KCW) PAD	GDA	56	296110	6249360	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5303	Kemps North West (KNW) PAD	GDA	56	295455	6250265	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5306	South Creek East (SCE)	GDA	56	293940	6251020	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5307	South Creek West T1 (SCW T1)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - North Sydney,Mr.Andrew Costello					**Permits**		
45-5-5308	South Creek West T2 (SCW T2)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5315	MRP-OS2	GDA	56	296737	6253925	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
45-5-5316	MRP-OS1	GDA	56	294413	6252254	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5234	Elizabeth Precinct PAD 03	GDA	56	293924	6249724	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					Permits		
45-5-5235	Elizabeth Precinct PAD 02	GDA	56	293927	6249529	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5236	Elizabeth Precinct PAD 01	GDA	56	293200	6249565	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5277	Cecil Park Water Reservoir AFT 1	GDA	56	299289	6248948	Open site	Valid	Artefact : -		
Contact		Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits	4577	
45-5-2568	CGD5	AGD	56	293300	6253500	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2561	GLC1	GDA	56	299580	6249001	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Annie Nicholson,Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Ge					Permits	4577
45-5-2550	CGD1	AGD	56	293350	6252800	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2552	CGD3	AGD	56	293000	6252800	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2553	CGD4	AGD	56	293300	6252500	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2554	CGD2	AGD	56	293000	6252900	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2307	P-CP9	AGD	56	298110	6248750	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2308	P-CP8	AGD	56	298580	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2310	KC/ED2;	AGD	56	297520	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-0604	Cecil Park 1	AGD	56	297350	6251470	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**	694	
45-5-0605	Cecil Park 2	AGD	56	297600	6251780	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**		
45-6-1775	Lec 9;	AGD	56	293200	6252700	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1777	Lec10;	AGD	56	293180	6253070	Open site	Valid	Artefact : -	Open Camp Site	1345,97496,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	1586,2056	
45-6-1778	Lec 11;	AGD	56	293300	6252820	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1779	Lec 12;	AGD	56	293300	6252850	Open site	Valid	Artefact : -	Open Camp Site	1345,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	2056	
45-5-0214	Kemps Creek;	AGD	56	296100	6248300	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0215	South Creek	AGD	56	293800	6249900	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	362
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0496	Fleurs1 Fleurs Radio Telescope	AGD	56	293750	6250730	Open site	Valid	Artefact : -	Open Camp Site	961,1018,98435
	Contact	**Recorders**	University of Sydney					**Permits**		
45-5-3058	EV1	AGD	56	295751	6254547	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Jim Wheeler					**Permits**		
45-5-3028	EPTA3	AGD	56	294160	6254370	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3029	EPTA4	AGD	56	294850	6253540	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3030	EPTA5	AGD	56	295170	6253570	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3031	EPTA6	AGD	56	295210	6253410	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3032	EPTA10	AGD	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3033	EPTA11	AGD	56	293340	6253690	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3034	EP-I 1	AGD	56	295260	6253400	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3035	EP-I 2	AGD	56	295190	6253500	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3036	EP-I 3	AGD	56	295240	6253710	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3095	PGH3	GDA	56	299004	6254512	Open site	Valid	Artefact : 2		103366
	Contact T Russell	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA),Noeleen Curran,Kelleher Nightingal					**Permits**		
45-5-2991	TCE 1	AGD	56	293300	6252700	Open site	Valid	Artefact : -		99352
	Contact T Russell	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	2056	
45-5-4102	Kemps Creek IF1	GDA	56	295565	6253701	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4103	Kemps Creeks IF2	GDA	56	294737	6254040	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4104	Kemps Creek (logosoc1)	GDA	56	295307	6254094	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4105	Kemps Creek (logosoc2)	GDA	56	295265	6254066	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4525	Oakdale South IF2	GDA	56	297566	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4526	Oakdale South AS2	GDA	56	297513	6254618	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4527	Oakdale South IF1	GDA	56	297516	6254817	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4528	Oakdale South AS3	GDA	56	297508	6254390	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4529	Oakdale South AS4	GDA	56	297190	6253944	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4947	Oakdale South AS5	GDA	56	297775	6254796	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		
45-5-4948	Oakdale South IF3	GDA	56	297752	6254842	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5104	PAD 2	GDA	56	294516	6249243	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5133	Oakdale West 18 Isolated Find 01	GDA	56	296303	6254317	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5134	Oakdale West 18 Artefact Scatter 02	GDA	56	296886	6254515	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5135	Oakdale West 18 Artefact Scatter 03	GDA	56	296777	6254242	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5136	Oakdale West 18 Isolated Find 02	GDA	56	296659	6254589	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5137	Oakdale West 18 Artefact Scatter 01	GDA	56	297167	6254820	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5187	MSP-01	GDA	56	294210	6254558	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5188	MSP-02	GDA	56	293594	6253823	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5189	MSP-03	GDA	56	293501	6253805	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5190	MSP-04	GDA	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5037	UC AS 23	GDA	56	298800	6248150	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Ms.Fenella Atkinson					**Permits**	4303	
41-5-0014	M12-AS-04	GDA	56	294361	6250957	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - Newcastle,Miss.Chelsea Jones					**Permits**		
45-5-5186	Mamre Road Artefact Scatter 1901 (MAM AS1901)	GDA	56	295114	6253373	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-2615	Area D	AGD	56	292900	6253450	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	1586	

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-3106	Kemps Creek (KC PAD 1)	AGD	56	296000	6248875	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : 1		97456,98064
	Contact T Russell	**Recorders**	Jo McDonald Cultural Heritage Management see GML						**Permits**	
45-5-4374	CP AS1	GDA	56	298104	6249004	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.josh madden						**Permits**	
45-5-4937	M12-AS-01	GDA	56	297650	6248694	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Neville Baker,Sydney Water-Parramatta						**Permits**	
45-5-4749	M12 A4	GDA	56	293785	6251051	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-4767	M12 A5	GDA	56	296537	6249457	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-5330	Elizabeth Precinct Isolated Find 05 (EP IF 05)	GDA	56	293287	6249478	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5331	Elizabeth Precinct Isolated Find 04 (EP IF 04)	GDA	56	293336	6249535	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5358	OW 19 IF 2	GDA	56	296486	6254788	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5359	OW 19 IF 1	GDA	56	296535	6254830	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5340	MSP-05	GDA	56	294016	6254604	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5341	MSP-06	GDA	56	294123	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5342	MSP-07	GDA	56	294146	6254469	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5343	MSP-08	GDA	56	294155	6254417	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5344	MSP-09	GDA	56	294469	6253984	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5345	MSP-10	GDA	56	294548	6253896	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5346	MSP-11	GDA	56	293382	6254091	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

APPENDIX 3 – QUESTIONNAIRE

1. **Cultural connection: Please describe the nature of your cultural connection to the country on which the subject area is situated. Please include any relevant cultural knowledge or knowledge of Aboriginal objects or places within the subject area. Have you ever lived in or near the subject area? If you are a Traditional Owner, please state this clearly.**

2. **Representing your community members: Please state who you or your organisation represents. Do you or your organisation represent other members of the Aboriginal community? If so, please describe how information is provided to the other members, and how their information and knowledge may be provided back to the Proponent and Urbis.**

3. **Previous experience: Please list your relevant (for example, in the area of the proposed project) previous experience in providing cultural heritage advice and survey participation.**

4. **Schedule of Rates: Please provide your Certificate of Currency including Product and Public Liability Insurance and Worker's Compensation. Please also schedule of rates (hourly/half day/day) for fieldwork participation, and include any expenses you may expect to incur, and these will be sought to be reimbursed. Please note that it is for the discretion for the Proponent to decide if they invite RAPs for site works and the consultation process does not guarantee paid employment.**

Meggan Walker

From: Carolyn .H [redacted]
Sent: Thursday, 11 February 2021 8:19 PM
To: Andrew Crisp; Meggan Walker
Subject: Fw: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).
Attachments: A1.PL2022.pdf; A1.WC2021.pdf

Follow Up Flag: Flag for follow up
Flag Status: Flagged

From: Carolyn .H [redacted]
Sent: Thursday, 11 February 2021 8:11 PM
To: Meggan Walker <mwalker@urbis.com.au>
Subject: Fw: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).

INDIGENOUS SERVICES PTY LTD
Contact: Carolyn Hickey
[redacted]

Hi Andrew,
Please find attached the completed Questionnaire and Insurances.
A1 would like to be included in the field work.
Kind Regards
Carolyn Hickey

From: Meggan Walker <mwalker@urbis.com.au>
Sent: Friday, 15 January 2021 11:46 AM
To: Andrew Crisp <acrisp@urbis.com.au>
Cc: Balazs Hansel <bhansel@urbis.com.au>
Subject: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).

Hello All,

Thank you for your registration for our project at 290-308 Aldington Road, Kemps Creek.
Please see the attached Stage 2 and Stage 3 letter for this project.
provide responses in writing, preferably by response email, by **5pm 12th February 2021,** to either myself or Andrew Crisp (details below):

Andrew Crisp
Urbis Pty Ltd
Senior Consultant (Archaeology)
02 8233 7642
Acrisp@urbis.com.au
Level 8/123 Pitt Street, Sydney, 2000.

Meggan Walker

From: Biamanga [redacted]
Sent: Tuesday, 9 February 2021 2:40 PM
To: Meggan Walker
Subject: Re: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).

Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of 290-308 Aldington Road, Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road,Kemps Creek, NSW

Please keep me informed on any further developments

On Fri, Jan 15, 2021 at 11:50 AM Meggan Walker <mwalker@urbis.com.au> wrote:

> Hello All,
>
> Thank you for your registration for our project at 290-308 Aldington Road, Kemps Creek.
>
> Please see the attached Stage 2 and Stage 3 letter for this project.
>
> provide responses in writing, preferably by response email, by **5pm 12th February 2021,** to either myself or Andrew Crisp (details below):
>
> Andrew Crisp
>
> Urbis Pty Ltd
>
> Senior Consultant (Archaeology)
>
> 02 8233 7642
>
> Acrisp@urbis.com.au
>
> Level 8/123 Pitt Street, Sydney, 2000.
>
> Please let us know if you have any questions or queries.
>
> Kind regards,
>
> **MEGGAN WALKER**
> CONSULTANT
>
> **D** +61 2 8233 7626
> **T** +61 2 8233 9900
> **E** mwalker@urbis.com.au

Meggan Walker

From: Goobah <goobahchts@gmail.com>
Sent: Tuesday, 19 January 2021 9:42 AM
To: Meggan Walker
Subject: Re: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).
Attachments: Goobah Current 1 Workers Insurance Certificate of Currency (9).pdf; Goobah Current 1 GIO Business Protect Certificate of Currency GPM005192282.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of 290-308 Aldington Road, Kemps Creek.

This is to confirm that we support the above proposed redevelopment and also confirm that we are traditional owners, we have participated in many surveys in western and greater Sydney including {WSA} Western Sydney Airport, Mt Gilead and many more, we have attached my insurances with our rate of pay o [redacted] and wish to be considered for field work with the redevelopment of 290-308 Aldington Road, Kemps Creek, please confirm.

On Fri, Jan 15, 2021 at 11:50 AM Meggan Walker <mwalker@urbis.com.au> wrote:

> Hello All,
>
> Thank you for your registration for our project at 290-308 Aldington Road, Kemps Creek.
>
> Please see the attached Stage 2 and Stage 3 letter for this project.
>
> provide responses in writing, preferably by response email, by **5pm 12th February 2021,** to either myself or Andrew Crisp (details below):
>
> Andrew Crisp
>
> Urbis Pty Ltd
>
> Senior Consultant (Archaeology)
>
> 02 8233 7642
>
> Acrisp@urbis.com.au
>
> Level 8/123 Pitt Street, Sydney, 2000.
>
> Please let us know if you have any questions or queries.
>
> Kind regards,

Meggan Walker

From: Darleen Johnson <murrabidgeemullangari@yahoo.com.au>
Sent: Tuesday, 9 February 2021 9:15 AM
To: Meggan Walker
Subject: Re: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Meggan
I have read the project information and methodology for the above project, I endorse the recommendations made.
Kind regards
Ryan Johnson
[redacted]

On Friday, 15 January 2021, 11:56:05 am AEDT, Meggan Walker <mwalker@urbis.com.au> wrote:

Hello all,

Please see the below.

The email attachment was too large for your inbox, so please find the stage 2 and 3 document available for download here: P0028928_KempsCreek_Stage2.3_20210115_Reduced.pdf

Please let us know if you have any issues with access, and please provide comments on the Stage 2 and 3 document by **COB 12th February 2021.**

Kind regards,

MEGGAN WALKER
CONSULTANT

D +61 2 8233 7626
T +61 2 8233 9900
E mwalker@urbis.com.au

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URBIS

ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

Meggan Walker

From: Murramarang <murramarangchts@gmail.com>
Sent: Tuesday, 19 January 2021 1:10 PM
To: Meggan Walker
Subject: Re: ACHA Stage 2 & 3 Document - 290-308 Aldington Road, Kemps Creek (Our Ref P0028928).

Follow Up Flag: Follow up
Flag Status: Flagged

290-308 Aldington Road, Kemps Creek

This is to confirm that we support stages 2 and 3 for this project and want to be kept informed on any further developments

On Fri, Jan 15, 2021 at 11:50 AM Meggan Walker <mwalker@urbis.com.au> wrote:

> Hello All,
>
> Thank you for your registration for our project at 290-308 Aldington Road, Kemps Creek.
>
> Please see the attached Stage 2 and Stage 3 letter for this project.
>
> provide responses in writing, preferably by response email, by **5pm 12th February 2021,** to either myself or Andrew Crisp (details below):
>
> Andrew Crisp
>
> Urbis Pty Ltd
>
> Senior Consultant (Archaeology)
>
> 02 8233 7642
>
> Acrisp@urbis.com.au
>
> Level 8/123 Pitt Street, Sydney, 2000.
>
> Please let us know if you have any questions or queries.
>
> Kind regards,

From:	Aaron Olsen
Cc:	Andrew Crisp; Balazs Hansel; Owen Barrett; Meggan Walker
Bcc:	"Reception@deerubbin.org.au"; "cazadirect@live.com"; "James.eastwood@y7mail.com"; "barkingowlcorp@gmail.com"; "biamangachts@gmail.com"; "clive.freeman@y7mail.com"; "corroboreecorp@bigpond.com"; "cullendullachts@gmail.com"; "didgengunawalclan@yahoo.com.au"; "goobahchts@gmail.com"; "gulagachts@gmail.com"; "gunjeewong@yahoo.com.au"; "philipkhan.acn@live.com.au"; "merrigarn@hotmail.com"; "muragadi@yahoo.com.au"; "murrabidgeemullangari@yahoo.com.au"; "murramarangchts@gmail.com"; "danny@tocomwall.com.au"; "Waawaar.awaa@gmail.com"; "waarlan12@outlook.com"; "wurrumay@hotmail.com"; "butuheritage@gmail.com"; "ngambaaculturalconnections@hotmail.com"; "kayla_87_@hotmail.com"; "yulayculturalservices@gmail.com"
Subject:	290-308 Aldington Road, Kemps Creek – Aboriginal Cultural Heritage Assessment – Stage 4 – Review of Draft ACHAR and Draft ATR
Date:	Thursday, 20 May 2021 10:37:00 AM
Attachments:	P0028928_ATR_D08_Compressed.pdf P0028928_ESR Kemps Creek_ACHA_D06_Compressed.pdf image002.png image003.png image004.png image005.png image006.png

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and a draft Archaeological Technical Report (ATR) for your consideration and comment. Appendices have been omitted at this stage to reduce file sizes.

You will note that parts of the draft ACHAR and draft ATR include yellow highlighted text. These sections will be amended after completion of Stage 4 of the ACHA process.

Please provide any comments in relation to the draft ACHAR and draft ATR by **17 June 2021** to:

Andrew Crisp
Senior Consultant
Urbis Pty Ltd
Level 8, 123 Pitt Street
Sydney NSW 2000
E: acrisp@urbis.com.au
P: 02 8233 7642

If you have any questions in the meantime, please let us know.

Kind regards

AARON OLSEN
CONSULTANT

D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au

ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. **Click here to read Urbis' response to COVID-19.**

Meggan Walker

From: Aaron Olsen
Sent: Tuesday, 15 June 2021 4:42 PM
To: Andrew Crisp
Cc: Owen Barrett
Subject: FW: 290-308 Aldington Road, Kemps Creek – Aboriginal Cultural Heritage Assessment – Stage 4 – Review of Draft ACHAR and Draft ATR

[redacted]

AARON OLSEN
CONSULTANT

D +61 2 8233 9957
T +61 2 8233 9900
E aolsen@urbis.com.au

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ANGEL PLACE, LEVEL 8, 123 PITT STREET
SYDNEY, NSW 2000, AUSTRALIA

Our highest priority is the health and wellbeing of our people, clients and community. **Click here to read Urbis' response to COVID-19.**

From: philip khan <philipkhan.acn@live.com.au>
Sent: Tuesday, 15 June 2021 12:26 PM
To: Aaron Olsen <aolsen@urbis.com.au>
Subject: Re: 290-308 Aldington Road, Kemps Creek – Aboriginal Cultural Heritage Assessment – Stage 4 – Review of Draft ACHAR and Draft ATR

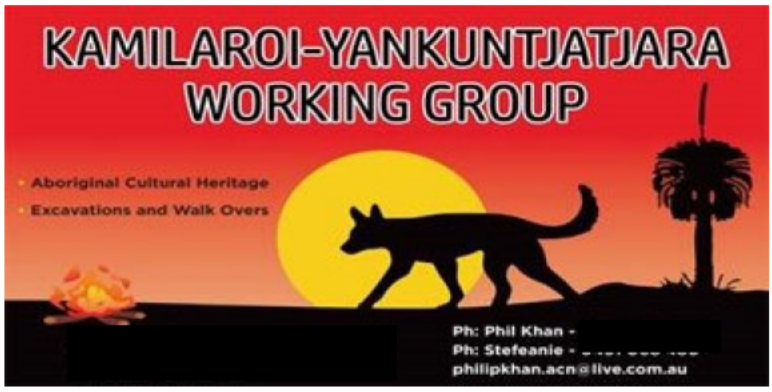
Dear Aaron,

Thank you for your ACHA for 290- 308 Aldington Road, Kemps Creek, us Aboriginal people have walked this land for tens of thousands of years and we continue to do so today. We hold a deep connection to the land, skies and water

ways. We would like to agree to your recommendations, will there be an interpretation plan for this project?, we look forward to working alongside you on this project.

Kind Regards

Kadibulla Khan



From: Aaron Olsen <aolsen@urbis.com.au>
Sent: Thursday, 20 May 2021 10:37 AM
Cc: Andrew Crisp <acrisp@urbis.com.au>; Balazs Hansel <bhansel@urbis.com.au>; Owen Barrett <obarrett@urbis.com.au>; Meggan Walker <mwalker@urbis.com.au>
Subject: 290-308 Aldington Road, Kemps Creek – Aboriginal Cultural Heritage Assessment – Stage 4 – Review of Draft ACHAR and Draft ATR

Good morning

Thank you again for registering your interest in the above project. As part of Stage 4 of the Aboriginal Cultural Heritage Assessment (ACHA), we now provide a draft Aboriginal Cultural Heritage Assessment Report (ACHAR) and a draft Archaeological Technical Report (ATR) for your consideration and comment. Appendices have been omitted at this stage to reduce file sizes.

You will note that parts of the draft ACHAR and draft ATR include yellow highlighted text. These sections will be amended after completion of Stage 4 of the ACHA process.

Please provide any comments in relation to the draft ACHAR and draft ATR by **17 June 2021** to:

Andrew Crisp
Senior Consultant
Urbis Pty Ltd
Level 8, 123 Pitt Street
Sydney NSW 2000
E: acrisp@urbis.com.au
P: 02 8233 7642

If you have any questions in the meantime, please let us know.

Kind regards

AARON OLSEN
CONSULTANT

D +61 2 8233 9957
T +61 2 8233 9900

E aolsen@urbis.com.au

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COMMUNITIES

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SYDNEY, NSW 2000, AUSTRALIA

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APPENDIX D ARCHAEOLOGICAL TECHNICAL REPORT

URBIS

ARCHAEOLOGICAL TECHNICAL REPORT

290-308 Aldington Road, 59-62 and
63 Abbotts Road, Kemps Creek

Prepared for
ESR AUSTRALIA
17 June 2021

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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EXECUTIVE SUMMARY

This Archaeological Technical Report (ATR) has been prepared to accompany a detailed Aboriginal Cultural Heritage Assessment (ACHA) which forms part of the Environmental Impact Assessment (EIS) for a State Significant Development (SSD) application 9080531. This assessment has been prepared by Urbis on behalf of ESR Australia (the proponent).

The SSD application is for the construction of a logistics park for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, as well as 59-62 and 63 Abbotts Road, Kemps Creek, NSW (hereafter referred as the 'subject area'). The ACHA informed the preparation of the present Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany the SSD application. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

Following the preparation of the ACHAR and the field survey undertaken on 16th February 2021, test excavation was deemed prudent for the subject area. This decision was based on the presence of Aboriginal artefacts observed within an exposed vehicle track and undisturbed landforms in proximity to freshwater.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHAR for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) (CoP).

Test excavation was conducted from Monday 19th April 2021 to Monday 3rd May 2021 covering a variety of landforms with the aim of testing these landscape features for any potential sub-surface archaeological deposits.

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 of testing including the excavation of up to 171 (one hundred and seventy-one) 50 cm by 50 cm test pits in a systematic transect system at a spacing of 10m or 20m. The location of the test pits was informed by the results of the archaeological survey and the predictive model of the ACHAR.
- All excavated material was wet sieved through a 5mm metal sieve station.

In total, 171 test pits were excavated from 20 transects (Transect A – Transect T) across all landform types within the subject area to provide a comprehensive sample.

The test excavation identified low density subsurface Aboriginal archaeological deposits (13 artefacts from 12 test pits).

The predictive model formulated for the ACHAR (see Section 2.7 of ACHA) anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present – including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Altogether, thirteen (13) artefacts were recovered during the test excavation programme.
- The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests.
- The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area.

- While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation.
- Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.
- The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).
- The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.
- The subject area has been assessed as possessing low historical value due to lack of historical connections.
- The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

Following the results of the test excavation program it is anticipated that the proposed works will result in direct harm to subsurface Aboriginal archaeological deposits which constitutes a low scientific and moderate cultural significant site(s).

The project can proceed in accordance with the following recommendations:

Recommendation 1 – Surface Collection

Following SSDA approval and prior to construction, surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

- Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)
- Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)
- Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)

No further subsurface archaeological excavation is warranted.

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared in consultation with the Registered Aboriginal Parties (RAPs) for inclusion in the construction management plan and site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites and artefacts to be aware of (i.e. stone tools), under the NPW Act, and the requirements of an ‘archaeological chance find procedure’ (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as “PowerPoint” for any face-to-face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any Aboriginal objects, archaeological deposits be uncovered during any site works, a Chance Find Procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved ‘out of the way’ without assessment.
2. The archaeologist and Aboriginal representative on site examine the find, provides a preliminary assessment of significance, records the item for the AHIMS register and decides on appropriate management. Such management may require further consultation with the Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC), preparation of a research design and archaeological investigation/salvage methodology and decision on temporary care and control.
3. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.

4. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this assessment and revised accordingly.

5. Works in the vicinity of the find can only recommence when all management measure all implemented, and the find is removed from the activity area. Should the find be an unmovable item such as an engraving or grinding groove located on a sandstone surface, further management measures will need to be introduced to avoid harm to the find.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.

2. Site supervisor or other nominated manager must notify the NSW Police and DPC.

3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.

4. Management recommendations are to be formulated by the Police, DPC and site representatives.

5. Works are not to recommence until the find has been appropriately managed.

INTRODUCTION AND BACKGROUND

1.1. PROJECT BACKGROUND

Urbis was engaged by ESR Australia (the Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, as well as 59-62 and 63 Abbotts Road, Kemps Creek, NSW (hereafter referred as the 'subject area'). The ACHA informed the preparation of the present Aboriginal Cultural Heritage Assessment Report (ACHAR), which will accompany State Significant Development (SSD) application 9080531. This Archaeological Technical Report (ATR) has been prepared to accompany the ACHAR.

The subject area is located within the City of Penrith Local Government Area (LGA), approximately 37km west of the Sydney CBD (Figure 1 and Figure 2). It is approximately 32ha and is situated approximately 900m east of Kemps Creek on the west-facing slopes of the valley associated with that waterway. The subject area is currently utilised for agricultural purposes and includes dwellings, agricultural sheds, dams, fencing and other farm improvements.

It is bound on all sides by semi-rural properties. The north-west corner of the subject area has frontages to Aldington Road and Abbotts Road

1.2. PROPOSED DEVELOPMENT

The Proponent is proposing to redevelop the subject area to provide a logistics park with 7 lots of warehouse and ancillary office floorspace (Figure 3).

Site preparatory works include:

- Demolition and clearing of all existing built form structures and vegetation;
- Bulk earthworks including 'cut and fill' to create flat development platforms for the proposed buildings, and topsoiling, grassing and site stabilisation works;
- Subdivision of the site into 7 individual allotments.
- Construction of a new industrial estate at the subject area comprising 7 allotments and a total GFA of 145,821m^2, including 139,621m^2 of warehousing floorspace and 5,950m^2 of ancillary office floorspace
- 1 new on-site retail cafe building comprising 200m^2 of floorspace;
- Construction of a new internal road layout and parking for 777 vehicles;
- Associated site servicing works and ancillary facilities, including OSD detention basin;
- Associated site landscaping; and
- Works-in-kind (WIK) arrangements through a Voluntary Planning Agreement (VPA) for external road upgrades including to Aldington Road and Abbots Road, and a new signalised intersection at Mamre Road and Abbotts Road.

This ATR is intended to detail the methodology and results of excavations at the subject area. Refer to Section 1.2 of the ACHA for detailed information regarding the proposed development at the subject area.

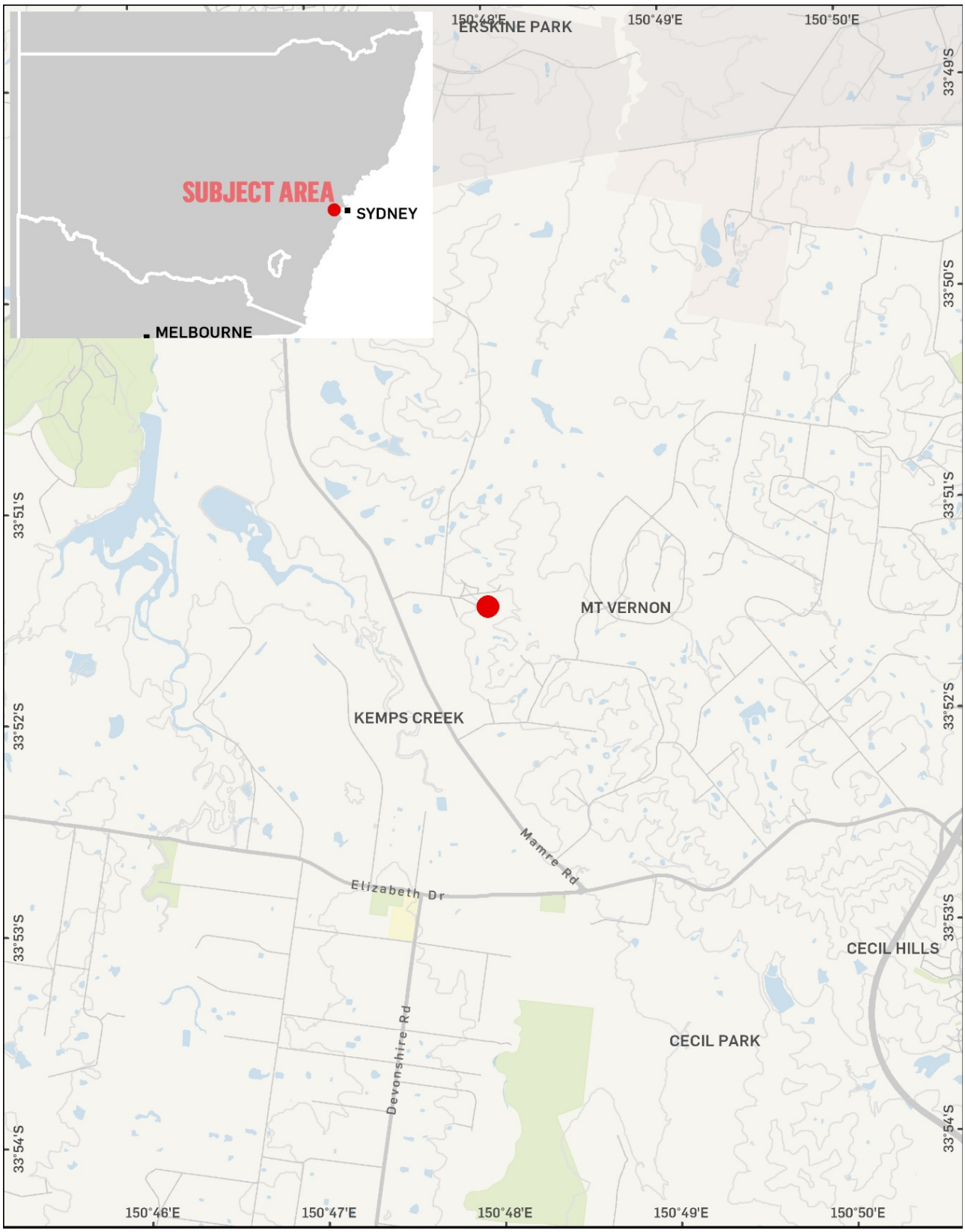

Figure 1 – Regional location

Figure 2 – Subject area

Figure 3 – Concept masterplan for subject area
Source: ESR Australia/Nettleton Tribe

1.3. OBJECTIVES AND REQUIREMENTS OF THIS REPORT

This ATR has been prepared in accordance with the following statutory guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) (the Code of Practice).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

This ATR has been prepared to address the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

This report complies with the requirements of the Code of Practice. Please refer to Table 1 for details on where each requirement is met. Please note, the below table refers to sections of the accompanying ACHAR for some requirements. Where this is the case, the ACHAR provides a more detailed overview of the requirement, which will be summarised within this ATR. The relevant sections of both the ACHAR and the present ATR are indicated.

Table 1 – Code of Practice Requirements

Requirement	ATR
1 – Review previous archaeological work	ACHAR Section 2.1 ATR Section 3
2 – Review the Landscape Context	ACHAR Section 2.2 ATR Section 2
3 – Summarise and discuss the local and regional character of Aboriginal land use and its material traces.	ACHAR Section 2.1.1 – 2.1.2 ATR Section 3
4 – Predict the nature and distribution of evidence	ACHAR Section 2.4 ATR Section 4
5 – Archaeological Survey	ACHAR Section 2.7 ATR Section 6.1.1 – 6.1.5
6 – Site definition	ATR Section 7.1 & Appendix C
7 – Site recording	ATR Section 7.1 & Appendix C
8 – Location information and geographic reporting	ATR Section 7.1 & Appendix C
9 – Record survey coverage data	ACHAR Section 2.7 ATR Section 6.1.1
10 – Analyse survey coverage	ACHAR Section 2.7 ATR Section 6.1.1
11 – Archaeological Report content and format	The ACHAR and ATR have been formatted in accordance with the requirements of the Code of Practice.
12 – Records	Records have been stored and will be made available upon request.
13 – Notifying DECCW and reporting	This assessment has complied with the Code of Practice. Urbis will provide all information on request.
14 – Test Excavation which is not excluded from the definition of harm	No excavation was undertaken in any of the identified areas or exclusion zones.

Requirement	ATR
15 – Pre-Conditions to carrying out Test excavation.	Urbis has complied with all requirements for notification, strategy and consultation prior to commencing excavation.
16 – Test excavation that can be carried out in accordance with this code.	Test excavation was undertaken in accordance with the requirements of the Code of Practice. Management protocols for objects uncovered are in accordance with the protocols.
17 – When to stop test excavation.	Test excavation was ceased following the testing of an adequate sample of the subject area.
18 – Artefact recording.	Artefact recording complies with the requirements of the Code of Practice.
19 – Attribute recording	Attribute recording complies with the requirements of the Code of Practice.
20 – Photography and drawing	All photos and section drawings available on request.

1.4. ABORIGINAL COMMUNITY CONSULTATION

Consultation with Aboriginal community was undertaken in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines) as part of the ACHA process. A brief summary of the consultation to date is included in Table 2 below. Full details of the consultation process followed is included in Section 3 of the accompanying ACHA.

Table 2 - Consultation summary table

Stage	Date commenced	Date completed	Comment
1.1	2 November 2020	2 November 2020	The search identified the subject area as freehold tenure, which extinguishes Native Title.
1.2	6 November 2020	3 December 2020	A total of 61 Aboriginal groups and individuals with a potential interest in the subject area were identified.
1.3	4 December 2020	31 December 2020	A total of 24 groups registered interested in the project (see Table 3 below).
1.6	18 January 2021	18 January 2021	A list of all Registered Aboriginal Parties (RAPs) was provided to the DPC and Deerubbin Local Aboriginal Land Council.
2	15 January 2021	15 January 2021	An information pack, which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to all RAPs via email.
3	15 January 2021	12 February 2021	Five responses were received to the Stage 2 information pack. The response are included in the ACHAR.
4	20 May 2021	17 June 2021	One response was received to the Stage 4 draft ACHAR. The response are included in the final ACHAR.

The Registered Aboriginal Parties (RAPs) for the project are listed in Table 3 below.

Table 3 – Registered Aboriginal Parties (RAPs)

Name	Contact
Deerubbin Local Aboriginal Land Council	Kevin Cavanagh
A1 Indigenous Services	Carolyn Hickey
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood
Barking Owl Aboriginal Corporation	Jody Kulakowski
Biamanga	Janaya Smith

Name	Contact
Clive Freeman	Clive Freeman
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Cullendulla	Corey Smith
Didge Ngunawal Clan	Lillie Carroll & Paul Boyd
Goobah Developments	Basil Smith
Gulaga	Wendy Smith
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Merrigarn	Shaun Carroll
Muragadi Heritage Indigenous Corporation	Jesse Johnson
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson & Ryan Johnson
Murramarang	Roxanne Smith
Tocomwall	Danny Franks
Waawaar Awaa Aboriginal Corporation	Rodney Gunther
Wailwan Aboriginal Group	Philip Boney
Wurrumay Pty Ltd	Vicky Slater
Butucarbin Aboriginal Corporation	Lowanna Gibson
Ngambaa Cultural Connections	Kaarina Slater
Woronora Platwau Gundangara Elders Council	Kayla Williamson

1.5. PERSONNEL AND AUTHORSHIP

This ATR has been prepared by Owen Barrett, Urbis Consultant Archaeologist, and Andrew Crisp, Urbis Senior Archaeologist. Review and quality control were undertaken by Balazs Hansel, Urbis Associate Director Archaeology.

Owen Barrett holds a Bachelor of Arts (Archaeology and Paleoanthropology) from the University of New England. Andrew Crisp holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney. Balazs Hansel holds a Masters (History) from the University of Szeged in addition to Masters (Archaeology and Museum Studies) from the University of Szeged and is currently completing a PhD (Archaeology) at the University of Sydney.

The personnel involved in the test excavation team are listed in Table 4.

Table 4 – Test Excavation Team

Name	Organisation	Role
Andrew Crisp	Urbis	Excavation Director
Meggan Walker	Urbis	Archaeologist & Recording
Owen Barrett	Urbis	Archaeologist & Recording
Aaron Olsen	Urbis	Archaeologist & Recording
Sam Richards	Urbis	Archaeologist
Jamie Currell	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Grant Fenton	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Tyrone Pol	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Kadibulla Kahn	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Stefeanie Naiker	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Adam Gunther	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
David Whitton	Kamilaroi Yankuntjatjara Working Group	Cultural Heritage Officer
Phil Boney	Wailwan Aboriginal Group	Cultural Heritage Officer
Braydon MacDougall	Wailwan Aboriginal Group	Cultural Heritage Officer
Joshua MacDougall	Wailwan Aboriginal Group	Cultural Heritage Officer
Steven Knight	Deerubbin Local Aboriginal Land Council	Cultural Heritage Officer

2. ENVIRONMENTAL CONTEXT

2.1. OVERVIEW OF ENVIRONMENT

The environmental context for the study area is elaborated in section 2.2 of the accompanying ACHAR. Presented here is a summary as identifies through desktop assessment and field survey.

- The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. There are two soil landscapes identified within the subject area (Figure 13), the Luddenham soil landscape and the Blacktown soil landscape.
- The subject area includes two First Order waterways running westward from elevated ground on its eastern boundary. The confluence into a Second Order waterway is in the centre of the subject area and forms a tributary of Kemps Creek, which is located approximately 1km west of the subject area. These waterways have been dammed for agricultural purposes. The majority of the subject area is within 200m of one or more of these waterways.
- The subject area has been subjected to varying levels of disturbance associated with agricultural activities such as land clearing, ploughing and subsequent erosion, the construction of sheds and fences and extensive modification for roads, structures and dams. Section 2.3 in the ACHAR provides a detailed description of historical land use.

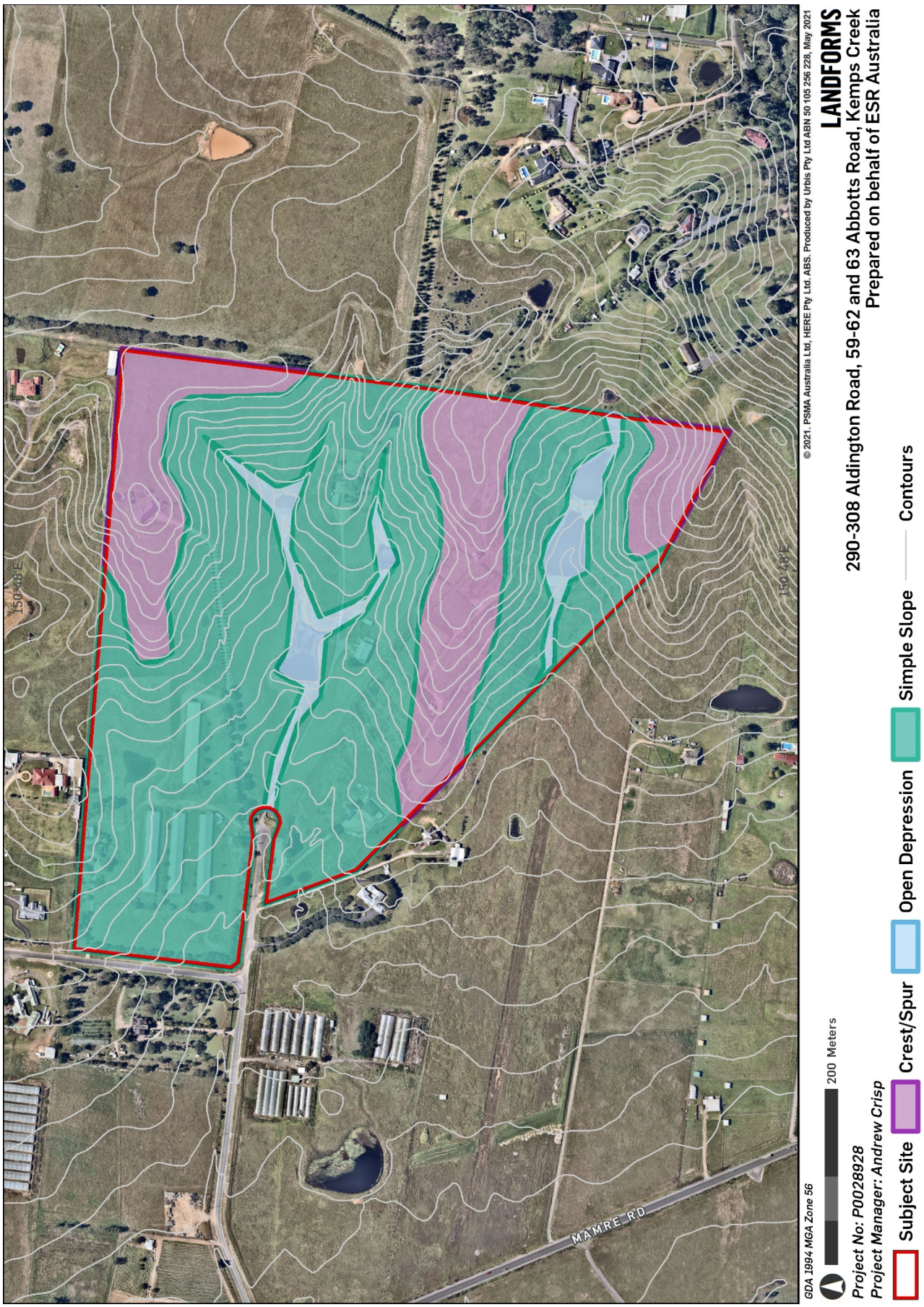

Figure 4 – Landforms

3. ARCHAEOLOGICAL CONTEXT

A detailed discussion of the archaeological context of the subject area is provided in Section 2 of the accompanying ACHAR. This includes the search of the Aboriginal Heritage Information Management System (AHIMS) previous archaeological investigations pertinent to the subject area and broader region. Presented here is a summary of the archaeological context of the subject area.

There are no identified Aboriginal sites or objects within the study area and two sites within a 1km radius. These consist of artefact scatters along a minor tributary of Ropes Creek.

A wider Extensive AHIMS search area that covers approximately 7km^2 identified 117 Aboriginal registered Aboriginal sites. These included grinding grooves, a modified tree, artefact scatters, isolated finds and potential archaeological deposits (PADs).

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area. It lists recorded sites identified during previous archaeological survey effort. The wider surroundings of the subject area have experienced various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments. Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.

4. PREDICTIVE MODEL

The following predictive model reproduced in Table 4 was developed to inform the accompanying ACHAR. For a detailed description on the development of the predictive model, refer to Section 2.4 of the accompanying ACHAR.

The predictive model took accounts for the results of the desktop study and field survey including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to a water source.
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

In summary, due to the hydrology and archaeologically sensitive landscape features, and the identification of surface artefacts the subject area retains moderate to high potential for the presence of Aboriginal archaeological resources, isolated finds, artefact scatters and/or PADs. This informed the decision to undertake archaeological test excavation at the subject area in accordance with The Code.

Table 5 – Predictive Model

Site type	Description	Potential	Justification
Artefact Scatters/ Camp Sites	Artefact scatters/camp sites represent past Aboriginal occupation and possible stone knapping activities and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface accumulation 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 and elevated land along or adjacent to rivers and creeks.	Moderate to high	▪ The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. ▪ The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. ▪ Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. 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 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.	Moderate to high	▪ The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. ▪ The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. ▪ Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.

Site type	Description	Potential	Justification
PAD	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. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near Third Order and above watercourses; ridge lines, ridge tops and sand dune systems.	Moderate to high	▪ The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. ▪ The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. ▪ Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Scarred Trees	Scarred trees are the results of the stripping-off the bark by Aboriginal people for various reasons, 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 (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar that can heal by the regrowth of the bark or remain an exposed scar for a prolonged period. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.	Nil	▪ Historical vegetation clearance in the subject area has removed all original trees.
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	Low	▪ The geology within the subject area makes it highly unlikely that

Site type	Description	Potential	Justification
	against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet grinding to occur.		the exposed sandstone outcrops required for this site type would occur within the subject 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 of 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.	Low	▪ Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial sites if they had been present.
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 during warfare, hunting etc), and it is difficult to move a body long distance. 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.	Low	▪ The subject area is not situated on soft, sandy soils. ▪ The subject area does not include any visible rock overhangs suitable as shelters.
Contact site	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.	Low	▪ Contact sites in the area are possible due to early European settlement. ▪ Historical land-use in the subject area reduces the potential for these sites.

Site type	Description	Potential	Justification
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where edible resources were extracted. Middens may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.	Nil to low	▪ The subject area is not situated near the coast. ▪ The lower order tributaries within the subject area is not conducive to this type of site.
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	▪ The subject area does not include any visible sandstone outcrops or rock overhangs. ▪ It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Nil to low	▪ The subject area does not include any rock overhangs. ▪ It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

5. FIELDWORK AIMS AND PROCEDURES

5.1. RESEARCH METHODOLOGY

The below Archaeological Research Design (ARD) has been developed to provide a framework to investigate the nature and origin of the potential archaeological resource within the subject area.

The ARD has been designed based on the results of the ACHAR, particularly the results of the archaeological background research and predictive model. The ARD has been prepared to cover the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

To fulfil the objectives of the ARD, the following research questions were formulated:

1. Is there a subsurface archaeological deposit present?
2. If an archaeological deposit present, how can it be interpreted?
    - What is the spatial and vertical extent of the deposit?
    - What is the integrity and condition of the deposit?
    - What are the physical attributes and compositions of the deposit (e.g. stone artefacts, features, remains of original environment, contact period artefacts)?
    - What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?
    - Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?
    - Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?
3. Can the archaeological deposit be interpreted in a local context?
    - Are there similarities or differences with nearby archaeological sites?
    - Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?
4. Can the archaeological deposit be interpreted in the regional context?
    - Where did the raw materials originate from?
    - Is there any indication of trade in connection of raw material procurement?
    - How does the assemblage compare to other archaeological sites within the region?
5. Do the results if the archaeological excavation changes the scientific and cultural significance of the site?
    - What is the scientific and cultural value of the assemblage?
    - How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

5.2. TEST EXCAVATION METHODOLOGY

The test excavations were undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the proposed methodology for the test excavation program. According to the Code of Practice "*test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area*".

The test excavation methodology proposed:

- The initial Stage 1 of testing to include the excavation of up to 100 (one hundred) 50 cm by 50 cm test pits at a spacing of 20m on a number of separate transects.
- The location of the transects (Figure 5) has been informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The area indicated with the yellow dashed polygon in 63 Abbotts Road required clarification regarding access and scheduling (active market garden) to conduct the required, up to, 40 (forty) test pits. Clearance of portions of the sugar cane will be required prior to excavation being undertaken.
- The location and number of transects and test pits were to be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal officers on site.
- All excavated material was to be wet sieved through a 5mm metal sieve station.

Figure 5 - Subject area (red polygon) with identified surface artefact locations (stars), areas of identified high disturbance (red), drainage line/open depression (blue), ridge (purple) and simple slope (green). A systematic grid of test pits will be established at 20m intervals along each indicative transect (white).

5.2.1. Proposed Test Excavation Stage 1

The test pits were proposed be excavated by hand (inclusive of trowels, shovels and other hand tools) along each transect at intervals of 20m.

The first test pit within each transect and/or landform were proposed to be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform and/or potential archaeological deposit were then be excavated in either 10cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).

All test pits were to be excavated using the above methods in each transect before any further adjustment was made to the transect or additional pits are excavated.

All excavated soil was to be sieved through 5mm nested sieves using wet sieving method.

Following the completion of Stage 1, the Excavation Director (Andrew Crisp) would make the decision whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.

- At the completion of Stage 1 Urbis would inform the proponent (ESR) whether it has been determined that Stage 2 test excavation is required. The Excavation Director (Andrew Crisp) was to determine whether it was necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.

5.2.2. Test Excavation Stage 2

Test pits could have been expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits were to be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.

Additional 50cm x 50cm test pits were proposed to be placed at an interval of 3, 5 or 10m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outlined above.

5.2.3. General Procedures

The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the Potential Archaeological Deposit or landform unit area being investigated.

All excavated soil shall be sieved in 5 mm sieves using wet sieving method.

Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.

Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.

Test excavation units shall be backfilled as soon as practicable, to be organised by the proponent. Alternatively, if manual collapse of the test pits is deemed appropriate this will be agreed to prior to the test excavation program.

An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.

An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.

In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.

Test excavations shall cease when enough information has been recovered to adequately characterise the objects/assemblage(s) present with regard to their nature and significance. Enough information is defined by DPC as meaning "*that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not*" (DECCW 2010a).

Test excavation was undertaken during business days from Monday 19th April 2021 to Monday 3rd May 2021. The program was intended to run from Monday 19th April 2021 to Friday 30th April 2021, but completion was delayed due to additional time required to clear lemon grass.

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

The test excavation included:

- The initial Stage 1 of testing including the excavation of up to 171 50 cm x 50 cm test pits in a series of linear transects at a spacing of 10m or 20m. The location of the test pits was informed by the results of the archaeological survey and the predictive model of the ACHAR.
- All excavated material was wet sieved through a 5mm metal sieve station.

In total, 171 test pits were excavated from 20 transects providing a comprehensive sample of the site. All artefacts that have been identified have been stored in a locked tambour in the Urbis office until a care and control agreement with DLALC could be reached.

Details of the excavation in relation to Requirement 16a of the Code of Practice (DECCW, 2011) are discussed below. As Aboriginal archaeological deposits were located, the Code of Practice requirement 16b is relevant to this assessment and discussed below.

Requirement 16a – Test Excavations

1. Test excavation units must be placed on a systematic grid appropriate to the scale of the area – either PAD or site – being investigated e.g. 10 m intervals, 20 m intervals, or other justifiable and regular spacing.

Transects were laid to sample the site and landforms present including upper, lower and mid slopes, spurs, and areas near the drainage line. Where pits had to be offset due to localised disturbance (such as roadway) this was marked on the spit sheet.

2. Any test excavation point must be separated by at least 5 m.

No test pits were located within 5m of each other. All test pits were separated by a minimum of 10m.

3. Test excavations units must be excavated using hand tools only.

The test excavation was conducted using hand tools for all pits.

4. Test excavations must be excavated in 50 cm x 50 cm units.

Each pit was 50cm x 50cm as a maximum and excavated until cultural sterile depths were reached (being basal clay) – this was between 10-50cm across the subject area. Each pit location was recorded through Garmin GPS and a mud map of the site was drawn in the field.

5. Test excavations units may be combined and excavated as necessary to understand the site characteristics, however:

i) the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point 1 (above) must be no greater than 3 m^2

No test pit was extended beyond 50cm by 50cm in size.

ii) the maximum surface area of all test excavation units must be no greater than 0.5% of the area – either PAD or site – being investigated .

Artefacts density within any pit never exceeded 2 artefacts across the subject area, and as such, no combination or expansion of pits was required.

6. Where the 50 cm x 50 cm excavation unit is greater than 0.5% of the area then point 5 (ii) (above) does not apply.

No test pits exceeded 50cm x 50cm.

7. The first excavation unit must be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.

The first test pit within each landform was excavated in 5cm spits.

8. All material excavated from the test excavation units must be sieved using a 5 mm aperture wire-mesh sieve.

All excavated material was separated into spits using buckets and sieved using a 5mm aperture wire-mesh metal sieve station.

9. Test excavation units must be excavated to at least the base of the identified Aboriginal object-bearing units, and must continue to confirm the soils below are culturally sterile.

Each pit was 50cm x 50cm as a maximum and excavated until cultural sterile depths were reached (being basal clay) – this was between 10-50cm across the subject area. Basal clays included reddish orange, orangey brown and yellowy brown clay.

11. Photographic and scale-drawn records of the stratigraphy/soil profile, features and informative Aboriginal objects must be made for each single excavation point.

Each pit was recorded with basal and section photographs and spit recording sheets describing the soils, depth, inclusions and presence/absence of artefacts. Soil samples were taken from one pit in each transect. Recording sheets and soil samples are stored physically at the Urbis office in a locked tambour, and digitally on One Drive.

12. Test excavations units must be backfilled as soon as practicable.

Each pit was backfilled through collapsing at the completion of the excavation program.

13. Following test excavation, an Aboriginal Site Impact Recording form must be completed and submitted to the AHIMS Registrar as soon as practicable, for each AHIMS site that has been the subject of test excavation in accordance with the requirements of this Code. The DECCW Aboriginal Site Impact Recording Form is available on the DECCW website.

ASIR form pending.

Requirement 16b – Objects Recovered During Test Excavations

Any Aboriginal objects that are moved during test excavation must be reburied as soon as practicable in a secure temporary storage location in accordance with Requirement 26 pending any agreement reached as to the long-term management of the salvaged Aboriginal objects.

The person carrying out the test excavation is responsible for ensuring that procedures are put in place so that Aboriginal objects that are reburied are not harmed.

The location of the secure temporary storage location must be submitted to AHIMS with a site update record card for the site(s) in question.

The Aboriginal objects were removed to the Urbis Offices at Angel Place, Level 8, 123 Pitt Street, Sydney NSW 2000, as a temporary storage location. The Aboriginal objects were stored in a locked cabinet in office space with around-the-clock security surveillance. The final keeping place of the artefacts will be made in consultation with the Registered Aboriginal Parties (RAPs) (see Section 7.4.2 below).

6. RESULTS

6.1. OVERVIEW

A field survey of the subject area was undertaken on 16th February 2021 by Urbis Senior Archaeologist Andrew Crisp, with three RAP site officers in attendance. Full details of survey results can be seen in section 2.7 of the ACHAR.

The study area was walked on foot with opportunistic inspection of areas of surface exposure. Landforms identified as having a potential for containing a subsurface archaeological deposit were identified. The archaeological survey was undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010a).

Following the preparation of the ACHAR and the field survey, test excavation was deemed prudent for the subject area. This decision was based on the presence of Aboriginal artefacts observed within an exposed vehicle track and undisturbed landforms within proximity to freshwater. Detailed test excavation results can be found below in Section 6.1.2.

6.1.1. Archaeological Survey Results

A field survey of the subject area was undertaken on 16th February 2021 by Urbis Senior Archaeologist Andrew Crisp, with three RAP site officers in attendance. Representatives are listed in Table 6 below.

Table 6 – RAP survey attendees

RAP Group	Representative
Deerubbin Local Aboriginal Land Council (DLALC)	Steven Randall
Deerubbin Local Aboriginal Land Council (DLALC)	Kevin Meredith
Deerubbin Local Aboriginal Land Council (DLALC)	Jack Donovan

The study area was walked on foot with opportunistic inspection of areas of surface exposure. Landforms identified as having a potential for containing a subsurface archaeological deposit were identified. The archaeological survey was undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a).

In accordance with the Code of Practice the study area was surveyed according to survey units, landforms, and landscapes. All survey units are described in Table 6 and sampled landform areas are described in Table 7.

The field survey was undertaken in generally overcast, rainy conditions with conditions clearing toward the second half of the survey. The field survey was undertaken via pedestrian transects with individuals distanced at approximately 5-10m where possible, and archaeologist with handheld GPS at end of the group.

The coverage of the field survey as shown by GPS data is represented in Figure 34 below. Small portions of the subject area were inaccessible due to livestock and canine activity (see red hashed portions in Figure 35).

Generally, visibility was low across the subject area due to grass and vegetation coverage, with visibility limited to areas of exposure resulting from disturbance including paths and vehicle tracks, dams, small erosion scours and livestock rutting/erosion around the base of trees.

The survey data is represented in Figure 34 and Figure 35 below with each survey unit discussed below.

Table 7 – Field Survey Data – Survey Coverage

Survey Unit	Landform	Unit Area (m^2)	Visibility %	Exposure %	Effective Coverage (m^2)	Effective Coverage %
1	Crest and Simple Slope	50800	20%	20%	2032	4%
2	Crest, Open Depression and Simple Slope	20325	20%	10%	406.5	2%
3	Crest and Simple Slope	46675	10%	30%	1400.25	3%
4	Simple Slope	4675	10%	10%	46.75	1%

During the course of the survey disturbance was noted and areas of potential were recorded. The test excavation will target undisturbed landforms within close proximity to freshwater, locations of newly identified Aboriginal sites and areas considered to be moderately to highly disturbed (control area). Three previously unidentified sites were recorded as a result of the survey (refer to Section 2.7.3).

Table 8 - Field Survey Data – Landform Summary

Landform	Landform Area (m^2)	Area Effectively Surveyed (m^2)	Percentage of Landform Effectively Covered	Number of Aboriginal Sites	Number of Artefact Features
Crest	42350	1694	4%	1	1
Simple Slope	79850	3194	4%	2	2
Open Depression	1400	56	4%	0	0

6.1.2. Survey Unit 1

Survey Unit 1 (SU1) incorporates 90-308 Aldington Road, Kemps Creek NSW (Lot 13 DP253503).

The eastern portion of SU1 is dominated by a crest landform with the topography of the SU sloping down toward the west into the Kemps Creek catchment. On the eastern crest is situated a small domestic dwelling.

The western half of SU1 contains simple slopes with the western portion of SU1 dominated by a decommissioned poultry farm (truncated landform, four large sheds, silos, vehicle tracks).

SU 1 was heavily grassed with some bordering light vegetation and trees. Visibility in SU 1 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, unsealed tracks, livestock impacts at the base of trees and in association with the poultry farm structures.

No Aboriginal sites were identified in Survey Unit 1.

Figure 6 – View east from rear of dwelling.

Figure 7 – Dwelling on crest.

Figure 8 – View west down crest toward poultry farm.

Figure 9 – View from eastern end of crest down onto poultry farm.

Figure 10 – Indicative shot of poultry farm.

Figure 11 – View west along hill slope to west and north of poultry farm.

6.1.3. Survey Unit 2

Survey Unit 2 (SU2) incorporates 59-62 Abbotts Road, Kemps Creek NSW (Lot 12 DP253503).

The eastern portion of SU1, similar to SU1, is dominated by a number of crest landforms with the topography of the SU sloping down toward the west into the Kemps Creek catchment. The centre of SU2 is dominated by a forked open depression draining to the west. On the eastern crest is situated a small domestic dwelling and the southern hillslope is situated a small, shed complex.

The majority of SU2 contains simple slopes associated with the three-crest landform in the eastern portion of the SU.

SU2 was heavily grassed. Visibility in SU2 was low, at approximately 20%. Exposures were associated with the areas of disturbance including the dam embankments, livestock impacts at the base of trees and in association with the dwelling/sheds.

No Aboriginal sites were identified in Survey Unit 2.

Figure 12 – View south across SU2.

Figure 13 – View east across SU2.

Figure 14 – Crest, slope and open depression landforms within SU2.

Figure 15 – View south-west over large dam.

Figure 16 – Indicative shot of open depression/drainage line.

Figure 17 – View of limited exposure adjacent to dam.

6.1.4. Survey Unit 3

Survey Unit 3 (SU3) incorporates the eastern portion of 63 Abbotts Road, Kemps Creek NSW (Lot 11 DP253503).

The SU3 is dominated by two east-west crest landforms with the topography of the SU sloping down toward the west into the Kemps Creek catchment. The south-eastern portion of SU3 is dominated by an open depression draining to the west. The entire SU is utilised as an active market garden, currently growing sugar cane and other crops.

SU3 is densely cropped with visibility limited entirely to unsealed vehicle tracks. Visibility in SU3 was low, at approximately 10%.

Three Aboriginal sites were identified in Survey Unit 3. All sites were identified within the unsealed vehicle access track running the crest at the centre of the SU. These sites include:

Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)

Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)

Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)

Figure 18 – Indicative shot of current height and density of sugar cane crop in SU3

Figure 19 – Indicative level and type of exposure within SU3

Figure 20 – View north from SU3 across SU2 and SU1.

Figure 21 – View south from northern crest to southern crest in SU3.

Figure 22 – Location of IF-1 in vehicle track on crest

Figure 23 – IF-1 proximal flake fragment (grey silcrete)

Figure 24 – Indicative shot of exposure along vehicle access track

Figure 25 – General location of IF-2 and IF-3 on access track to south of SU4

Figure 26 – IF-2 angular fragment (grey silcrete)

Figure 27 – IF-3 medial flake fragment (grey silcrete)

6.1.5. Survey Unit 4

Survey Unit 4 (SU4) incorporates the north-western portion 63 Abbotts Road, Kemps Creek NSW (Lot 11 DP253503) fronting onto the road easement.

The eastern portion of SU4 contains small dams and a residential dwelling. The western portion of the SU abutting the road easement is currently utilised as a hard stand laydown yard for timber and construction elements.

SU4 contains simple slopes sloping down to the north-west. SU4 was heavily grassed and contains a large hardstand area. Visibility in SU4 was low, at approximately 10%. Exposures were associated with the areas of disturbance including the dam embankments.

No Aboriginal sites were identified in Survey Unit 4.

Figure 28 – Indicative shot of dwelling from rear. Aspect north-west.

Figure 29 – View of dam on north side of driveway

Figure 30 – Hardstand area

Figure 31 – View south-east along driveway

Figure 32 – View of dam on north side of driveway

Figure 33 – Indicative view of southern portion of SU4

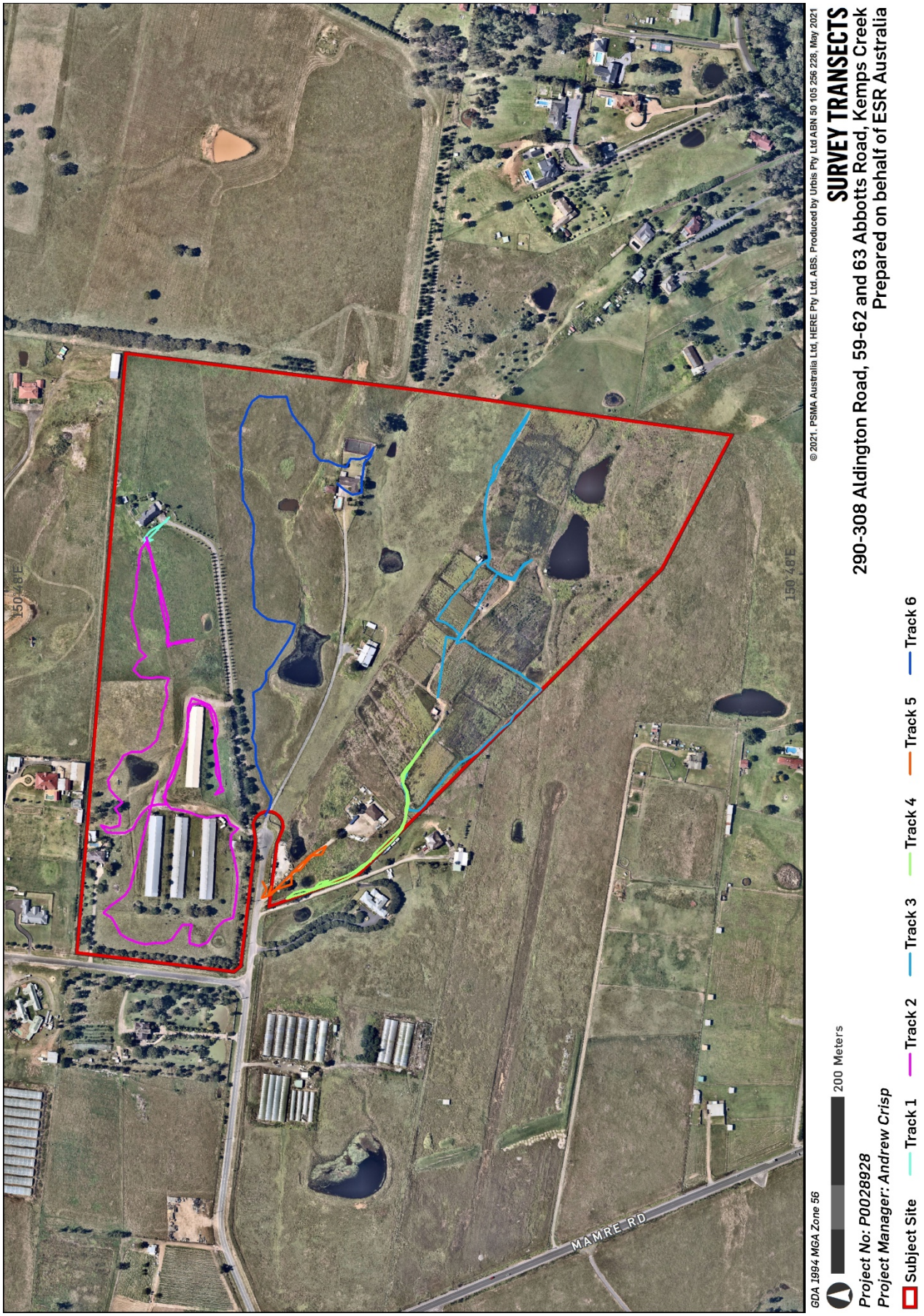

Figure 34 – Survey Tracks

Figure 35 – Survey Units

6.1.6. Test Excavation Results

Test excavation was conducted from Monday 19th April 2021 to Monday 3rd May 2021. A total of 171 50cm x 50cm test pits were excavated according to the proposed methodology covering a variety of landforms. For clarity these will be demarcated as Areas 1 to 6 and described below.

Area 1: Lower slopes in the western portion of the study area adjacent to Aldington Rd. This area consisted of simple slopes above and adjacent to a small dam. Vegetation consisted of exotic grass and weed species, with regrowth eucalypts and acacias on the perimeter. Area 1 consisted of test pits A1-A15 and B1-B5. Two artefacts were recovered from tests pits in Area 1: a silcrete complete flake (B1) and a quartzite angular fragment (B5).

Area 2: lower and mid-slopes following a spur leading up to a crest in the north-east corner of the subject area. This was approximately parallel to the study areas northern boundary. Vegetation consisted of exotic pasture grasses. Area 2 consisted of test pits C1-C6 and E1-E7. No artefacts were recovered from Area 2.

Area 3: Upper crest/ridge in the north-eastern portion of the study area. Area 3 consisted of test pits I1-I7, J1-J7 and K1- K3. Vegetation consisted of exotic grasses and weeds. One artefact was recovered from tests pits in Area 3: a silcrete complete tool (J6).

Area 4: Lower/mid-slopes adjacent to the main waterway in the centre of the site. The northern portion of Area 4 of test squares D1-D10, F1-F10, G1-G5 and H1 -H5. The southern portion of area 4 consisted of test squares M1-M10. Five artefacts were recovered from tests pits in Area 4: two silcrete complete tools (F5 and M4), two silcrete complete flakes (F7 and M1) and a silcrete distal flake (M1).

Area 5: Upper crest east and centre of study area. This landform is located above the upper catchment of the waterways in area 4. Area 5 consisted of test squares L1-L28. Three artefacts were recovered from tests pits in Area 5: a silcrete distal flake (L5), a silcrete complete flake (L7) and a silcrete broken core (L9).

Area 6: Long broad spur in between two waterways. Heavily modified market gardens. Area 6 consisted of test squares N1-N9, O1-O4, P1-7, Q1-Q3, R1-R10, S1-S7 and T1-T10. Two artefacts were recovered from tests pits in Area 6: two silcrete complete flakes (P6 and R3).

Figure 36 – Test Excavation Transects Overview

Figure 37 – Transect a and Transect B

GDA 1994 MGA Zone 56

100 Meters

Project No: P0028928
Project Manager: Andrew Crisp

Subject Site | Single Artefact | Test Pits

TEST EXCAVATION RESULTS
290-308 Aldington Road, 59-62 and 63 Abbotts Road, Kemps Creek
Prepared on behalf of ESR Australia

Figure 38 – Transects C, D, E, F, G, H, I J K and M

GDA 1994 MGA Zone 56

100 Meters

Project No: P0028928
Project Manager: Andrew Crisp

Subject Site | Single Artefact | Two Artefacts | Test Pits

TEST EXCAVATION RESULTS
290-308 Aldington Road, 59-62 and 63 Abbotts Road, Kemps Creek
Prepared on behalf of ESR Australia

Figure 39 – Transect L and Transect Q

GDA 1994 MGA Zone 56

50 Meters

Project No: P0028928
Project Manager: Andrew Crisp

Subject Site Single Artefact Test Pits

TEST EXCAVATION RESULTS
290-308 Aldington Road, 59-62 and 63 Abbotts Road, Kemps Creek
Prepared on behalf of ESR Australia

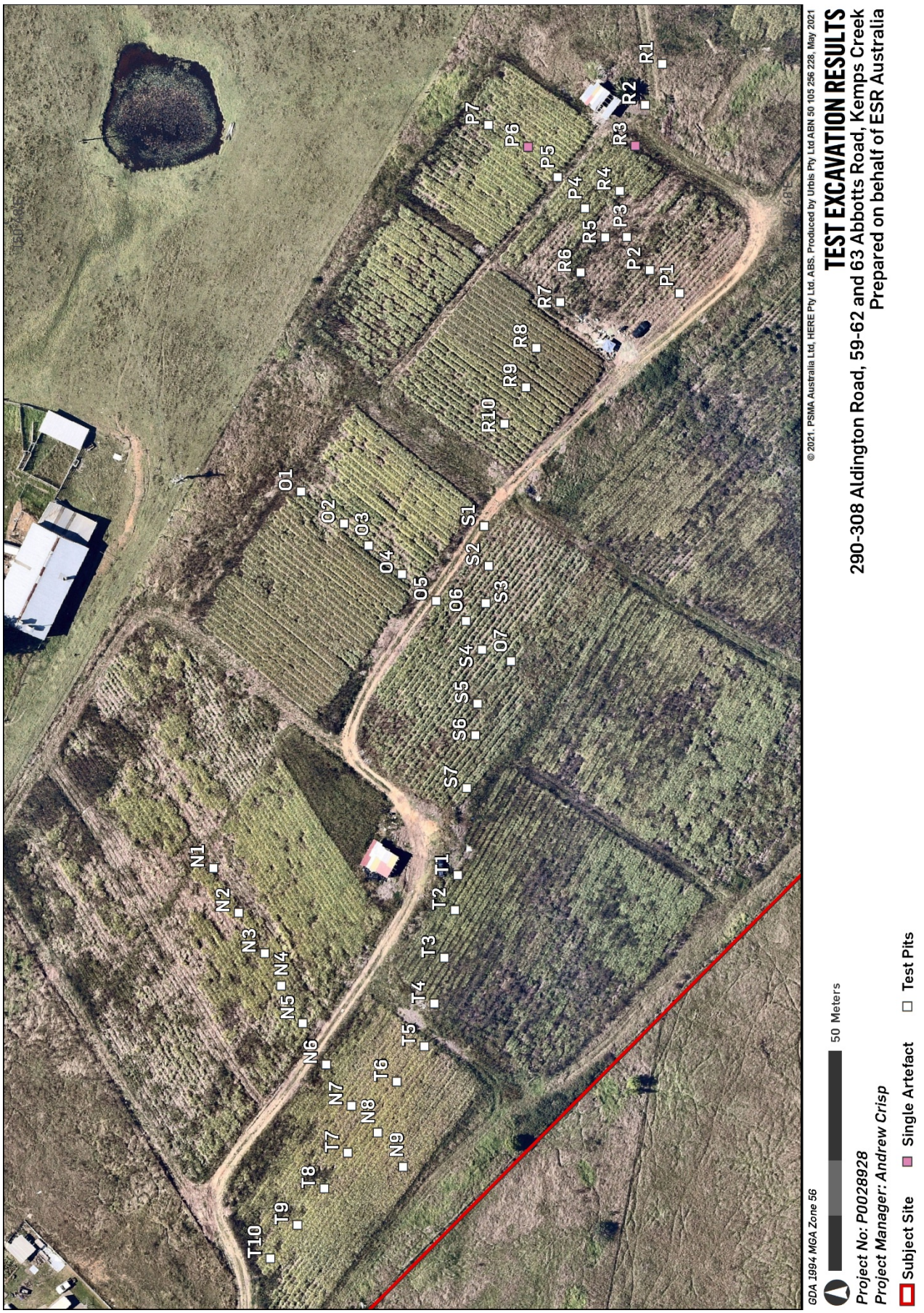

Figure 40 – Transect N, O, P R, S and T

6.1.6.1. Area 1

Lower slopes in the western portion of the study area adjacent to Aldington Rd. This area consisted of simple slopes above and adjacent to a small dam. Vegetation consisted of exotic grass and weed species, with regrowth eucalypts and acacias on the perimeter. Area 1 consisted of test squares A1-A15 and B1-B5.

Figure 41 - Area 1 view north

Figure 42 - Area 1 view south

Transect A consisted of 15 test pits at 10m intervals and ran from the south, adjacent to the dam, upslope to the north. No artefacts were recovered from transect A.

Soil profiles in Transect A showed considerable variation with an average depth of 20cm, and a depth range from 10cm to 36cm.

Test pits A5, A9-A11 and A13 consisted of a redeposited mix of local clay and soil directly overlying disturbed basal clay. This disturbance appeared to be related to earthworks associated with the construction of nearby poultry sheds.

Test pit A2 appeared truncated and mixed possibly affected by dam construction.

Remaining test pits displayed a more or less intact soil profile, though inclusions of sparse clay patches suggest a degree of prior disturbance.

A typical intact soil profile such as at A6 consisted of:

I. 0-12cm: Dark brown humic silty clay loam with abundant grass roots. Munsell 7.5YR 3/4; bioturbated transition to:

II. 12cm-base: Decreasing humic content; reddish brown moderately compact silty clay loam. Munsell 7.5YR 4/4; increasing clay towards base; bioturbated transition to:

III. Base: Red brown silty clay to light clay. Munsell 5YR 4/6.

Figure 43 - Test pit A6: intact soil profile.

Figure 44 - Test pit A9: redeposited soil and clay.

Transect B was parallel to transect A 20m to the west. Five test pits were spaced at 10m intervals. Test pits in Transect B had 13 to 30cm of redeposited clay and soil overlying natural soil profiles with a depth range of 19 to 25cm.

One artefact was recovered from B1 however this was from spit 1 (top 10cm), within fill, and was therefore out of context.

One artefact was recovered from test square B5 from the transition to intact natural topsoil. The provenance of the artefact is therefore uncertain considering level of disturbance at test square B5.

Figure 45 Test square B1: clayey fill to 30cm.

Figure 46 Test square B5: clay fill to approx. 15cm.

6.1.6.2. Area 2

Lower and mid-slopes following a spur leading up to a crest in north west of subject area. This was approximately parallel to the study areas northern boundary. Vegetation consisted of exotic pasture grasses. Area 2 consisted of test pits C1-C6 and E1-E7.

Figure 47 - Area 2 view east; spur and crest in background, test pit C1 in foreground

Figure 48 - Area 2 view west; test pit E6 in foreground.

Transect C consisted of 6 test pits at 10m intervals running east west on gentle lower slopes above a dam. No artefacts were recovered from transect C.

Soil profiles were consistent within Transect C. Test pits were shallow, ranging from 15-20cm depth and appeared to be truncated and mixed. This would be consistent with ploughing and subsequent erosion.

A typical soil profile such as at C6 consisted of:

I. 0-base: Reddish brown, silty clay loam, clumpy and faint clay mottling; appears to be truncated and disturbed. Munsell 7.5YR 4/4; gradual transition to:

II. Base: reddish brown silty clay Munsell 5YR 4/6.

Figure 49 - Test pit C6.

Figure 50 - Test pit C5

Transect E formed a continuation of transect C incorporating the steeper mid-slopes on a wide spur towards the crest of the landform. Transect E consisted of 6 test pits at 20m intervals. No artefacts were recovered from Transect C.

Soil profiles were consistent within Transect E. Test pits were shallow, ranging from 16-22cm depth and appeared to be affected by ploughing and erosion. Test pits E6 and E7 were slightly more reddish brown and appeared less disturbed, though still these test squares also displayed some clay mottling suggesting past disturbance.

A typical soil profile such as at E4 consisted of:

I. 0-base: Yellowish brown, silty clay loam, clumpy and mixed with clay; appears to be truncated and disturbed. Munsell 7.5YR 5/4; disturbed boundary to:

II. Base: reddish brown silty clay. Clumpy and disturbed.

Figure 51 - Test pit E7.

Figure 52 - Test pit E4

6.1.6.3. Area 3

Upper crest/ridge in the north-eastern portion of the study area. Area 3 consisted of test pits I1-I7, J1-J7 and K1- K3. Vegetation consisted of exotic grasses and weeds.

Figure 53 - Area 3 view west; test pit I5 in foreground

Figure 54 - Area 3 view south. Test pit I3 in foreground

Transect I began on the eastern edge of the subject area and covered the crest of the landform. Transect I consisted of 7 test squares at 20m intervals. No artefacts were recovered from transect I.

Soil profiles were consistently truncated and disturbed with around 10cm of mixed red brown clay silty loam.

A typical soil profile such as at I1 consisted of:

I. 0-base: Red brown mix of silt and clay. Munsell 5YR 4/6; Cracked and clumpy with an indistinct boundary to:

II. Base: red brown heavy clay, Munsell 5YR 4/6. Also disturbed.

Figure 55 - Test pit I7. Truncated and disturbed.

Figure 56 – Test pit I1. Truncated and mixed.

Transect J was parallel to transect I 10m to the north. Transect J consisted of 7 test squares at 20m intervals. One silcrete tool was recovered from test pit J6 in a highly disturbed soil profile.

Soil profiles were consistently truncated and disturbed with around 10cm of mixed red brown clay and silty loam.

A typical soil profile such as at J6 consisted of:

I. 0-base: Red brown mix of soil and clay. Munsell 5YR 4/6; Cracked and clumpy with an indistinct boundary to:

II. Base: red brown heavy clay, Munsell 5YR 4/6. Also disturbed.

Figure 57 - Test pit J6: Disturbed subsoil only.

Figure 58 - Test pit J3.

6.1.6.4. Area 4

Lower/mid-slopes adjacent to the main waterway in the centre of the site. The northern portion of Area 4 of test squares D1-D10, F1-F10, G1-G5 and H1-H5. The southern portion of area 4 consisted of test squares M1-M10.

Figure 59 - Area 4, northern portion, view east; test square F5 in foreground.

Figure 60 - Area 4 northern portion, view south; test square D9 in foreground.

Figure 61 - Area 4 southern portion, view east; test square M5 in foreground.

Figure 62 - Area 4 southern portion, view north; test square M5 in foreground, area 4 northern portion in background.

Transect D consisted of 10 test pits at 20m intervals running east west on a terrace above a dam. No artefacts were recovered from transect D.

Soil profiles were generally consistent within Transect D, although tending to lighter soil colours at lower elevation. Test pits ranged from 17-27cm depth and appeared to be intact.

A typical soil profile such as at D3 consisted of:

I. 0-base: Dark brown humic silty clay loam, with scattered charcoal flecks; appears intact. Munsell 7.5YR 3/4; clear transition to:

II. Base: reddish brown silty clay Munsell 5YR 4/6.

Transect F consisted of 10 test pits at 20m intervals running east west on a terrace above a dam. Two artefacts were recovered from transect F: a silcrete complete tool and a silcrete complete flake (see Table 9 below).

Soil profiles were generally consistent within Transect F. Test pits ranged from 18-47cm depth and mostly appeared to be intact.

A typical soil profile such as at F5 consisted of:

I. 0-base: Dark brown silty clay loam, with sparse ironstone gravels. Munsell 7.5YR 3/4; transition to:

II. Base: reddish brown silty clay. Munsell 5YR 4/6.

Transect G consisted of 5 test pits at 20m intervals running east west on a terrace above a dam. No artefacts were recovered from transect G.

Soil profiles were generally consistent within Transect G. Test pits ranged from 18-30cm depth and mostly appeared to be intact.

A typical soil profile such as at G2 consisted of:

I. 0-base: Medium brown silty clay loam. Munsell 7.5YR 5/3; transition to:

II. Base: yellowish brown clay. Munsell 7.5YR 5/4.

Transect H consisted of 5 test pits at 20m intervals running east west on a terrace above a dam. No artefacts were recovered from transect H.

Soil profiles were generally consistent within Transect H, although there was some colour variation from grey brown to dark brown. Ironstone gravels were common among test pits in transect H. Test pits ranged from 20-34cm depth and appeared to be intact.

A typical soil profile such as at H2 consisted of:

I. 0-base: Grey to medium brown silty clay loam with scattered ironstone gravels. Munsell 7.5YR 5/3; transition to:

II. Base: yellowish brown silty clay. Munsell 7.5YR 5/4.

Transect M consisted of 10 test pits on south-east/north-west axis alongside a driveway on a terrace below a dam. M1 to M6 are aligned on a single axis at 20 metre intervals. M7 and M8 are on a parallel axis 10m north-east and M9 and M10 are on a parallel axis 10m south-west. Three artefacts were recovered from transect M: a silcrete distal flake, a silcrete complete tool and a silcrete complete flake (see Table 9 below).

Soil profiles were generally consistent within Transect M. Test pits ranged from 11-28cm depth and mostly appeared to be intact, although the lower test pits (M5 and M6) appeared truncated.

A typical soil profile such as at M4 consisted of:

I. 0-base: reddish grey brown silty clay loam. Munsell 5YR 5/3; transition to:

II. Base: reddish brown silty clay. Munsell 5YR 4/6.

6.1.6.5. Area 5

Upper crest east and centre of study area. This landform is located above the upper catchment of the waterways in area 4. Area 5 consisted of test squares L1-L28.

Figure 63 - Area 5 view east; test square L6 in foreground.

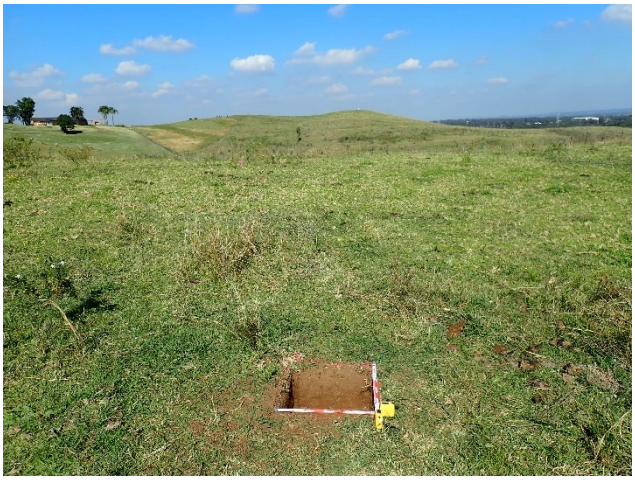

Figure 64 - Area 5 view south; test square L10 in foreground.

Transect L consisted of 28 test pits in a grid pattern on a crest. Test pits were separated by 20m intervals along the east-west axis and 10m intervals along the north-west axis. Three artefacts were recovered from transect H: a silcrete distal flake, a silcrete complete flake and a silcrete broken core (see Table 9 below).

Soil profiles were generally consistent within Transect L. Ironstone gravels were common among test pits in transect L. Test pits ranged from 12-37cm depth and appeared to be intact.

A typical soil profile such as at L8 consisted of:

I. 0-base: reddish grey brown silty clay loam. Munsell 5YR 5/3; transition to:

II. Base: reddish grey brown silty clay. Munsell 5YR 5/3.

6.1.6.6. Area 6

Long broad spur in between two waterways. Heavily modified market gardens. Area 6 consisted of test squares N1-N9, O1-O4, P1-7, Q1-Q3, R1-R10, S1-S7 and T1-T10.

Figure 65 - Area 6, view south; test square R4 in foreground.

Figure 66 - Area 6, view north east; end of transect T.

Transect N

Transect N consisted of 9 test pits at 20m intervals running east west within the market garden towards the base of the slope. No artefacts were recovered from transect N.

Soil profiles were generally consistent within Transect N. Test pits ranged from 20-29cm depth and appeared to be disturbed through heavy ploughing.

A typical soil profile such as at N6 consisted of:

I. 0-base: mixed dark reddish brown soil and clay, ploughed, in market garden bed. Munsell 5YR 3/2. clear transition to:

II. Base: reddish brown plasticky clay.

Transect O

Transect O consisted of 7 test pits at 20m intervals running east west within the market garden towards the midslope. No artefacts were recovered from transect O.

Soil profiles were generally consistent within Transect O. Test pits ranged from 20-35cm depth and appeared to be disturbed through heavy ploughing.

A typical soil profile such as at O2 consisted of:

I. 0-base: mixed dark reddish brown clay and loam, ploughed, in market garden bed. Munsell 5YR 3/2. Plastic sheet fragments throughout. Transition to:

II. Base: dark reddish brown silty clay.

Transect P

Transect P consisted of 7 test pits at 20m intervals running east west within the market garden along the spur. 1 artefact was identified within Transect P, a complete silcrete flake in Pit P6.

Soil profiles were generally consistent within Transect P. Test pits ranged from 11-30cm depth and appeared to be disturbed through heavy ploughing.

A typical soil profile such as at P1 consisted of:

I. 0-base: mixed dark reddish brown clay, ploughed, in market garden bed. Munsell 5YR 3/2. Transition to:

II. Base: reddish brown clay.

Transect Q

Transect Q consisted of 3 test pits at 20m intervals running north south within the market garden. No artefacts were recovered from transect Q.

Soil profiles were generally consistent within Transect Q. Test pits ranged from 17-27cm depth and appeared to be disturbed from heavy ploughing.

A typical soil profile such as at Q1 consisted of:

I. 0-base: Dark reddish brown compacted clayey-loamy soil, heavily ploughed, with lemon grass roots and clay nodules from ploughing. Munsell 5YR 3/2. Clear transition to:

II. Base: red plasticky clay.

Transect R

Transect R consisted of 9 test pits at 20m intervals running north south within the market garden down the slope. One artefact was recovered from Transect R, being a complete silcrete flake in pit R3.

Soil profiles were generally consistent within Transect R. Test pits ranged from 10-37cm depth and appeared to be disturbed from heavy ploughing.

A typical soil profile such as at R4 consisted of:

I. 0-base: Yellowy brown clayey loam soil, market garden with lemongrass roots, heavily ploughed, Munsell 7.5YR 7/8, some ironstone gravels. transition to:

II. Base: mottled orangey yellow brown plasticky clay base.

Transect S

Transect S consisted of 7 test pits at 20m intervals running north south within the market garden down the slope. No artefacts were recovered from transect S.

Soil profiles were generally consistent within Transect S. Test pits ranged from 10-32cm depth and appeared to be disturbed from heavy ploughing.

A typical soil profile such as at S5 consisted of:

I. 0-base: orangey brown loamy clayey soil, heavily ploughed, orangey clay flecks. Munsell 7.5YR 6/8. Clear transition to:

II. Base: orangey basal clay.

Transect T

Transect T consisted of 9 test pits at 20m intervals running east west along the spur within the market garden. No artefacts were recovered from transect T.

Soil profiles were generally consistent within Transect T. Test pits ranged from 10-29cm depth and appeared to be disturbed from heavy ploughing.

A typical soil profile such as at T3 consisted of:

I. 0-base: Yellowy brown loam soil, ploughed market garden with some bioturbation, plastics, rootlets and stone inclusions. orangey brown loamy clayey soil, heavily ploughed, orangey clay flecks. Munsell 7.5YR 7/6. Transition to:

II. Base: shale and yellowy basal clay, undulations due to ploughing.

6.1.7. Soils and Disturbance

Soils across the subject area generally consisted of silty clay loams, with varying degrees of humic material and colours ranging from dark brown to grey brown, on a clay base. Soil depths above the underlying clay base ranged from 10-50cm across the subject area. The underlying clay ranged from dark orange and reddish brown to light yellowy brown. Areas 2, 3 and 6 exhibited significant disturbance, while soils in the remaining areas were generally intact.

7. ANALYSIS AND DISCUSSION

7.1. ARTEFACT ANALYSIS

1. Is there a subsurface archaeological deposit present?

Yes. The below table shows the artefact assemblage across the subject area.

Table 9 - Test excavation artefact assemblage

Test Pit	Spit	Artefact Type	Raw Material	Landform
B1	1	Complete Flake	Silcrete	Lower hill slope
B5	3	Angular Fragment	Quartzite	Lower hill slope
F5	2	Complete Tool	Silcrete	Terrace
F7	1	Complete Flake	Silcrete	Terrace
J6	1	Complete Tool	Silcrete	Crest
L5	1	Distal Flake	Silcrete	Crest
L7	1	Complete Flake	Silcrete	Crest
L9	1	Broken Core	Silcrete	Crest
M1	2	Distal Flake	Silcrete	Terrace
M1	3	Complete Flake	Silcrete	Terrace
M4	2	Complete Tool	Silcrete	Terrace
P6	1	Complete Flake	Silcrete	Spur
R3	1	Complete Flake	Silcrete	Spur

In general, thirteen (13) artefacts were identified across the subject area during the test excavation, with artefacts present across a variety of landforms. This represents a low density assemblage, reflective of small and temporary occupation across the subject area.

The dominant raw material across the assemblage was silcrete, comprising 92% (n=12) of lithic materials, while quartzite comprised 8% (n=1). The closest known silcrete extraction point is at Plumpton, approximately 14km north of the subject area, and this may be where the silcrete present within the subject area was sourced.

Spatially, the majority of artefacts were located in Transects L and M, which were both located in Lot 12 DP253503. Both transects contained three (3) artefacts. Transect L was located to the east of the lot, north of the market gardens, with transect M located to the west of the shed on the lot approximately 280m to the west of Transect L. No artefacts were located below 30cm depth, with artefact densities decreasing with depth across the subject area. Spit 1 (0-10cm) contained 62% (n=8) of artefacts, Spit 2 23% (n=3) and Spit 3 15% (n=3). The majority of artefacts were located on terrace landform, being 38% (n=5), with 31%(n=4) on crests, and 15% (n=2) on both spur and lower hill slope landforms. The pit with the highest density was M1, which contained two (2) artefacts, both being silcrete, one being a distal flake (spit 2) and one being a complete flake (spit 3).

Five (5) artefact types were identified across the assemblage. This ranged from angular fragments to complete tools. The dominant artefact type across the assemblage was complete flakes, which comprised 46% (n=6) of artefact types. Complete tools were also highly represented, comprising 23% (n=3), with distal flakes

comprising 15% (n=2) and 8% (n=1) for both angular fragments and broken core. The below charts represent the archaeological assemblage for the subject area.

Regarding soil condition, Table 10 identifies the soils in which artefacts were located in each pit. This demonstrates artefacts were generally located in natural soils including natural topsoils across the subject area, with the exception of the Complete Flake located in Pit M1 Spit 3. Pit P6 Spit 1 and Pit R3 Spit 1 also indicated disturbance with ploughing evident due to their location within the market garden, and plastic fragments were also found in Spit 1 of Pit P6.

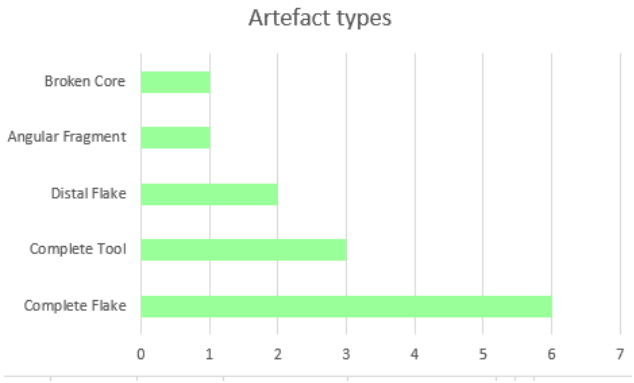

Figure 67 -Artefact Types

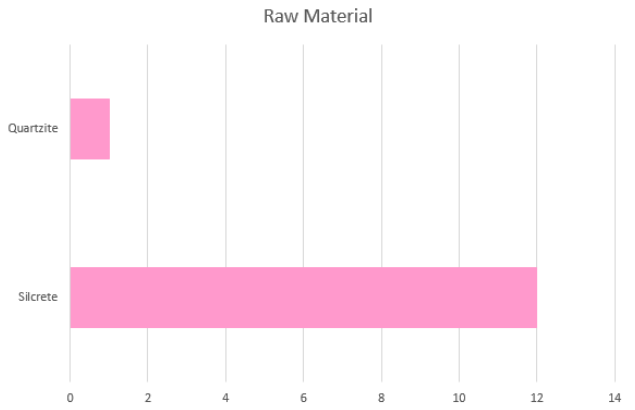

Figure 68 – Raw Materials

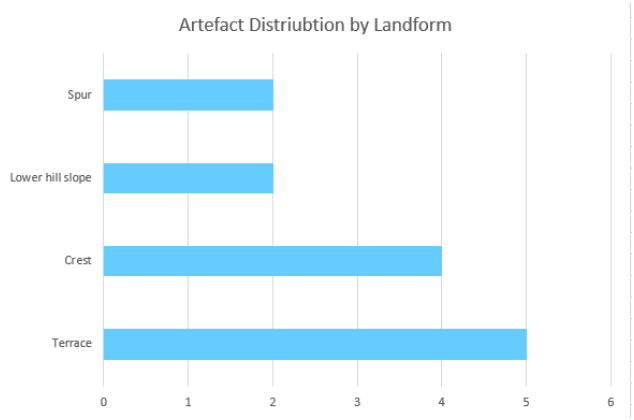

Figure 69 – Artefact Distribution by Landform

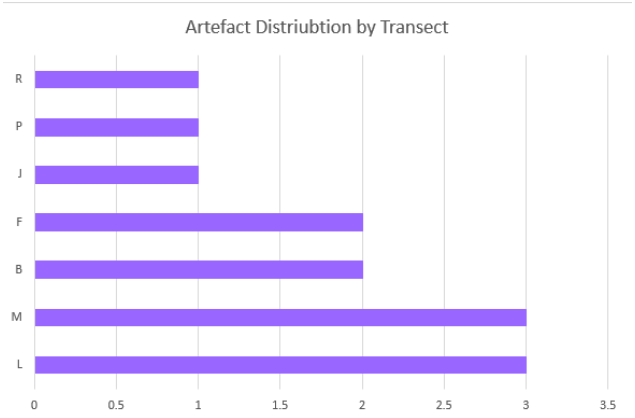

Figure 70 – Artefact distribution by transect

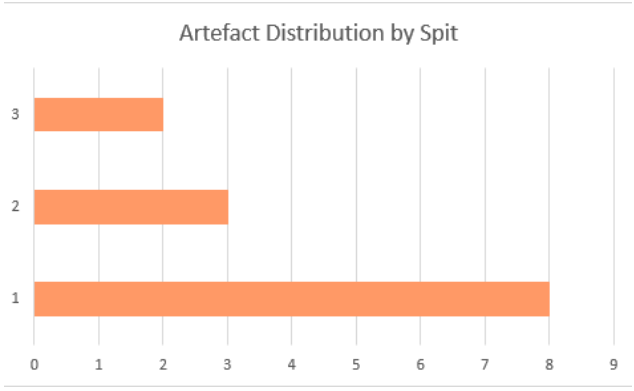

Figure 71 – Artefact Distribution by Spit

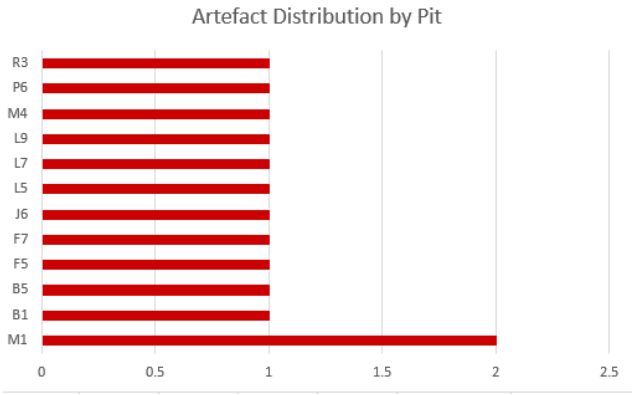

Figure 72 – Artefact Distribution by Pit

Table 10 – Soil conditions for artefact locations

Pit	Spit	Soil
B1	1	Brown clayey loam.
B5	3	Natural topsoil below disturbed mixed clay (Spit 1-2).
F5	2	Dark brown clayey loam.
F7	1	Dark brown clayey loam.
J6	1	Mixed soils and red clay.
L5	1	Dark brown clayey loam.
L7	1	Orange brown clayey loam.
L9	1	Thin layer of dark brown clayey loam over reddish grey brown silty clay loam.
M1	2	Reddish grey brown silty clay loam.
M1*	3	Reddish grey brown silty clay loam, increasingly red and mottled- potentially deposited.
M4	2	Reddish grey brown silty clay loam, increasing red clay content.
P6*	1	Predominantly yellowish brown clay, ploughed with silty loam. Plastic fragments.
R3*	1	Yellowy brown clayey loamy soil compacted and heavily ploughed.

* indicates disturbance in pit/spit.

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Figure 73 -B1, spit 1

Figure 74 – B1, spit 1

Figure 75 – B5, spit 3

Figure 76 – B5, spit 3

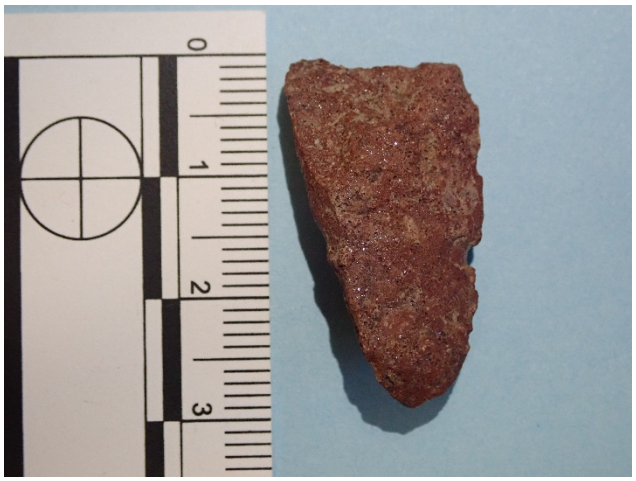

Figure 77 – F5, spit 2

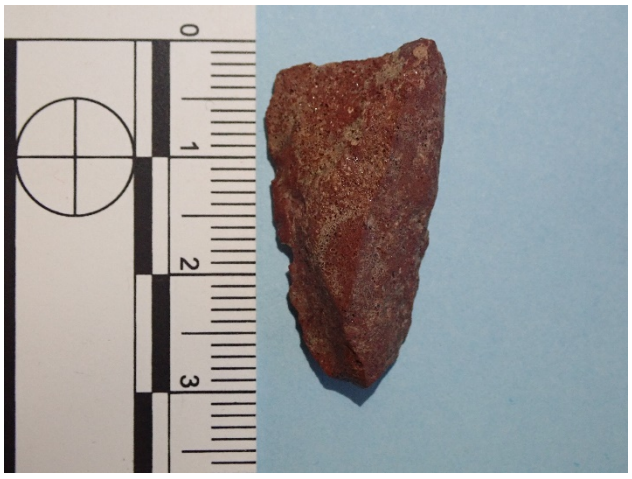

Figure 78 – F5, spit 2

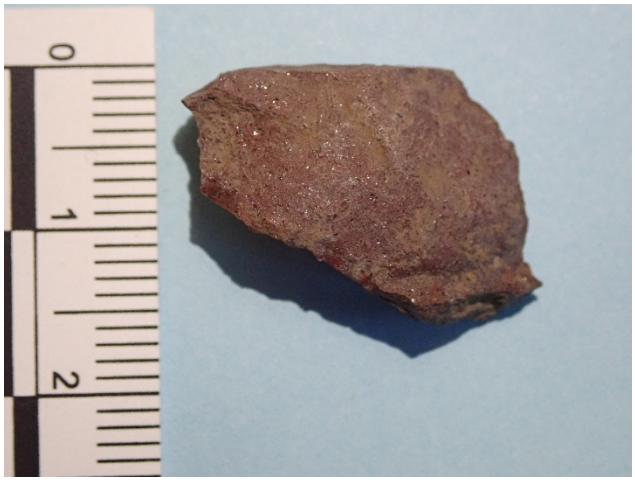

Figure 79 – F7, spit 1

Figure 80 – F7, spit 1

Figure 81 – J6, spit 1

Figure 82 – J6, spit 1

Figure 83 – L5, spit 1

Figure 84 – L5, spit 1

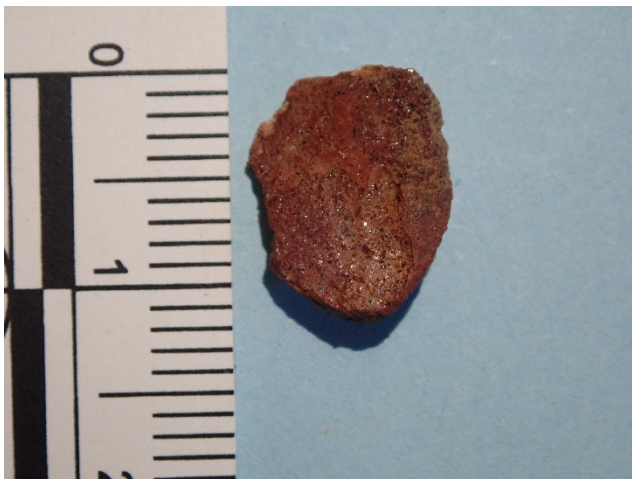

Figure 85 – L7, spit 1

Figure 86 – L7, spit 1

Figure 87 – L9, spit 1

Figure 88 – L9, spit 1

Figure 89 – M1, spit 2

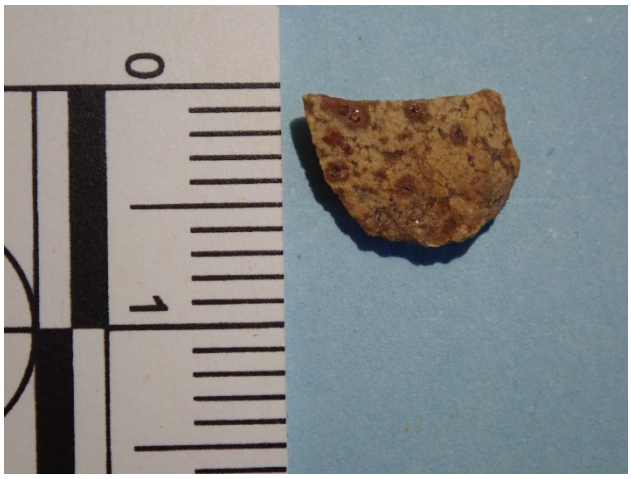

Figure 90 – M1, spit 2

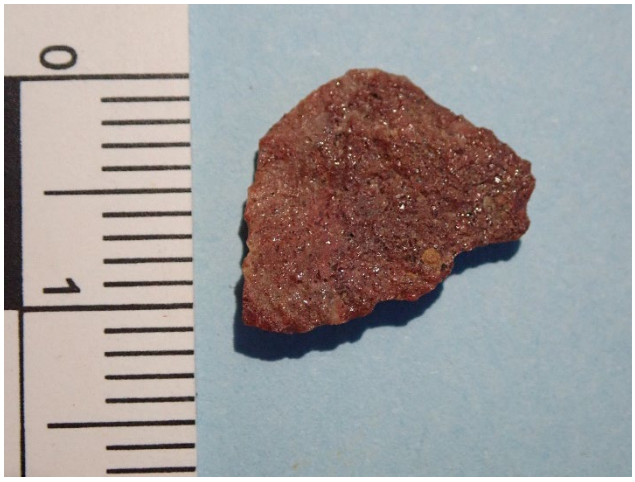

Figure 91 – M1, spit 3

Figure 92 – M1, spit 3

Figure 93 – M4, spit 2

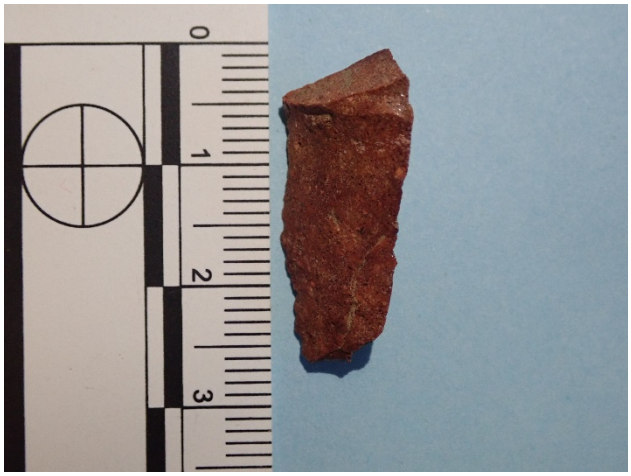

Figure 94 – M4, spit 2

Figure 95 – P6, spit 1

Figure 96 – P6, spit 1

Figure 97 – R3, spit 1

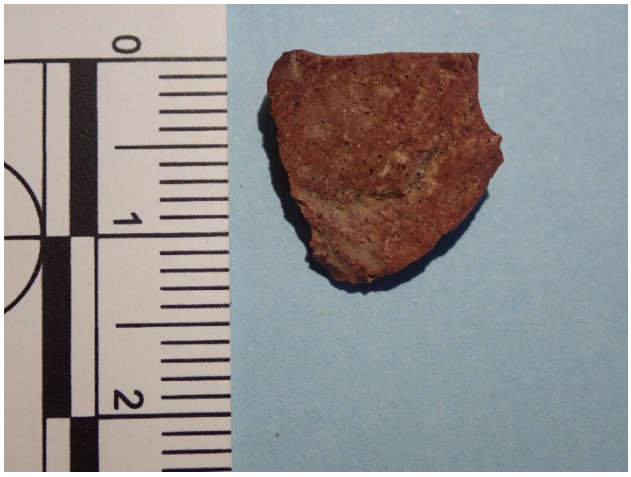

Figure 98 – R3, spit 1

2. If an archaeological deposit present, how can it be interpreted?

    - What is the spatial and vertical extent of the deposit?

A regional model for artefact distribution in relation to stream ordering on the Cumberland Plain has been developed principally by Beth White and Jo McDonald. White and McDonald (2010) analysed artefact distribution on the north of the Cumberland Plain by examining the results from archaeological investigations in the Rouse Hill area. This research found that artefact distribution varies significantly with stream order, with higher densities of artefacts located in proximity to larger streams.

First Order Streams had a mean density of 0.7 artefacts/m^2, while for Second Order Streams this was 6.5 artefacts/m^2 and for Fourth Order Streams this increased to 13.9 artefacts/m^2. There was not enough data on third order streams for the authors to make a comparison (White & McDonald 2010, p.32).

Distance from water was also tested, as this was believed to be a primary determinant of where people camped and hence where artefact density would be present in the archaeological record. For First Order Streams, distance from water was not as statistically important; with artefact archaeological deposits found to be comprised of mainly background scatter. For Second Order Streams, artefact densities were found to be highest within 50 m of water and decline with increasing distance from water. Fourth Order Streams displayed artefact densities highest 51-100m from the stream and lower closer to the stream (<50m) and declining densities greater than 100m from the stream (White & McDonald 2010, p.33).

To compare the current test excavation results with this regional model it is necessary to extrapolate the results of the 50 x 50cm test pits to what the results may have been if a full square meter was excavated. By doing so it becomes clear that transect M in close proximity to the second order tributary had the highest artefact density per test unit at 1.5 artefacts / m^2.

    - What is the spatial and vertical extent of the deposit?

The results of the test excavation are in line with the regional model developed by White and MacDonald and clearly shows that there is a correlation between artefact densities and the proximity to fresh water and along spurs/crest landforms. All artefacts were identified within 0-30cm of the soil deposit within the subject area.

    - What is the integrity and condition of the deposit?

The assemblage is generally low density and is generally indicative of low intensity occupation or background scatter. Generally artefacts were identified in non-disturbed contexts within natural brown clayey loamy soils, with only three pits with artefacts containing evidence of disturbance in the relevant spit (M1, P6 and R3). Disturbance was generally in the form of ploughing (P6 and R3) with some plastic fragments identified (P6) and some redeposited soil (M1).

These results suggest the archaeological assemblage of the subject site is generally intact with moderate integrity, with 77% (n=10) of archaeological materials identified in natural soil deposits.

    - What are the physical attributes and compositions of the deposit (e.g. stone artefacts, features, remains of original environment, contact period artefacts)?

The archaeological assemblage on the site included exclusively stone artefacts. These were primarily silcrete artefacts, comprising 92% (n=12) with 8% (n=1) quartzite. Artefacts were typically flakes or fragments, comprising 77% (n=10), while complete tools comprised 15% (n=2) and cores comprised 8% (n=1). These artefacts are generally determined to represent background scatter indicative of low intensity habitation/occupation.

No contact or potential contact sites were identified.

- What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?

The absence of large, formalised tools (such as ground stone axes and flaked hatchets) indicates the assemblage is representative of small tool tradition of the Bondaian phase of the Eastern Regional Sequence. The Bondaian Phase dates to the mid to late Holocene, typically the last 5,000 years.

- Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?

The low-density assemblage does not provide any evidence of intra-site patterning. The artefact typology combined with shallow soil profile suggests a small number of single events rather than repeat occupation.

- Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?

No bone or shell was recovered during program.

3. Can the archaeological deposit be interpreted in a local context?

- Are there similarities or differences with nearby archaeological sites?

The low-density artefact assemblage recovered from the subject area, comprising primarily flaked silcrete artefacts, is similar to other nearby sites, such as AHIMS ID# 45-5-0604, AHIMS ID# 45-5-0605 which are located within 1km of the subject area. The presence of a quartzite artefact is similar to AHIMS ID# 45-5-5189, located approximately 4.25km north west of the subject area within the vicinity of South Creek.

The results are generally similar to that of OA1 in the Mamre South Precinct excavated by Biosis in 2019. 16 artefacts were identified, of which 93.8% (n=15) were silcrete. While the wider Mamre Road South Precinct excavations resulted in much higher density, the OA1 area is compatible with the current subject area.

- Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?

The artefact assemblage of the present subject area appears to be connected to nearby sites by the common dominance of flaked silcrete artefacts and the presence of a single quartzite artefact, consistent with an origin closer to South Creek or Kemps Creek.

The presence of silcrete connects the artefact assemblage at the subject area to Plumpton Ridge, which is the closest known resource extraction site for red silcrete in this region. The dominance of silcrete, as present in other sites across this region, is likely the result of the local natural source and therefore abundance of the material and does not necessarily indicate a connection between individual sites, but rather a regional connection to the Plumpton Ridge extraction site.

4. Can the archaeological deposit be interpreted in the regional context?

- Where did the raw materials originate from?

All recovered artefacts are formed from red silcrete, with the exception of one artefact formed from quartzite (Table 9). Red silcrete is common within the Cumberland Plain and may have originated near to the subject area, such as the silcrete extraction point at Plumpton, approximately 14km north of the subject area (see Section 7.1 above). Quartzite is commonly associated with waterways in the region, such as nearby South Creek (Doelman et al. 2015) and Kemps Creek. The raw materials from which the recovered artefacts are formed may therefore have originated from with the region surrounding the subject area.

- Is there any indication of trade in connection of raw material procurement?

There is no indication among the recovered artefacts of any trade in raw materials. The artefacts are consistent with the use of locally sourced materials.

- How does the assemblage compare to other archaeological sites within the region?

The artefact assemblage is consistent with other sites in the regions, which typically include artefact assemblages dominated by red silcrete flaked artefacts.

5. Do the results if the archaeological excavation changes the scientific and cultural significance of the site?

- What is the scientific and cultural value of the assemblage?

Low scientific significance. Low density subsurface assemblage, common artefact types (flakes, debitage, broken core and blades) produced from local silcrete resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits (terraces adjacent to water sources, lower hill slopes, spurs and crests).

- How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

As part of the ACHAR, consultation with members of the local Aboriginal community was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. Kamilaroi Yankuntjatjara Working Group have noted the deep connection that Aboriginal people hold with the land. The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.

7.2. SIGNIFICANCE ASSESSMENT

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 principal 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 summary of scientific of archaeological values for the project area. The assessment for social, historical and aesthetic value is presented in Section 4 of the ACHAR.

7.2.1. 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 establish potential, 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.

To appreciate scientific value, ask:

- Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?

7.2.1.1. Isolated Find 01

Low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

7.2.1.2. Isolated Find 02

Low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

7.2.1.3. Isolated Find 03

Low scientific significance. Common artefact and site type in the Cumberland Plain discovered in a disturbed context.

7.2.1.4. Aldington Road Subsurface Assemblage

Low scientific significance. Low density subsurface assemblage, common artefact types (flakes, debitage, broken core and blades) produced from local silcrete resources. Distribution of artefacts was across the landscape and evident on all landforms predicted to contain subsurface deposits (terraces adjacent to water sources, lower hill slopes, spurs and crests).

7.3. IMPACT ASSESSMENT

The identified Aboriginal sites within the study area has been considered in relation to the proposed works. Impacts to the sites will be unavoidable due to the requirement for bulk earthworks and associated activities. The types of impact to the identified Aboriginal sites within the study area is shown in Table 11 below.

Table 11 – Impacts to identified Aboriginal Sites within the subject area

Site number	Site name	Type of harm	Degree of harm	Consequence of harm
Pending	Isolated Find 01 (IF-1)	Direct	Total	Total loss of value
Pending	Isolated Find 02 (IF-2)	Direct	Total	Total loss of value
Pending	Isolated Find 03 (IF-3)	Direct	Total	Total loss of value
Pending	Aldington Road Subsurface Assemblage	Direct	Total	Total loss of value

7.4. MANAGEMENT AND MITIGATION

7.4.1. Surface Collection

Following SSDA approval and prior to construction surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)

Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)

Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)

7.4.2. Repatriation or Deposition in Keeping Place

Through consultation with the RAPs a decision will be made as to the final destination for the artefacts recovered during both the test excavation and surface collection programs.

Care and Control of artefacts

Through the ACHA process a determination will be made in consultation with the RAPs the final keeping place of the artefacts collected during the project. All project artefacts will be sorted and packaged in accordance with Australian Museum Standards. The general options are:

Option 1: Deerubbin LALC enters into a Care and Control agreement and the artefacts are then stored at their designated keeping place (Old Parramatta Gaol).

Option 2: Repatriation of artefacts to ’Country’. Following construction of proposed development the artefacts would be reburied within the subject area and the location registered on AHIMS.

Option 3: Designation of alternative keeping place such as local museum, Australian Museum or with other RAP group.

8. CONCLUSIONS AND RECOMMENDATIONS

This ATR has been prepared to accompany a detailed ACHA which forms part of the EIS for a SSD application 9080531. This assessment has been prepared by Urbis on behalf of ESR Australia.

The SSD application is for the construction of a logistics park at for Lots 11, 12 and 13 in DP 253503 at 290-308 Aldington Road, as well as 59-62 and 63 Abbotts Road, Kemps Creek, NSW (hereafter referred as the 'subject area'). The ACHA informed the preparation of the ACHAR, which will accompany the SSD application. This ATR has been prepared to accompany the ACHAR.

Following the preparation of the ACHAR and the field survey undertaken 16th February 2021, test excavation was deemed prudent for the subject area. This decision was based on the presence of Aboriginal artefacts observed within an exposed vehicle track and undisturbed landforms in proximity to freshwater.

This ATR is intended to detail the methodology and results of test excavation. Refer to Section 1.2 of the ACHA for detailed information regarding the proposed development at the subject area.

This ATR has been prepared in accordance with the following statutory guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) (CoP).

Test excavation was conducted from Monday 19th April 2021 to Monday 3rd May 2021 covering a variety of landforms with the aim of testing these landscape features for any potential sub-surface archaeological deposits.

Test excavation was undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation also aimed to sample the various landscape features for any potential sub-surface archaeological deposits.

The test excavation included:

- The Stage 1 of testing including the excavation of up to 171 (one hundred and seventy-one) 50 cm by 50 cm test pits in a systematic transect system at a spacing of 10m or 20m. The location of the test pits was informed by the results of the archaeological survey and the predictive model of the ACHAR.
- All excavated material was wet sieved through a 5mm metal sieve station.

In total, 171 test pits were excavated from 20 transects (Transect A – Transect T) across all landform types within the subject area to provide a comprehensive sample.

The test excavation identified low density subsurface Aboriginal archaeological deposits (13 artefacts from 12 test pits).

The predictive model formulated for the ACHAR (see Section 2.7 of ACHA) anticipated that artefact scatters, PADs and isolated finds had moderate-high potential to occur in areas of low historical ground disturbance, on the basis of the distribution of artefact sites in the region as well as the landscape features present – including elevated ground/terraces associated with waterways and crests/spurs.

The results of the test excavation confirmed:

- Altogether, thirteen (13) artefacts were recovered during the test excavation programme.
- The presence of a low density, background scatter suggests a transitional, low frequency use of the subject area by Aboriginal people, including lower slopes, terraces adjacent to waterways, spurs and ridge crests.
- The very small artefact assemblage provides limited information on the artefact production process that might have taken place in the area.
- While the subject area was clearly utilised by Aboriginal people in the past, the results of the test excavation suggest it was likely to have been in a transitionary manner, with no focus of intensive or repeated occupation.

- Test excavations also revealed that if archaeological deposits had been present in areas of high disturbance and/or erosion, post depositional processes may have removed or dispersed the archaeological evidence.
- The scientific significance of the subject area is determined to be low, based on the presence of a low-density subsurface assemblage of common artefact types for the Cumberland Plain (flakes, debitage, broken core and blades) produced from local silcrete resources and associated with landforms consisted with predictive model (terraces adjacent to water sources, lower hill slopes, spurs and crests).
- The subject area has been assessed as containing high cultural value to local Aboriginal communities on the basis of the deep connection Aboriginal people hold with the land and broader environment.
- The subject area has been assessed as possessing low historical value due to lack of historical connections.
- The subject area is considered to have moderate aesthetic value due to impacts caused by farming and pastoral activities within the study area.

Following the results of the test excavation program it is anticipated that the proposed works will result in direct harm to subsurface Aboriginal archaeological deposits which constitutes a low scientific and moderate cultural significant site(s).

The project can proceed in accordance with the following recommendations:

Recommendation 1 – Surface Collection

Following SSDA approval and prior to construction surface collection of identified artefacts IF1, IF2 and IF3 must be undertaken in accordance with the Code of Practice and with the involvement of the Registered Aboriginal Parties.

- Isolated Find 01 (IF-1) – proximal flake fragment (grey silcrete) (33º51’33.5”S, 150º47’57.7”E)
- Isolated Find 02 (IF-2) – angular fragment (grey silcrete) (33º51’28.6”S, 150º47’47.2”E)
- Isolated Find 03 (IF-3) – medial flake fragment (grey silcrete) (33º51’30”S, 150º47’47.9”E)

No further subsurface archaeological excavation is warranted.

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared in consultation with the Registered Aboriginal Parties (RAPs) for inclusion in the construction management plan and site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites and artefacts to be aware of (i.e. stone tools), under the NPW Act, and the requirements of an ‘archaeological chance find procedure’ (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as “PowerPoint” for any face-to-face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any Aboriginal objects, archaeological deposits be uncovered during any site works, a Chance Find Procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must <u>not</u> be moved ‘out of the way’ without assessment.
2. The archaeologist and Aboriginal representative on site examine the find, provides a preliminary assessment of significance, records the item for the AHIMS register and decides on appropriate management. Such management may require further consultation with the Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC), preparation of a research design and archaeological investigation/salvage methodology and decision on temporary care and control.
3. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
4. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this assessment and revised accordingly.

5. Works in the vicinity of the find can only recommence when all management measure all implemented, and the find is removed from the activity area. Should the find be an unmovable item such as an engraving or grinding groove located on a sandstone surface, further management measures will need to be introduced to avoid harm to the find.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.
2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the Police, DPC and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

9. REFERENCES

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DISCLAIMER

This report is dated 17 June 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of ESR AUSTRALIA **(Instructing Party)** for the purpose of Archaeological Technical Report **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A BASIC AND EXTENSIVE AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : ESR Kemps Ck 7km

Client Service ID : 546950

Urbis Pty Ltd - Angel Place L8 123 Pitt Street

Level 8 123 Angel Street
Sydney New South Wales 2000

Attention: Aaron Olsen

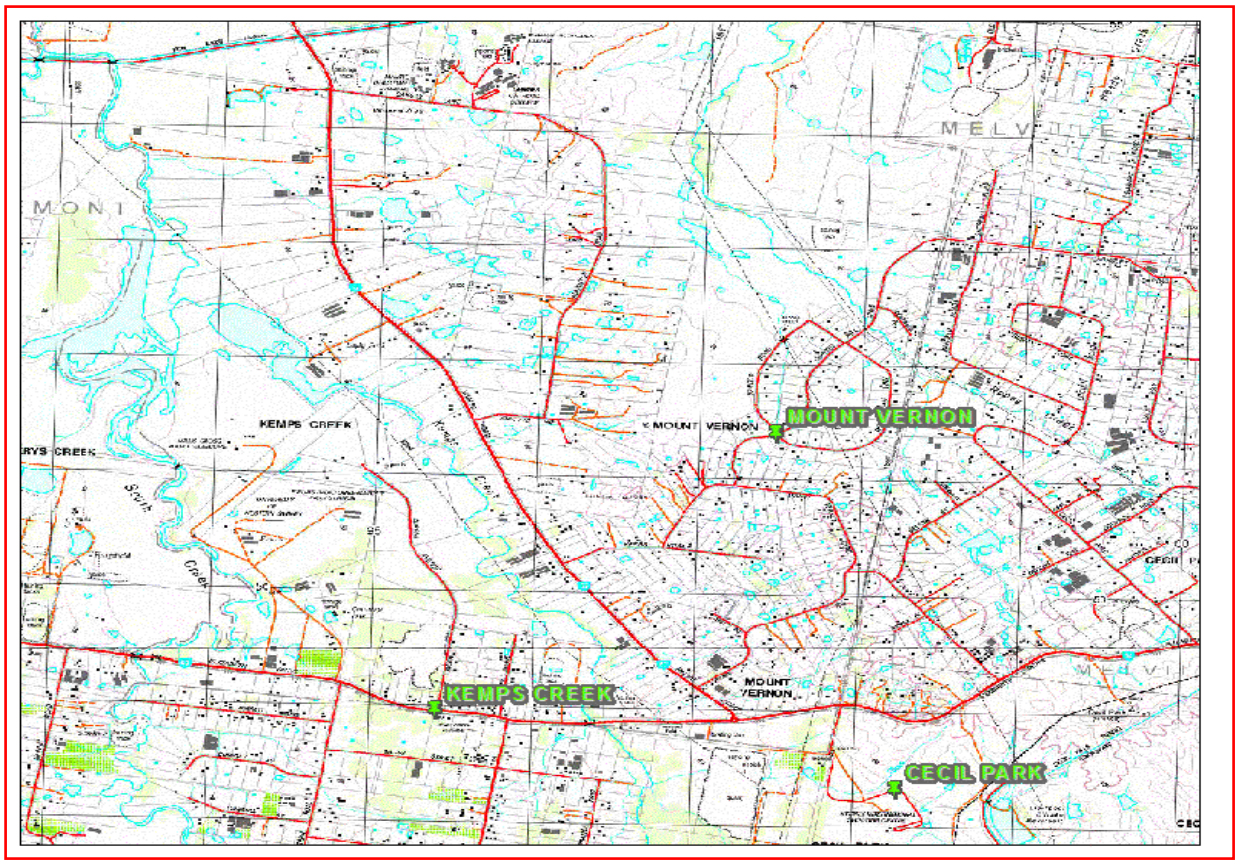
Email: aolsen@urbis.com.au

Date: 02 November 2020

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters, conducted by Aaron Olsen on 02 November 2020.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

117	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2057	PGH1;Monier PGH;	GDA	56	298268	6254015	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2046	PGH2;Monier PHG;	GDA	56	298493	6254045	Open site	Destroyed	Artefact : -	Isolated Find	98435,103366
	Contact	**Recorders**	Noeleen Curran					**Permits**		
45-5-2008	SC4;Cecil Park Shooting Complex;	AGD	56	298360	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2009	SC5 Cecil Park Shooting Complex	AGD	56	298340	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2011	SC3;Cecil Park Shooting Complex;	AGD	56	298050	6247790	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2012	SC2;Cecil Park Shooting Complex;	AGD	56	297760	6247810	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2013	SC1;Cecil Park Shooting Complex;	AGD	56	297800	6247960	Open site	Valid	Artefact : -	Isolated Find	3857
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2426	IFSC 11;Cecil Park;	AGD	56	297990	6248110	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2427	IFSC 10;Cecil Park;	AGD	56	297680	6247790	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2429	CPSC 3;Cecil Park;	AGD	56	297710	6248020	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
45-5-2430	IFSC 7;Cecil Park;	AGD	56	298590	6247980	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**	4577	
45-5-2711	CDG1	AGD	56	293300	6252800	Open site	Valid	Artefact : -		1345,1539,4737
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-3999	PAD 2001-6	GDA	56	295825	6248852	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4006	Artefact Scatter PAD 2007-4	GDA	56	295792	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4007	Artefact Scatter 2008-4	GDA	56	297641	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4008	Isolated Object 2009-5	GDA	56	297443	6248524	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-4009	Isolated Object 2010-5	GDA	56	297432	6248202	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4010	Isolated Object 2011-5	GDA	56	297479	6248304	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4022	Artefact Scatter PAD 2023-846	GDA	56	299598	6249047	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams,Mr.Mattl					**Permits**	4577	
45-5-4049	PAD 2054-6	GDA	56	296512	6249100	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Alan Williams					**Permits**		
45-5-4675	Oakdale West Isolated Find (OW IF 2)	GDA	56	296627	6254876	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-4676	Oakdale West Isolated Find 3	GDA	56	295882	6254754	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Josh Symons,Mr.ryan tadde					**Permits**		
45-5-5259	Elizabeth Drive AFT 1	GDA	56	293377	6249426	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor					**Permits**		
45-5-5260	Wylde MTB PAD1	GDA	56	298467	6248411	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5261	Wylde MTB PAD2	GDA	56	298498	6248258	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5262	Wylde MTB PAD 3	GDA	56	299151	6248697	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Eco Logical Australia Pty Ltd - Sydney - Individual users,Mr.Daniel Claggett					**Permits**		
45-5-5274	Bakers Lane SLR AFT 1	GDA	56	295915	6254097	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**		
45-5-5268	Kemps Creek IF-02	GDA	56	295030	6253859	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5269	Kemps Creek IF-01	GDA	56	294976	6253943	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Urbis Pty Ltd - Angel Place L8 123 Pitt Street,Miss.Meggan Walker					**Permits**		
45-5-5281	Cross Street Kemps Creek AFT 1	GDA	56	296973	6248376	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**	4577	
45-5-5230	Elizabeth Precinct Isolated Find 03 (EPIF 03)	GDA	56	293375	6249980	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5231	Elizabeth Precinct Isolated Find 02 (EPIF 02)	GDA	56	293466	6250004	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5232	Elizabeth Precinct Isolated Find 01 (EPIF 01)	GDA	56	293416	6249892	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5233	Elizabeth Precinct Artefact Scatter 01 (EPAS 01)	GDA	56	293412	6249873	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-5301	Kemps Creek East (KCE) PAD	GDA	56	296543	6249177	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5302	Kemps Creek West (KCW) PAD	GDA	56	296110	6249360	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5303	Kemps North West (KNW) PAD	GDA	56	295455	6250265	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5306	South Creek East (SCE)	GDA	56	293940	6251020	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5307	South Creek West T1 (SCW T1)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - North Sydney,Mr.Andrew Costello					**Permits**		
45-5-5308	South Creek West T2 (SCW T2)	GDA	56	293360	6251085	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Andrew Costello,Jacobs Group (Australia) Pty Ltd - North Sydney					**Permits**		
45-5-5315	MRP-OS2	GDA	56	296737	6253925	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		
45-5-5316	MRP-OS1	GDA	56	294413	6252254	Open site	Valid	Artefact : -		
	Contact	**Recorders**	EMM Consulting - St Leonards - Individual users,Ms.Taylar Reid					**Permits**		

Report generated by AHIMS Web Service on 02/11/2020 for Aaron Olsen for the following area at Datum :GDA, Zone : 56, Eastings : 292944 - 299944, Northings : 6247883 - 6254883 with a Buffer of 0 meters. Additional Info : ACHA. Number of Aboriginal sites and Aboriginal objects found is 117

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5234	Elizabeth Precinct PAD 03	GDA	56	293924	6249724	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					Permits		
45-5-5235	Elizabeth Precinct PAD 02	GDA	56	293927	6249529	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5236	Elizabeth Precinct PAD 01	GDA	56	293200	6249565	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
Contact		Recorders	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					Permits		
45-5-5277	Cecil Park Water Reservoir AFT 1	GDA	56	299289	6248948	Open site	Valid	Artefact : -		
Contact		Recorders	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					Permits	4577	
45-5-2568	CGD5	AGD	56	293300	6253500	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2561	GLC1	GDA	56	299580	6249001	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Annie Nicholson,Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Ge					Permits	4577
45-5-2550	CGD1	AGD	56	293350	6252800	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2552	CGD3	AGD	56	293000	6252800	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2553	CGD4	AGD	56	293300	6252500	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2554	CGD2	AGD	56	293000	6252900	Open site	Valid	Artefact : -	Open Camp Site	98435
Contact		Recorders	Dominic Steele Archaeological Consulting					Permits		
45-5-2307	P-CP9	AGD	56	298110	6248750	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2308	P-CP8	AGD	56	298580	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		
45-5-2310	KC/ED2;	AGD	56	297520	6248760	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Helen Brayshaw					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-0604	Cecil Park 1	AGD	56	297350	6251470	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**	694	
45-5-0605	Cecil Park 2	AGD	56	297600	6251780	Open site	Valid	Artefact : -	Open Camp Site	1283,98435
	Contact	**Recorders**	Smith,M Hanckel					**Permits**		
45-6-1775	Lec 9;	AGD	56	293200	6252700	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1777	Lec10;	AGD	56	293180	6253070	Open site	Valid	Artefact : -	Open Camp Site	1345,97496,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	1586,2056	
45-6-1778	Lec 11;	AGD	56	293300	6252820	Open site	Valid	Artefact : -	Open Camp Site	1345,98435
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-6-1779	Lec 12;	AGD	56	293300	6252850	Open site	Valid	Artefact : -	Open Camp Site	1345,98435,99352
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**	2056	
45-5-0214	Kemps Creek;	AGD	56	296100	6248300	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0215	South Creek	AGD	56	293800	6249900	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	362
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**		
45-5-0496	Fleurs1 Fleurs Radio Telescope	AGD	56	293750	6250730	Open site	Valid	Artefact : -	Open Camp Site	961,1018,98435
	Contact	**Recorders**	University of Sydney					**Permits**		
45-5-3058	EV1	AGD	56	295751	6254547	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Jim Wheeler					**Permits**		
45-5-3028	EPTA3	AGD	56	294160	6254370	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3029	EPTA4	AGD	56	294850	6253540	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3030	EPTA5	AGD	56	295170	6253570	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3031	EPTA6	AGD	56	295210	6253410	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3032	EPTA10	AGD	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3033	EPTA11	AGD	56	293340	6253690	Open site	Valid	Artefact : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3034	EP-I 1	AGD	56	295260	6253400	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3035	EP-I 2	AGD	56	295190	6253500	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3036	EP-I 3	AGD	56	295240	6253710	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd					**Permits**	2188	
45-5-3095	PGH3	GDA	56	299004	6254512	Open site	Valid	Artefact : 2		103366
	Contact T Russell	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA),Noeleen Curran,Kelleher Nightingal					**Permits**		
45-5-2991	TCE 1	AGD	56	293300	6252700	Open site	Valid	Artefact : -		99352
	Contact T Russell	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	2056	
45-5-4102	Kemps Creek IF1	GDA	56	295565	6253701	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4103	Kemps Creeks IF2	GDA	56	294737	6254040	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4104	Kemps Creek (logosoc1)	GDA	56	295307	6254094	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4105	Kemps Creek (logosoc2)	GDA	56	295265	6254066	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**		
45-5-4525	Oakdale South IF2	GDA	56	297566	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4526	Oakdale South AS2	GDA	56	297513	6254618	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4527	Oakdale South IF1	GDA	56	297516	6254817	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4528	Oakdale South AS3	GDA	56	297508	6254390	Open site	Valid	Artefact : -		104331
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4529	Oakdale South AS4	GDA	56	297190	6253944	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Alex Timms					**Permits**		
45-5-4947	Oakdale South AS5	GDA	56	297775	6254796	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		
45-5-4948	Oakdale South IF3	GDA	56	297752	6254842	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.ryan taddeucci					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-5104	PAD 2	GDA	56	294516	6249243	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Miss.Jasmine Fenyvesi					**Permits**		
45-5-5133	Oakdale West 18 Isolated Find 01	GDA	56	296303	6254317	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5134	Oakdale West 18 Artefact Scatter 02	GDA	56	296886	6254515	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5135	Oakdale West 18 Artefact Scatter 03	GDA	56	296777	6254242	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5136	Oakdale West 18 Isolated Find 02	GDA	56	296659	6254589	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5137	Oakdale West 18 Artefact Scatter 01	GDA	56	297167	6254820	Closed site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma					**Permits**		
45-5-5187	MSP-01	GDA	56	294210	6254558	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5188	MSP-02	GDA	56	293594	6253823	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5189	MSP-03	GDA	56	293501	6253805	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5190	MSP-04	GDA	56	293580	6253610	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-5-5037	UC AS 23	GDA	56	298800	6248150	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Ms.Fenella Atkinson					**Permits**	4303	
41-5-0014	M12-AS-04	GDA	56	294361	6250957	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Jacobs Group (Australia) Pty Ltd - Newcastle,Miss.Chelsea Jones					**Permits**		
45-5-5186	Mamre Road Artefact Scatter 1901 (MAM AS1901)	GDA	56	295114	6253373	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Jennifer Norfolk					**Permits**		
45-5-2615	Area D	AGD	56	292900	6253450	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Dominic Steele Archaeological Consulting					**Permits**	1586	

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : ESR Kemps Ck 7km

Client Service ID : 546950

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-3106	Kemps Creek (KC PAD 1)	AGD	56	296000	6248875	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : 1		97456,98064
	Contact T Russell	**Recorders**	Jo McDonald Cultural Heritage Management see GML						**Permits**	
45-5-4374	CP AS1	GDA	56	298104	6249004	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.josh madden						**Permits**	
45-5-4937	M12-AS-01	GDA	56	297650	6248694	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Neville Baker,Sydney Water-Parramatta						**Permits**	
45-5-4749	M12 A4	GDA	56	293785	6251051	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-4767	M12 A5	GDA	56	296537	6249457	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes						**Permits**	
45-5-5330	Elizabeth Precinct Isolated Find 05 (EP IF 05)	GDA	56	293287	6249478	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5331	Elizabeth Precinct Isolated Find 04 (EP IF 04)	GDA	56	293336	6249535	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Ms.Alyce Haast						**Permits**	
45-5-5358	OW 19 IF 2	GDA	56	296486	6254788	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5359	OW 19 IF 1	GDA	56	296535	6254830	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Artefact - Cultural Heritage Ma						**Permits**	
45-5-5340	MSP-05	GDA	56	294016	6254604	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5341	MSP-06	GDA	56	294123	6254552	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5342	MSP-07	GDA	56	294146	6254469	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5343	MSP-08	GDA	56	294155	6254417	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5344	MSP-09	GDA	56	294469	6253984	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5345	MSP-10	GDA	56	294548	6253896	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	
45-5-5346	MSP-11	GDA	56	293382	6254091	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						**Permits**	

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APPENDIX B TEST PIT REGISTER

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
A1	1	5	6	30	5cm of dark brown humic loam overlying reddish brown silty clay loam to 25cm. Bioturbated boundary to orange brown basal clay.	Sparse clay patches throughout; disturbed basal clay.
A2	1	10	1	10	Medium brown silty clay loam. Clear transition to reddish brown silty clay base.	Patchy clay throughout. Truncated and mixed.
A3	1	10	3	30	Mixed soil and red brown clay. Red brown basal clay	Mixed and truncated.
A4	1	10	3	23	Brown silty clay loam over orange clay base	Patchy clay.
A5	1	10	1	12	Mixed soil and red brown clay. Red brown basal clay	Mixed and truncated.
A6	1	10	3	30	10cm of dark brown humic loam; decreasing humic content with depth; bioturbated transition to red brown silty clay.	Appears intact.
A7	1	10	4	36	Dark brown humic silty loam to 20 cm, decreasing humic content with depth; bioturbated transition to red brown clay.	Appears intact.
A8	1	10	2	20	Brown silty clay loam over mottled orange clay base	Appears intact.
A9	1	10	2	19	Mixed soil and clay; disturbed red brown basal clay	Truncated and mixed
A10	1	10	1	10	Mixed soil and clay; disturbed red brown basal clay	Truncated and mixed
A11	1	10	1	12	Mixed soil and clay; disturbed red brown basal clay	Truncated and mixed
A12	1	10	2	22	Dark brown humic loam to 8cm; reddish brown silty clay loam with increasing clay and bioturbated boundary to red brown clay base.	Slightly mottled, possibly ploughed.
A13	1	10	2	18	Mixed soil and clay; disturbed red brown basal clay	Very mixed
A14	1	10	2	15	Brown silty clay loam; disturbed orange clay base	Slightly mottled, possibly ploughed.
A15	1	10	2	18	Dark brown silty clay loam, increasing clay content with depth; bioturbated orange brown clay base.	Appears intact.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
B1	1	10	5	50	Redeposited local clay and soils with clear boundary to original dark brown humic topsoil at around 30cm.Clay increasing towards base; clear boundary to red brown silty clay base.	30cm of fill. Intact below.
B2	1	10	4	38	Redeposited local clay and soils with clear boundary to original dark brown humic topsoil at 15cm with fine gravels.Clay increasing towards base; clear boundary to red brown silty clay base.	15cm of fill. Intact below.
B3	1	10	3	36	Redeposited local clay and soils with clear boundary to original dark brown humic topsoil at 13cm.Clay increasing towards base; clear boundary to red brown silty clay base.	13cm of fill. Intact below.
B4	1	10	5	45	Redeposited local clay and soils with clear boundary to original dark brown humic topsoil at 20cm.Clay increasing towards base; clear boundary to red brown silty clay base.	20cm of fill. Intact below.
B5	1	10	4	35	Redeposited local clay and soils with clear boundary to original dark brown humic topsoil at 16cm.Clay increasing towards base; clear boundary to red brown silty clay base.	Approx. 16cm of fill. Intact below.
C1	2	10	2	15	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Shallow profile, possibly truncated
C2	2	10	2	20	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Faintly mottled, possibly ploughed and eroded.
C3	2	10	2	16	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Faintly mottled; quite clumpy; possibly ploughed and eroded.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
C4	2	10	2	19	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Faintly mottled; possibly ploughed and eroded.
C5	2	10	2	19	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Faintly mottled; quite clumpy; possibly ploughed and eroded.
C6	2	10	2	15	Brown clayey loam; gradual transition to orange brown silty clay. Ironstone pebbles <10%.	Faintly mottled; quite clumpy; possibly ploughed and eroded.
D1	4	10	3	26	Medium grey brown silty clay loam with clear transition to reddish brown silty clay base	Appears intact.
D2	4	10	2	21	Medium grey brown silty clay loam, scattered ironstone <10mm; bioturbated clay from 17cm onto red brown silty clay base.	Appears intact.
D3	4	10	2	21	Dark brown humic silty clay loam, scattered charcoal flecks; clear transition to reddish brown silty clay base	Appears intact.
D4	4	10	2	20	Dark brown humic silty clay loam, scattered charcoal flecks; bioturbated transition to red brown silty clay base	Appears intact.
D5	4	10	2	20	Dark brown silty clay loam; ironstone pebbles <10mm;	Appears intact.
D6	4	10	2	17	Dark brown humic silty clay loam, scattered charcoal flecks; bioturbated transition to reddish brown silty clay base	Appears intact.
D7	4	10	3	26	Reddish brown silty clay loam; scattered gravels; clear transition to reddish brown clay base	Appears intact.
D8	4	10	2	18	Dark brown silty clay loam over reddish brown silty clay.	Appears intact.
D9	4	10	3	27	Dark brown silty clay loam over reddish brown silty clay.	Appears intact.
D10	4	10	3	26	Dark brown silty clay loam over reddish brown silty clay.	Appears intact.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
E1	2	10	2	18	Dark brown silty clay loam, very clumpy; shale, ironstone, baked clay, charcoal inclusions; red brown silty clay base, evidence of burning continues.	Clumpy and mixed; appears to have been ploughed.
E2	2	10	2	22	Sparse topsoil over yellowish brown silty clay; very weak and crumbly; very clayey from 15cm; yellow brown silty clay base.	Clumpy and mixed; appears to have been ploughed and eroded.
E3	2	10	2	16	Sparse topsoil over yellowish brown clumpy clay; yellow brown silty clay base.	Clumpy and mixed; appears to have been ploughed and eroded.
E4	2	10	2	22	Sparse topsoil over yellowish brown clumpy clay; yellow brown silty clay base.	Clumpy and mixed; appears to have been ploughed and eroded.
E5	2	10	2	20	Sparse topsoil over yellowish brown silty clay; very weak and crumbly; very clayey from 15cm; yellow brown silty clay base.	Clumpy and mixed; appears to have been ploughed and eroded.
E6	2	10	2	20	Reddish brown silty clay loam; scattered gravels; irregular boundary to red brown clay at 14cm.	Appears mixed
E7	2	10	2	23	Thin topsoil over reddish brown silty clay loam; irregular transition to red brown clay.	Appears mixed
F1	4	5	4	25	Yellowish brown silty clay loam, ironstone of varying sizes up to 8cm diametre; bioturbated zone over reddish brown clay base.	Appears intact,; root channel in base.
F2	4	10	2	18	Dark brown silty clay loam; sparse ironstone pebbles <20mm; rddish brown silty clay base.	Intact
F3	4	10	4	38	Dark brown silty clay loam; sparse ironstone pebbles <20mm; reddish brown silty clay base.	Intact
F4	4	10	3	26	Reddish brown silty clay loam, scattered baked clay flecks and nodules, soil appears ashy; dark red brown heat affected clay.	Appears mixed

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
F5	4	10	3	23	Dark brown silty clay loam; sparse ironstone pebbles <50mm; reddish brown silty clay base.	Appears intact.
F6	4	10	4	34	Medium brown brown silty clay loam, charcoal flecks, sparse gravels; increasing clay towards brown clay base;	Appears intaqct.
F7	4	10	4	36	Dark brown silty loam; irregular boundary to loamy clay from around 30 cm; Reddish brown silty clay base	Appears intact.
F8	4	10	4	47	Reddish brown silty clay loamsmall shale fragment from spit 1 and increasing in size with depth; Up to 60%rock to 20cm in size in base of test pit.	Natural rock outcrop?
F9	4	10	2	20	Dark brown silty clay loam, small ironstone pebbles; reddish brown clay base	Appears intact
F10	4	10	3	25	Dark brown silty clay loam, small ironstone pebbles, reddish brown clay base.	Appears intact
G1	4	10	3	25	Medium brown silty clay loam; charcoal and Fe flecks; bioturbated transition to yellowish brown clay.	Appears intact
G2	4	10	3	30	Medium brown silty clay loam; transition to yellowish brown clay base	Appears intact
G3	4	10	3	28	Dark brown silty clay loam with ironstone gravel; transition to orange clay base	Appears intact
G4	4	10	2	18	Dark brown silty clay loam with ironstone gravel; transition to orange clay base	Appears intact
G5	4	10	3	24	Grey brown silty clay loam; transition to reddish brown silty clay	Appears intact
H1	4	10	3	25	Grey brown silty clay loam; transition to reddish brown silty clay	Appears intact
H2	4	10	3	28	Medium brown silty clay loam; transition to yellow brown silty clay	Appears intact

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
H3	4	10	4	34	Drak brown silty clay loam; clear transition to dark yellowish brown silty clay	Appears intact
H4	4	10	2	20	Dark brown silty clay loam with ironstone gravel; transition to orange clay base	Appears intact
H5	4	10	3	23	Grey brown silty clay loam; transition to yellowish brown silty clay	Appears intact
I1	3	5	3	16	This topsoil.Mixed red clay and sparse silty loam to 10cm; very disturbed red clay over dense plastic clay base.	Very little soil horizon remaining. Disturbed clay only.
I2	3	10	1	10	Thin topsoil over mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
I3	3	10	1	9	Thin topsoil over clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
I4	3	10	1	10	Thin topsoil over clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
I5	3	10	1	10	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
I6	3	10	2	23	Dark brown clayey loam; cracked and clumpy; reddish brown clay base.	Appears mixed and truncated.
I7	3	10	1	10	Mixed dark brown loam and yellow brown clay; yellow brown clay base.	Appears mixed and truncated.
J1	3	10	3	30	Disturbed reddish brown clayey silt, sparse ironstone gravels. Irregular transition to disturbed red brown clay at around 16cm. Excavated into clay to ensure not a clay capping.	Very disturbed profile; clujpy and irregular clay patches.
J2	3	10	1	10	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
J3	3	10	1	10	Slightly humic in top 5cm; overlies mixed red clay/soil and Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
J4	3	10	1	10	Thin topsoil over clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
J5	3	10	2	12	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
J6	3	10	1	10	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
J7	3	10	2	12	Cracked clumpy brown clayey silt on brown clay.	Truncated and disturbed.
K1	3	10	1	10	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
K2	3	10	1	10	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
K3	3	10	1	8	Thin topsoil over cracked clumpy mixed red clay/soil. Plastic red clay base.	Very little soil horizon remaining. Disturbed clay only.
L1	5	10	4	37	Orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L2	5	10	3	23	Dark brown to orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L3	5	10	3	29	Dark brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L4	5	10	2	20	Dark brown to orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L5	5	10	2	14	Dark brown to orange brown silty clay loam; transition to orange clay	Appears intact
L6	5	10	2	15	Orange brown silty clay loam with charcoal piece; transition to orange clay	Appears intact
L7	5	10	2	14	Orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L8	5	10	3	24	Reddish grey brown silty clay loam with ironstone gravel; transition to reddish brown silty clay	Appears intact
L9	5	10	3	27	Reddish grey brown silty clay loam with ironstone gravel;	Appears intact

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
					transition to reddish brown silty clay	
L10	5	10	3	26	Reddish brown silty clay loam with ironstone gravel; transition to reddish brown silty clay	Appears intact
L11	5	10	2	18	Reddish brown silty clay loam with ironstone gravel; transition to reddish brown silty clay	Appears intact
L12	5	10	2	18	Reddish brown silty clay loam with ironstone gravel; transition to reddish brown silty clay	Appears intact
L13	5	10	2	20	Orange brown silty clay loam with ironstone to gravel; transition to orange clay	Appears intact
L14	5	10	2	17	Dark brown to orange brown silty clay loam with ironstone gravel; transition to redish brown clay	Appears intact
L15	5	10	2	19	Reddish brown silty clay loam; transition to orange clay	Appears intact
L16	5	10	3	24	Orange brown clay loam with ironstone gravel; transition to orange clay base	Appears intact
L17	5	10	2	16	Orange brown silty clay loam; transition to orange clay	Appears intact
L18	5	10	2	18	Reddish brown silty clay loam with ironstone gravel; transition to reddish brown clay base	Appears intact
L19	5	10	2	15	Orange brown silty clay loam; transition to orange clay	Appears intact
L20	5	10	2	20	Reddish brown silty clay loam with ironstone gravel; transition to reddish brown clay base	Appears intact
L21	5	10	2	20	Medium brown silty clay loam; transition to orange clay	Appears intact
L22	5	10	3	24	Dark brown silty clay loam with ironstone gravel; transition to orange clay base	Appears intact
L23	5	10	2	18	Dark brown silty clay loam with ironstone gravel; transition to orange clay base	Appears intact

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
L24	5	10	2	13	Orange brown silty clay loam; transition to orange clay	Appears intact
L25	5	10	2	16	Orange brown silty clay loam; transition to orange clay	Appears intact
L26	5	10	2	19	Orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L27	5	10	2	16	Orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
L28	5	10	2	13	Orange brown silty clay loam with ironstone gravel; transition to orange clay	Appears intact
M1	4	5	6	28	Reddish grey brown to ressish brown silty clay loam with mottling; transition to yellowish brown clay	Mottling suggests disturbance and/or redeposition
M2	4	10	2	17	Dark reddish brown silty clay loam; clear transition to yellowish brown clay	Appears intact; clay appears heat affected
M3	4	10	2	20	Yellowish brown silty clay loam with ironstone gravel; clear transition to reddish silty clay base	Appears intact
M4	4	10	3	23	Reddish grey brown to reddish brown silty clay loam; transition to red brown clay	Appears intact
M5	4	10	2	13	Yellowish brown silty clay loam; transition to reddish brown silty clay	Possibly truncated
M6	4	10	2	13	Yellowish grey brown silty clay loam with ironstone gravel; clear transition to reddish brown silty clay	Possibly truncated
M7	4	10	2	16	Dark reddish brown silty clay loam; transition to brown clay	Modern materials at 7cm indicates disturbance
M8	4	10	2	18	Dark reddish brown silty clay loam with scattered baked clay and charcoal; transition to reddish brown clay	Possibly disturbed
M9	4	10	3	24	Grey brown silty clay loam with iron fleckas and mottling; transition to reddish brown silty clay	Modern materials at 5cm, mottling and baked clay indicate disturbance

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
M10	4	10	3	27	Reddish brown silty clay loam with iron flecks and mottling; transition to yellow brown silty clay loam	Mottling may suggest disturbance
N1	6	10	3	25	Dark reddish brown mixed soil and clay; transition to red clay	Appears mixed
N2	6	10	3	22	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N3	6	10	3	21	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N4	6	10	3	27	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N5	6	10	3	29	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N6	6	10	3	30	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N7	6	10	3	28	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N8	6	10	3	25	Dark reddish brown mixed soil and clay; transition to disturbed red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
N9	6	10	2	23	Reddish brown loamy clay with ironstone fragments; abrupt transition to red clay	Highly disturbed market garden. Plastic sheet fragments throughout.
O1	6	10	3	30	Dark red brown mixed soil and clay with ironstone gravel; transition to red brown clay	Highly disturbed market garden.
O2	6	10	4	35	Dark red brown mixed clay and soil; ironstone gravels; disturbed red brown plastic clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
O3	6	10	4	35	Dark red brown mixed clay and soil; ironstone gravels; disturbed yeollw brown plastic clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.
O4	6	10	3	32	Dense mixed clay and soil; scattered baked clay; highly disturbed red brown clay base with charcoal inclusions.	Highly disturbed market garden bed.
O5	6	10	3	22	Dense mixed clay and soil; scattered baked clay; dense disturbed basal clay from around 15cm.	Highly disturbed market garden bed; plastic sheet fragments to 15 cm depth.
O6	6	10	4	29	Reddish brown mixed clay and soil; scattered baked clay; disturbed transition to red brown clay from 25 cm depth.	Highly disturbed market garden bed; plastic sheet fragments throughout.
O7	6	10	3	31	Very clumpy mix of clay and soil; natural rock fragments; disturbed reddish brown basal clay; rock fragments continue.	Highly disturbed market garden bed; plastic sheet fragments throughout.
P1	6	10	2	23	Reddish brown mixed silty clay; disturbed red brown clay base.	Highly disturbed market garden bed.
P2	6	10	3	30	Well mixed yellowish brown soil and clay; heavily disturbed transition to reddish brown plastic clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
P3	6	10	3	28	Well mixed yellowish brown soil and clay; heavily disturbed transition to reddish brown plastic clay.	Highly disturbed market garden bed; plastic sheet fragments throughout, continues into basal clay.
P4	6	10	2	18	Clumpy clay mixed with silty loam; very compact yellow brown silty clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
P5	6	10	2	16	Predominantly yellow brown clay mixed with silty loam; very compact yellow brown silty clay base.	Highly disturbed market garden bed.
P6	6	10	2	18	Predominantly yellow brown clay mixed with silty loam; compact yellow brown silty clay base.	Highly disturbed market garden bed.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
P7	6	10	4	33	Dark brown clayey loam; uniformly mixed; very dense dark reddish brown basal clay.	Highly disturbed market garden bed.
Q1	6	10	3	30	Reddish brown to dark yellowish brown compact and disturbed clayey mixed soil; reddish brown plastic basal clay.	Highly disturbed market garden bed.
Q2	6	10	3	26	Reddish brown compact and disturbed clayey mixed soil; clay clumps; reddish brown plastic basal clay.	Highly disturbed market garden bed.
Q3	6	10	2	17	Dark yellowish brown disturbed clayey mixed soil; red plastic basal clay undulating due to ploughing.	Highly disturbed market garden bed.
R1	6	10		23	Dark brown clayey soil, very compact; reddish brown plastic clay base.	Highly disturbed market garden bed.
R2	6	10	1	10	Mottled reddish brown clayey soil; mottled clay base.	Highly disturbed market garden bed.
R3	6	10	2	16	Yellowish brown compact clayey mixed soil; reddish brown basal clay.	Highly disturbed market garden bed.
R4	6	10	2	18	Yellowish brown compact clayey mixed soil; reddish brown basal clay.	Highly disturbed market garden bed.
R5	6	10	3	26	Yellowish brown compact clayey mixed soil; reddish brown basal clay.	Highly disturbed market garden bed.
R6	6	10	4	37	Yellowish brown compact clayey mixed soil; dark brown silty basal clay.	Highly disturbed market garden bed.
R7	6	10	3	22	Yellowish brown compact clayey mixed soil; reddish brown silty basal clay.	Highly disturbed market garden bed.
R8	6	10	3	23	Reddish brown mixed clayey soil; mottled with reddish clay flecks; reddish brown basal clay.	Highly disturbed market garden bed.
R9	6	10	2	17	Yellowish brown over reddish brown mixed clayey soil; mottled reddish brown basal clay.	Highly disturbed market garden bed.
R10	6	10	3	24	Reddish brown mixed clayey soil; undulating yellow brown basal clay.	Highly disturbed market garden bed.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
S1	6	10	1	10	Reddish brown mixed clayey soil; reddish brown silty clay base.	Highly disturbed market garden bed.
S2	6	10	2	12	Reddish brown mixed clayey soil; reddish brown silty clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.
S3	6	10	3	23	Reddish brown mixed clayey soil; reddish brown silty clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.
S4	6	10	2	21	Yellowish brown clumpy, cracked mixed clay and soil; indistinct transition to hard set cracked clays.	Highly disturbed market garden bed.
S5	6	10	2	20	Reddish brown mixed clayey soil; mottled with reddish clay flecks; reddish brown basal clay.	Highly disturbed market garden bed.
S6	6	10	15	15	Yellowish brown mixed clayey soil; yellowish grey brown clay base.	Highly disturbed market garden bed.
S7	6	10	25	25	Reddish brown silty clay loam; shale fragments throughout; red brown clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T1	6	10	1	10	Mixed red brown silty clay loam; clumps of basal clay; disturbed red brown plastic basal clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T2	6	10	2	18	Mixed red brown silty clay loam; clumps of basal clay; disturbed red brown plastic basal clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T3	6	10	3	30	Yellowish brown mixed clayey soil; yellowish grey brown clay base.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T4	6	10	1	10	Yellowish grey brown silty clay loam with some clay nodules; mottled yellow/reddish basal clay with sandstone inclusions.	Highly disturbed market garden bed; wood post remains.
T5	6	10	3	24	Yellowish grey brown silty clay loam with some clay nodules; mottled yellow/reddish basal clay with shale.	Highly disturbed market garden bed; degraded shale fragments.

Test square ID	Area	Spit depth (cm)	Spit count	Max. Depth (cm)	Soil profile	Disturbance
T6	6	10	3	30	Yellowish grey brown silty clay loam with some clay nodules; mottled yellow/reddish basal clay with shale.	Highly disturbed market garden bed; degraded shale fragments.
T7	6	10	3	22	Reddish brown mixed clayey soil; Reddish brown basal clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T8	6	10	1	10	Reddish brown mixed clayey soil; Reddish brown basal clay.	Highly disturbed market garden bed.
T9	6	10	1	10	Reddish brown mixed clayey soil; Reddish brown basal clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.
T10	6	10	2	14	Reddish brown mixed clayey soil; Reddish brown basal clay.	Highly disturbed market garden bed; plastic sheet fragments throughout.

APPENDIX C ARTEFACT CATALOGUE

Transect	Test Unit	Spit	Artefact type	Raw Mat	Colour	Form	Ctx type	Ctx %	Platform (flakes)	Term (flakes)	Ret Type	Scar Dir (cores)	Scar # (cores)	Platform # (cores)	MD (mm)	L (mm)	W (mm)	Th (mm)	Weight (gm)	Note / Comments / Photos /Tool type
B	1	1	CF	S	Red		IN	0	FL	F					10.95	9.5	10.29	4.37	0.4	
B	5	3	ANG	S	Grey										20.2	20.2	14.95	14.86	3.8	
F	5	2	CT	S	Red		IN	0							29.69	27.61	15.33	6.89	3.1	Backed Silcrete blade with retouch.
F	7	1	CF	S	Red		IN	0	FL	F					24.59	23.72	14.63	6.03	2.3	
J	6	1	CT	S	Red		IN	0							25.92	25.67	8.23	4.7	1	Broken backed blade. Conjoined two pieces.
L	5	1	DF	S	Red		COBB	26-50		F					23.73	17.93	16.43	10.61	3.2	Broken distal flake with cortex.
L	7	1	CF	S	Red		IN	26-50	FL	F					11.83	11.71	9.55	3.28	0.4	
L	9	1	BC	S	Red		COBB	1-25				Unidirection	1	1	26.84	20.5	26.3	14.31	7.6	
M	1	2	DF	S	Red		IN	0	FL	F					8.81	6.34	9.68	2.08	less than 0.3 gm	
M	1	3	CF	S	Red		IN	0	FL	F					14.3	10.48	12.33	2.46	0.3	
M	4	2	CT	S	Red		IN	0							26.13	22.52	12.18	5.89	1.5	Backing or use wear.
P	6	1	CF	S	Red		IN	0	FL	F					14.93	14.93	8.05	3.96	0.3	
R	3	1	CF	S	Red		IN	0	FL	F					13.09	12.77	12.59	5.27	0.8	

Artefact type:
CF=complete flake, PF=proximal flake, DF=distal flake, SPLITR=longitudinal split flake right side, SPLITL=longitudinal split flake left side, RF=Retouched flake, C=core, BC=broken core, CT=complete tool, BT=broken tool, A=anvil, M=muller, GR=grinding stone, ANG=angular fragment, N=non-diagnostic.

Raw material:
S=Silcrete, CH=Chert, Q=Quartz, QTZ=Quarzite.

Form:
EXP=expanding, BP=bipolar, BLO=block, IN=indeterminate.

Cortex type:
COBB=cobble/water rolled, QAR=quarried, IN=indeterminate.

Cortex:
0, 1-25, 26-50, 51-75, 76-99, 100.

Platform:
PL=plane, FL=flaked, FCT=faceted, CTC=cortical, CR=crushed/bipolar.

Termination:
F=feather, S=step, H=hinge, P=plunge.

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