



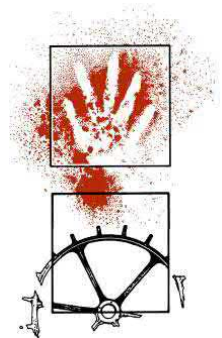
EnergyConnect (NSW – Eastern Section)

Buronga to Wagga Wagga, NSW

Revised Aboriginal Cultural Heritage Assessment Report

Public version

May 2022



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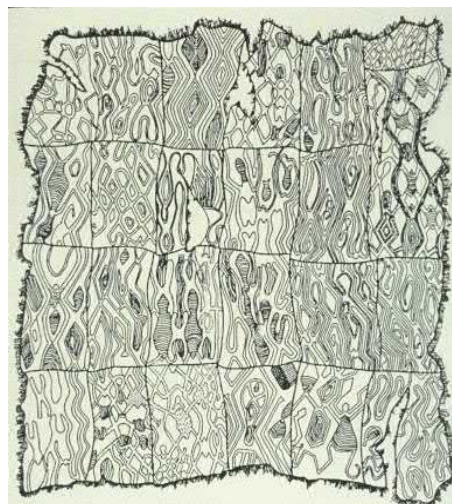
acn: 092 901 605

*Number 4
Kingston Warehouse
71 Leichhardt St.
Kingston ACT 2604*

www.nohc.com.au

ph 02 6282 9415

fx 02 6282 9416



NOHC acknowledges Australia's Aboriginal and Torres Strait Islander people, their many diverse communities across our nation and their rich culture. We pay respect to their Elders past and present. We acknowledge Aboriginal and Torres Strait Islander peoples as Australia's first peoples and as the Traditional Owners and custodians of the land and water across the Australian landscape and seascape. We recognise and value the ongoing contribution of Aboriginal people to Australian life and how their contribution continues to enrich our society. In our daily work we recognise, cherish, celebrate and defend the evidence of Aboriginal and Torres Strait Islander peoples rich and complex history and prehistory which extends back from the present day into a deep and distant past. We understand that this archaeological evidence has meaning to the descendants of those who created it. Through our research and conservation efforts we strive to unlock hidden meanings from these traces of the past and to make that knowledge available to current and future generations of Aboriginal and Torres Strait Islander people.



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Previous page: Aboriginal possum skin rug collected 1839-1840 from the Hunter River region, eastern NSW (Smithsonian Inst. Washington D.C. Cat. no. E5803)



Executive summary

Transgrid (electricity transmission operator in New South Wales (NSW)) and ElectraNet (electricity transmission operator in South Australia (SA)) are seeking regulatory and environmental planning approval for the construction and operation of a new High Voltage (HV) interconnector between NSW and SA, with an added connection to north west Victoria. Collectively, the proposed interconnector is known as EnergyConnect. The proposal, focusing on the eastern section of EnergyConnect in NSW, would involve:

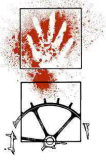
- about 375 kilometres of new 330 kilovolt (kV) double circuit transmission line and associated infrastructure between the Buronga substation and the proposed Dinawan 330kV substation
- connection of the proposed transmission lines to the existing Buronga 330kV substation
- construction of a new 330kV substation around 30 kilometres south of Coleambally, referred to as the proposed Dinawan 330kV substation
- connection of the proposed transmission lines to the proposed Dinawan substation
- about 162 kilometres of new 500kV double circuit transmission line and associated infrastructure between the proposed Dinawan 330kV substation and the existing Wagga Wagga substation at Wagga Wagga, NSW
- upgrade and expansion of the Wagga Wagga substation to accommodate the new transmission line connections including the installation of new line bays, relocation and upgrade of existing bays and associated electrical and civil works (road, kerb, gutter, drainage works and earthworks)
- provision of three optical repeater structures and associated connections to existing local electrical supplies
- new and/or upgrade of access tracks as required
- ancillary works required to facilitate the construction of the proposal (e.g. laydown and staging areas, concrete batching plants, brake/winch sites, site offices and accommodation camps).

This technical paper, the Revised Aboriginal Cultural Heritage Assessment Report (Revised ACHAR), has been prepared to support the Submissions Report (herein referred to as the Submissions Report) for the proposal. The Revised ACHAR has been prepared to respond to submissions received on the exhibited Environmental Impact Statement (EIS) and to document the additional field activities (including survey and test excavation works) completed since the EIS was prepared. It also documents the revised impact assessment based on some minor refinements to the proposal design which have occurred since the exhibition of the EIS.

Impact assessment

There has been impact avoidance and minimisation measures applied through the design process and refinement of construction methodology to date and that this has resulted in impacts to some items and PADs being completely avoided or impacts minimised. For example, avoidance of impacts to PEC-E-PAD15 and PEC-E-19 at a Cobb Highway camp option and PEC-E PAD44 at a Booororban compound option location.

As part of the ongoing heritage survey and field investigations that have been undertaken following exhibition of the EIS, a new area of PAD (PEC-E-PAD45) has been identified at the location of the previously proposed Cobb Highway construction compound and accommodation camp site. In order to avoid potential impacts to this PAD, a revised site arrangement for the construction compound and accommodation camp has been developed.



Archaeological subsurface testing has been completed in all PADs which have been identified as likely to be directly impacted by the proposal and significance assessments have been completed for the PADs which have been subject to test excavation. Following the completion of the subsurface test excavations eight PADs were found to not have subsurface archaeological potential, they are PEC-E-PAD01, 04, 05, 06, 09, 17, 28 and 41. As a result these areas are longer considered to be PADs. There are therefore 37 areas of PAD remaining in the proposal area.

The proposal may have a range of direct and potential direct impacts on a total of 92 Aboriginal heritage sites and PADs, which consist of sites of low to moderate to high scientific significance (refer to Section 9.6 and Table 9.1). The exact nature and extent of impact would be confirmed following detailed analysis.

The final construction methodology for the works in PADs 7, 12, 14, 16, 33 and 43 is subject to detailed construction planning. It is currently assumed that there would be no sub-surface impact in these areas and as a result a program of test excavations has not occurred in them. Should the finalisation of the construction method determine that sub-surface direct impacts (i.e. grading, any excavations works) would be required then testing would need to occur before there is any impacts in these areas.

Mitigation measures

The mitigation measures to manage potential Aboriginal heritage impacts of the proposal during the construction and operation phase include (refer to Section 10 for further detail):

- The finalisation of the proposal design and construction methodology, and associated final disturbance area, would be developed to avoid harm to features/items of Aboriginal heritage significance as far as practical. Avoidance and minimisation of harm to features/items moderate or higher archaeological significance and Potential Archaeological Deposits (PADs) would be prioritised.
- Aboriginal stakeholder consultation would be carried out in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010a). Registered Aboriginal Parties would be invited to be active participants in all proposed site inspections and test excavations, with further cultural information to be gathered during consultation undertaken in association with these activities.
- An Aboriginal heritage assessment would be carried out with RAPs where ground disturbance activities are required in all locations outside of the previously surveyed heritage survey area, prior to ground disturbing activities occurring in any such areas.
- An archaeological subsurface test excavation program would be carried out in parts of any PADs where proposal activities would have direct impact and a test excavation program has not already been completed in the area of impact. Direct impacts include grading of tracks and construction areas, excavation for tower construction and tree removal that includes the root ball. The purpose of the test excavations would be to determine the presence or absence and significance of intact subsurface archaeological deposits to inform design development and construction planning and / or requirements for salvage activities.
- Harm to scarred trees would be avoided where possible through design or construction planning. Scarred trees must only be removed to directly facilitate construction of permanent infrastructure and/or to meet Vegetation Clearance Requirements at Maximum Line Operating Conditions (Transgrid, 2003). If the removal of a scarred tree cannot be avoided, the tree would be subject to 3D scanning, followed by salvage of the scarred trunk. The results of this assessment would be reported on in addendum reports.



- All portions of artefact scatters that are to be directly impacted would require surface collection and salvage prior to construction commencement in those areas. Hearths would be the subject of photographic recording and samples taken of hearth material prior to disturbance. Additionally, based on the outcomes of the test excavation, PADs would be subject to surface collection or salvage excavations prior to the commencement of ground disturbing activities within the PAD.
- Aboriginal heritage exclusion zones would be established to protect sites, including:
 - known features/items of significance that have been identified to remain in-situ throughout construction (and not subject surface collection)
 - scarred trees that are to remain in-situ.
 - any portions of PADs that become a known site following subsurface testing and which are identified for no impact.
- Any existing access track in areas of PAD that require upgrading for use during construction would not be the subject of direct ground disturbance such as grading. The methodology to be used for the upgrade would be designed to avoid this disturbance and may include laying of geotextile on the surface. If avoidance is not possible then additional test excavation would be required, and salvage completed as necessary prior to works commencing (in accordance with AH4 and AH6).
- During operation features/items of heritage significance that would remain in-situ within the transmission line easement would be mapped and recorded within GIS systems managed by Transgrid and would be entered on the NSW Aboriginal Heritage Information Management System (AHIMS). Relevant Transgrid systems and procedures would be updated as required with protocols that would be implemented during operation to ensure that impacts to the features/items of significance do not occur during maintenance activities.

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Glossary

Term/Acronym	Description
Aboriginal object	Means an object associated with Aboriginal people because of Aboriginal tradition (<i>Heritage Act 2004</i>).
Aboriginal place	Means a place associated with Aboriginal people because of Aboriginal tradition (<i>Heritage Act 2004</i>).
Aboriginal site	A place or location which relates to past or contemporary Aboriginal occupation. Sites can be divided into those identified from archaeological evidence (archaeological sites), and those related to intangible cultural values, such as revealed by oral tradition and lore, or from the historical record. An Aboriginal site may have both archaeological and intangible values.
archaeological site	A place or location with the confirmed presence of archaeological evidence of Aboriginal occupation, where the context of that evidence can be reliably related to the Aboriginal actions which produced the evidence.
artefact	An object, normally portable, made or modified by human hand (see 'stone artefact').
artefact scatter	Artefacts situated within an open context are classed as an open artefact scatter (or 'open camp site') when two or more occur no more than 60 metres away from any other constituent artefact. The 60 metre specification relates back to the definition of an isolated find (see above). The use of the term <i>scatter</i> is intended only to be descriptive of the current archaeological evidence and does not infer the original human behaviour which formed the site. The term <i>open camp site</i> has been used extensively in the past to describe open artefact scatters. This was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, the terms <i>artefact scatter</i> , <i>artefact distribution</i> or <i>artefact occurrence</i> are now more extensively used. The latter two options can also be used to categorise artefacts occurring in subsurface contexts.
background discard/scatter	<p>There is no single concept for background discard or 'scatter', and therefore no agreed definition. The definitions in current use are based on the postulated nature of prehistoric activity, and often they are phrased in general terms and do not include quantitative criteria. It is commonly agreed that background discard occurs in the absence of 'focused' activity involving the production or discard of stone artefacts in a particular location. An example of unfocused activity is occasional isolated discard of artefacts during travel along a route or pathway. Examples of 'focused activity' are camping, knapping and heat-treating stone, cooking in a hearth, and processing food with stone tools.</p> <p>In practical terms, over a period of thousands of years an accumulation of 'unfocused' discard may result in an archaeological concentration that may be identified as a 'site'. Definitions of background discard comprising only qualitative criteria do not specify the numbers (numerical flux) or 'density' of artefacts required to discriminate site areas from background discard.</p>



Term/Acronym	Description
brake/winch sites	<p>A brake and winch site is a temporarily cleared area where plant and equipment is located for the purposes of spooling and winching a conductor into place on erected transmission line structures along a transmission line corridor. Dependent upon the angle of line deviation, the location of the brake and winch site at that angle may or may not be within the nominated transmission line easement. The brake and winch site is only required for the construction phase of the proposal. It does not need to be maintained for ongoing operation and / or maintenance of the transmission line.</p>
burial sites and burial grounds	<p>Burials within the region are generally found either in mound sites, or in elevated natural topographies consisting of soft, easily dug, sediments, such as aeolian sands or unconsolidated alluvial silts. They may occur in isolation or in groups and may also be association with occupation site debris. Burials are generally only visible where there has been some disturbance of subsurface sediments or where some erosional process has exposed them.</p>
construction impact area	<p>Refers to the area that would be directly impacted by construction of the proposal comprising the following:</p> <ul style="list-style-type: none"> • construction of all proposal infrastructure elements (including the proposed transmission line alignment, transmission line easement, substation site works (at both the proposed Dinawan 330kV and upgraded and expanded Wagga Wagga substations), optical repeater infrastructure, and other ancillary works) • locations for construction elements such as construction compounds and accommodation camps, access tracks (excluding public roads proposed to be used for access routes), site access points, water supply points, laydown and staging areas, concrete batching plants, brake/winch sites and site offices. <p>The area is identified based on realistic proposal component locations and areas however it is indicative at this stage. The area would be confirmed during finalisation of the design and construction methodology and would be developed as part of the consideration of avoidance and impact minimisation.</p> <p>This area includes the operational impact area (including areas required for maintenance) (refer definition below).</p> <p>For this assessment, the construction impact has been divided into subset disturbance areas. These subsets relate to the identified level of disturbance in each area to reflect construction and operational requirements – specifically:</p> <ul style="list-style-type: none"> • Disturbance area A, in which ground disturbance would be required • Disturbance area A (centreline) in which ground disturbance would be required • Disturbance area B, in which ground disturbance is not required except in limited circumstances where vegetation removal is required as triggered by the vegetation clearing requirements • Disturbance area hazard/high risk trees, in which trees could be removed/trimmed for operational requirements if they meet the definition of hazard/high risk tree. <p>Further detail of these areas is provided below.</p>



Term/Acronym	Description
disturbance area A	<p>Refers to an area at and around the transmission line towers (including associated construction work areas), areas for brake and winch sites and for new/upgraded access tracks in which vegetation would be removed during construction. The area also includes the proposed Dinawan 330kV substation site, the existing Wagga Wagga substation site and each of the main construction compounds and accommodation camps at Balranald, the Cobb Highway, Dinawan (Kidman Way), Lockhart and Wagga Wagga.</p> <p>It would include vegetation (including tree) removal and sub-surface impacts through construction activities such as grading, excavation, and full tree removal (i.e. root ball removal).</p> <p>Except in areas where only temporary disturbance is required (i.e. temporary access tracks and brake and winch sites), this area would also be subject to ongoing maintenance during operation (i.e. removal to ground level) for operational and safety requirements (including bushfire).</p> <p>This zone is a subset to the construction impact area (see definition above).</p>
disturbance area A (centreline)	<p>Refers to a centreline area between the proposed transmission line towers in which all vegetation (including trees) has been assumed to be removed during construction to ground level.</p> <p>In areas of known or potential heritage subsurface sensitivity (i.e. potential archaeological deposits (PADs)) sub-surface impacts in these areas would be avoided. In these areas vegetation would be cut to ground level and root balls would be retained as necessary to avoid subsurface impacts.</p> <p>Additionally, in areas of key Plains Wanderer primary habitat these centreline areas would not be subject to vegetation clearing. Alternate methods would be adopted in these key habitat areas for the conductor stringing activities.</p> <p>This area would also be subject to ongoing maintenance during operation (i.e. removal to maintain vegetation clearance requirements) for operational and safety requirements (including bushfire).</p> <p>This zone is a subset to the construction impact area (see definition above).</p>
disturbance area B	<p>Refers to an area between transmission line towers in the easement in which removal of vegetation (including trees) would be undertaken where they have the potential to exceed vegetation clearance heights. This removal may result in temporary ground disturbance. Vegetation that is to be removed would have root balls removed except where practicable to retain.</p> <p>Vegetation clearance heights are set by Transgrid for operational and safety requirements, including bushfire risk management.</p> <p>This area would also be subject to ongoing maintenance during operation.</p> <p>This zone is a subset to the construction impact area (see definition above).</p>



Term/Acronym	Description
disturbance area – hazard / high risk trees	<p>Refers to discrete areas alongside the proposal alignment where vegetation (trees) located outside of the easement have been assumed to potentially meet the definition of hazard/high risk trees and as a result have had an impact assumed.</p> <p>The impact would include partial vegetation clearing which would be restricted to the operational phase.</p> <p>Vegetation that is to be removed would have root balls retained and where practicable impacts will be restricted to pruning.</p> <p>Vegetation clearing has been identified as being limited to maintenance of hazard/high risk trees which are outside of the disturbance area B10 zone and within the adjacent 10 metre area where trees within vegetated areas exceed defined height thresholds of 30 metres for the 330 kV line and 20 metres for the 500 kV line.</p> <p>Locations identified for this disturbance area are shown in Appendix 5.</p> <p>This zone is a subset to the construction impact area (see definition above).</p>
earth mounds	<p>Earth mounds can result from a number of Aboriginal uses, in some areas of eastern Australian ceremonial rings (bora rings) are made by forming earth into shallow circular ridges and pathways. In the proposal study area however, earth mounds have been recorded that are related to a variety of uses including food preparation and camping.</p>
EnergyConnect	<p>An electrical interconnector of around 900 kilometres between the electricity grids of South Australia and New South Wales, with an added connection to north west Victoria. In NSW, EnergyConnect comprises two sections – Western Section (which has been the subject of a separate environmental assessment and approval) and the Eastern Section (the proposal the subject of this EIS).</p>
hazard/high risk tree	<p>Hazard/high risk trees are defined under Transgrid procedures and include any tree or part of a tree that if it were to fall would infringe on the vegetation clearance requirements at maximum conductor sag of the transmission lines. Hazard/high risk trees shall be identified during finalisation of the proposal design based on the transmission line conductor profile. All hazard/high risk trees posing a risk to the corridor shall be removed, subject to assessment by an arborist for health and risk of falling prior to removal.</p>
hearth	<p>In archaeology, a hearth is a firepit or other fireplace feature. Hearths are common within the proposal area and are often made of fired clay balls and sometimes reflect multiple use.</p>
heritage study corridor	<p>A 10-kilometre site search corridor used to develop a preliminary predictive model focused on Aboriginal site locations. This area is based on the proposal study area centreline between the Buronga and Wagga Wagga</p>
historic period	<p>Post colonisation period of Australian history</p>



Term/Acronym	Description
isolated find	<p>An isolated find is a single stone artefact, not located within a rock shelter, which occurs without any associated evidence of Aboriginal occupation within a radius of 60 metres. Isolated finds may be indicative of:</p> <ul style="list-style-type: none"> • random loss or deliberate discard of a single artefact • the remnant of a now dispersed and disturbed artefact scatter, and • an otherwise obscured or subsurface artefact scatter. <p>Except in the case of the latter, isolated finds may be considered to be constituent components of the <i>background scatter</i> present within any particular landform.</p> <p>The distance used to define an isolated artefact varies according to the survey objectives, the incidence of ground surface exposure, the extent of ground surface disturbance, and estimates of <i>background scatter</i> or <i>background discard</i> densities. In the absence of baseline information relating to background scatter densities, the defining distance for an isolated find must be based on methodological and visibility considerations. Given the varied incidence of ground surface exposure and deposit disturbance within the proposal study area, and the lack of background baseline data, the specification of 60 metres is considered to be an effective parameter for surface survey methodologies. This distance provides a balance between detecting fine scale patterns of Aboriginal occupation and avoiding environmental biases caused by ground disturbance or high ground surface exposure rates. The 60 metre parameter has provided an effective separation of low-density artefact occurrences in similar southeast Australian topographies outside of semi-arid landscapes.</p>
lithic assemblage (of stone)	<p>A collection of whole and fragmentary stone artefacts and manuports obtained from an archaeological site, either by collecting items scattered on the present ground surface (see lithic scatter) or by controlled excavation (see also 'stone artefact').</p>
midden	<p>Freshwater middens are defined as a concentration of artefactual debris that includes a significant percentage of freshwater shell (predominantly mussel shell <i>Velesunio sp.</i> or <i>Alathyria sp.</i>). Non-human animal bone, charcoal, ash and other botanicals can also be found in middens. They are usually the result of interim or base camp activity and are normally situated within riparian zones characterised by relatively permanent water.</p> <p>Within the transmission line corridor freshwater middens may be associated with creeks, rivers, billabongs and prior stream channels. Midden material may be buried by overlying silt deposits.</p>
open camp site	<p>A formerly used site type classification defined as an open context stone artefact occurrence (or artefact scatter), containing two or more artefacts situated no more than a specified arbitrary distance (such as 60 metres) away from any other included artefact. The term <i>open camp site</i> was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, both open camp sites and isolated finds are now referred to as <i>artefact occurrences</i>.</p>



Term/Acronym	Description
operational impact area	Refers to the area that would be directly impacted by permanent components of the proposal, including all proposed infrastructure elements such as the proposed transmission line easement, transmission line and transmission line towers, any new or upgraded substation infrastructure and permanent access tracks.
potential archaeological deposit (PAD)	A discrete location or area, defined spatially either by geomorphological, disturbance or administrative criteria, within which there is a predicted likelihood that subsurface archaeological material is present, and that this material would warrant archaeological investigation in order to determine its scientific, cultural, or statutory value and status.
preliminary alignment corridor	A 10 kilometre corridor identified during the initial assessment of transmission line corridor options which is generally based on desktop assessments only.
proponent, the	The proposal is proposed to be undertaken by NSW Electricity Networks Operations Pty Ltd as a trustee for NSW Electricity Operations Trust (referred to as Transgrid). Transgrid is the operator and manager of the main high voltage (HV) transmission network in NSW and the Australian Capital Territory (ACT) and is the Authorised Network Operator (ANO) for the purpose of an electricity transmission or distribution network under the provisions of the <i>Electricity Network Assets (Authorised Transactions) Act 2015</i> .
proposal study area	<p>The study area for this EIS, which comprises a generally one kilometre wide corridor (500 metres either side of the proposal alignment) between the Buronga substation and the Wagga Wagga substation as well as additional proposal components located away from the transmission line easement (with the exception of the proposed water points which has had a 200 metre diameter applied around each site).</p> <p>The proposal study area has been applied to identify the constraints nearby to the proposal which may or may not be indirectly impacted by the proposal.</p> <p>It encompasses the components including the construction impact area, the optical repeater sites (and associated connections), construction water points and other ancillary construction facilities.</p>
proposal, the	The proposal is known as 'EnergyConnect (NSW – Western Section)' as described in Chapter 5 and Chapter 6 of this document.
scarred/modified trees	Trees with scars of Aboriginal origin form another major type of artefactual evidence. Each tree is normally considered to be a separate site. The identification of a scar as Aboriginal in origin is dependent on a set of inter-related interpretive criteria. The credibility of alternative causal explanations such as natural traumas and other types of human scarring must be tested for each scar.
sites	A site is defined as any material evidence of past Aboriginal activity that remains within a context or place which can be reliably related to that activity. Many Aboriginal archaeological sites are identified by the stone or shell artefacts situated on or in a sedimentary matrix, marks located on or in rock surfaces, scars on trees, stones placed in arrangements at ceremonial sites, human skeletal remains, earthen mounds and hearths. Some significant sites bear no visible artefacts but are natural features related to Aboriginal creation stories.



Term/Acronym	Description
	Frequently encountered site types within the region include stone artefact occurrences – including isolated finds and open artefact scatters, earth mounds and hearths, burial sites, freshwater middens, and scarred trees. Other sites common in south-eastern Australia but which are not common to the proposal study area include coastal middens, rock shelter sites with occupation deposit and/or rock art and grinding groove sites. For the purposes of this section, only the methodologies used in the identification of these site types are outlined.
survey area	Is the corridor subject to investigation as per Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (2011) and was defined as approximately a 100 metre wide corridor along the length of the proposal and included break and winch sites outside of the easement and proposed camp locations.
transmission line easement	An area surrounding and including the transmission lines, which is a legal right allowing for construction of the transmission line, along with ongoing access and maintenance of the lines and will be acquired from landholders either by agreement or pursuant to compulsory acquisition process. The easement width would be 80 metres wide.
ACHA(R)	Aboriginal Cultural Heritage Assessment (Report)
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIM	Aborigines Inland Mission
ALRA	Aboriginal Land Rights Act 1983
ANU	Australian National University
APB	Aboriginal Protection Board
APZ	asset protection zone
ASC	Australia Soil Classification class
BP	Before Present
CSSI	critical State significant infrastructure
CSG	Great Soil Group
DAWE	Australian Department of Agriculture, Water and the Environment
DECCW	Department of Environment, Climate Change and Water (NSW)
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESC	effective survey coverage



Term/Acronym	Description
ESD	ecological sustainable development
fgs	Fine Grained Siliceous (stone material type)
GIS	geographic information system
GPS	global positioning system
HV	high voltage
ICOMOS	International Council on Monuments and Sites
ILUA	Indigenous land use agreement
IMT	Indurated Mudstone/Tuff
kV	kilovolt
LEP	Local Environmental Plan
LGA	Local Government Area
MNES	Matters of national environmental significance
NEM	National Electricity Market
NOHC	Navin Officer Heritage Consultants Pty Ltd
NPWS	National Parks and Wildlife Service
NTA	<i>Native Title Act 1993</i>
NSW	New South Wales
OEH	NSW Office of Environment and Heritage (former)
PAD	potential archaeological deposit
RAP	registered Aboriginal party
REF	Review of Environmental Factors
RTA	Roads and Traffic Authority
SA	South Australia
SEAR	Planning Secretary's Environmental Assessment Requirement
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSD	State Significant Development
SSI	State Significant Infrastructure
VIC	Victoria



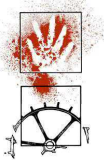
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1. Introduction

1.1 Proposal context and overview

Transgrid (electricity transmission operator in New South Wales (NSW)) and ElectraNet (electricity transmission operator in South Australia (SA)) are seeking regulatory and environmental planning approval for the construction and operation of a new High Voltage (HV) interconnector between NSW and SA, with an added connection to north west Victoria. Collectively, the proposed interconnector is known as EnergyConnect.

EnergyConnect aims to reduce the cost of providing secure and reliable electricity transmission between NSW and SA in the near term, while facilitating the longer-term transition of the energy sector across the National Electricity Market (NEM) to low emission energy sources.

EnergyConnect has been identified as a priority transmission proposal in the NSW Transmission Infrastructure Strategy (NSW Department of Planning and Environment (DPE), 2018), linking the SA and NSW energy markets and would assist in transporting energy from the South west Renewable Energy Zone to major demand centres.

EnergyConnect comprises of several sections (shown on Figure 1.1) that would be subject to separate environmental planning approvals under the relevant jurisdictions. It includes:

- SW sections including:
 - Western Section, which would extend from:
 - the SA/NSW border (near Chowilla in SA) to Transgrid's existing Buronga substation
 - Buronga substation to the NSW/Victoria border at Monak (near Red Cliffs in Victoria)
 - Eastern Section, which would extend from the Buronga substation to the existing Wagga Wagga substation
- a Victorian Section, which would extend from the NSW/Victoria border to Red Cliffs substation
- a SA Section, which would extend from Robertstown to the SA/NSW border.

Transgrid is currently seeking planning approval for the NSW – Eastern Section (the proposal), which is the subject of this EIS.

Transgrid has previously sought and received separate environmental planning approvals for the NSW – Western Section of EnergyConnect and the Victorian Section. ElectraNet is responsible for obtaining environmental planning approval for the section of EnergyConnect located in SA.

1.1.1 Proposal objectives

The primary objective of EnergyConnect (of which the proposal comprises an extensive component) is to reduce the cost of electricity by providing secure electricity transmission between NSW and SA in the near term and facilitate the longer-term transition of the energy sector across the NEM to low emission energy generation sources. More specifically, EnergyConnect (including the proposal) aims to:

- lower power prices
- improve energy security
- increase economic activity
- support the transition to a lower carbon emission energy system



Figure 1.1 Overview of EnergyConnect

1.2 The proposal

Transgrid is seeking approval under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) to construct and operate the proposal. The proposal has been declared as Critical State Significant Infrastructure under Section 5.13 of the EP&A Act.

The proposal was also declared a controlled action on 30 September 2020 and requires a separate approval under the (Commonwealth) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The proposal is subject to the bilateral assessment process that has been established between the Australian and NSW governments.

1.3 Proposal overview

1.3.1 Aboriginal heritage study area

The Aboriginal heritage study area comprises a generally one kilometre wide corridor between the Buronga substation and the Wagga Wagga substation. It traverses around 540 kilometres in total. It encompasses the construction impact area and transmission line corridor, which has been applied to identify the constraints nearby to the proposal which may or may not be indirectly impacted by the proposal. Access tracks would be located within the heritage study area.

The Aboriginal heritage study area is located in regional western NSW across nine Local Government Areas (LGAs), being: Wentworth Shire; Balranald Shire; Murray River; Edward River; Hay Shire; Murrumbidgee; Federation; Lockhart Shire; and Wagga Wagga LGAs.

1.3.2 Key features of the proposal

The key components of the proposal include:

- about 375 kilometres of new 330 kilovolt (kV) double circuit transmission line and associated infrastructure between the Buronga substation and the proposed Dinawan 330kV substation
- connection of the proposed transmission lines to the existing Buronga 330kV substation



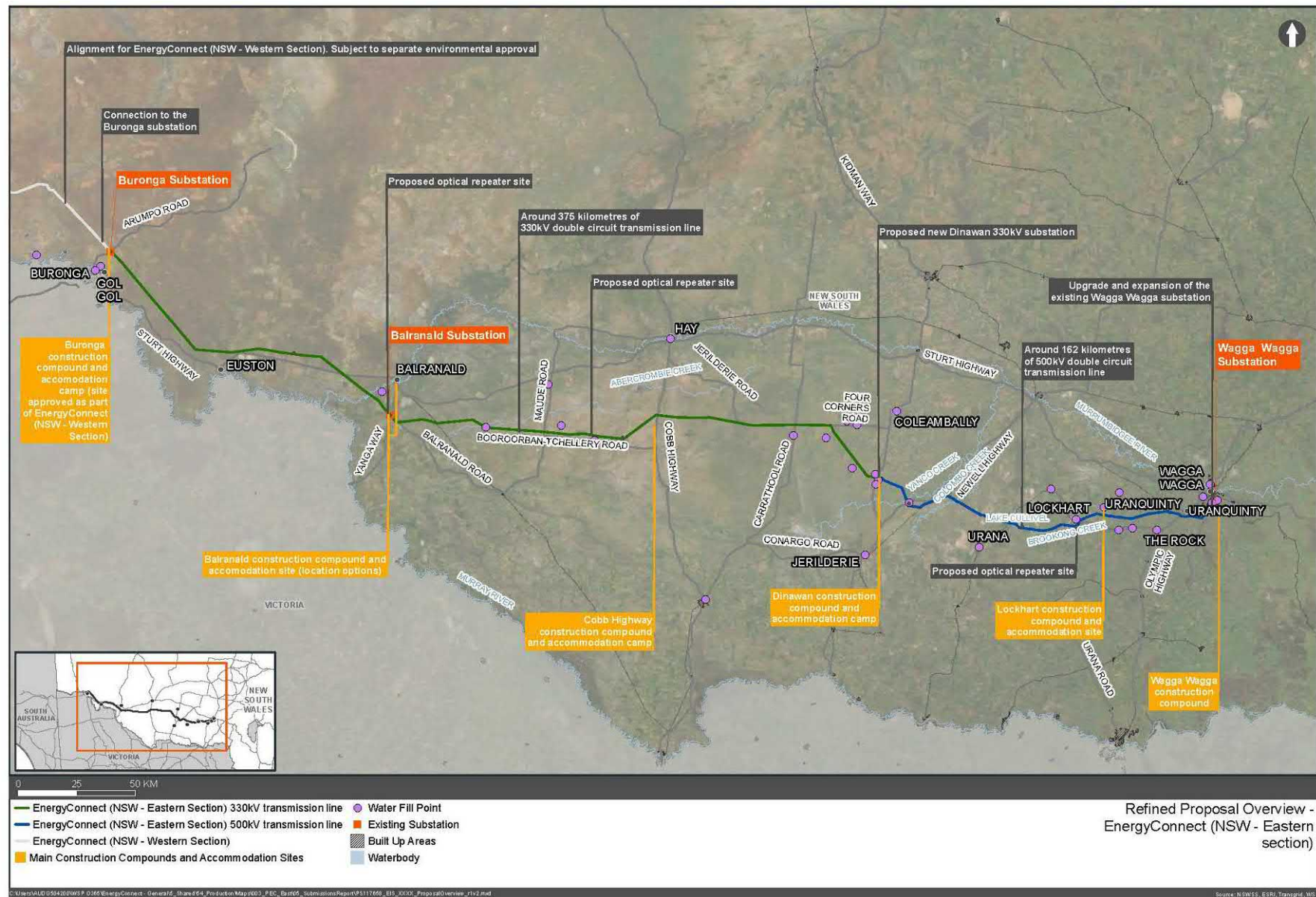
- construction of a new 330kV substation around 30 kilometres south of Coleambally, referred to as the proposed Dinawan 330kV substation
- connection of the proposed transmission lines to the proposed Dinawan substation
- about 162 kilometres of new 500kV double circuit transmission line and associated infrastructure between the proposed Dinawan 330kV substation and the existing Wagga Wagga substation at Wagga Wagga
- upgrade and expansion of the Wagga Wagga substation to accommodate the new transmission line connections including the installation of new line bays, relocation and upgrade of existing bays and associated electrical and civil works (road, kerb, gutter, drainage works and earthworks)
- provision of three optical repeater structures and associated connections to existing local electrical supplies
- new and/or upgrade of access tracks as required
- ancillary works required to facilitate the construction of the proposal (e.g. laydown and staging areas, concrete batching plants, brake/winch sites, site offices and accommodation camps).

Since the exhibition of the EIS (and the appended ACHAR) in early 2022, a number of changes have been proposed which have been considered in this revised ACHAR. The proposed design refinements and elements of the proposal include:

- a series of refinements to the proposed alignment following engagement with local land holders and adjacent properties. Key alignment refinements which have been identified include a section to the south of Lake Cullivel and a section to the south of the township of Lockhart. Other minor refinements to the alignment have also been made as part of ongoing consultation with land holders, and to further reduce potential environmental impacts. Cumulatively these changes are referred to in this report as ‘the refined alignment’
- confirmation of the preferred construction compound and accommodation camp site at Lockhart and refinement of the preferred arrangement for the Cobb Highway construction compound and accommodation camp site due to identification of additional heritage constraints
- identification of a series of additional water supply points proposed to be used during construction
- changes to the construction impact area following refinement of the proposed construction methodology.

A detailed description and assessment of the proposed refinements are provided in the separate Amendment Report (WSP, 2022a) supporting this proposal.

An overview of the proposal is provided in Figure 1.2. Further detail on the key infrastructure components of the proposal and construction activities are provided in Chapter 5 and Chapter 6 of the main environmental impact assessment respectively.



EnergyConnect – Eastern Section – Aboriginal Cultural Heritage Assessment
Navin Officer Heritage Consultants Pty Ltd May 2022



1.3.3 Construction of the proposal

Key construction works

Key construction works for the proposal would typically include (but not be limited to):

- site establishment works, which may include:
 - establishment of construction compound and accommodation sites, access tracks and service relocations
 - vegetation clearance
 - transportation of equipment such as steelwork, high voltage plant, switchgear, between dock and site as part of the construction works
- ancillary works to facilitate the construction of the proposal (e.g. intermediate laydown and staging areas, concrete batching plants, brake/winch sites, site offices and accommodation camps)
- construction of the proposed transmission lines, which would include (but not be limited to):
 - access tracks to accommodate safe access of construction machinery and materials to each transmission line tower site
 - earthworks (including establishment of construction pads) and the construction of footings and foundations for each transmission line tower
 - erection of the new transmission line towers using crane(s) and or helicopter(s)
 - stringing of the conductors and overhead earth wires and optical ground wire
 - installation of earthing conductors
 - testing and commissioning of the transmission lines
- construction of the proposed Dinawan 330kV substation, which would include (but not be limited to):
 - civil construction works including earthworks
 - slab construction at the new substation site
 - electrical fit out with new substation equipment;
 - testing and commissioning of the new substation equipment
- upgrade and expansion of the existing Wagga Wagga substation to enable the proposed connection and operation of the new transmission lines which would include (but not be limited to):
 - civil construction works including earthworks and slab construction at the expanded substation site;
 - electrical fit out with new substation equipment;
 - testing and commissioning of the new substation equipment;
- connection of the proposed transmission lines to the Buronga substation
- demobilisation and remediation of areas disturbed by construction activities.



A detailed description of construction works for the proposal is further described in Chapter 6 of the Environmental Impact Statement (EIS) and as amended in the Amendment Report – Appendix B.

Construction program

Construction of the proposal would commence in late-2022 (enabling works phase), subject to NSW Government and Commonwealth planning approvals.

The main construction works for the transmission lines and substation facilities would take around 18 months. The upgraded and expanded Wagga Wagga substation and the proposed Dinawan 330kV substation are expected to be operational by late-2024. Site decommissioning and remediation would extend around six months beyond the commissioning (operational) phase, with estimated completion in mid-2025.

The final program would be confirmed as part of finalisation of the proposal infrastructure following approval of the proposal.

Indicative duration of transmission line construction activities

Construction at each transmission line tower would be intermittent and construction activities would not occur for the full duration at any one location. Figure 1.3 presents an indicative duration of construction activities associated with the transmission line towers. These durations could vary and breaks between activities may be shorter which may lead to longer inactive periods in subsequent stages of construction at an individual transmission line tower. Durations of any particular construction activity, and respite periods, may vary for a number of reasons including (but not limited to), multiple work fronts, resource and engineering constraints, works sequencing and location.

These activities would also have multiple work fronts, therefore (for example) foundation works or tower erection would be occurring in several locations along the easement at the same time.

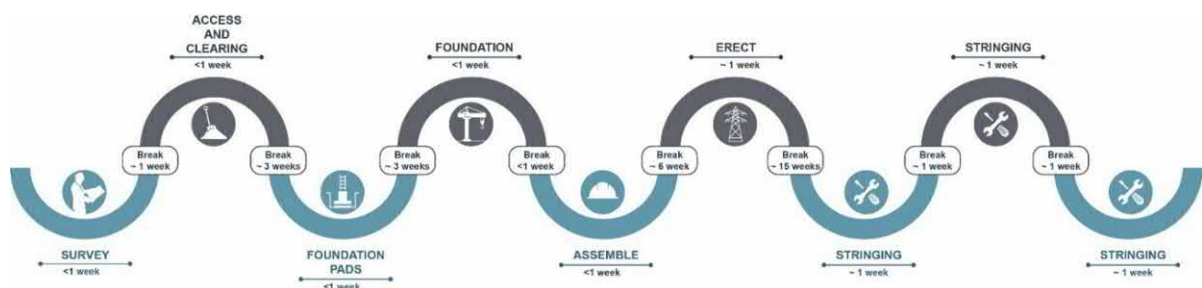


Figure 1.3 Indicative duration of construction activities at transmission line towers

1.4 Purpose of this technical report

This technical paper is one of a number of technical papers that form part of the Response to Submission (RtS) for the proposal. The purpose of this technical paper is to identify and assess the revised potential impacts of the proposal in relation to specialist impacts. It responds directly to the Secretary's environmental assessment requirements (SEARs) (refer to Section 1.4.1) and the submission received from Heritage NSW on the exhibited EIS.

This report has the following objectives:

- identify and record any Aboriginal sites within the study area
- assess the conditions and significance of the site



- assess the impact of the proposal on any identified sites or PADs
- provide management recommendations and mitigation measures.

1.4.1 Secretary's environmental assessment requirements

The EIS was placed on exhibition between January 19 and February 15 2022. Government agencies and the community were given the opportunity to make comment on the EIS and the specialist reports, including the ACHAR. This ACHAR forms part of the Submissions Report, and addresses issues raised in the submissions together with providing updated information following site investigations undertaken after the EIS was submitted to the NSW Department of Planning, and Environment (DPE) (formerly the Department of Planning, Industry and Environment (DPIE)) in December 2021.

DPE has provided the Secretary's Environmental Assessment Requirement (SEARs) for the EIS. The requirements specific to this assessment and where these aspects are addressed in this technical report are outlined in Table 1.1.

Table 1.1 Secretary's environmental assessment requirements – heritage

Reference	Secretary's Environmental Assessment Requirements	Where addressed in the report
Key Issue – Heritage	an assessment of the Aboriginal and non-Aboriginal (historic) heritage (cultural and archaeological) impacts of the proposal	This report satisfies this for Aboriginal heritage, see specifically Section 9. Non-Aboriginal (historic) heritage is addressed in separate technical paper.
	adequate consultation with the local Aboriginal community and other relevant stakeholders, having regard to the <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (DECCW, 2010)	Section 5

1.4.2 Heritage NSW submission

Heritage NSW provided a submission to the EIS that was placed on public exhibition, which included the ACHAR (NOHC, 2022). The following table (Table 1.2) summarises the comments and recommendations provided by Heritage NSW in its submission, as well as where in this Revised ACHAR these comments and recommendations have been considered and/or addressed.

Table 1.2 Heritage NSW response to the ACHAR

Heritage NSW response	Where addressed in the report
Heritage NSW recommends that the unsurveyed sections of the proposed development footprint be prioritised for survey and assessment with respect to Aboriginal cultural heritage.	Additional areas of the construction impact area have been the subject to field survey since the exhibition of the EIS. Table 9.3 outlines the remaining areas where field survey has not been able to be completed due to ongoing landowner access. This Revised ACHAR has been updated to consider the survey results and any associated implications to the impact assessment.



Heritage NSW response	Where addressed in the report
Heritage NSW recommends that any proposed test excavations must occur prior to any associated development works commencing.	Test excavations have been undertaken at all PADs that have been identified as being directly impacted by the proposal, see Section 7.5. Should refinements to the design and/or construction methodology require a change to the identified areas of direct impact, then additional test excavation would be undertaken in accordance with mitigation measure AH4. These works would be completed prior to construction impacts in the relevant area.
Heritage NSW recommends that the established community consultation process be maintained for the throughout all stages of the proposed development.	Section 5 documents the ongoing consultation that has occurred for this proposal. Consultation will continue through the development stages of the proposal as committed to in mitigation measure AH2.

1.5 Structure of this report

This report has been structured as follows:

- description of the proposed development/works etc. (Section 1)
- description of the statutory and policy context of the proposal (Section 2)
- description of the study methodology (Section 3)
- provision of a description of the study area (Section 4)
- description of consultation with Aboriginal people (Section 5)
- provision of an Aboriginal heritage context for the study area (Section 6)
- description of the results and analysis of the archaeological survey (Section 7)
- description of the cultural heritage values and significance statement of the study area (Section 8)
- description of the proposed activity (Section 9)
- provision of management recommendations and mitigations measures to avoid and minimise harm (Section 10)
- summary of reference documents (Section 11).
- Appendices:
 - Appendix 1 -provides a list of the AHIMS recordings within the heritage study corridor
 - Appendix 2 -provides a description of all newly recorded sites
 - Appendix 3 - presents an unanticipated discovery protocol
 - Appendix 4 - provides the Aboriginal consultation log



- Appendix 5 - provides mapping for the project
- Appendix 6 - presents the test excavation memo reports outlining the approach to and findings of the works

1.5.1 Restricted information

Information in this report relating to the exact location of Aboriginal sites should not be published or promoted in the public domain. The following images and report sections have been restricted from the public version of this document:

- all tabulated data in Appendix 1
- Appendix 5
- Appendix 6.

No information provided by Aboriginal stakeholders in this report has been specifically identified as requiring access restrictions due to its cultural sensitivity.

1.5.2 Confidentiality

No information in this report has been classified as confidential.

1.6 Contributors

Contributors to the collection of information towards the preparation of this report from Navin Officer Heritage Consultants (NOHC) has included:

- Adrian Cressey
- Ben Sybert
- Jasmine Fenyvesi
- Joel Mason
- Madelaine van Ewyk
- Meg Walker
- Ngaire Richards
- Nicola Hayes
- Ricardo Servin
- Susan McIntyre-Tamwoy
- Aboriginal organisations represented in the field:
 - Balranald Local Aboriginal Land Council
 - Cummeragunja Local Aboriginal Land Council
 - Dareton Local Aboriginal Land Council
 - Deniliquin Local Aboriginal Land Council



- Griffith Local Aboriginal Land Council
- Hay Local Aboriginal Land Council
- Narrandera Local Aboriginal Land Council
- Ngumbaay Indigenous Corp
- Wagga Wagga Local Aboriginal Land Council
- Pappin Family Aboriginal Corporation
- Bundyi Cultural Tours
- Bidya Marra Consultancy

This report was prepared by Ricardo Servin. Ricardo has Bachelor of Arts majoring in Archaeology from the University of Sydney.

With assistance from Nicola Hayes, Jasmine Fenyvesi and Ben Sybert. Nicola has a Bachelor of Arts and Science (BA/Sc), as well as a Graduate Diploma in Archaeology from the ANU. Jasmine has a Bachelor of Archaeological Practice (BAP) from the ANU and Ben has a Bachelor of Arts (BA) from the University of Illinois (USA) and Masters of Archaeological Science (MASc) from the ANU including an advanced remote sensing and GIS specialization.

This report was edited by Meg Walker. Meg has a Bachelor Arts and Commerce (BA/BComm) and MASc from the ANU specialising in bioarchaeology and environmental archaeology.

With geographic information system (GIS) support from Joel Mason. Joel has a MASc from the ANU.

1.7 Limitations

A comprehensive heritage assessment was limited by proposal implementation issues including some landholder restrictions and the availability of information. The following summarises these limitations and how this bias impacts data produced in this technical report.

Due to some ongoing landowner restrictions, access to the full length of the survey area was limited and archaeological data for these areas was not available during the preparation of this report. Substantial effort has been undertaken since the preparation of the EIS to gain approval for access from landholders and this has enabled a substantial portion of the unsurveyed alignment to now be surveyed.

It is noted that some lengths of the survey area were only assessed visually either:

- from an adjacent road which was in close proximity to the proposed construction impact area to view the landforms and disturbance level or
- based on survey being completed on a previous alignment design which was in an area adjacent to the final alignment design

These approaches were only adopted where the visual assessment from the adjacent area was able to provide an appropriate level of general landform understanding and ground disturbance assessment. Figure 1.4 below shows the different areas where land access has not been granted, areas where visual inspection only has occurred and areas where the on-foot survey has occurred. Detailed mapping series of this is provided in Appendix 5.



Data available for this heritage assessment was limited to the survey area. Archaeological assessments commissioned for development proposals are restricted to the specific footprint that will be impacted by that proposal. Therefore, the area of land being assessed is specifically constrained, and in many cases the proposal footprint will not representatively sample the different landforms found across the wider region. Therefore, a full picture of the archaeology of an area cannot be gained or assumed by this type of assessment. This is the case for the current proposal as only a single landscape transect has been captured.

Data limitations will usually become less pronounced as further assessments are carried out in a region. A systematic bias in the data can still easily occur, however, if surveys are concentrated in one landform type over another. This could be the case if the assessments relate to development proposals which preferentially occur on specific landforms.

Available information is limited by the data collected in reports. Land use by Aboriginal groups in the post-contact period, including the present day, is likely limited as these activities are not typically reported on in the public domain or to NOHC. This mainly occurs when land use practices are associated with knowledge that is culturally restricted. Further, oral history programs, or studies that capture the lives and histories of contemporary Aboriginal communities, are not frequently conducted; focus remains on archaeological methods and evidence.

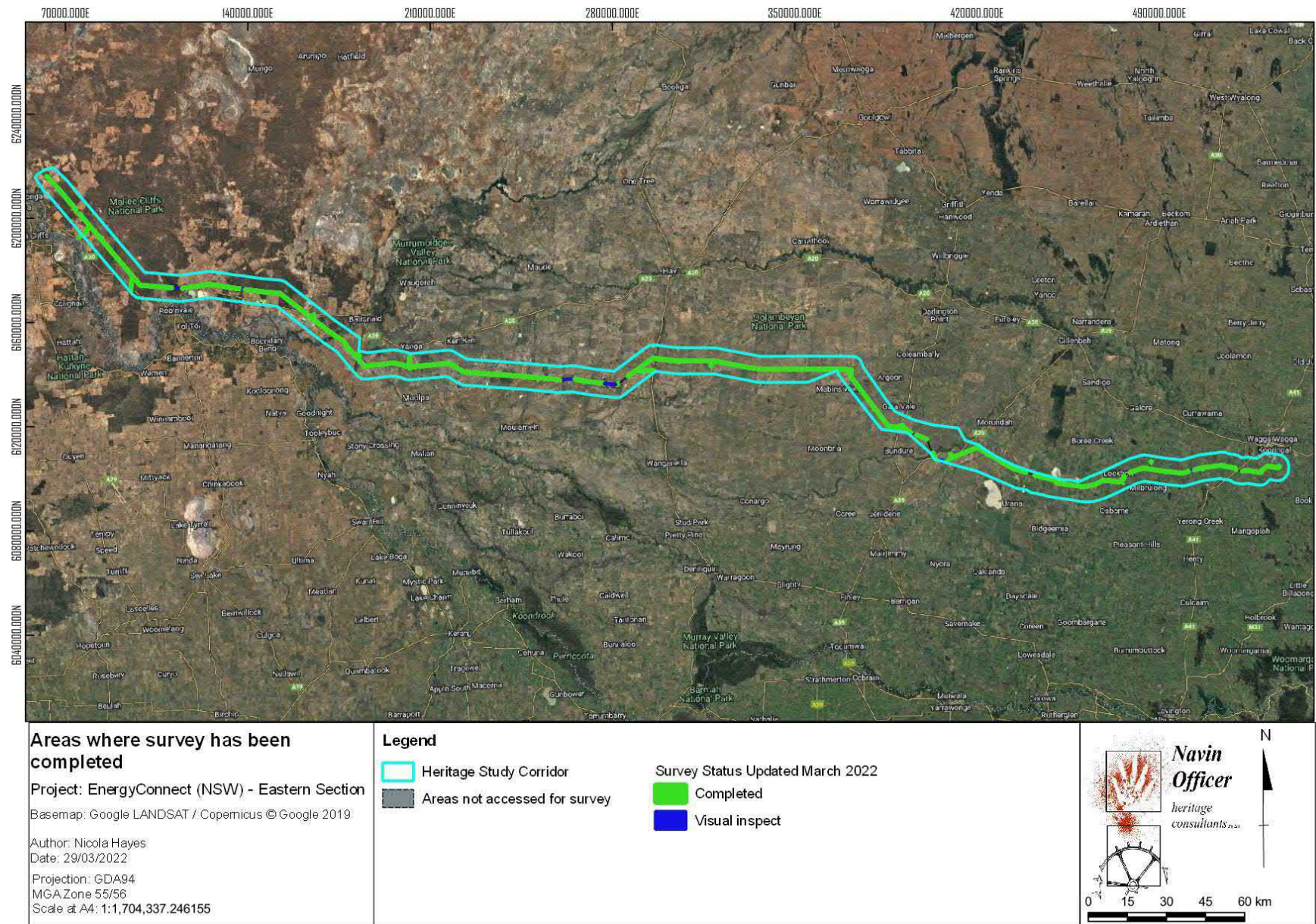


Figure 1.4 Areas where survey has been completed



2. Statutory context

2.1 Commonwealth legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government's key piece of environmental legislation. It focuses Australian Government interests on the protection of matters of national environmental significance (MNES), with the states and territories having responsibility for matters of state and local significance. A person must not take an action that has, will have, or is likely to have, a significant impact on any of the matters of NES without approval from the Australian Minister for the Environment (the Environment Minister).

Objectives of the Act include:

- the protection of the environment, especially those aspects of national significance;
- to promote the conservation of biodiversity and ecologically sustainable development; and
- to recognise the role of Indigenous people and their knowledge in realising the aforementioned objectives.

Under the EPBC Act, a proposal is required to be referred to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) for activities that have the potential to significantly impact on MNES. If the proposal is considered likely to significantly affect MNES, the Environment Minister may deem the proposal a controlled action, and their approval is required prior to proceeding with construction. A controlled action requires a set of conditions be met in order to mitigate impact of the MNES to an acceptable level to meet the requirements of the EPBS Act.

The current proposal has been determined to be a 'controlled action' as it is likely to have a significant impact on certain listed threatened species. The proposal will be assessed under the bilateral agreement between the State and Australian Governments under section 45 of the EPBC Act. With respect to heritage (for the proposal as exhibited), MNES could include World Heritage properties and National Heritage places; no World Heritage properties are located within the proposal study area. The Australian Government also maintains two heritage registers: 1) the National Heritage List and 2) the Commonwealth Heritage List. There are no listed items within the proposal study area.

2.1.2 Native Title Act 1993

The Commonwealth *Native Title Act 1993* (NT Act) provides for the recognition and protection of native title where it may still exist. The NT Act sets up a process for native title claims and compensation claims to be determined in the Federal Court, a determination of native title provides a declaration that native title continues to exist in the area. A successful compensation claim will provide recompense, monetary and other forms to native title holders whose native title was extinguished by inconsistent grant of interests in land after 1975 (when the *Racial Discrimination Act 1975* (Commonwealth) was enacted). Prior to this any extinguishment of native title does not provide a legal right to compensation.



One of the main purposes of the NT Act was to protect native title where it still exists; however, the Government realised that there would still be future necessary works and other activities that will affect and impair native title. In order to do this legally the Government provided that any impairment of native title would be valid if according to the procedures set out in the NT Act, any effect on native title rights and interests would be converted to a right to compensation. This is called the future act regime¹.

It is important to remember that the NT Act protects all native title, not only in areas where there is a registered native title claim or a determination of native title. If native title has not been extinguished, and native title holders still have a connection to the land, then the processes outlined in the NT Act must be followed. It is only for mining and other certain acts (like compulsory acquisition) that give rise to the right to negotiate, that a native title claim must be registered. The National Native Title Tribunal imposes the registration test.

Part of the future act regime provides for Indigenous Land Use Agreements (ILUA). An ILUA is a special type of agreement between a native title group and the State or third parties dictating the use and management of land and waters. It allows for proposed works and other activities to validly affect native title. Flexible, pragmatic agreements that suit particular circumstances, and that outline all compensation for the impairing effects of native title, can be made using an ILUA.

While there is no explicit linkage in NSW between heritage legislation and the NTA, the guidelines state:

'In the first instance "traditional owners or custodians" are to be identified as native title holders, registered native title claimants, and Aboriginal Owners registered under the Aboriginal Land Rights Act 1983 (NSW). Where native title has been determined to exist for an area, only the native title holders or the relevant prescribed body corporate need to be consulted. Otherwise, as well as contacting native title claimants and Aboriginal Owners, the person or company is also required to seek input more broadly from a range of organisations, including Heritage NSW, the Local Aboriginal Land Council, Catchment Management Authorities, Native Title Services, and also to place a notice in the local newspaper' (DECCW 2010).

In summary:

- Where native title has been **determined** consultation is required only with the native title holders
- Where a native title claim has been **registered and/or lodged** but not yet determined the proponent must ensure that they involve the registered applicants in consultation regarding the cultural knowledge of the area in addition to any other Registered Aboriginal Parties for the proposal under the NSW OEH Consultation Guidelines.

The proposal intersects with the Barkandji Traditional Owners #8 (Part A) native title area (determined). The Barkindji Traditional Owners have been consulted with regards to their involvement in surveys undertaken to date, and this consultation would continue moving forward. There are no other native title claims.

¹ 'Future' means after the date the NTA came into effect in 1994



2.2 State legislation

2.2.1 Environmental Planning and Assessment Act 1979

The *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) provides a framework for environmental planning and assessment in NSW. The proposal has been declared Critical State Significant Infrastructure (CSSI) in accordance with Division 5.2, Part 5 of the EP&A Act and requires the approval of the NSW Minister of Planning and Public Spaces (or their delegate) under Section 5.13 of the EP&A Act.

Under Section 5.23 of the EP&A Act, the following authorisations are not required under other legislation for the proposal:

- Approvals under Part 4, or an excavation permit under section 139 of the *Heritage Act 1977*
- Aboriginal heritage impact permits under section 90 of the *National Parks and Wildlife Act 1974*.

The EP&A Act and its regulations, schedules and associated guidelines require that environmental impacts are considered in land use planning and decision making; environmental impacts include cultural heritage assessment. The SEARs for this proposal require adequate consultation with the local Aboriginal communities and other relevant stakeholders, in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).

2.2.2 National Parks and Wildlife Act 1974 (NSW)

Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) provides protection for Aboriginal cultural heritage in New South Wales, including Aboriginal objects and declared Aboriginal places.

An **Aboriginal object** is defined as:

[...] any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains (*Part 1.5, NPW Act*).

An **Aboriginal place** is any area of land in NSW declared by the Minister for the Environment to be of special significance to Aboriginal culture.

It is an offence under section 86(4) of the NPW Act to harm (destroy, deface, or damage) or desecrate an Aboriginal object or place. The definition of harm includes moving an Aboriginal object from the land on which it is situated. Where harm cannot be avoided, an Aboriginal heritage impact permit (AHIP) issued by the Heritage NSW under section 90 of the NPW Act is required. An AHIP application must be accompanied by an Aboriginal cultural heritage assessment report (ACHAR), which details the results of an archaeological investigation, assesses the Aboriginal cultural heritage values associated with the area, and identifies any potential harm the proposed activity may cause. Consultation with Aboriginal communities must also be undertaken in relation to the AHIP application and adhere to the consultation process set out in clause 60 of the National Parks and Wildlife Regulation 2009.



Heritage NSW have published several codes that regulate how ACHAR assessments and Aboriginal consultation are to be undertaken, they include:

- Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010)
- Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (2010)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (2011).

As stated in Section 2.2.1, the proposal is CSSI and an AHIP is not required. Nonetheless, the assessment has been carried out with reference to the above guidelines.

The Aboriginal Heritage Information Management System (AHIMS) was also established to collate information on known Aboriginal objects, sites and places. The AHIMS is a database kept by Heritage NSW which contains information about Aboriginal objects and places in New South Wales, including site records and cultural heritage assessment reports. If an Aboriginal object is found that is not already recorded on the AHIMS database, it is a requirement under section 89A of the NPW Act to notify DPIE of the object's location.

2.2.3 Aboriginal Land Rights Act 1983 (NSW)

The *Aboriginal Land Rights Act 1983* (ALRA) is a New South Wales statute that was established to return land to Aboriginal peoples through a process of lodging claims for certain Crown lands and the establishment of Aboriginal Land Councils. Aboriginal Land Councils constituted under the ALRA in NSW can claim Crown land.

The purposes of the ALRA are set out in section 3:

- to provide land rights for Aboriginal persons in New South Wales
- to provide for representative Aboriginal Land Councils in New South Wales
- to vest land in those Councils
- to provide for the acquisition of land, and the management of land other assets and investments, by or for those Councils and the allocation of funds to and by those Councils
- to provide for the provision of community benefit schemes by or on behalf of those Councils.

It may be that some Crown land in the proposal has been claimed by an Aboriginal Land Council. There are however provisions to exclude land from a claim if it is required for an essential public purpose, such as a transmission line.



3. Study methodology

This section presents the methodology used to undertake this assessment including:

- literature and database review
- archaeological field assessment support to preliminary geotechnical investigations
- determination of the survey area and assessment approach
- field archaeological methodology.

This section also provides definitions of site types encountered during the field survey.

3.1 Literature and database review

A range of archaeological data was reviewed for the proposal study area and its surrounds. This literature and data review was used to determine if known Aboriginal sites were located within the area under investigation, to facilitate site prediction on the basis of known regional and local site patterns, and to place the area within an archaeological and heritage management context.

Aboriginal literature sources were attained through the AHIMS which is maintained by Heritage NSW. Site cards and a catalogue of archaeological reports and other associated files are collated and maintained through AHIMS. A series of searches were conducted through AHIMS which retrieved data from a 10 kilometre wide heritage study corridor along the proposal study area. These data were used to develop a preliminary predictive model to assess the likelihood of Aboriginal site locations in the landscape. Additional searches were made where ongoing refinement of the proposal's design during preparation of the assessment resulted in areas not previously searched.

3.2 Preliminary geotechnical investigation

Archaeological field assessments of the preliminary geotechnical testing locations (boreholes and test pits) for the proposal were undertaken from the 10 to 23 February 2020. These assessments followed the *Due Diligence Code of Practice* (DECCW 2010) and were conducted alongside Registered Aboriginal Parties (RAPs) who monitored all geotechnical works. Geotechnical testing locations that were assessed to have a low probability of impacting Aboriginal objects were approved for disturbance by proposal archaeologists.

3.3 Determination of the survey area and approach to assessment

3.3.1 Proposal study area and survey area

The proposal study area for this Aboriginal Cultural Heritage Assessment (the proposal study area) typically comprised a one kilometre wide corridor (500 metres either side of the proposal alignment) between the existing Buronga and Wagga Wagga substations to accommodate the alignment of the proposal. Additional proposal components were located away from the transmission line easement (such as electrical connection points, camps and compounds) and form part of the survey area.

The proposal study area has been applied to identify the constraints nearby to the proposal which may or may not be indirectly impacted by the proposal.



Within the proposal study area corridor, a narrower corridor was subject to survey (the survey area). The survey area is the corridor subject to investigation as per Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (2011) and was defined as approximately a 100 metre wide corridor along the length of the proposal and included break and winch sites outside of the easement and proposed camp locations.

Since the preparation of the EIS and associated ACHAR substantial additional effort has been undertaken to gain access to properties where survey was not previously possible. As a result, Aboriginal heritage surveys of substantial sections of the proposal alignment have now been able to be completed. As detailed above in Section 1.7, due to some remaining landowner access restrictions, it was not possible during the assessment to survey the full length and extent of the identified survey area. In addition, some lengths of the survey area were assessed visually either from a vehicle on an adjacent road or a previous alignment design included areas adjacent to the current survey area. When access is granted to areas where not survey has been completed, then those section would be subject to further assessment. In addition, if following final refinement of the proposal design, sections of the proposal are located outside the 100 metre survey area, these areas would be subject to further assessment.

In summary, surveys have been able to be completed for approximately 97 per cent of the proposal alignment, with only 18 kilometres (approximately) or three per cent of the full alignment not being able to be surveyed at the time of writing this Revised ACHAR.

The proposal study area and survey area are shown in Figure 3.3.

3.3.2 Construction impact area

Refers to the area that would be directly impacted by construction of the proposal comprising the following:

- construction of all proposal infrastructure elements (including the proposed transmission line alignment, transmission line easement, substation site works (at both the proposed Dinawan 330kV and upgraded and expanded Wagga Wagga substations), optical repeater infrastructure, and other ancillary works)
- locations for construction elements such as construction compounds and accommodation camps, access tracks (excluding public roads proposed to be used for access routes), site access points, water supply points, laydown and staging areas, concrete batching plants, brake/winch sites and site offices.

The area is identified based on realistic proposal component locations and areas however it is indicative at this stage. The area would be confirmed during finalisation of the design and construction methodology and would be developed as part of the consideration of avoidance and impact minimisation.

This area includes the operational impact area (including areas required for maintenance) (refer definition below).

For this assessment, the construction impact has been divided into subset disturbance areas. These subsets relate to the identified level of disturbance in each area to reflect construction and operational requirements – specifically:

- Disturbance area A, in which ground disturbance would be required
- Disturbance area A (centreline) in which ground disturbance would be required
- Disturbance area B, in which ground disturbance is not required except in limited circumstances where vegetation removal is required as triggered by the vegetation clearing requirements



- Disturbance area hazard/high risk trees, in which trees could be removed/trimmed for operational requirements if they meet the definition of hazard/high risk tree.

Further detail of these areas is provided below.

3.3.3 Disturbance areas

The disturbance areas identified below have been applied to this assessment– specifically:

- **Disturbance area A** - Refers to an area at and around the transmission line towers (including associated construction work areas), areas for brake and winch sites and for new/upgraded access tracks in which vegetation would be removed during construction. The area also includes the proposed Dinawan 330kV substation site, the existing Wagga Wagga substation site and each of the main construction compounds and accommodation camps at Balranald, the Cobb Highway, Dinawan (Kidman Way), Lockhart and Wagga Wagga.

It would include vegetation (including tree) removal and sub-surface impacts through construction activities such as grading, excavation, and full tree removal (i.e. root ball removal).

Except in areas where only temporary disturbance is required (i.e. temporary access tracks and brake and winch sites), this area would also be subject to ongoing maintenance during operation (i.e. removal to ground level) for operational and safety requirements (including bushfire).

This zone is a subset to the construction impact area (see definition above).

- **Disturbance area A (centreline)**. Refers to a centreline area between the proposed transmission line towers in which all vegetation (including trees) has been assumed to be removed during construction to ground level.

In areas of known or potential heritage subsurface sensitivity (i.e. potential archaeological deposits (PADs)) sub-surface impacts in these areas would be avoided. In these areas vegetation would be cut to ground level and root balls would be retained as necessary to avoid subsurface impacts.

Additionally, in areas of key Plains Wanderer primary habitat these centreline areas would not be subject to vegetation clearing. Alternate methods would be adopted in these key habitat areas for the conductor stringing activities.

This area would also be subject to ongoing maintenance during operation (i.e. removal to maintain vegetation clearance requirements) for operational and safety requirements (including bushfire).

This zone is a subset to the construction impact area (see definition above).

- **Disturbance area B**, Refers to an area between transmission line towers in the easement in which removal of vegetation (including trees) would be undertaken where they have the potential to exceed vegetation clearance heights. This removal may result in temporary ground disturbance. Vegetation that is to be removed would have root balls removed except where practicable to retain.

Vegetation clearance heights are set by Transgrid for operational and safety requirements, including bushfire risk management.

This area would also be subject to ongoing maintenance during operation.



This zone is a subset to the construction impact area (see definition above)..

- **Disturbance area – hazard / high risk trees**, Refers to discrete areas alongside the proposal alignment where vegetation (trees) located outside of the easement have been assumed to potentially meet the definition of hazard/high risk trees and as a result have had an impact assumed.

The impact would include partial vegetation clearing which would be restricted to the operational phase.

Vegetation that is to be removed would have root balls retained and where practicable impacts will be restricted to pruning.

Vegetation clearing has been identified as being limited to maintenance of hazard/high risk trees which are outside of the disturbance area B10 zone and within the adjacent 10 metre area where trees within vegetated areas exceed defined height thresholds of 30 metres for the 330 kV line and 20 metres for the 500 kV line.

Locations identified for this disturbance area are shown in Appendix 5.

This zone is a subset to the construction impact area (see definition above).

The disturbance areas are demonstrated on Figure 3.1 and Figure 3.2 for the transmission line section of the proposal.

These disturbance area subsets have been applied to this heritage assessment to determine the potential impact from the proposal based on the proposed alignment and infrastructure locations. There is potential for the final location of these disturbance areas to be modified in some areas based on design refinement. The design refinement process could potentially shift the tower locations and work sites along the alignment to avoid or minimise impacts where possible. This shift would change the location of disturbance area A and B areas in applicable locations.

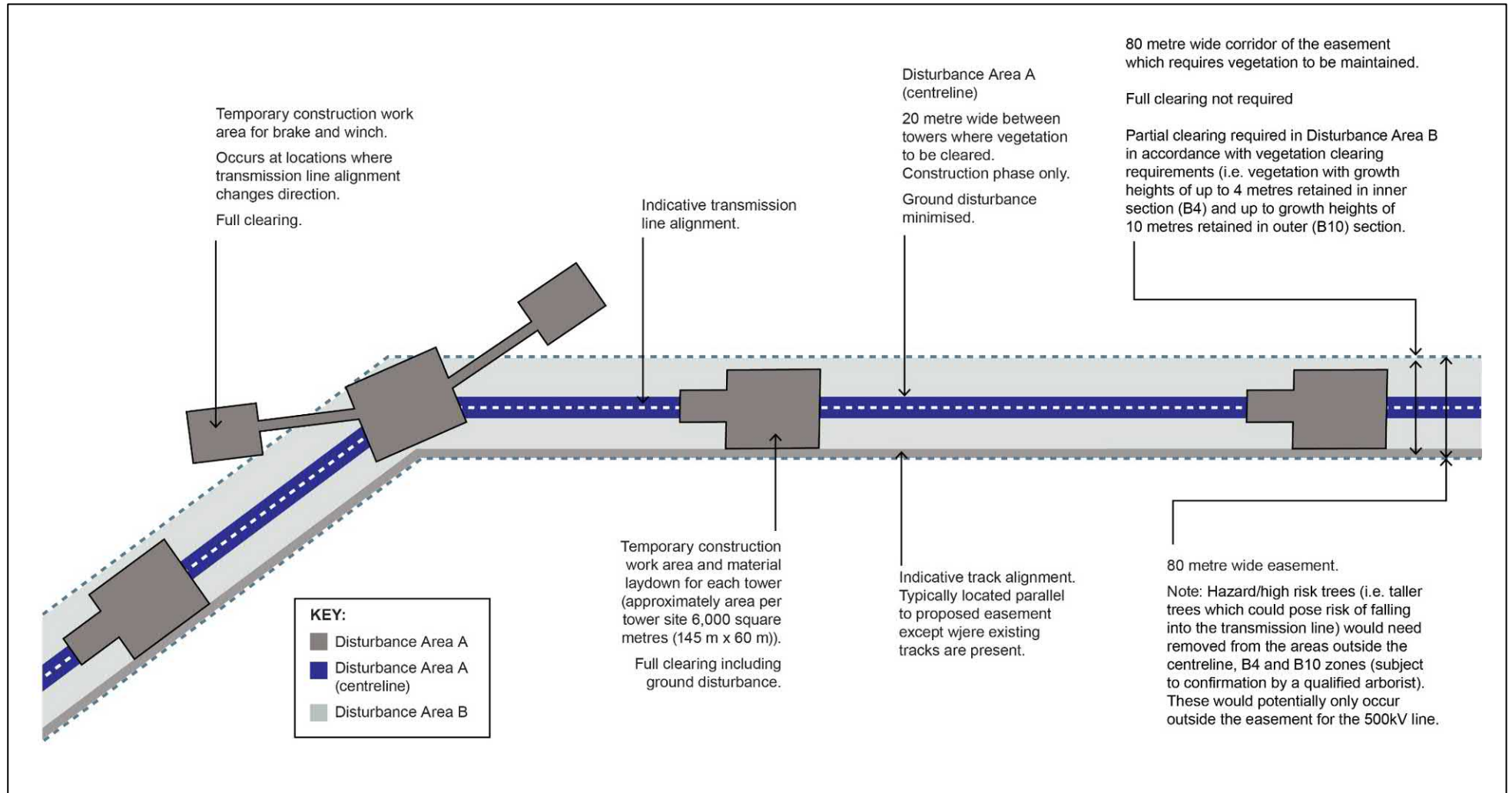


Figure 3.1 Disturbance Areas A and B 500kV

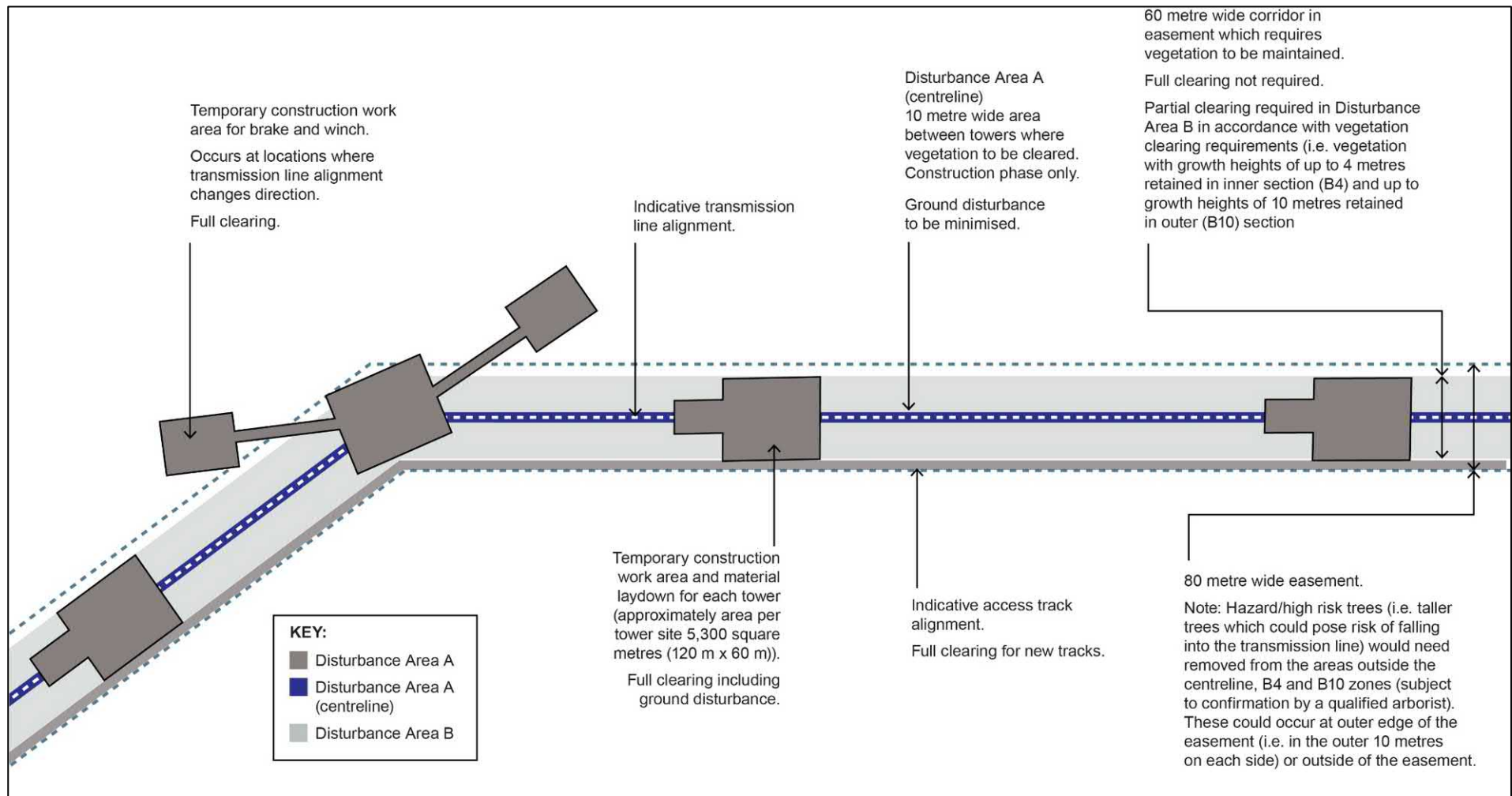


Figure 3.2 Disturbance Areas A and B 330kV



3.3.4 Significance and impact assessment

The significance of each Aboriginal site is assessed using *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS Burra Charter, 2013a) with a reference to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010:iii).

From this assessment, the proposal is considered and an impact assessment made. The impact assessment for the proposal has considered the potential for direct and indirect impacts on Aboriginal heritage based on the disturbance area as defined in Section 3.3.3.

Aboriginal cultural heritage impact assessment

Direct impacts can be defined as actions that move or physically alter items, objects, or features of a site. This includes, but is not limited to, direct physical impacts to midden/shell, hearths, stone artefacts, and scarred trees. Actions that directly and physically disturb the sediments and deposits of PADs are also considered a direct impact. Using the criteria outlined in Section 3.3.3, the following assessment identifies the likely direct and indirect impacts to sites based on the actions outlined for each disturbance area.

Disturbance Area A activities would directly impact all items, objects, or features of a site and or PAD located in this area.

Disturbance Area A (centreline) activities would directly impact all scarred trees in this area. Vegetation management methodologies would be developed as part of the heritage management subplan, so as to minimise ground disturbance in PADs during vegetation clearance.

Disturbance Area B activities would directly impact archaeological deposits associated with surface sites and/or PADs depending on the vegetation removal methods (ie. in particular if root balls are required to be removed). Disturbance Area B activities may directly impact scarred trees. Scarred trees would require removal if they are measured to exceed the height identified in the vegetation clearing requirements (i.e. up to four metres growth height in inner maintenance zone area and up to 10 metres in outer maintenance zone area of the easement) and Furthermore, there is the risk of potential direct impacts from heavy machinery to all known items, objects, or features that are not fenced and marked on maps. Vegetation management methodologies would be developed as part of the heritage management subplan, so as to minimise ground disturbance in PADs during vegetation clearance.

Indirect impacts for disturbance areas A, A (centreline) and B can be defined as impacts that alter the relationship of an item to other site features and/or its position in the natural landscape. For example, if a site was fenced, but then the landscape around it was subject to significant cut and fill land forming, this site would be assessed as having been subject to indirect impacts. Depending on site type, site context, and its archaeological and cultural significance, indirect impacts to a site may or may not result in a loss of heritage value.

Disturbance Area A activities are unlikely to have significant indirect impacts on sites, except where sites extend across disturbance areas A, A (centreline) and B. In this case, the direct impacts of features/objects within Area A would indirectly affect the portions of the site that extend into area B, as these impacts would alter the relationship of an item to other site features and/or its position in the natural landscape.

Disturbance Area A (centreline clearing) has the potential to indirectly impact midden/shell, hearths, stone artefact sites, and PADs, located in areas that have not been subject to significant vegetation clearance historically. Vegetation clearance in these areas may indirectly impact the relationships of such sites within the broader landscape and would likely result in changes in erosion and accretion of sediments, with the potential of destabilising some sites.



Disturbance Area B activities have the potential to indirectly impact midden/shell, hearths, stone artefact sites, and PADs, located in areas that have not been subject to significant vegetation clearance historically. Vegetation clearance in these areas may indirectly impact the relationships of such sites within the broader landscape and would likely result in changes in erosion and accretion of sediments, with the potential of destabilising some sites.

The potential for indirect impacts may extend outside of Disturbance Areas A and B depending on the nature of impact, for example the movement of sediment across sites resulting from run-off management during construction. This would be considered as part of the finalisation of the proposal design and managed during construction through provisions in the construction heritage management sub-plan. Consideration would be given to protecting sites from indirect impacts during construction by considering the location of recorded sites and any construction impact mitigations that are to be put in place.

The magnitude of impacts that a site is subject to would vary depending on whether those impacts are direct or indirect, and total or partial. Whether an impact is total or partial depends on the type of impacts and how those impacts interact with site specific variables such as site type, site complexity, density of artefacts/features, areal spread of the site, and the assessed presence of subsurface archaeological deposits and the depth of those deposits. Indirect impact is identified as part of this assessment however the final extent of this impact would require confirmation if the impact type is changed as part of the design refinement process.

Disturbance area – hazard / high risk trees have the potential to impact and remove scarred trees that are within these zones. As removal is not expected to not involve root ball removal impacts would not occur to other Aboriginal sites types such as stone artefacts, hearths and PADs.

Impact avoidance and minimisation and future heritage assessment

During finalisation of the proposal design, opportunities to avoid or minimise impacts would be determined (refer to sections 9 and 10). This would include a requirement for additional heritage assessment in the following circumstances:

- if new archaeological features, objects, or PADs are identified and they are not able to be avoided from impact through final design process
- if there are areas outside of the survey area requiring impact from the proposal (including areas where property access was restricted) which would be impacted by final design. Archaeological assessment would occur in such areas.

This is discussed further in Section 10.

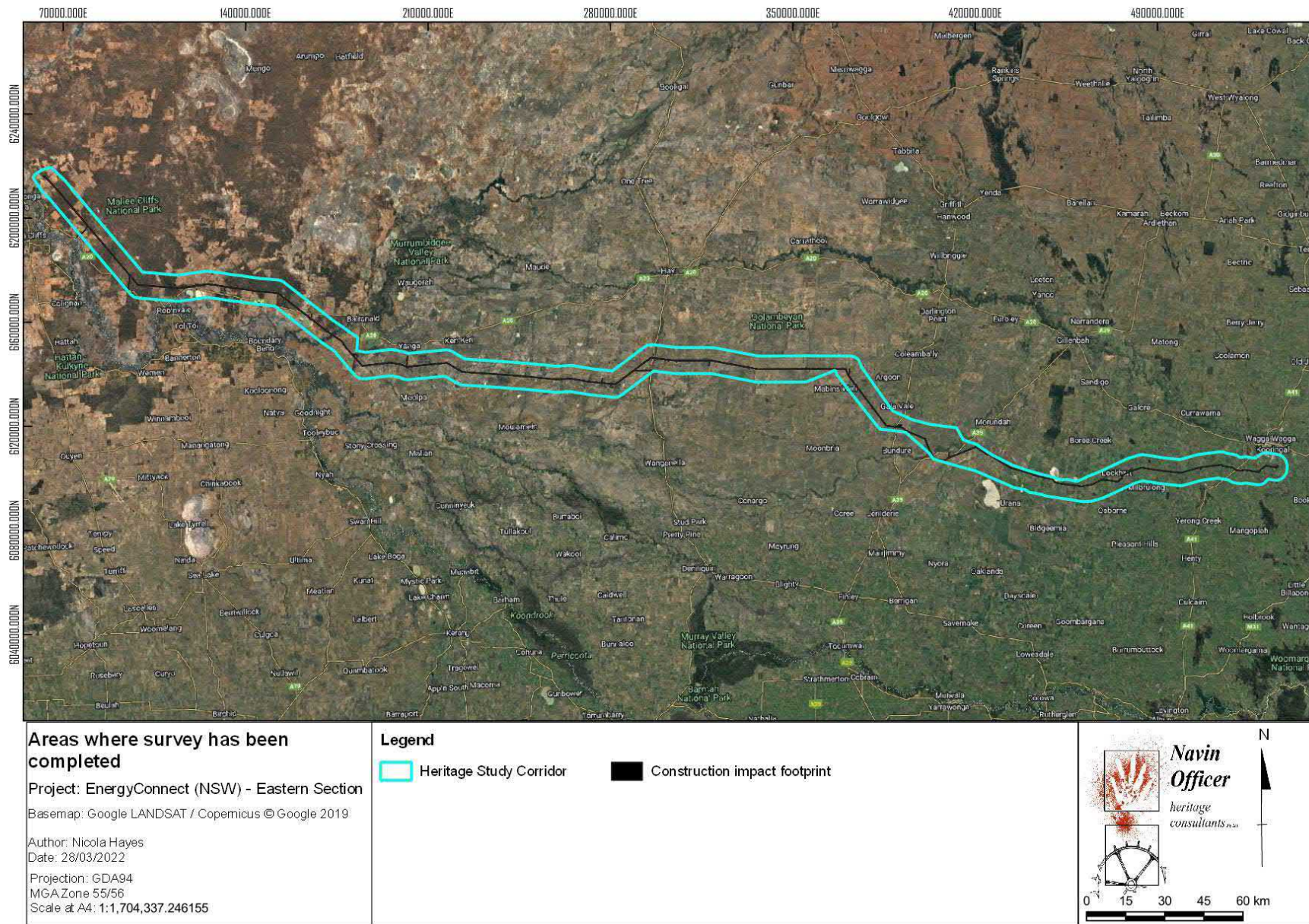


Figure 3.3 Proposal study area and heritage study corridor



3.4 Assessment of construction water supply points

There are around 39 proposed water supply points for the proposal. The majority of these would source water from existing infrastructure connections and as a result no heritage impacts are predicted for these locations.

Two points would require new infrastructure connections (see Table 3.1). These areas have been included in the revised construction impact area and any impacts to Aboriginal heritage as a result of this new infrastructure have been assessed in this report.

There are an additional four points which may require some new infrastructure connections; however, the exact locations and works associated with these points (including connection type) are not currently known and subject to further agreements with land holders/ water suppliers. These sites are identified as being in the following general locations:

- Moulamein Road, Moulamein
- Four Corners Road at Mabins Well
- Newell Highway at Bundure
- Kerri Kerri Road, Kerri Kerri.

Potential Aboriginal heritage impacts at the four above mentioned construction water supply points are not currently assessed in this Revised ACAHR as the locations are not confirmed. Once the locations and potential impacts are confirmed they will be assessed.

Table 3.1 Water supply points requiring new infrastructure

Location	Typical use	Connection type
Ashfords Road (near Dinwan substation)	Office/Welfare, Dust suppression, earthworks, washdown	New small section of pipe connecting to existing infrastructure. It would require a small trench and installation of a pipe to connect water to the Dinawan substation site for construction (adjacent to the proposed transmission line alignment). The survey area includes the location of this pipe.
Lockhart – Collinguille Road	All proposed uses	New piped connection under Collinguille Road. The survey area includes the location of this pipe.

3.5 Field survey

Field survey of the survey area was undertaken between 31 May and 26 September 2021 and this detail was provided in the EIS and accompanying ACHAR. Subsequent to the EIS preparation, additional survey has been completed in January, February and March 2022 and this additional survey is included in this revised ACHAR. The extent of field survey and unsurveyed areas is based on the refined construction impact area (as of March 2022) which includes all of the amended project components. The aims of the surveys were to identify any archaeological sites and areas of potential archaeological deposit (PAD) not previously recorded, and to confirm the location of known Aboriginal sites recorded on the AHIMS database (shown in Figure 6.1 and listed in Appendix 1).



The survey consisted of between two to three teams at any one time conducting pedestrian survey of the survey area. The survey teams were made of up to four participants (typically comprising two NOHC representatives and two RAP representatives) who were spaced at 10 to 20 metre intervals depending on the estimated probability of encountering Aboriginal sites. Each team walked along the length of the heritage survey area.

Extra focus was applied to locations of already recorded sites or PADs and areas yielding high ground surface visibility and exposures. Where feasible, all old-growth native trees in the survey area were inspected for the presence of culturally derived scars.

The proposal team consulted with the RAPs in order to conduct the cultural assessment program in a culturally sensitive manner and have treated all information provided with respect (and in confidence, where requested and required). Aboriginal field participants were encouraged to communicate knowledge regarding the cultural heritage values of the proposal study area, archaeological and cultural sites, and the overall landscape.

Some of the survey effort was completed under COVID-19 restrictions. In order to keep the Aboriginal communities safe consultation with RAPs and site surveys were conducted using COVID safe protocols to complete surveys safely. These included complete virtual consultation and daily catchups with RAPs and spacing of RAPs and archaeologists in the field.

3.5.1 Site recording

All encountered surface archaeological objects, sites, potential archaeological deposits and places of Aboriginal cultural value were documented. All sites had the following details recorded using standardised recording forms:

- site name, recorder and date
- site type
- global positioning system (GPS) coordinates
- landscape and landform character
- context information – cultural/spiritual location, proximity to other objects/sites etc.
- site dimensions
- site condition and potential to be larger
- site content including numbers and artefact types, raw materials and detailed recording of a sample of artefacts
- photos
- any other relevant information, such as oral information and informant details.

3.6 Archaeological subsurface testing program

3.6.1 Study aims

Since the preparation of the EIS and ACHAR an archaeological subsurface testing program has been undertaken in consultation with the RAPs. The aim of the works program was to ascertain the archaeological deposits within PADs that are to be directly impacted by construction of the proposal. The test excavations have taken into consideration all project amendments including alignment changes.



The archaeological subsurface testing methodology was designed to test the density (horizontal and vertical) of substantial archaeological deposits. The test excavation targeted the areas of possible highest impact (ie from tower foundations) in order to provide additional information for an assessment of significance and refine the impact assessment. The methodology does not aim to conclusively prove or disprove that Aboriginal objects are present or absent from the wider area of large landscape based PADs.

3.6.2 Test excavation locations

During the field surveys, 105 new Aboriginal sites and 45 areas of Potential Archaeological Deposit (PAD) were identified. Of the forty-five PADs identified in the field survey, 26 have been identified as being directly impacted by the proposal. The other 19 PADs identified in the field survey are not expected to be directly impacted by construction and/or operation of the proposal. Of the 26 potentially directly impacted PADs (Figure 3.4 to Figure 3.23):

- Twenty-four would be potentially directly impacted by the proposal from the installation of the proposed transmission line towers and some with associated access tracks (PEC-E-PAD01 to 06, 08,09, 17 to27, 29, 32, 35, 38/39 and 40). An estimated seventy-one transmission line towers would be located across these twenty-two PADs.
- Two PADs would be potentially directly impacted where a new section of access track would be constructed (PEC-E-PAD28 and 41) (noting these PADs would not have a transmission line tower constructed in them).

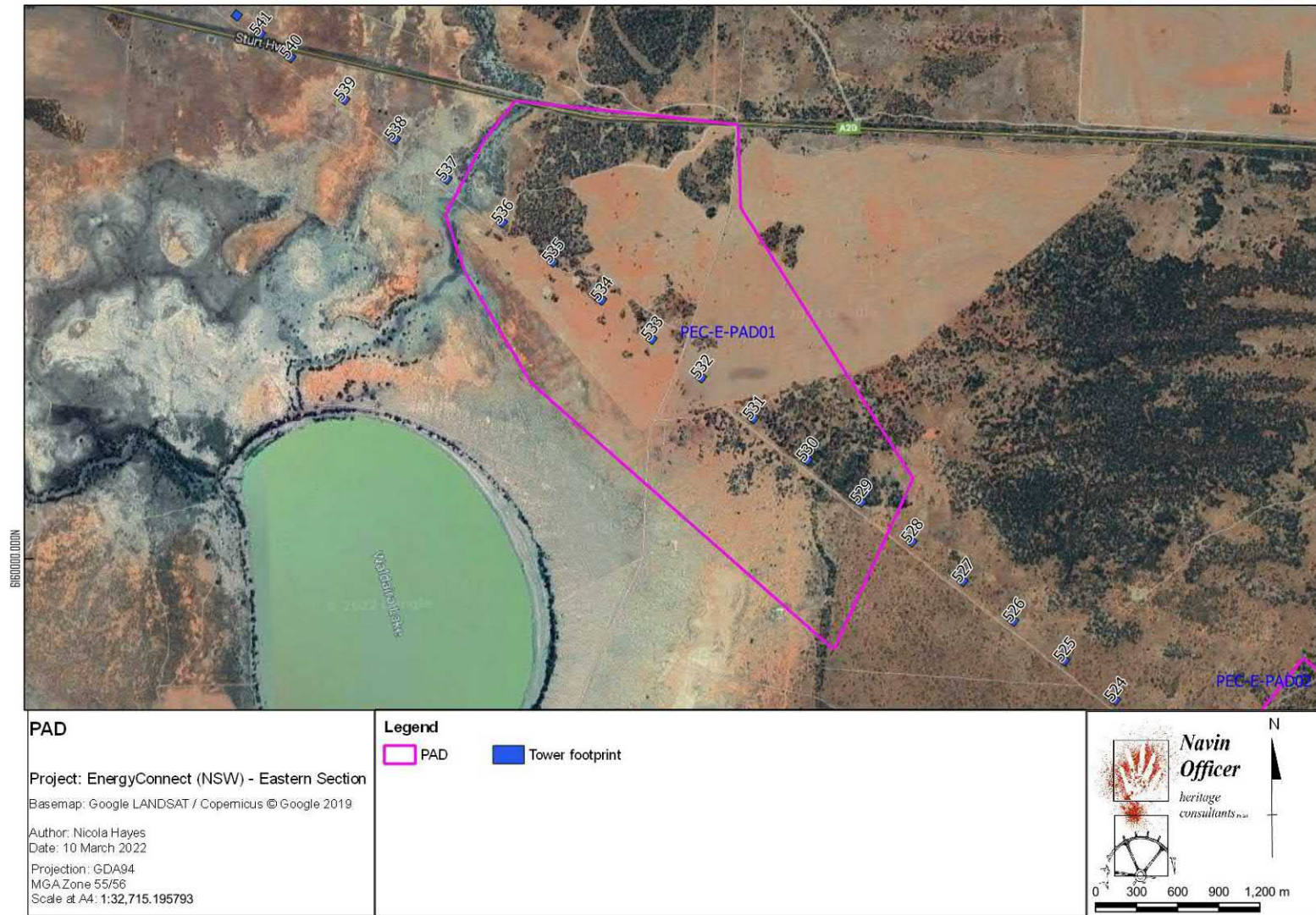


Figure 3.4 PEC-E-PAD01

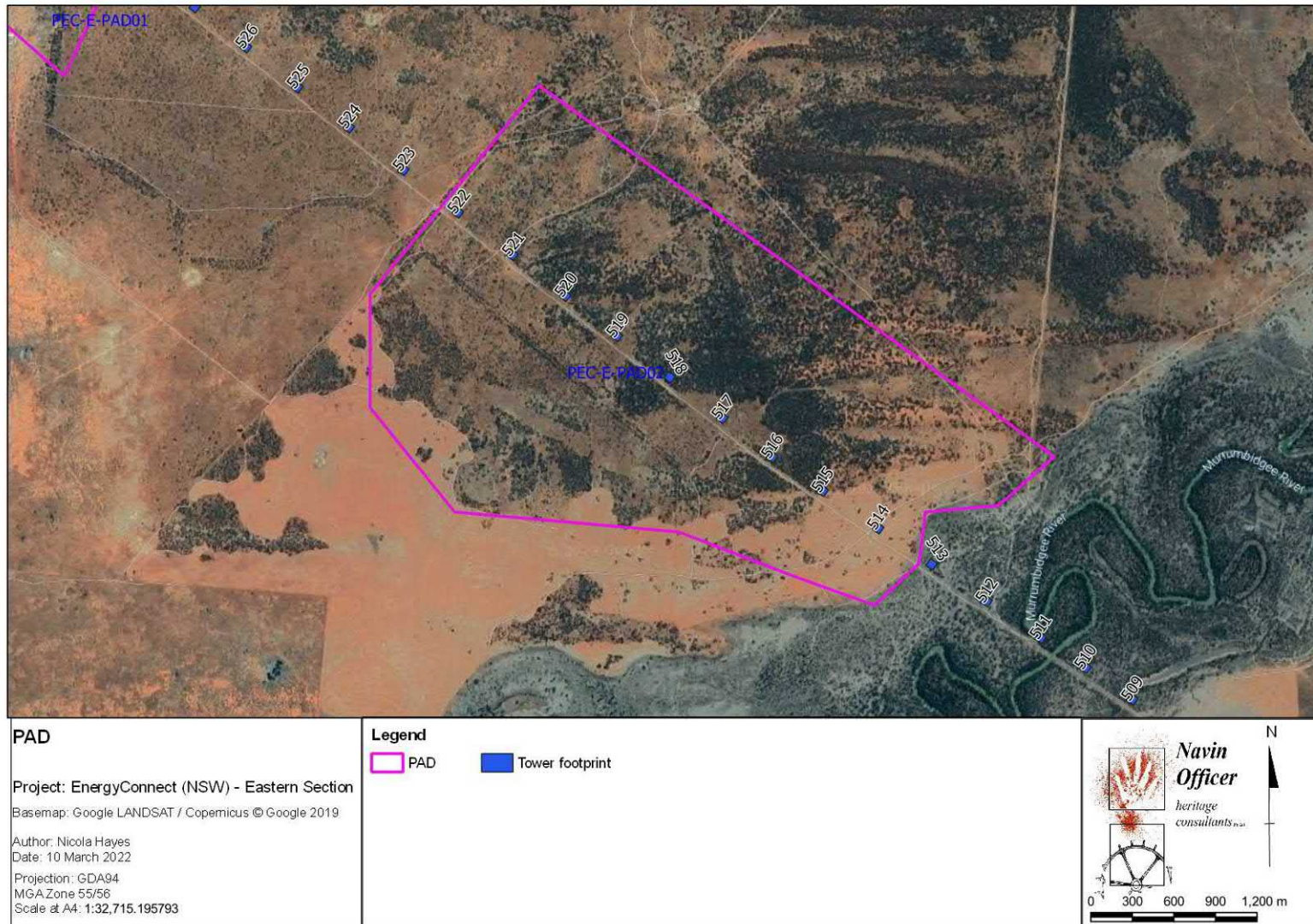


Figure 3.5 PEC-E-PAD02

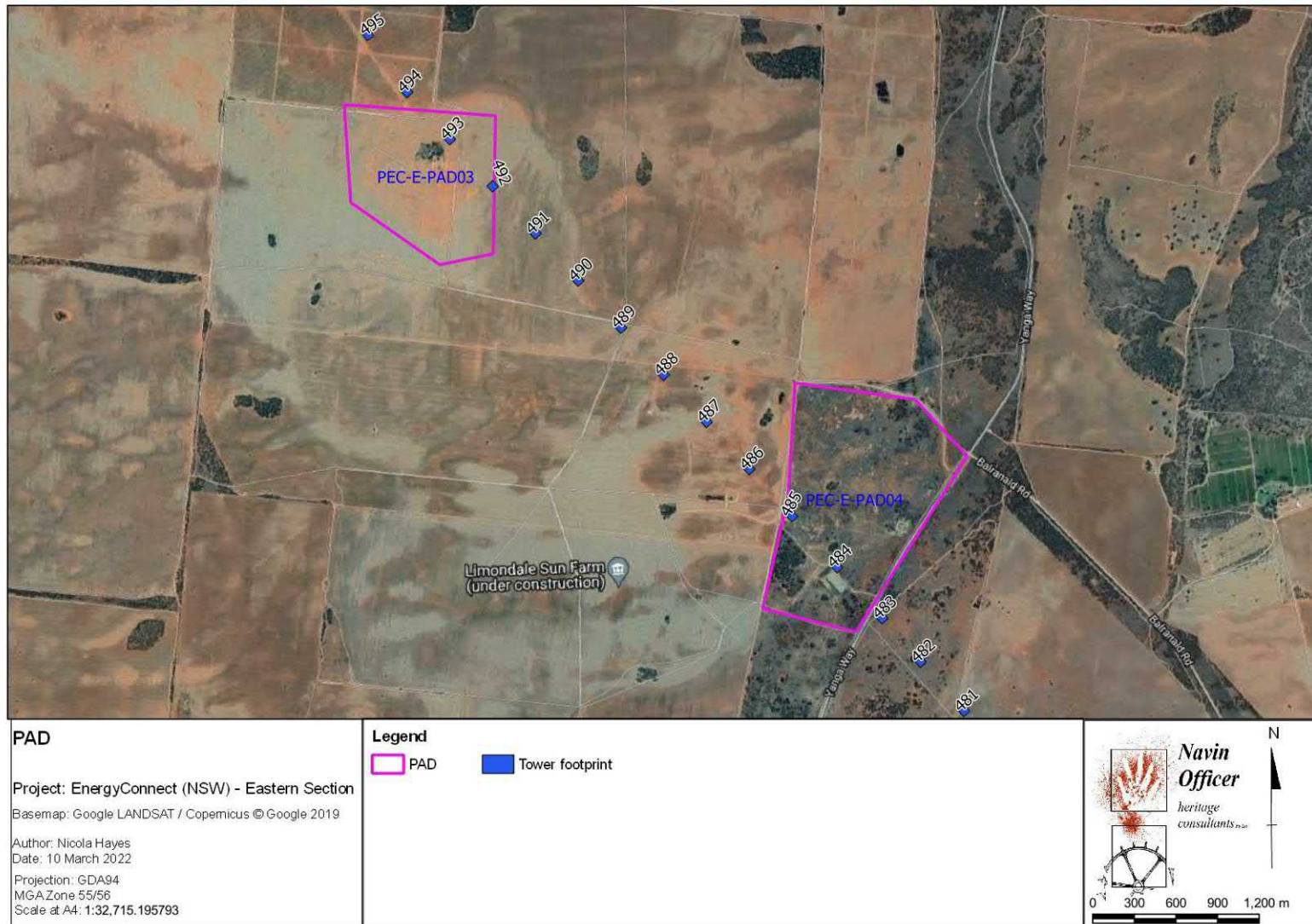


Figure 3.6 PEC-E-PAD03 and 04

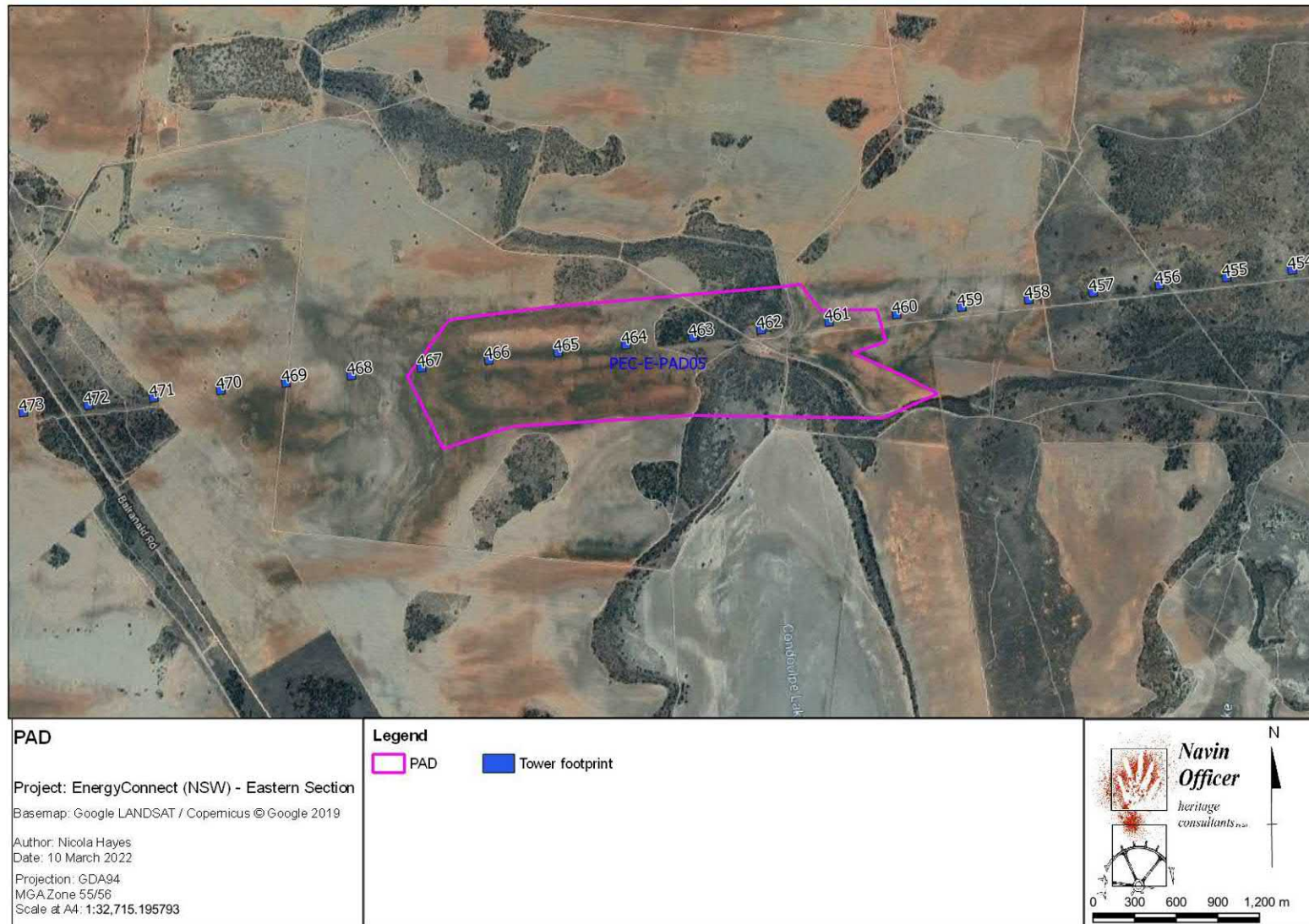


Figure 3.7 PEC-E-PAD05

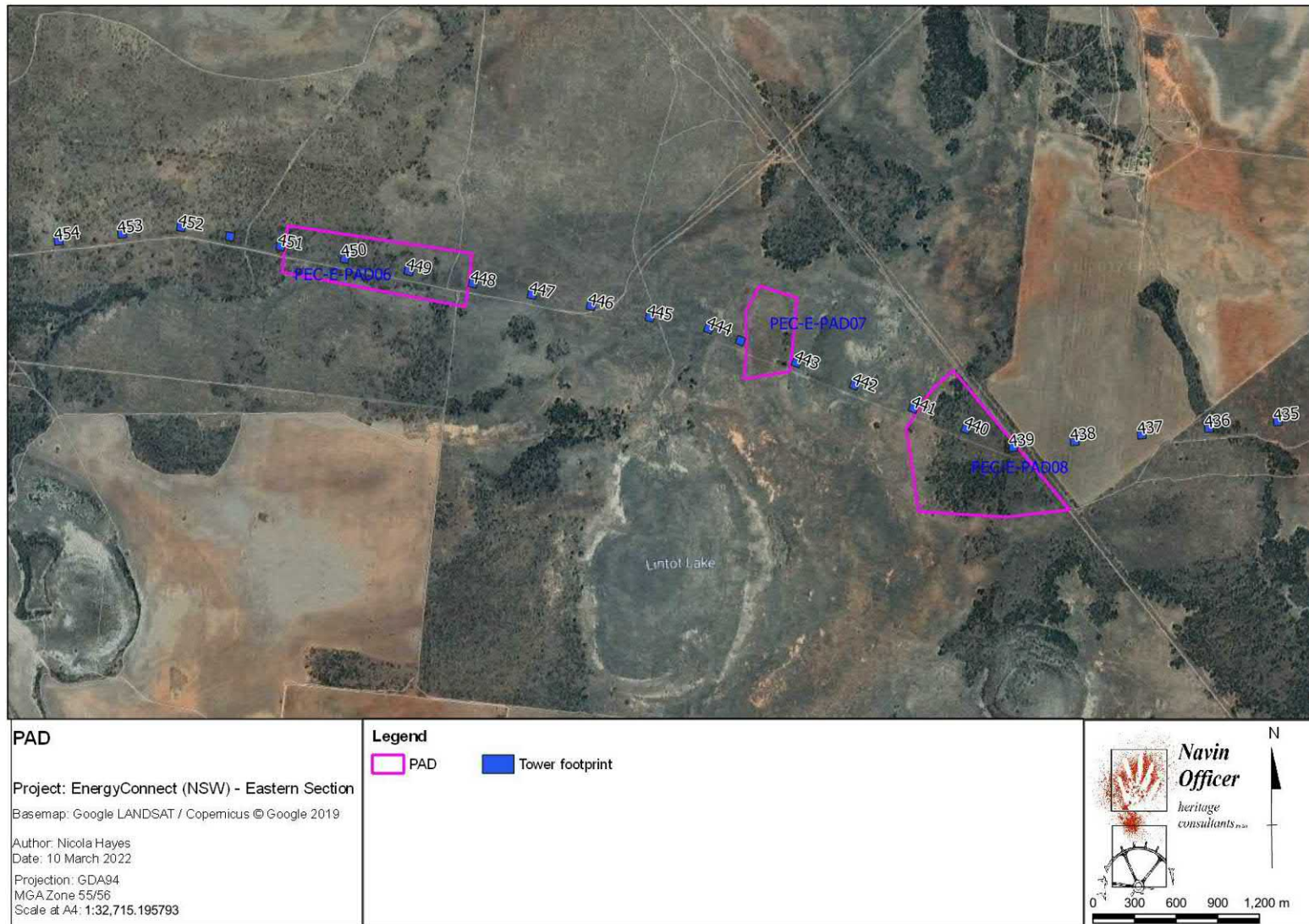


Figure 3.8 PEC-E-PAD06 to 08

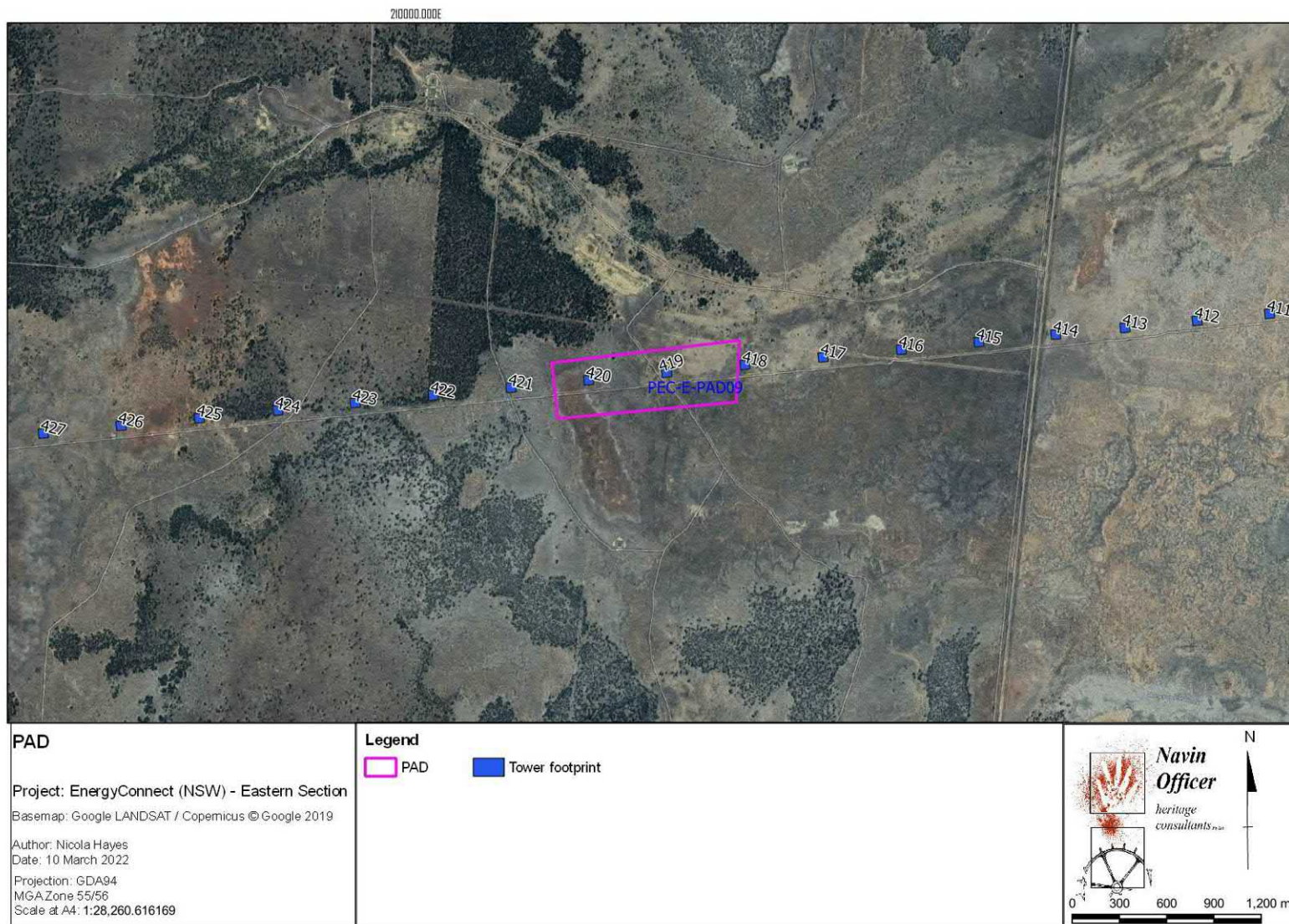


Figure 3.9 PEC-E-PAD09

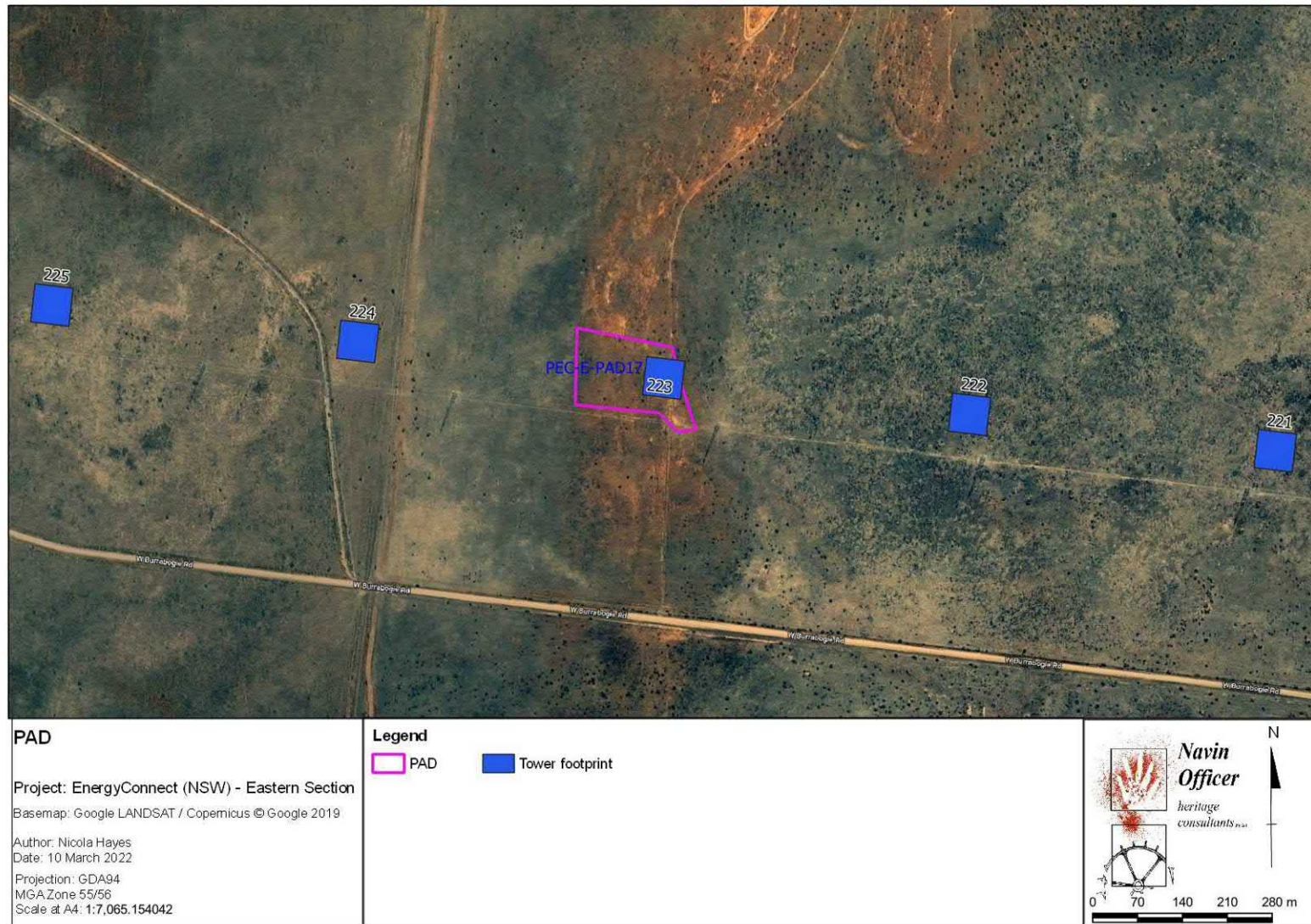


Figure 3.10 PEC-E-PAD17

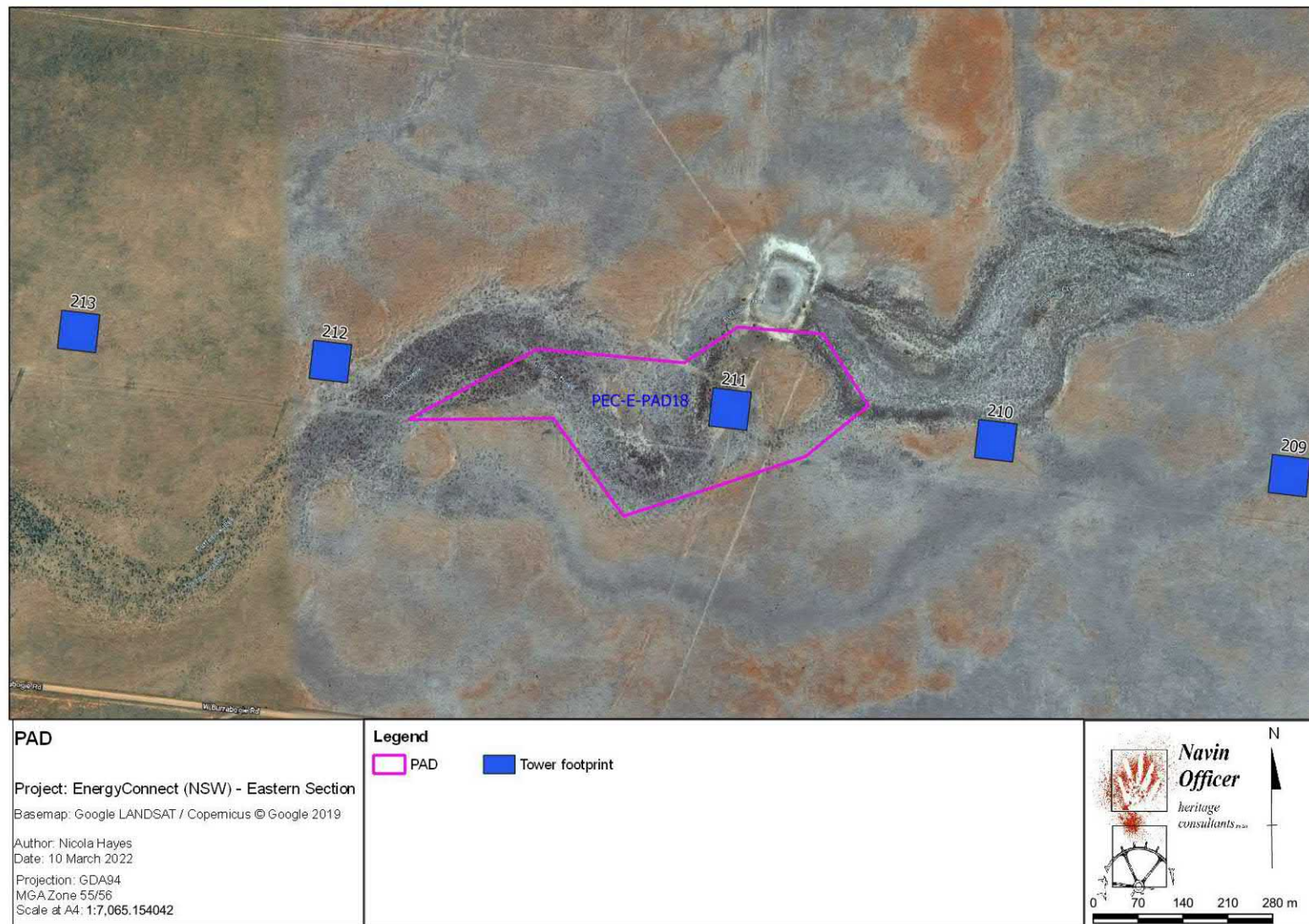


Figure 3.11 PEC-E-PAD18

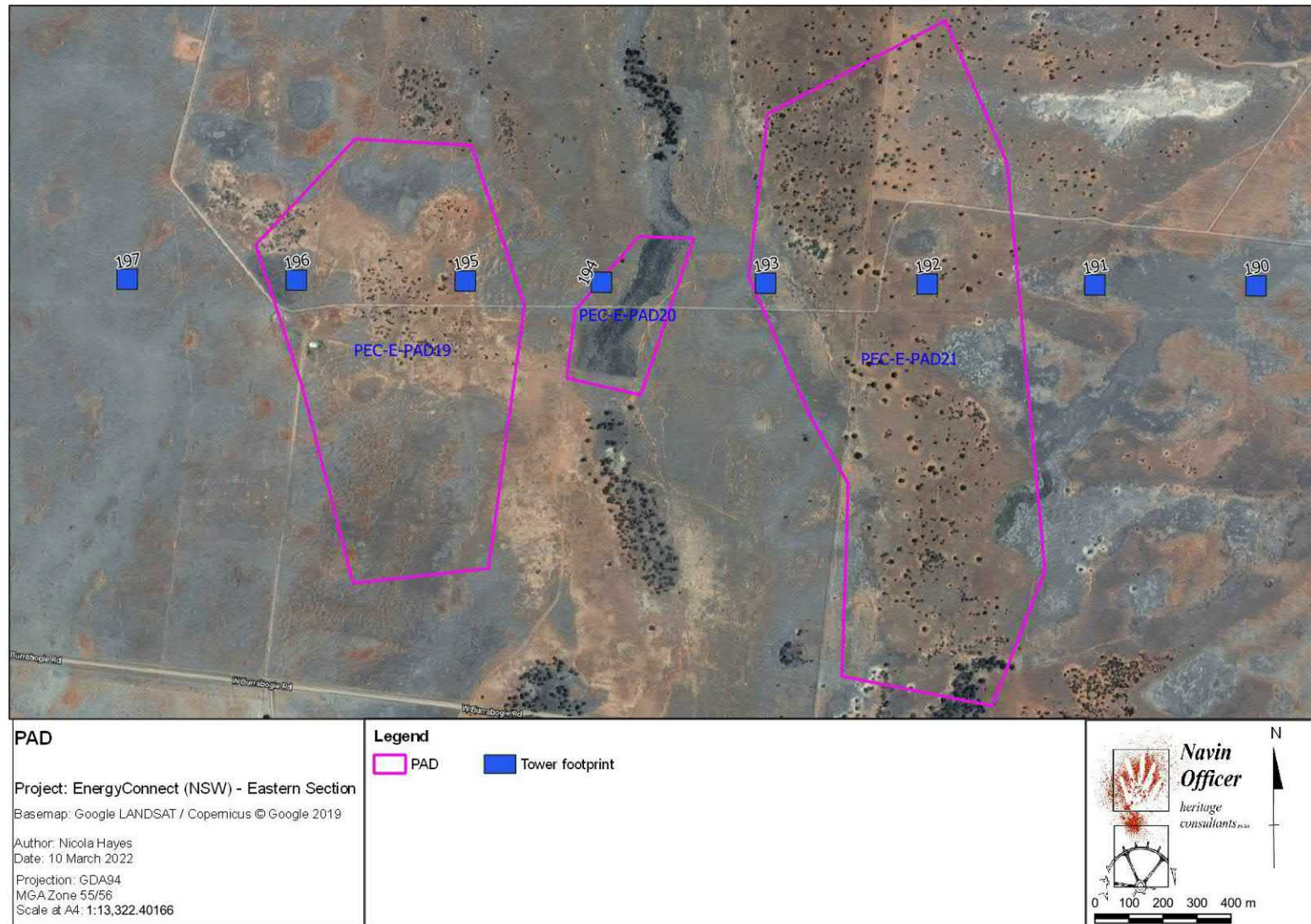


Figure 3.12 PEC-E-PAD20 to 21

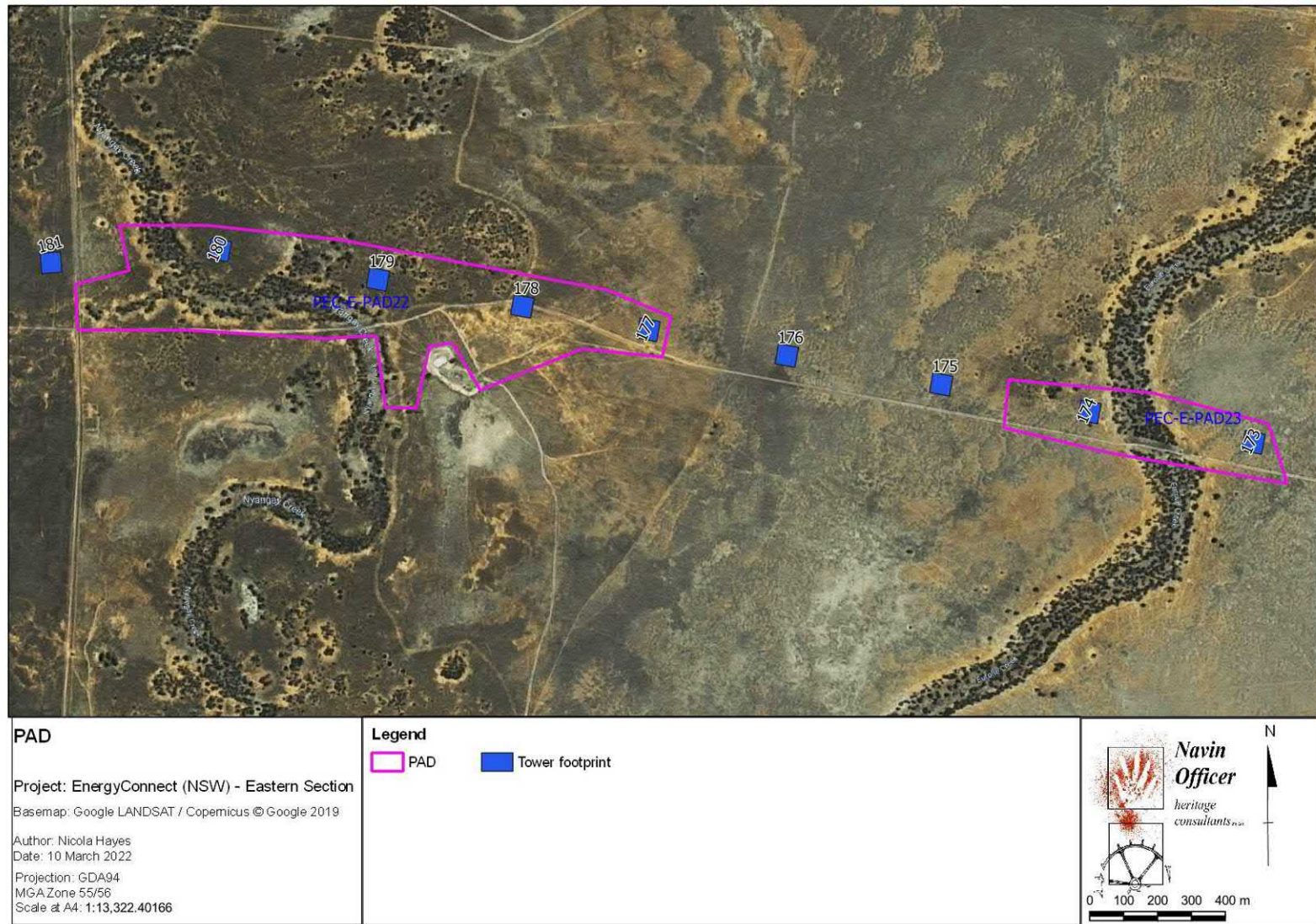


Figure 3.13 PEC-E-PAD22 and 23

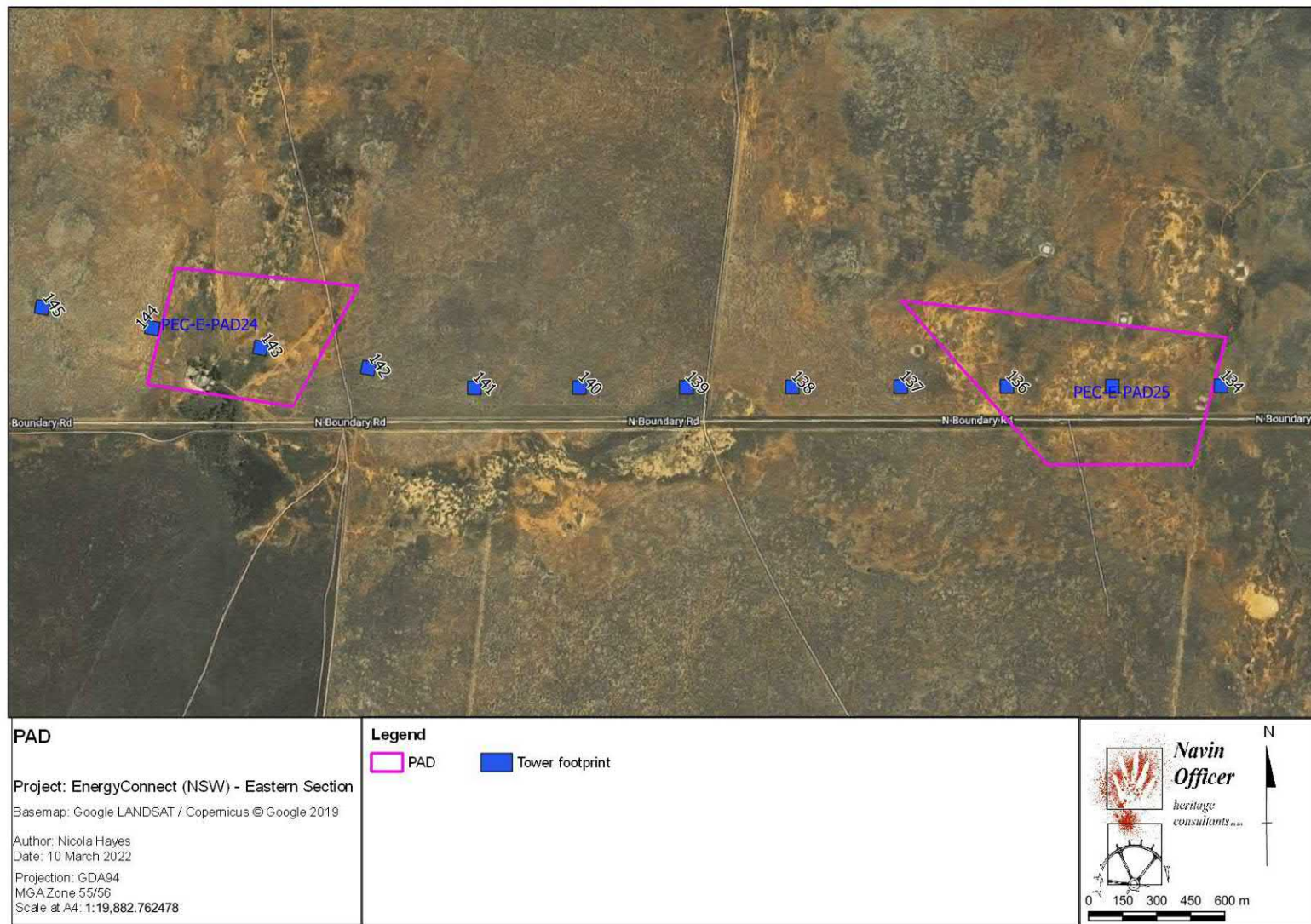


Figure 3.14 PEC-E-PAD24 and 25



Figure 3.15 PEC-E-PAD26

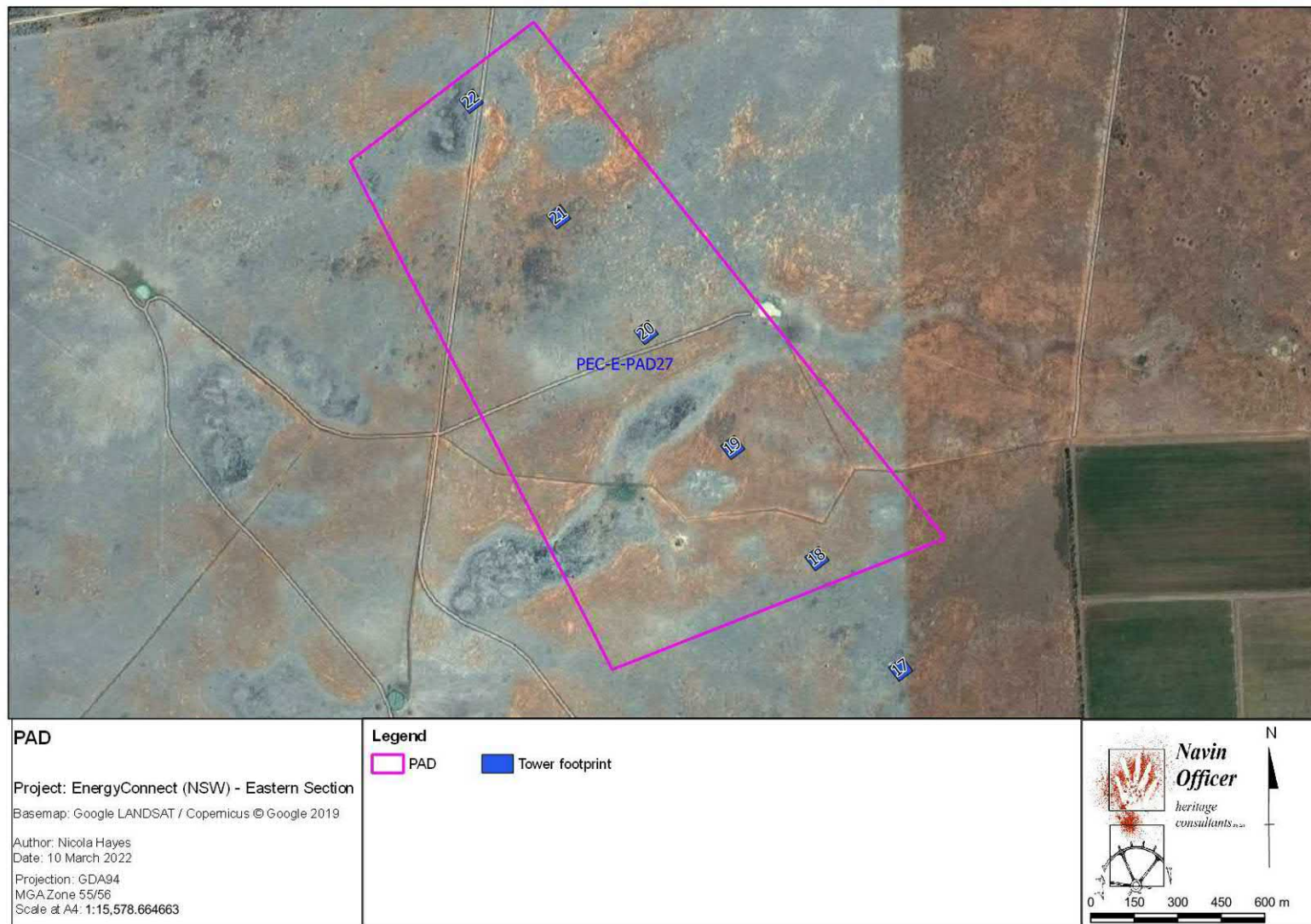


Figure 3.16 PEC-E-PAD27

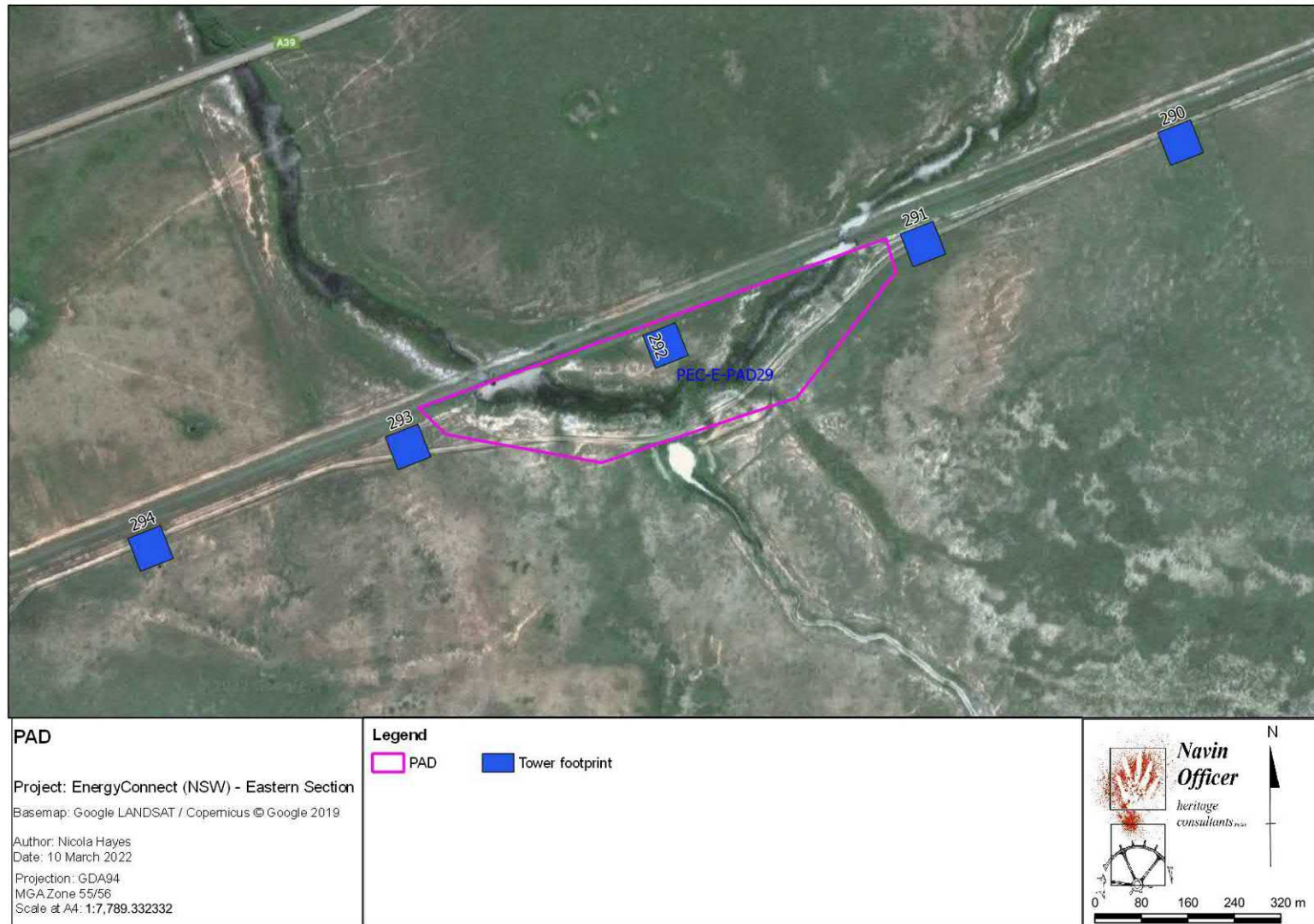


Figure 3.17 PEC-E-PAD29

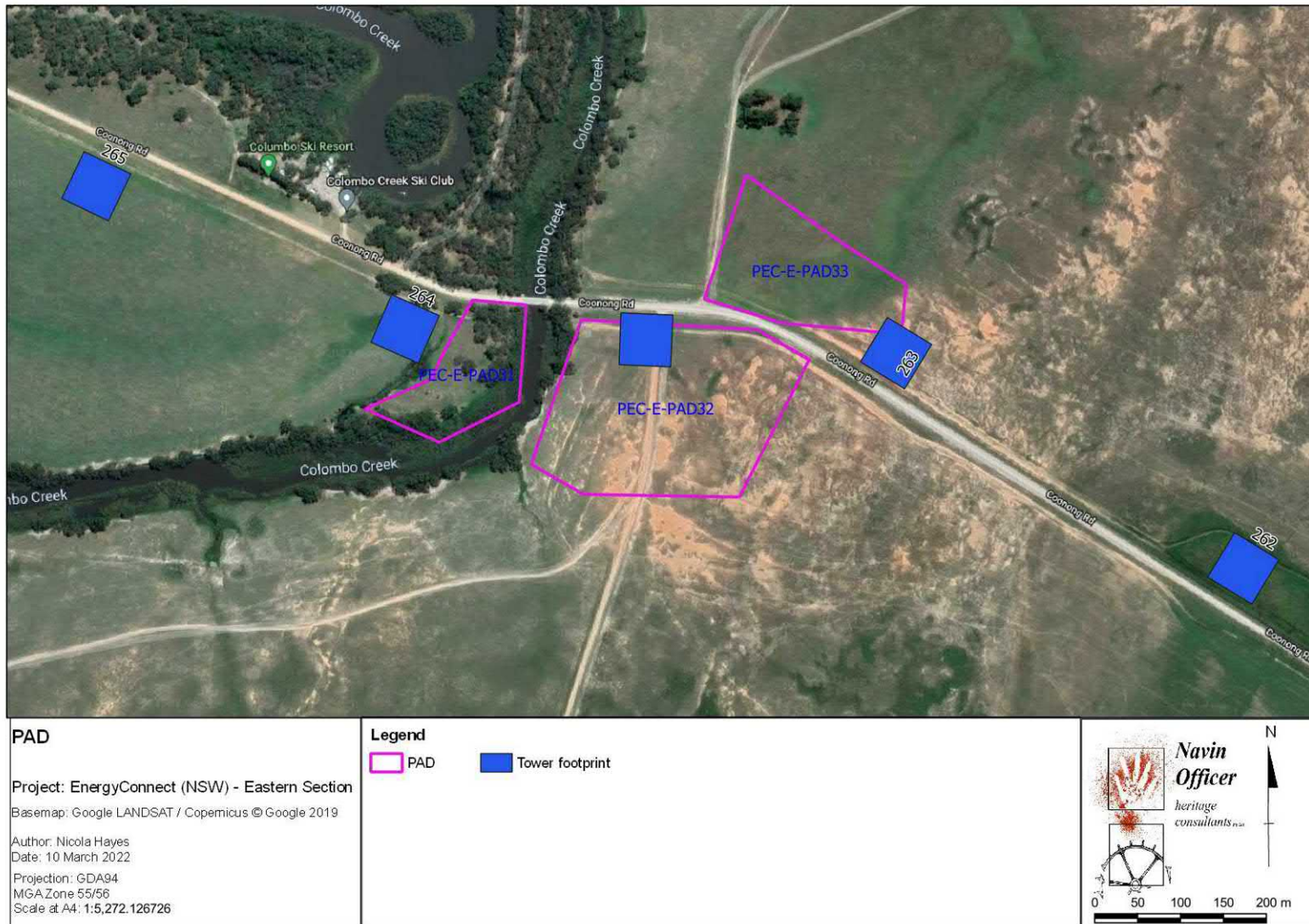


Figure 3.18 PEC-E-PAD31, 32 and 33

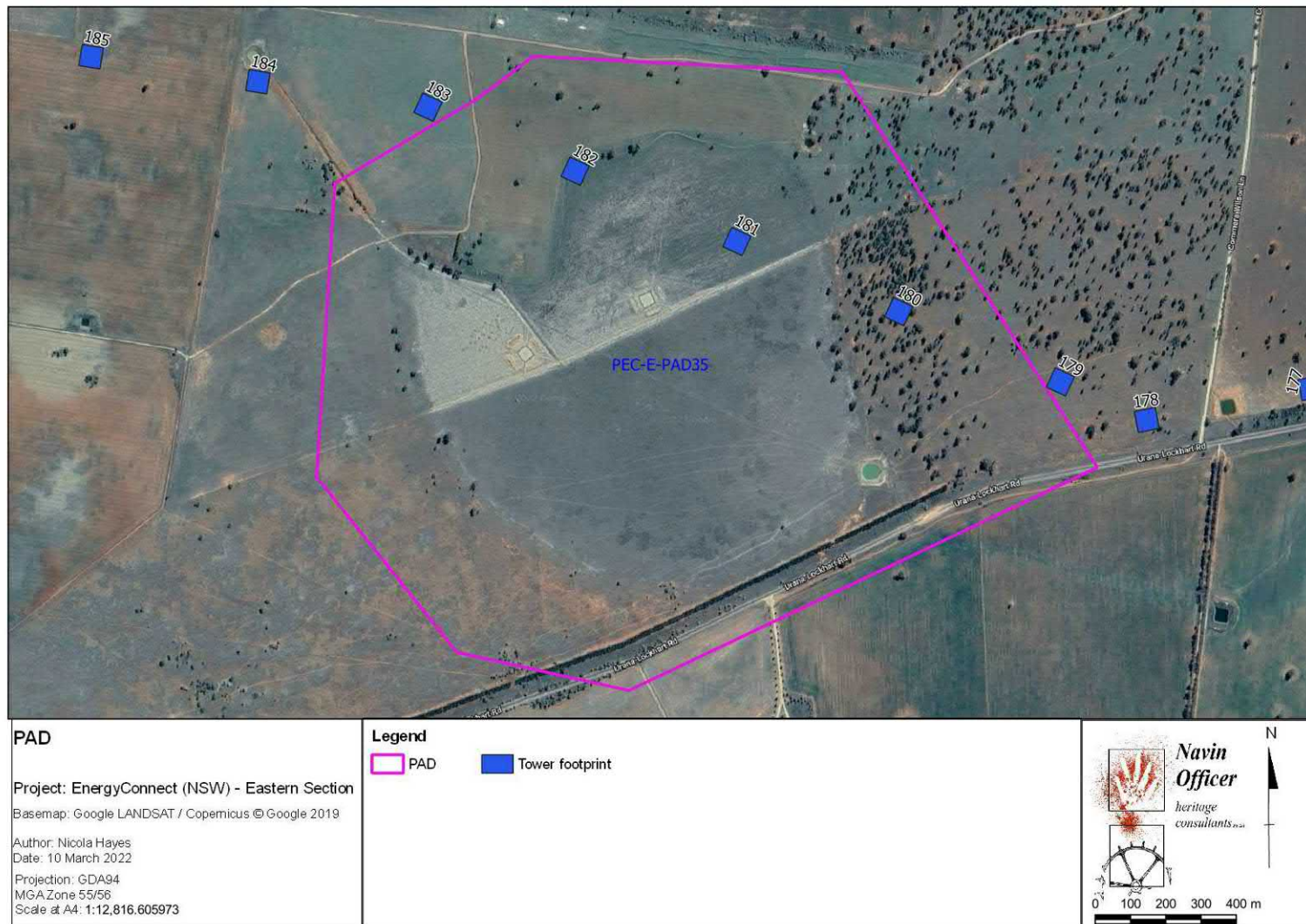


Figure 3.19 PEC-E-PAD35 (original proposed tower locations shown in relation to PAD extent being mapped – noting these have changed and new locations are assessed in the impact assessment)



Figure 3.20 PEC-E-PAD38/39

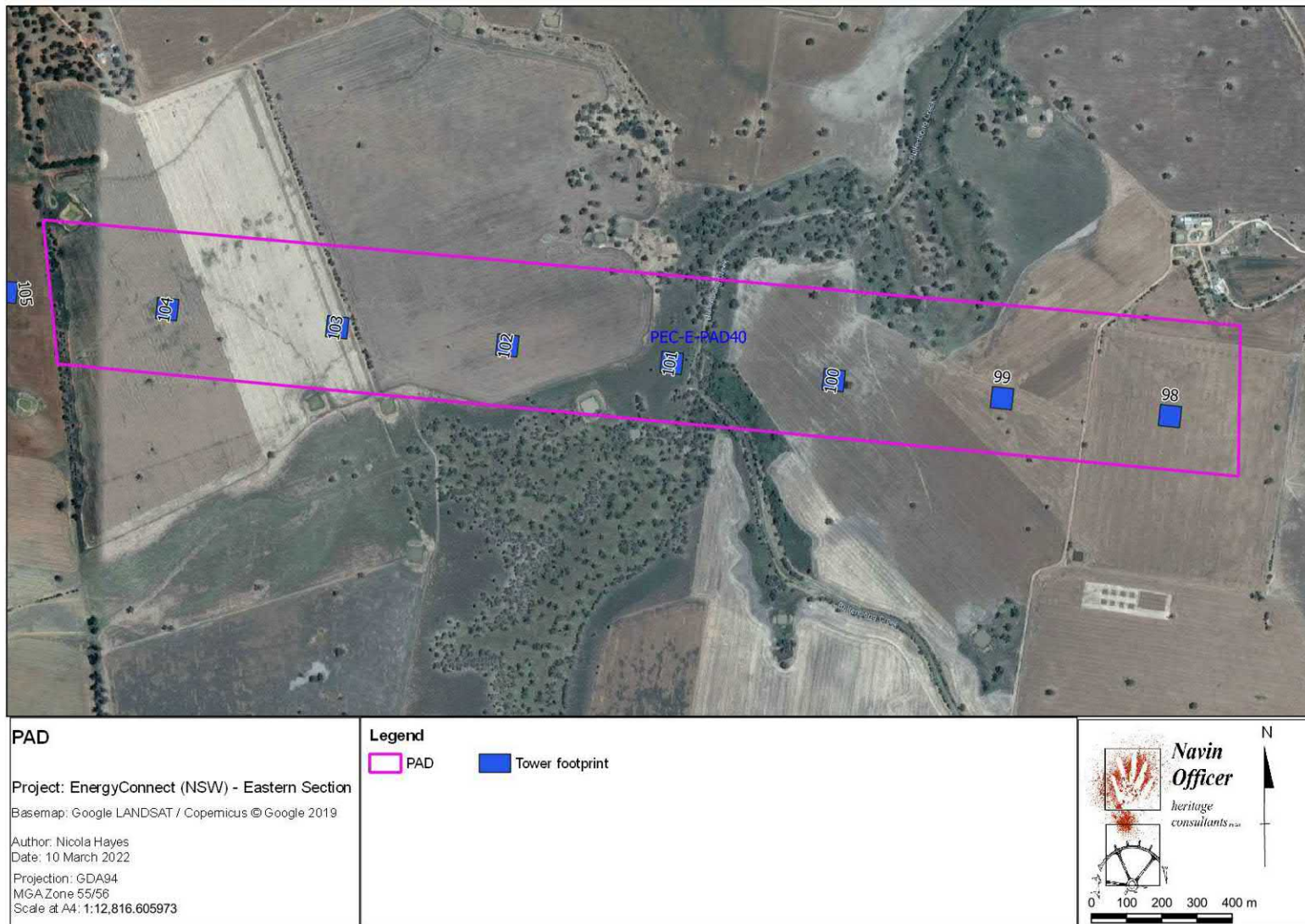


Figure 3.21 PEC-E-PAD40

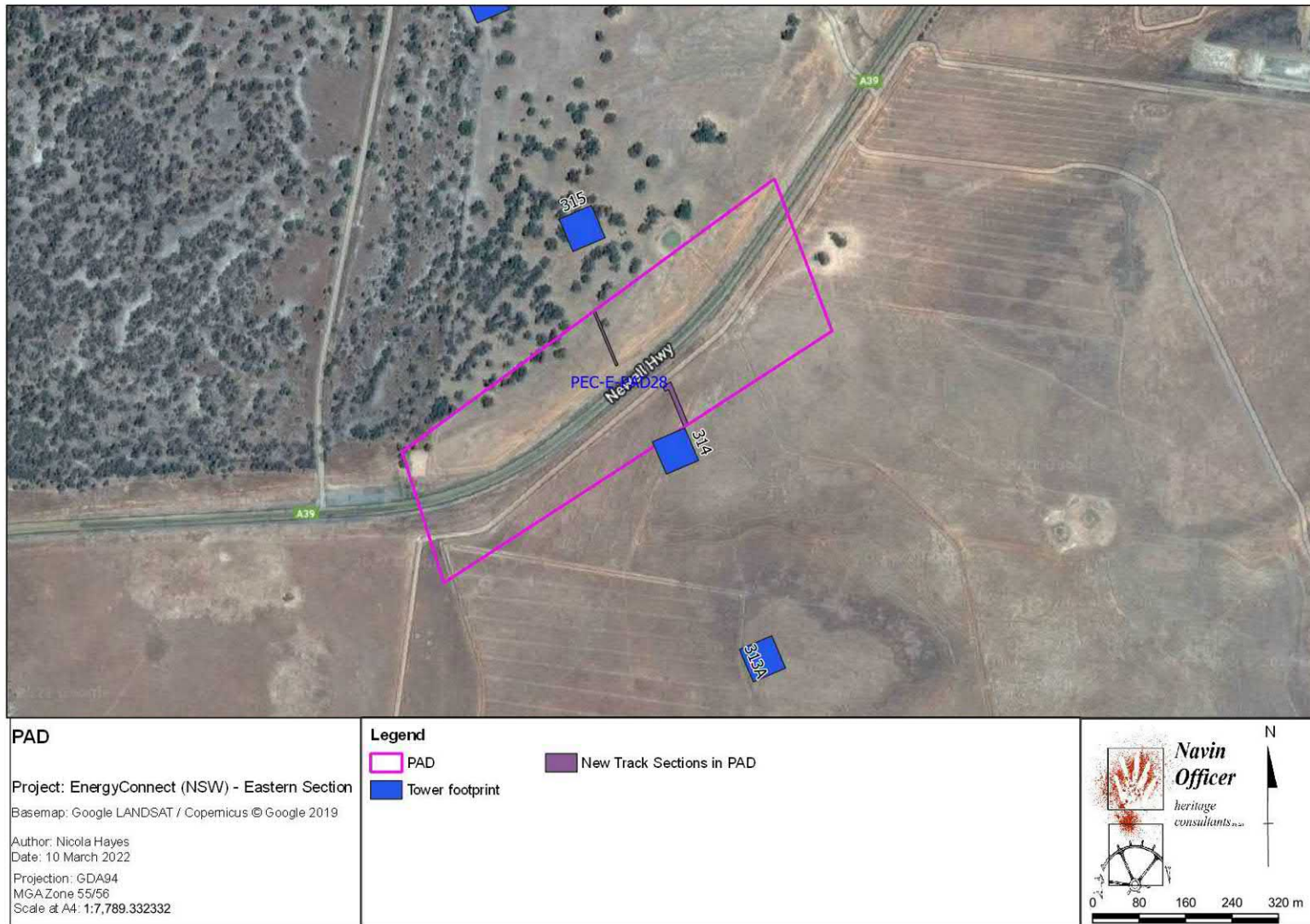


Figure 3.22 PEC-E-PAD28 (new track section in green)

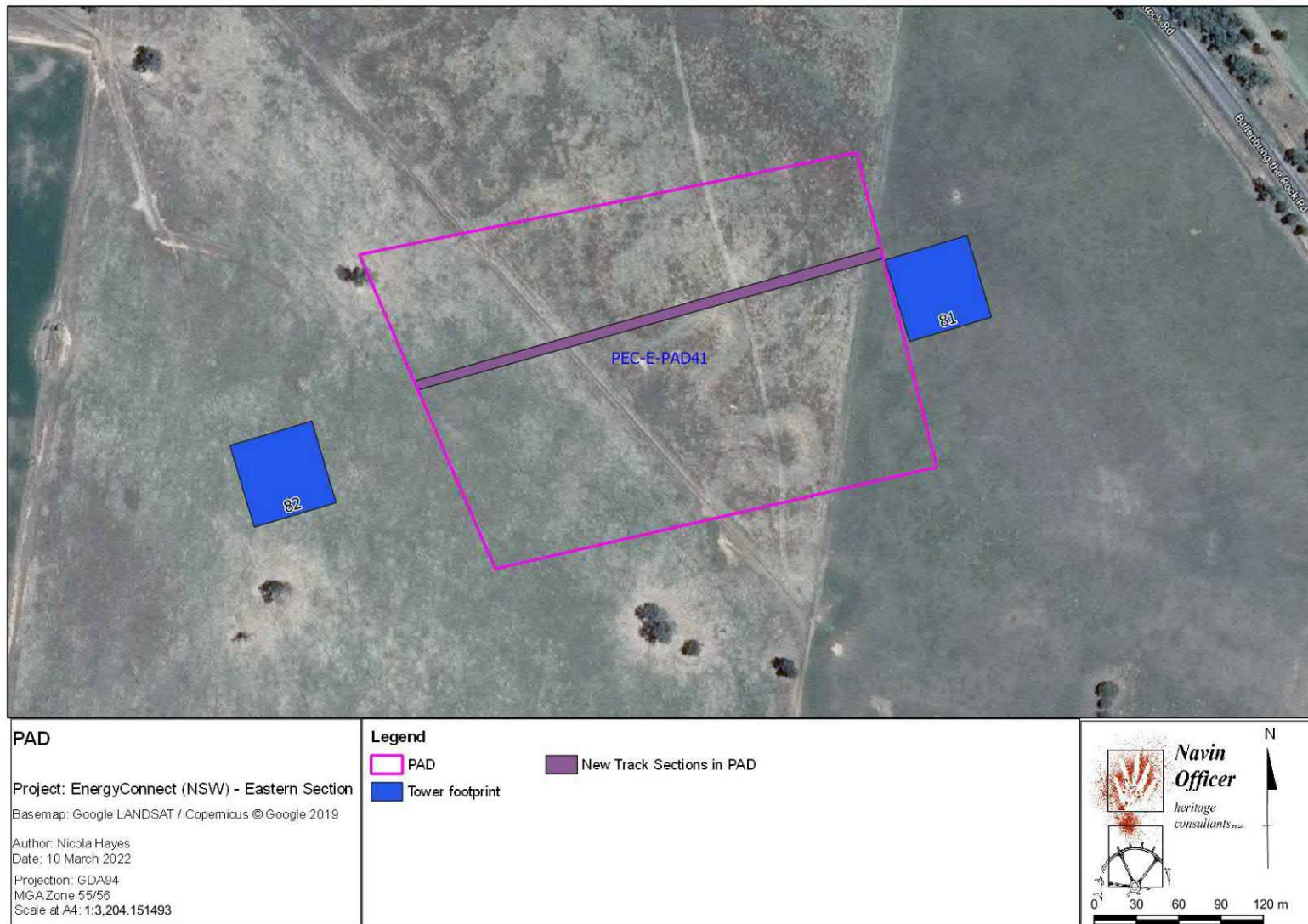


Figure 3.23 PEC-E-PAD41 (new track section in green)



3.6.3 Approach to archaeological subsurface testing program

The methodology for the archaeological subsurface testing program was prepared and consulted on with RAPS in November 2021 for the required 28 day comment period. The methodology that was agreed for implementation is outlined below in Section 3.6.4

3.6.4 Archaeological subsurface test excavation methodology

Program of works

The program of works for the subsurface test excavation was undertaken between 17 January and 1 April 2022. The program of works involved up to five teams, each consisting of approximately seven people working across different PAD locations along the proposal alignment. Teams comprised one archaeological field director, two assistant archaeologists, one field assistant from WSP and three Aboriginal RAP representatives.

Test excavations at proposed tower locations

The methodology used for the PAD subsurface test excavation was in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales: Part 6 National Parks and Wildlife Act 1974* (DECCW 2010:26-27), and was detailed in the *Proposed Methodology for a Subsurface Test Excavation Program* (NOHC 2021). In summary, the methodology included a staged approach for subsurface test excavation as follows:

Stage 1

Within PADs that are potentially directly impacted by proposed transmission line tower locations, five test pits were placed within each proposed transmission line tower location (see Figure 2). Each test pit was excavated to a maximum depth of 1.4 metres, depending on the deposits encountered. All test pits were excavated by hand using 1 metre x 1 metre units and excavated in quadrants.

Stage 2

If no artefacts were identified during the first phase of testing, additional test pits were placed within the proposed transmission line tower location, to test for the absence of Aboriginal cultural material. Additional test pits were placed between each stage 1 test pit as shown in Figure 3.24 below. All test pits were excavated by hand using 1 metre x 1 metre units and excavated in quadrants.

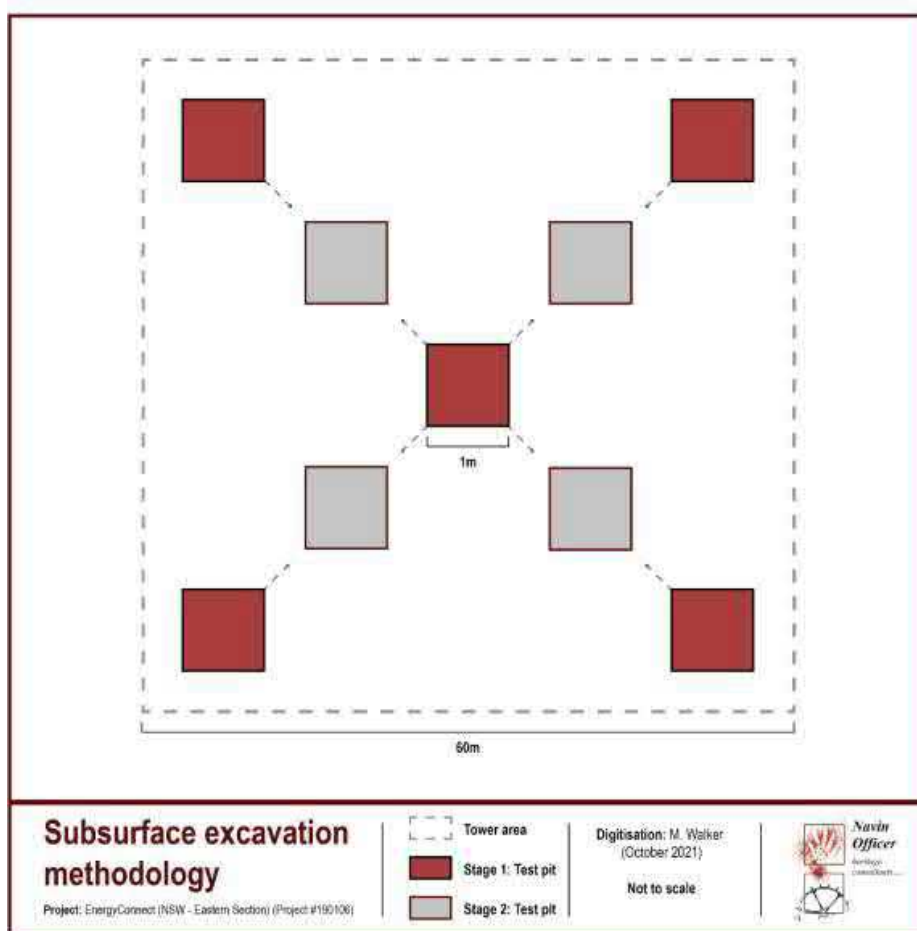


Figure 3.24 Location of test pits within tower locations

Test excavations at proposed access tracks

Within PADs impacted by new access tracks and access track upgrades, a line (transect) of pits was placed along the proposed access track alignment. Pits were placed 20 metres apart. Pits were excavated to 50 centimetres in depth as this is the expected maximum depth of any disturbance.

Following an on-site review, the test pit locations may have been varied slightly in order to avoid hazards and obstructions including the following:

- large stone cobbles or tors;
- outcropping bedrock;
- highly disturbed or eroded ground including rabbit burrows, ants nests, buried infrastructure such as pipes or cables; and/or
- substantial vegetation.

3.6.5 Excavation method

The test excavation program was carried out in accordance with requirement 16a of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). All pits were excavated by hand using 0.5 x 0.5 metre units. The size of an individual test pit was 1 x 1 metres. Each test pit was recorded in quadrant units.

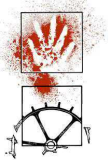


3.6.6 Materials analysis

For this report only raw lithic items and cultural material numbers are reported on. Detailed analysis will be required of all recovered materials in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Following this analysis, some items may be found to not be Aboriginal artefacts. Therefore, the numbers of items reported for each PAD are preliminary and the excavations results also preliminary and will be finalised following the materials analysis.

3.6.7 Outcome of works program

Some PAD sites subject to subsurface archaeological test excavation were confirmed as not having archaeological potential and therefore the PAD classification was removed from the site or a portion of the site. Other sites have retained PAD status and in these circumstances, recommendations made in relation to the potential impact of the proposal.



4. Description of the area

4.1 Location of proposal

EnergyConnect (NSW – Eastern Section) extends from the Buronga substation to the Wagga Wagga substation. The proposal is located within the Wentworth, Balranald, Murray River, Edward River, Hay, Murrumbidgee, Federation, Lockhart and Wagga Wagga LGAs in regional western NSW and traverses around 540 kilometres between Buronga and Wagga Wagga.

4.2 Environmental context

4.2.1 Bioregions and topographic context

Australia's landscapes have been classified into bioregions as part of a national and regional framework for conservation planning and assessment (NPWS 2003) (Figure 4.1). The classification system is based on physical environmental attributes including climate, lithology, geology, landforms and vegetation (Thackway and Cresswell 1995). These large, geographically distinct areas of land have been further refined into more localised and homogenous geomorphological units known as subregions (Department of Agriculture, Water and the Environment, n.d.).

The proposed transmission line easement extends across different bioregions from the Murray Darling Depression through the Riverina and the NSW South Western Slopes.

Murray Darling Depression

The Murray Darling Depression Bioregion covers a broad swathe of the south western NSW, as well as north western Victoria, and eastern South Australia and is characterised by extensive undulating plains, linear and parabolic dunes, and lakes. The bioregion includes the Murray, Murrumbidgee, Lachlan, Darling, Barwon, Yanda River and Peacock Creek catchments and is dominated by a hot semi-arid climate with predominantly winter rainfall, and hot summers and mild winters. The vegetation consists mainly of mallee shrublands with a chenopod shrub understorey, rosewood–belah open woodlands and blue bush chenopod shrublands. Leasehold grazing is the major tenure in rangeland areas, and small freehold blocks exist on the interface with the cropping zone.

The sediments of the basin are Tertiary and Quaternary deposits formed by shallow seas, and later lakes, and rivers. Aeolian sands of the Woorinen formation overlay many of these deposits forming the dunes and sandplains that characterise the bioregion today. Other geomorphic categories in the region include alluvial plains, playas, and basins.

Riverina

The Riverina bioregion is characterised by extensive riverine floodplains with low relief, associated with the Murray, Murrumbidgee and Lachlan Rivers. The climate is dominated by dry semi-arid climate and characterised by hot summers and cool winters. The geology and geomorphology of the bioregion is similar to that of the Darling Riverine Plains Bioregion. The upper catchment landscape is a series of overlapping, low gradient alluvial fans. The lower tract of the river is a floodplain with overflow lakes.

The bioregion is dominated by river channels, floodplains, backplains, swamps, lakes and lunettes that are all of Quaternary age. The region comprises three overlapping alluvial fans centred on the eastern half of the Murray Basin. Modern river channels consist mostly of sandy soils and more saline heavy grey and brown clays towards the outer perimeter of the floodplains on the higher rarely flooded terraces. Sandy soils also form levees, old channels, dunes and lunettes. As soil and water salinity increase downstream on the Murrumbidgee, saline clays become evident on lake floors.



Vegetation is dominated by chenopod shrublands and associated grasslands. Other vegetation types include box woodlands, mallee woodlands, native grasslands and wetlands.

NSW South Western Slopes

The South Western Slopes bioregion comprises an extensive area of foothills and isolated ranges comprising the lower inland slopes of the Great Dividing Range extending from north of Cowra through southern NSW into western Victoria. The bioregion is dominated by a sub-humid climate characterised by hot summers and no dry season. Geology, soils and vegetation are complex and diverse but typified by granites and meta-sediments, texture contrast soils and a variety of eucalypt woodlands.

The bioregion lies wholly in the eastern part of the Lachlan Fold Belt which consists of a complex series of north to north westerly trending folded bodies of Cambrian to Early Carboniferous sedimentary and volcanic rocks. Limited areas of Tertiary basalt with underlying river gravels and sands occur, and as the country becomes lower to the west and north, wide valleys filled with Quaternary alluvium and occasional lakes become the dominant landscape form.

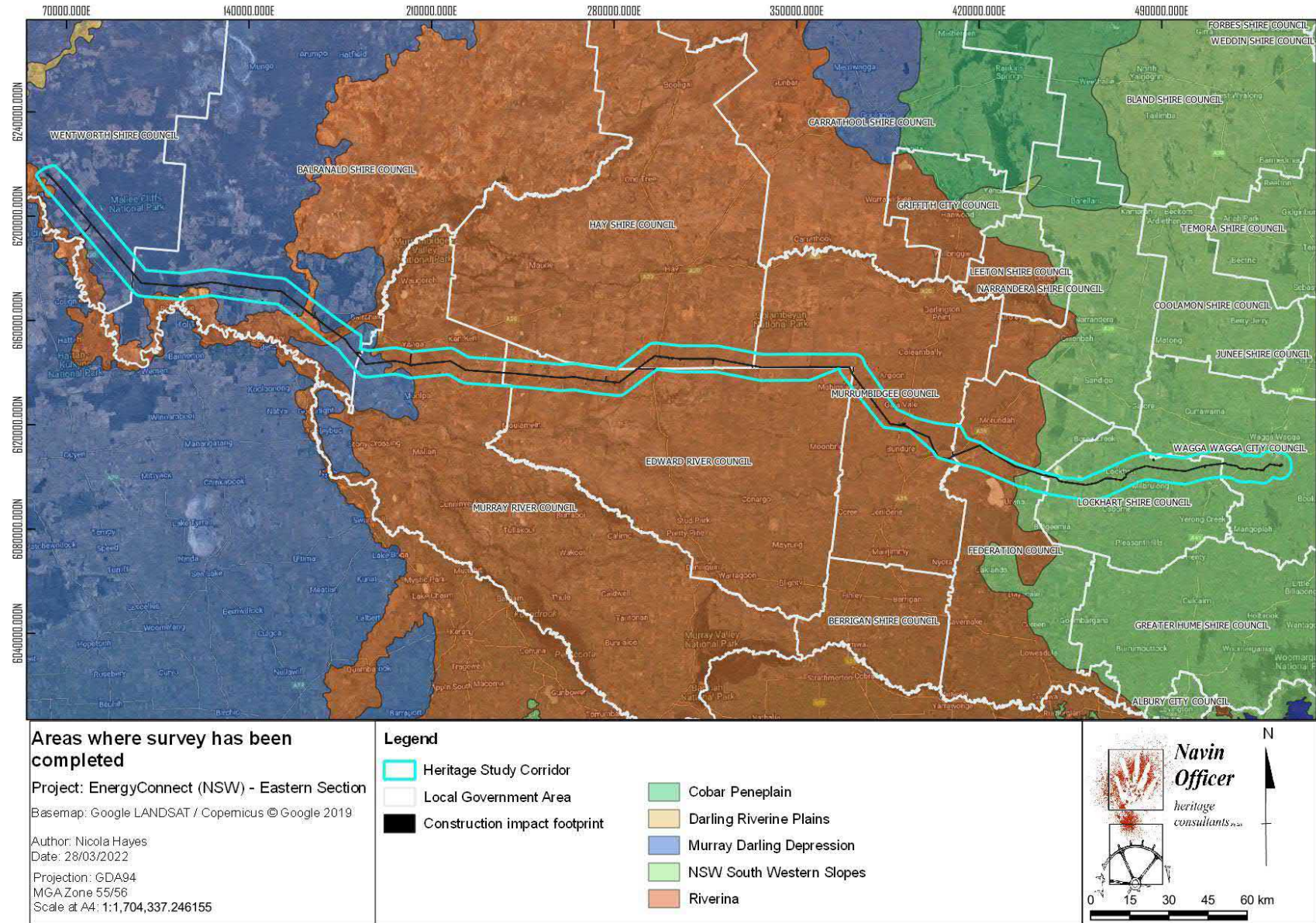
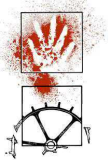


Figure 4.1 Bioregions and LGAs in the proposal area



4.2.2 Soils

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

The proposal extends across different soil types defined within the Great Soil Group (GSG) Soil Type Map of NSW (Department of Planning, Industry and Environment 2021) and classified within the Australian Soil Classification class (ASC) (Isbell 2020).

Great Soil Group

Great Soil Groups (GSG) (Department of Planning, Industry and Environment 2021) describe soil types in terms of morphology, genesis and land use. Table 4.1 outlines the soil types that occur within the study area corridor and based on the GSG with an equivalent to the ASC.

Australian Soil Classification

A multi-category scheme with classes defined by diagnostic horizons or materials and their arrangement in vertical sequence as seen in an exposed soil profile. The scheme is hierarchically classified by Order, Suborder, Great Group, Subgroup, family.

The ASC orders associated with the GSG soil types identified within the study area are the following:

Calcarosols (CA): This order consists of soils that are usually calcareous throughout the profile. These Soils were either calcareous throughout the solum - or calcareous at least directly below the A1 or Ap horizon, or within a depth of 0.2 m (whichever is shallower). Carbonate accumulations must be judged to be pedogenic¹, i.e. are a result of soil forming processes in situ (either current or relict). Soils dominated by nonpedogenic calcareous materials such as particles of limestone or shells are excluded (Isbell 2020, 30).

Chromosols (CH): This order consists of soils with strong texture and clear defined horizon boundary. Soils of this Order are among the most widespread soils used for agriculture in Australia, particularly those with red subsoils. They do not have high levels of sodium and are not strongly acidic in the subsoil (Isbell 2020, 36).

Kandosols (KA): This order consists of those soils that lack strong texture contrast, have massive or only weakly structured B horizons, and are not calcareous throughout. They are mostly well drained, permeable soils, although some yellow and most grey forms have impeded subsoil drainage (Isbell 2020, 66).

Kurosols (KU): This order consists of soils with strong texture contrast between A horizons and strongly acid B horizons. These soils may present some unusual subsoil chemical features such as high magnesium, sodium and aluminium (Isbell 2020, 72).

Rudosols (RU): This order generally consists of young soils that have had little time to pedologically modify parent rocks or sediments, therefore containing negligible pedologic organisation. The Soils were apedal or only weakly structured in the A1 horizon and show no pedological colour changes apart from the darkening of an A1 horizon. There is little or no texture or colour change with depth unless stratified or buried Soils were present (Isbell 2020, 85).

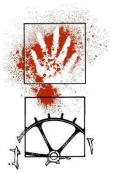
Sodosols (SO): This soil order consists of soils with strong texture contrast between A horizons and sodic B horizons that are not strongly acid. These soils generally have an abrupt clay increase down the profile and high sodium content, which may lead to clay dispersion and instability (Isbell 2020, 91).



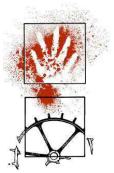
Vertosols (VE): This order consists of clay soils with shrink-swell properties that exhibit strong cracking when dry and at depth have slickensides and/or lenticular peds. Problems of water entry are usually related to tillage practices and adverse soil physical conditions at least partly induced by high sodium in the upper part of many profiles (Isbell 2020, 109).

Table 4.1 GSC Soil types within the proposal study area with ASC equivalence

GSG Soil Type	Soil Description	ASC
Solonized Brown Soils (SB)	This soil type generally occurs in areas of low rainfall. It consists of deep sandy to shallow loamy soils overlying deep rubbly and powdery calcareous clay subsoils, and are neutral to alkaline at the surface, becoming more alkaline with depth. Their landscape is frequently characterized by a parallel east-west dune system. This soil type is very susceptible to wind erosion (Australian Bureau of Statistics 2012; Office of Environment and Heritage (OEH) 2017)	Calcarosols (CA)
Calcareous Sands (KS)	This soil type occurs on windblown landscapes and consists of soils with minimal profile development comprising mainly finely crushed shells and some accumulation of organic matter in the surface horizon when they have been fixed by vegetation for sufficient time.	Rudosols (RU)
Siliceous Sands (SS)	Deep, disturbed, sporadically bleached sandy soil with no profile development that generally occurs on disturbed linear dunes	Rudosols (RU)
Red Brown Earths (RBE)	The characteristic features of these Soils were grey-brown to red-brown loamy A horizons, weakly structured to massive, an abrupt to clear boundary between A and B horizons, and brighter brown to red clay B horizons with well-developed medium prismatic to blocky structure (Office of Environment and Heritage (OEH) 2017).	Chromosols (CH)
Grey, Brown and Red Clays (GC_BC_RC)	A broad group of soils whose common properties are determined by their rich clay contents. These Soils were found in imperfectly drained sites (Office of Environment and Heritage (OEH) 2017; Isbell 2020).	Vertosols (VE)
Calcareous Red Earths (KRE)	Red sandy to loamy soils which are porous and 'earthy' in fabric with some free carbonates in the lower part of the profile.	Calcarosols (CA)



GSG Soil Type	Soil Description	ASC
Red Podzolic Soils - less fertile (granites and metasediments) (RPI)	A soil profile formed at an advanced stage of weathering and leaching by the process of podzolization. These soils have a strong textural difference: the A horizon (topsoil) is usually loamy, and the A2 horizon (lower topsoil) is sporadically bleached (or randomly pale). The A horizon has a medium to coarse particle size overlaying a predominantly red B horizon (subsoil), which has a higher clay content. The Soils were often more acidic in the surface than at depth. The boundaries between the soil layers are gradual to clear. These Soils were inherently infertile and commonly deficient in phosphorus, nitrogen and molybdenum. They commonly occur on the upper slopes of hills grading into shallow soils (lithosols) on hill tops (Department of Primary Industries 2001).	Kurosols (KU)
Red Earths - less fertile (granites and metasediments) (REI)	This soil type is associated with old land surfaces. Red earths generally consist of a diffuse to gradual profile with an increase in clay content with depth. These Soils were fairly well structured but still prone to hard setting and surface crusting. They are considered fertile in the region (Department of Primary Industries 2001).	Kandosols (KA)
Yellow Earths (YE)	This soil type is associated with old land surfaces and are similar to red earths except that these are predominantly yellow. They are not as well drained as the red earths and are weakly structured (Department of Primary Industries 2001).	Kandosols (KA)
Solodic Soils (SC)	Solodic soils occur on residual hills to low ridges and slopes. They occur on various types of sedimentary and metamorphic material, often presenting the appearance of layering within the soil itself. They generally present a well-structured profile with clear to abrupt boundaries (Department of Primary Industries 2001).	Sodosols (SO)
Non-Calcic Brown Soils (NKB)	Similar to Red-brown Earths but without an A2 horizon. They have a carbonate-free solum and a neutral to slightly alkaline (with lower base saturation) B horizon. They are also generally thinner soils, 40 – 80 cm deep (Office of Environment and Heritage (OEH) 2017).	Chromosols (CH)
Soloths (SH)	Acid soils with strong texture contrast between pale topsoil and clay subsoil with coarse blocky or columnar structure (Office of Environment and Heritage (OEH) 2017).	Kurosols (KU)



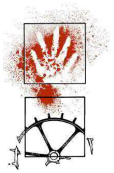
GSG Soil Type	Soil Description	ASC
Lithosols (L)	This soil type consists of weathering rock and rock fragments lacking horizon development. They have shallow sandy to sandy loam topsoil, and a clayey sand subsoil formed in situ or formed from colluvial material. They occur mostly in the north-east of the Murrumbidgee catchment on ridges and close to drainage lines (Office of Environment and Heritage (OEH) 2017; Department of Primary Industries 2001).	Rudosols (RU)
Yellow Podzolic Soils - less fertile (granites and metasediments) (YPI)	This type consists of predominantly acidic soils occurring in poorly drained areas such as foot slopes (lower slopes) and depressions. They are usually deep and are dispersible and highly erodible. The soil is highly erodible and is more acidic on the surface than in the subsurface.	Kurosols (KU)

4.2.3 Geology

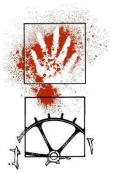
The proposed corridor extends across different geological formations. Table 4.2 outlines the different underlying geological units that occur along the extension of the proposed corridor.

Table 4.2 Underlying geology in the proposal study area

Geological Unit	NSW code	Description	Province
Woorinen Formation	QH__w	A Woorinen formation of Cenozoic sedimentary basin sand that comprises fossil dune fields of openly spaced, east-west linear dunes.	Cenozoic Sedimentary Province
Alluvial floodplain deposits	CZ_af	A Cenozoic channel formation of Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	Cenozoic Sedimentary Province
Alluvial channel deposits - meander-plain facies	Q_acm	A formation of Quaternary unconsolidated grey humic, clayey very fine-grained sand, typically overlying light brown clayey silt.	Cenozoic Sedimentary Province
Aeolian lunette	Q_ddl	An Aeolian formation of deposits, dunes and lunettes that consist of red-brown to light brown, silty bi-modal quartz sand, sporadically clayey; locally capped by off-white to beige mobile quartz sand. Regolithic carbonate accumulations at depth, including rhizolith development.	Cenozoic Sedimentary Province



Geological Unit	NSW code	Description	Province
Source-bordering dunes	Q_dds	A formation of Aeolian deposits, dunes and Source-bordering dunes that consist of red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	Cenozoic Sedimentary Province
Alluvial channel deposits - meander-plain facies	Q_acm	A Clastic sedimentary formation of unconsolidated grey humic, clayey very fine-grained sand, typically overlying light brown clayey silt.	Cenozoic Sedimentary Province
Claypan and lacustrine deposits	Q_l	A Quaternary lacustrine formation of friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand.	Cenozoic Sedimentary Province
Alluvium	Q_a	A Quaternary clastic sedimentary formation of unconsolidated grey to brown to beige humic micaceous silty clay, quartz lithic silt, fine- to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic palaeosol horizons.	Cenozoic Sedimentary Province
Alluvial floodplain deposits	Q_af	A Quaternary clastic sedimentary formation of alluvial flood plain deposits of silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	Cenozoic Sedimentary Province
Aeolian sand plain	Q_ds	An Upper Pleistocene formation of Aeolian flat to low undulating or hummocky fossil sand plain, red-brown to brown and humic, clayey, silty to fine-grained sand, silty clay at depth; abundant regolithic & pedogenic carbonate, extensively modified by pedogenesis	Cenozoic Sedimentary Province
Colluvial and residual deposits	Q_cr	A Quaternary formation of clastic undifferentiated colluvial and residual deposits.	Cenozoic Sedimentary Province



Geological Unit	NSW code	Description	Province
Residual deposits - ferricrete	CZ_rff	A Gelasian to Upper Pleistocene formation of residual ferricrete that consists of indurated red-brown to near-black regolithic material or duricrust and/or ironstone formed by iron oxyhydroxide cementation (primarily goethite and/or hematite) bonding from sand-sized nuclei to cobble-sized clasts, depending on parent material.	Cenozoic Sedimentary Province
Playa lake deposits	Q_lp	A Quaternary clastic formation of claypan, lacustrine and Playa lake deposits that consist of friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand; gypsiferous (kopi) surficial deposits, selenite beds sub-surface	Cenozoic Sedimentary Province
Colluvium	Q_c	A Quaternary formation of clastic Colluvium that consist of poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	Cenozoic Sedimentary Province
Residual deposits	Q_r	A Quaternary formation of residual deposits of weakly-consolidated regolithic residuum such as soil or saprolite mostly developed in-situ as a result of advanced weathering and/or pedogenesis	Cenozoic Sedimentary Province
Mixed colluvial, alluvial and aeolian deposits	Q_ca	A Quaternary formation of mixed clastic colluvial, alluvial and aeolian deposits.	Cenozoic Sedimentary Province
Burrandana Granite	Dkyb	A Pridoli to Lochkovian formation of Koetong Supersuite, Kyeamba Suite and Burrandana Granite that consist of Orange, pink to cream, fine- to coarse-grained, equigranular to porphyritic biotite±muscovite granite. Megacrysts occur locally.	Lachlan Orogen



Geological Unit	NSW code	Description	Province
Willandra Sandston	Omaw	A Lower Ordovician to a Bo3 (Bolindian) formation of Margules Group and Willandra Sandstone that consist of Grey, thick-bedded, fine- to coarse-grained, moderately to poorly sorted lithic quartz-arenite typically with distinctive dark glassy quartz grains. The sandstones are intercalated with subordinate, up to metre-thick, packets of graptolitic black shale	Lachlan Orogen
Mount Flakney Granite	Suxm	A Telychian to Gorstian formation of unassigned Central Lachlan Silurian granites and Mount Flakney granite comprising felsic medium- to coarse-grained, subequigranular, biotite-muscovite-granite with rare coarse-grained feldspar phenocrysts. Rare mafic microgranular enclaves; biotite-rich xenoliths are common, particularly towards the northwest pluton margin.	Lachlan Orogen

4.2.4 Hydrology

Water availability is a major influence on the range of resources available and the suitability of an area for Aboriginal occupation. Water resources are key for the identification and interpretation of areas of occupation, environment, archaeological potential and depositional formation.

The proposal extends along and across major rivers, perennial and non-perennial watercourses and in proximity to ephemeral lakes. It is situated within the transitional zone between the dune fields, sandplains and undulating plains containing lakes and rivers of the Murray Darling Depression through the low gradient alluvial fans, floodplains and lakes of the Riverina, and to the foothills and ranges of the South Western Slopes Bioregion. Hydrological features located within these bioregions, segmented by LGA, are summarised below. Distances and references to the 'study area' follows the definition in Section 3.3 which encompasses a one kilometre wide corridor along the proposal alignment.

Murray Darling Depression

Within the Murray Darling Depression Bioregion the study area extends along the south-east of Wentworth LGA and across the south of Balranald LGA. In the Wentworth LGA the alignment of the study area is located in close proximity to non-perennial low order streams of first and second-order and it also extends somewhat parallel to the Murray River located around six kilometres south west. On the north-western end of the study area at Buronga substation the study area is located 2.2 kilometres north east from Lake Gol Gol and 3.4 north east of Gol Gol Swamp which lies south of the lake; both hydrological features are associated with significant recorded archaeological sites.



Within Balranald LGA, the proposal continues to extend somewhat parallel to the Murray River which ranges between five to 16 kilometres to the south east. Washpen Creek, a high order creek that feeds from the Murray River runs on an east-west alignment four kilometres south of the study area. Dry lake, Lake Benanee and Lake Caringay, which all contain significant registered archaeological sites, are linked to Washpen Creek. Dry lake is located one kilometre south of the study area alignment and is linked to Lake Benanee which is situated 800 metres to the east next to Talia Creek; Lake Benanee is 1.7 kilometres south of the study area. Lake Caringay located 1.2 kilometres south-east of Lake Benanee linked to Washpen Creek on the east and Caringay Creek on the south. Lake Caringay is located approximately 6.1 kilometres to the south of the study area alignment.

On the south-western boundary of the Murray River LGA the study area intersects with the Condoulpe Creek, a high order creek linked with Yanga Lake, 6.3 kilometres north of the study area, Yanga Lake is partly located within the Riverina bioregion and with Condoulpe Lake located 120 metres to the south of the study area; both are associated with registered Aboriginal sites of archaeological significance.

Riverina

Within the Riverina bioregion south-east of Balranald LGA the study area alignment intersects with Box Creek which is linked with Dry Lake (three kilometres to the north of the study area) and with Waldaira Lake (1.6 kilometres to the south of the study area). Dry Lake and Waldaira Lake are associated with significant registered archaeological sites. The study area also intersects with the Murrumbidgee River in the south-east region of the Balranald LGA.

Within the Murray River LGA, the proposal intersects with several high order perennial and low order non-perennial creeks and is in proximity to several lakes, some of which contain registered Aboriginal sites of archaeological significance. On the south-western side of this LGA the study area extends 1.6 kilometres north of Dusty Lake, which is partially located within the Murray Darling Depression bioregion and contains registered Aboriginal sites.

Approximately 3.2 kilometres east of Dusty Lake and partly located within the Murray Darling Depression bioregion is Lintot Lake, which is located approximately 600 metres south of the study area alignment and contains several registered sites. Seven hundred metres north of Lintot Lake is a dry ephemeral lake that intersects with the study area. Approximately 1.7 kilometres east of Lintot Lake, there is another dry ephemeral lake that contains several registered Aboriginal sites of archaeological significance; these are located 1.5 kilometres south of the study area alignment.

Abercrombie Creek, a high order creek line linked to Murrumbidgee River, intersects with the study area within Murray River LGA and is linked to several dry ephemeral lakes, some of which contain several registered Aboriginal sites of archaeological significance.

Within the Edward River LGA, the proposal intersects with and somewhat follows high order perennial and low order non-perennial creeks, and is in proximity to several lakes, some of which contain registered Aboriginal sites of archaeological significance. In the west of this LGA, and to the north of the study area Abercrombie Creek continues to run somewhat parallel to the study area. It also links to a dry ephemeral lake that contains several Aboriginal registered sites of archaeological significance that are located 6.2 kilometres north of the study area.

Forest Creek, which becomes Nyangay Creek runs somewhat parallel for most of the extent of the study area within Edward River LGA. It ranges from 80 metres to 8.2 kilometres south of the proposal. A confluence of this creek intersects with the study area.

The study area corridor crosses through the south eastern portion of Hay LGA with several perennial and low order non-perennial creeks intersecting across the study area. Curtains, Nyangay and Eurolie Creeks are the high order perennial creeks that intersect with the study area corridor within this LGA.



Within the Murrumbidgee LGA the proposal extends across several non-perennial low order creeks. The corridor also extends across Yanco Creek, a high order perennial creek with some registered Aboriginal sites located to the banks of the creek and confluences associated with the creek.

Most of the study area corridor extends across high order perennial and low order non-perennial creeks and in proximity to several lakes within Federation LGA. Colombo Creek, a high order perennial creek runs somewhat parallel to the alignment of the corridor from the western portion of the study area eventually intersecting with the corridor as the alignment of the corridor moves southwards. Lake Urana, linked on the north with Coonong Creek, to Urangeline Creek on the east and to the west with Cocketgedong Creek is located approximately 850 metres south of the study area and contains several registered Aboriginal sites.

NSW South Western Slopes

The eastern portion of Federation LGA is located within the Riverina bioregion whilst the western portion is within the NSW South Western Slopes bioregion. The study area corridor in the NSW South Western Slopes bioregion comes in close proximity to perennial water body areas.

Within Lockhart LGA, the proposal intersects with several high order perennial and low order non-perennial creeks and comes in proximity to several lakes and water bodies, some of them containing registered Aboriginal sites of archaeological significance. Lake Cullivel is located approximately 330 metres north of the study area corridor and it is the largest dry lake near the study area within this LGA; registered Aboriginal sites of archaeological significance have been identified here. High order, perennial creeks such as Hallidays Creek and Burkes Creeks intersect the study area corridor. Some of the low order, non-perennial creeks located near the alignment of the study area corridor contain registered Aboriginal sites.

The portion of the study area corridor within Wagga Wagga LGA lies on the NSW South Western Slopes bioregion. It extends across several low order non-perennial creeks and is in proximity to several lakes, swamps and water bodies, some of them containing registered Aboriginal sites of archaeological significance. Roping Pole Swamp, which contains a registered Aboriginal site, is located approximately 1.6 kilometres north of the corridor. Lake Albert, a perennial lake linked to Stringybark Creek is located three kilometres north of the study area corridor. Most of the registered Aboriginal sites in this LGA within a five kilometre radius of the study area corridor are associated with low order non perennial creeks and perennial water body areas.

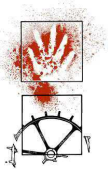
4.3 Land use

The length and changing landscape within the study area mean that land use varies widely across length of the proposal. Much of the land within the study is currently private property used for agriculture, however other land uses include infrastructure developments, protected forested areas and transportation ways.

In the west, land use is predominantly large sheep stations, and in the east, smaller sheep and cattle farms dominate. Land use, particularly around Lockhart and Wagga Wagga, also includes cropping activities to grow fodder and other crops such as canola. Properties subject to overstocking and cropping have been heavily degraded, and laser levelling is evident over much of the central and eastern parts of the proposal study area.

The proposal study area runs roughly parallel to, and follows, an established transmission line along much of its length. Installation and up-keep of these lines have also disturbed the ground including access tracks and ground works for high voltage cable.

The proposal traverses Yanga State Conservation Area, Cullivel State Forest and Brooking State Forest. Although these areas are now forested, and protected to varying degrees, these were once used for agricultural purposes which have impacted the ground through associated activities and infrastructure.



The proposal also crosses or runs parallel with roads, railway lines and other services. Many of these are currently in use, however some are now abandoned.



Photo 4.1 Examples of landscapes in the proposal study area



5. Consultation process

The document *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW, 2010) that sets out the requirements for 'consulting with those Aboriginal people who can provide information about the significance of Aboriginal cultural heritage as part of the heritage assessment process. The requirements are referred to in the SEARs for this proposal and have therefore been applied to this assessment. The requirements specify four stages of consultation:

- Stage 1 – notification of this proposal and registration of interest
- Stage 2 – presentation of information about the proposal
- Stage 3 – gathering information about cultural significance
- Stage 4 – review of draft cultural heritage assessment report.

The stages are explained in the sections below with Appendix 4 containing the full consultation log.

5.1 Stage 1

The following outlines who were notified of the proposal and how people were engaged to register their interest. In addition to the below, a search was also made of the National Native Title Tribunal registers.

Public notices were placed in the following newspapers on the 12th August 2020:

- | | |
|--------------------------|------------------------------|
| • Koori Mail | • Eastern Riverina Chronicle |
| • Wagga Daily Advertiser | • Riverina Leader |
| • Area News (Griffith) | • Sunraysia Daily |
| • Border Mail | • Pastoral Times |
| • Hay Riverine Grazier | • The Observer (Deniliquin). |
| • Narrandera Argus | |

Letters were sent to:

- | | |
|---|--|
| • Office of the Registrar Aboriginal Land Rights Act (1983) NSW | • Dareton Local Aboriginal Land Council |
| • Native Title Services Corporation Limited | • Balranald Local Aboriginal Land Council |
| • Barkindji Traditional Owner Group | • Deniliquin Local Aboriginal Land Council |
| • Heritage NSW | • Hay Local Aboriginal Land Council |
| • Murray Local Land Services | • Griffith Local Aboriginal Land Council |
| • Riverina Local Land Services | |
| • Western Local Land Services | |



- Narrandera Local Aboriginal Land Council
- Wagga Wagga Local Aboriginal Land Council
- Wentworth Shire Council
- Balranald Shire Council
- Murray River Council
- Hay Shire Council
- Edward River Council
- Murrumbidgee Council
- Federation Council
- Lockhart Shire Council
- Wagga Wagga City Council.

Following advice received from the above organisations, letters were sent to:

- Bangerang Aboriginal Corporation
- Barkandji #8 Native Title Determinants
- Barkindji Maraura Elders Environment Team Limited (BMEET)
- Barkindji Maroura Elders Council
- Bundy Aboriginal Cultural Knowledge
- Hay Aboriginal Corporation Community Working Party
- Kureinji Aboriginal Corporation
- Miyagan Culture & Heritage
- Muthi Muthi Nations
- National Koorie Site Management
- Pappin Family Aboriginal Corporation
- Ta-Ru Board of Management/Mauraua Barkintji Traditional Owners
- Waagan Waagan Proposal Group
- Wakool Indigenous Corporation
- WLRWHA Aboriginal Advisory Group
- Yalmambirra
- Yarkuwa Indigenous Knowledge Centre
- Yorta Yorta Nation Aboriginal Corporation
- Alice Pettit
- Alvira Wighton
- Arthur Kirby
- Brian Gash Jnr
- Cherokee Dixon
- Corey Hughes
- Daryl Singh
- Gary Pappin
- Geraldine Johnson
- Jamie Woods
- John Jackson
- Josephine Goulding
- Kerrie Parker
- Liz Heta
- Mabel Fitzpatrick
- Marie (Sissy) Havea
- Marie Murray
- Ms Mary Ann Marton
- Richard Dixon
- Rod Pettit
- Tara Dixon
- Terence Singh
- Tiem Wilson



- Will Carter
- Bidya Marra Consultancy
- Maliyan Horizon
- Riverina Murra Regional Alliance
- Cummeragunja LALC
- Hay Traditional Owner
- The Nature Conservatory
- Barkandji Native Title Group
Aboriginal Corporation RNTBC
- Jarrah
- Hay Traditional Owner
- Waddi Waddi Housing Tammi Leigh
Chirgwin
- Peter Kabaila
- Noel Thomson
- Barbara Brown

The closing date for expressions of interest was 4 September 2020. Registrations of interest were received from the following groups and individuals (and are the Registered Aboriginal Parties (RAPs) for this proposal):

- Dareton Local Aboriginal Land Council
- Griffith Local Aboriginal Land Council
- Murray Lower Darling Rivers Indigenous Nations
- Barkandji Native Title Group
Aboriginal Corporation RNTBC
- Wagga Wagga Local Aboriginal Land Council
- Balranald Local Aboriginal Land Council
- Deniliquin Local Aboriginal Land Council
- Hay Local Aboriginal Land Council
- Narrandera Local Aboriginal Land Council
- Miyagan Culture and Heritage
- Roley Williams
- Sandhills Artefacts
- Muragadi
- Merrigarn
- Murrabidgee Mullangari
- Ian Woods
- Jamie Woods
- Richard Dixon
- Tara Dixon
- Kerrie Parker
- Mabel Fitzpatrick
- Tiem Wilson
- Jermaine Dixon
- Cherokee Dixon
- Bundyi Aboriginal Cultural Knowledge
- Balranald Mutthi Mutthi Traditional Owners
- Barkindji Maraura Elders Environment Team Limited (BMEET)
- Brian Gash
- Riverina Murra Regional Alliance
- Sissy Pettit Havea
- Terrence Singh
- Dallas Togo Singh
- Zakk Togo Singh
- Jed Pettit



- Alvira Wighton
- Alice Pettit
- Marie Murray
- Edward Smokey Murray Snr
- Ruth Murray
- Edward Murray Smith
- Daryl Singh
- Ray Woods
- Hay Aboriginal working party
- Yalmambirra
- Kureinji Nation
- Cheryl Penrith
- Will Carter

5.2 Stage 2 and 3

A preliminary survey methodology and cultural information request was sent to registered groups on 2 October 2020. A proposal update letter was sent to all RAPs in November 2020 and an additional update letter with updated details of the archaeological field survey was sent to all RAPs on 21 April 2021, for further comment.

5.3 Field participation – field survey

Aboriginal organisations represented in the field during the various field survey events have comprised:

- Balranald Local Aboriginal Land Council
- Dareton Local Aboriginal Land Council
- Deniliquin Local Aboriginal Land Council
- Griffith Local Aboriginal Land Council
- Hay Local Aboriginal Land Council
- Ngumbaay Indigenous Corp
- Wagga Wagga Local Aboriginal Land Council.

5.4 Stage 4 – consultation on the draft ACHAR

A draft copy of the ACHAR was provided to RAPs for comment on 1 November 2021. In addition, Transgrid and NOHC undertook a series of online meetings with LALCs that were available this included Balranald LALC, Griffith LALC, Cummergunja LALC and Narrandera LALC. Online sessions were conducted to allow consultation to take place in a COVID safe way. NOHC also provided a summary document of the results from each specific LALC area to Cummergunja, Hay, Deniliquin, Griffith, Balranald and Narrandera LALCs.

A summary of the responses to the consultation on the draft report is provided in Table 5.1 below.

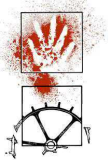


Table 5.1 Comments pertaining to ACHA report following RAP consultation

RAP	Comments	Response to comments
Muragadi	<ul style="list-style-type: none"> Agree with the recommendations made. 	Noted.
Ray Woods	<ul style="list-style-type: none"> Objected to the use of just the LALCs in the field assessment. Still undertaking cultural practices and not all in the community know of all of the information. No details provided on specific areas of concern. 	Transgrid as the proponent chose to include LALCs in the first instance in the field survey. All RAPs are included in other consultation actions such as the provision of reports.
Multiple RAPs	<ul style="list-style-type: none"> Most LALCs spoken to were concerned about the size of the assessment and report to be reviewed. 	Additional LALC specific information was provided to those LALCs that requested it for ease of consultation with their members.

5.5 Archaeological subsurface testing methodology review

A draft of the proposed archaeological subsurface testing methodology was provided to all RAPs on 1 November 2022. In addition, the meetings outlined above in Section 5.4 also covered the subsurface test excavation program. No specific comments were received from RAPs on the proposed archaeological subsurface testing methodology which was then finalised before commencing in January 2022.

5.6 Field participation – archaeological subsurface testing program

Aboriginal organisations represented in the field during the archaeological subsurface testing program have comprised:

- Balranald Local Aboriginal Land Council
- Cummeragunja Local Aboriginal Land Council
- Pappin Family Aboriginal Organisation
- Deniliquin Local Aboriginal Land Council
- Griffith Local Aboriginal Land Council
- Narrandera Local Aboriginal Land Council
- Hay Local Aboriginal Land Council
- Wagga Wagga Local Aboriginal Land Council
- Bundy Cultural Tours
- Bidya Marra Consultancy



5.7 Consultation on the draft revised ACHAR

A draft copy of the revised ACHAR was provided to RAPs for comment on 14 April 2022 for the required 28 day consultation period. This period concluded on the 12 May 2022. In addition, Transgrid and NOHC undertook a series of online meetings with LALCs and RAPs that were available this included Hay LALC, Griffith LALC, Bidya Marra Consultancy, Narrandera LALC, Deniliquin LALC and Murrabidgee Mullangari. Online sessions were conducted to allow consultation to take place in a COVID safe way.

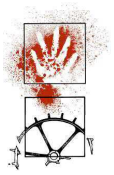
Table 5.2 summarises the responses received from attendees at the briefing meetings and in writing as received prior to the closure of the consultation period.

Table 5.2 Comments pertaining to the revised ACHAR as part of RAP consultation

RAP	Forum	Comments	Response to comments
Hay LALC	Online meeting	<ul style="list-style-type: none"> Agreed with the recommendations outlined Identified that they would like for artefacts to stay on country Noted that they were comfortable with the assessment completed and the consultants used Identified that they would like input into which archaeologists undertake the salvage works. 	Noted
Griffith LALC	Online meeting	<ul style="list-style-type: none"> Identified that they would like to see opportunity for reconnection and protection of culture Noted sites are sacred Noted concern about impacts and access in the future from the electricity towers Identified that they would like some compensation and continuation of consultation with the LALC to mitigate the impact to sacred sites. 	<p>All sites have been assessed as having cultural significance.</p> <p>RAPs will continue to be involved in the project and consultation.</p>
	Email	<p>The Griffith LALC provided formal feedback to the consultation period dated 12 May 2022 which noted the following:</p> <ul style="list-style-type: none"> Griffith LALC can confirm that the identified within the project area are of cultural and spiritual significance to the local Wiradjuri People of whom are the traditional owners and custodians of the lands. It is not customary for Aboriginal people to remove or destroy Aboriginal places of cultural and spiritual significance, we are obligated to care and protect the environment and country, this includes Aboriginal Ancestral cultural and heritage located within the boundaries of . Therefore we are opposed to Transgrid intending to cause harm and destruction to Aboriginal Ancestral places of significance. 	



RAP	Forum	Comments	Response to comments
		<ul style="list-style-type: none"> Griffith LALC recommends that Transgrid meet with its Board of Management/Traditional owners/custodians to negotiate proposed salvage, impact mitigations and management options, in further discuss re-compensate options for the local Wiradjuri peoples loss of native title rights. 	
Bidya Marra Consultancy	Online meeting	<ul style="list-style-type: none"> Noted all recommendations sound reasonable Noted they would supply a written response. 	Noted
	Email	<p>The Bidya Marra Consultancy provided formal feedback to the consultation period dated 17 May 2022 which noted the following:</p> <ul style="list-style-type: none"> It is the opinion of Bidya Marra Consultancy and Bundjie Culture that the ACHAR satisfies its requirements under the Aboriginal Cultural Heritage Consultation Requirements for Proponents but reserved the right to be involved in any salvage work required along the sections including Wagga Wagga, Lockhart and Coleambally. Bundjie Culture and Bidya Marra welcomed the opportunity to conduct additional assessment that would occur in accordance with the Code of Practice for areas where ground disturbing activities and/or where hazard / high risk tree removal are required in locations outside of the previously surveyed heritage survey area. They also noted that where additional heritage surveys are undertaken, they should be carried out with the RAPs prior to ground disturbing activities occurring (including areas where only visual inspection were undertaken). It was acknowledged that if no Aboriginal objects are found or if Aboriginal objects are found and they would not be impacted, then a letter report would be prepared by an archaeologist that documents the findings and gives clearance to proceed (measure AH3). Bundjie Culture and Bidya Marra Consultancy welcomed the opportunity to provide Wiradjuri Aboriginal Cultural Awareness Training (measure AH10) for all personnel involved in construction activities as well as assisting with any unexpected finds (measure AH11). 	Noted
Narrandera LALC	Online meeting	<ul style="list-style-type: none"> Did not raise any objections to the recommendations or assessment. 	Noted
Deniliquin LALC	Online meeting	<ul style="list-style-type: none"> Did not raise any objections to the recommendations or assessment. 	Noted



RAP	Forum	Comments	Response to comments
Murrabidgee Mullangari	Online meeting	<ul style="list-style-type: none">• Did not raise any objections to the recommendations or assessment• Noted they would follow up with a written response.	Noted



6. Aboriginal heritage context

This section presents a summary of Aboriginal heritage relevant to the 10 kilometre wide heritage study corridor. Summaries of ethnohistoric texts and material evidence from the archaeological record are provided to contextualise the lives of Aboriginal peoples in the pre- and post-contact landscapes.

6.1 Aboriginal Ethnohistory

6.1.1 NSW South Western Slopes

In the eastern end of the proposal study area the Murrumbidgee River basin would have been a focus of occupation in the region. An abundance of resources were found along the river in addition to its waters; it supported wood and forest habitats that housed a wide range of plants and animals used by Aboriginal populations. The frequent floods of the Murrumbidgee River also provided Aboriginal peoples with an abundance of resources, as pools left by the receding floodwaters would be filled with freshwater mussels, fish, yabbies, and aquatic plants (Kabaila, 1998).

The NSW South Western Slopes are home to the Wiradjuri people. The Wiradjuri people are the largest Aboriginal group in NSW, known as 'the people of three rivers', for the Wambool (the Macquarie River), the Kalari (the Lachlan River) and the Murrumbidjeri (the Murrumbidgee River) which border their country. Within the south of Wiradjuri country three local groups are known, the Murringbulla at Murrumburrah, the Kutamundra at Cootamundra, and the Narrungdera at Narrandera. The current proposal study area sits within Narrungdera country. Narrungdera boundaries ran approximately from Ganmain to Ardlethan, west to Mirrool Creek and along the Murrumbidgee River to Darlington Point (Howitt, 1884, Wood, 1992).

Burials and ceremonial sites are rare in the Wagga Wagga region, though there are a number of historical accounts that mention these sites. An 1861 article in *The Argus* (Express, 1861) reported on the burial of Wiradjuri man 'Old Billy' near the racecourse camp at Wagga Wagga. He had died under suspicious circumstances and the chief constable of the Wagga Wagga police had visited the camp to investigate, finding that the body had already been prepared for burial with a grave dug 'a short distance from the camp' (The Argus, 20th November 1861). A local history of Wagga Wagga by J. J. Baylis notes that the sandhills of Wagga Wagga were known burial grounds for Wiradjuri people (Baylis, 1927).

Historical records of cultural practises in the Wagga Wagga region from the 1870s to the 1940s focus mainly on the 'burbong' or male initiation ceremonies and other 'men's business' (Green, 2002). This male centric focus stems from the recorders who, being male, would not have been privy to any 'women's business' and often overlooked domestic or mundane tasks as being unimportant. Though the recorders were given some knowledge of these practises, the level of information given was similar to that given to children who had not yet been initiated as much of the knowledge was protected for only initiated men. The practise of ceremony declined quickly following European settlement in the region and by 1900 was no longer seen to happen. There is of course evidence that some of these ceremonial practises continued in secret till the 1930s and potentially beyond (Green, 2002)

The first Europeans to visit the Wagga Wagga region were Sturt and his exploration party in 1829 during their travels on the Murrumbidgee. Diseases such as small pox had spread ahead of European settlement so that by the early 1830's Aboriginal groups had already suffered dramatic population loss. In 1836 Thomas Mitchell traversed the country to the southeast of Wagga Wagga and reported that Europeans had settled the banks of the Murrumbidgee (Swan, 1970). European settlement of the riverine plains and saltbush plains was swift and further dispossessed and devastated the remaining Aboriginal population. By the mid 1830's it was estimated that, of a possible population of 3000, only 1000 Aboriginal people survived (Garland, 1984).



Aboriginal people are noted camping on the outskirts of Wagga Wagga throughout the mid 1800's; two sites mentioned are Hampden Bridge and at the racecourse situated next to the Murrumbidgee River (Garland, 1984, Green, 2002). Following the establishment of the Warangesda Mission at Darlington Point and Brungle Mission near Tumut in the 1880's any remaining Aboriginal people in the Wagga Wagga region would have been encouraged to relocate to these missions. Only six Aboriginal people were counted in Wagga Wagga in the 1901 census (Green, 2002).

6.1.2 Riverine Plains

As the Murrumbidgee River moves further west, away from the western slopes of the Wagga Wagga region and towards the wide plains of the Hay and Griffith areas, the landscape becomes increasingly arid with the western flow of the river shifting to an open plain dominated by grasslands and woodlands. The Aboriginal heritage of the region consists of numerous burials, mounds, campsites, artefact scatters, scarred trees, natural/mythological sites and post-contact sites such as missions, fringe camps and stations.

Within the Riverine Plains region are three major language groups, the Kulin language group (Mathi Mathi, Wathi Wathi, Nari Nari and Wemba Wemba) which cover the western side of the region, the Wiradjuri language groups which covers the northern portion of the region, and the Murray River language group (Yita Yita, Yota Yota and Pangerang) covering the southern portion of the region (Pardoe and Martin, 2011).

Burials have been shown to vary significantly across the Riverine Plain, with cemeteries mainly in the western portion and burials generally increasing in number and density towards the southwest of the Plain (Bonhomme, 1990). It was suggested by Bonhomme that population numbers had been greater in the western portion, and this was attributed to the greater variety of landscape features, and therefore greater resource availability. Considerable research was conducted on the burials of the Hay Plain which demonstrated a clear boundary between practises of the people from the Riverine Plain and those further west on the Mallee Plain (Littleton, 1999). Littleton noted that there are a far higher proportion of burials located within oven mounds in the east of the Riverine Plain than in other locations. A number of these oven mounds are known to contain several burials, ranging from a few individuals to up to 80 skeletons (Swan Hill Guardian, 'Rheola', November 18, 1912., Littleton 1999). Bonhomme (1990) classified burials in the Riverine Plains into three main categories: 1) isolated and individual burials, 2) many individual and unrelated burials, and 3) cemeteries. The second category, many individual and unrelated burials, was thought to be associated with a preference for certain landforms in the location of burial sites. Lunettes and some source bordering dunes along stream channels had probably been used for such a long time that the absolute number of burials became very large.

Robinson's journal entry for 2nd May 1846 (in TZGA, 2013) describes visits to Aboriginal graves and camps in the region around Lake Tala:

Visited interesting grave of a black, five yards, north end of the lake thus ancient grave, raised ridges, bark hut five feet high, four feet wide made of bark and timber, hollow inside, wooden shield. Visited second grave with two bodies, made in same manner but no bark hut only old wood laid on grave. Counted 40 native camps. Upwards of 100 or 200 pelicans, crane, white, large umber ducks, plovers, miles of swans, white spoonbills. No stone in country. High bank sand precipitous on east side 100 feet high eucalyptus gum at foot and another species of tree long leaf. Visited small camp [of] natives and then climbed the steep [bank]. Visited the first hut built by Clark, slab ditto, commanding position take all ditto, descended to a large camp on beach, went through the camp about 300 natives al-together, men women and children, very civil. Walgerre, Ta/a, Yanga, and other blacks present.

Explorers Oxley and Mitchell recorded similar graves along the Lachlan and Murrumbidgee Rivers (TZGA, 2013).



The Aboriginal population declined following European settlement in the area, bringing outbreaks of disease and disrupting access to resource gathering zones and camp areas. A number of missions were set up across the Riverina and would have attracted dispossessed Aboriginal people from the region. In 1851, Moravian missionaries constructed a mission at Lake Boga, just south of the Victorian border near Swan Hill, which was later abandoned in 1856. Maloga Mission was established in 1874, east of Moama on the NSW side of the Murray. The Aboriginal people living at Maloga Mission were moved in 1883 to Cummeragunja NSW, closer to Echuca (Massola, 1970 in TZGA, 2013). Missionary Reverend John Gribble founded Warangesda Mission at Darlington Point in 1880, on the south bank of the Murrumbidgee River inspired by his time at Maloga Mission (Elphick & Elphick, 2004). In 1883 The NSW Aboriginal Protection Board (APB) was established and assumed governance of the reserves set up for Aboriginal people. Moonacullah Mission, located 40 kilometres north west of Deniliquin on the Edward River, was a government run Aboriginal mission set up by the APB in the 1890s and was managed by the Aborigines Inland Mission (AIM). Annual reports released by the APB give details of the numbers of Aboriginal people in centres until the early 1900s. In 1883, 106 Aboriginal people are listed as living in Balranald (Aboriginal Protection Board Annual Reports 1883, 1891 in TZGA, 2013). In 1891, the APB recorded the employment of Aboriginal people on Yanga and Canally Stations. Bonney (1884) recalls Aboriginal men working as farm hands across the Riverina and Murray Darling regions.

In June 1892 the NSW Governor, Earl Jersey, visited Balranald. While there he was petitioned by local Aboriginal people for land. These pleas were accepted and the reservation of 'The Island', 140 acres between the Murrumbidgee and Yanga Creek, was granted 'for the use of Aborigines' on 1st October 1892 (Harris, 1913 in TZGA, 2013). The Island remained in Aboriginal use until 1962 (Gahan, 2002 in TZGA, 2013). The Island was transferred to the Balranald Aboriginal Land Council in 1995.

6.1.3 Murray Darling Depression

The Murray Darling Depression landscape is defined by contrast. The Murray River corridor is a rich and relatively stable environment with permanent water and a variety of concentrated resources available throughout the year. These rich river resources are bordered by semi-arid country that is unpredictable in resource availability; resources are widely distributed (Pardoe, 2003). The Murray Darling Depression is home to the Barkinji language group (Barkinji, Barinji, Danggali, Maraura, and Wilyakali) to the north of the Murray and the lower Darling River, and the Kulin language group (Mathi Mathi, Wathi Wathi, Nari Nari and Wemba Wemba) to the east.

Early historical accounts show the Murray River as a focus for Aboriginal occupation with Eyre (1845 II: 372) noting that the Murray River was amongst the most densely populated areas of the country that he had encountered. The Murray River provided a permanent source of water and food, even in drought (Bonney 1884, Angas 1847, Butlin 1983). Human occupation in the Murray – Darling Basin is well documented in the archaeological record. Evidence of not only the oldest dates, but also the longest sequences of human habitation are found at Willandra, Menindee, Tandou and Victoria lakes (Pardoe and Martin, 2011).

Sturt and his exploration party were the first Europeans to venture through this region in 1829. Sturt commented on the heavily utilised paths along the Murray River used by Aboriginal people (Sturt 1883, I:125) suggesting that the majority of travel was conducted along the rivers rather than inland journeys. During winter it is believed that people moved further inland away from the river's edge, taking shellfish with them on this journey as evidenced by the presence of middens at a distance from the river in Mallee Country (HCA 1993, pg. 17)



Hawdon (1838, pg. 51), Beveridge (1883, pg. 36) and Eyre (1845, II: 267) all note the importance of mussels as a food source and to a lesser extent fish. Mussels are noted as being available year-round, taken on journeys as sustenance, and were consumed in large quantities during ceremonial gatherings. Eyre described the collection of freshwater mussels (1845, II: 267):

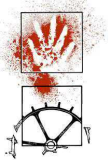
[Mussels] of the very large kind are also got by diving. The women whose duty it is to collect these, go into the water with small nets (lenko) hung around their necks and diving to the bottom pick up as many as they can, put them into their bags, and rise to the surface for fresh air, repeating the operation until their bags have been filled.

In the western end of the proposal study area as the landscape becomes more diverse there is a shift in burial practise from the Riverine Plains. Along with an increase in cemeteries, riverside burials become prevalent and greater mortuary complexity is seen (Bonhomme, 1990), along with an increase in cemeteries (noting these features would not be impacted by the proposal). Whereas on the Riverine Plain burials in cemeteries count for less than 10 per cent of all known burials, and within the Murray Darling Depression the number of known burial sites located in cemeteries of more than 10 individuals increases to 40% (Littleton, 1999., Pardoe and Martin, 2011).

In 1982 an archaeological investigation was undertaken after skeletons (ancestral remains) were found eroding out of the bank of the Murray River at Robinvale (Bowdler, 1983). The section that was in danger of eroding into the river was excavated by Sandra Bowdler at the request of the Murray Valley Aboriginal Co-operative. A total of four square metres was excavated and ten separate burial sites located; all but one of the ancestral remains were interred individually. The burial with more than one person was found to contain an adult woman and a teenage girl, buried on their sides with knees drawn up and with their heads to the south. This burial was radiocarbon dated to around 3,000 years BP. The majority of the ancestral remains excavated were adults buried stretched out on their backs, aligned in various directions. There was one infant buried in a small pit with knees drawn up, with a small cluster of possum teeth associated with skull, suggesting a head ornament. The stratigraphically oldest burial was of a young teenage boy, approximately 12 year old, buried on his left side with knees drawn up and head pointing east. Bowdler estimated that there were between 245 and 1,400 burials in the entire Robinvale burial site. The burial site was located on a four metre high sandy bank and the ancestral remains were found in the top metre of the exposed bank. Bowdler's site diagram suggests that this is a source bordering dune deposit that has been cut into by the river. During survey works associated with the investigation 'a remarkably large number of trees and mound sites' were located on nearby Bumbang Island (Bowdler, 1983).

The cemeteries of the central Murray have been of great interest to archaeologists due to their stark contrast to the burials of the Hay Plains within the Riverina. Cemeteries along the central Murray were placed on high ground near water in highly visible locations on prominent landmarks and/or strategic places such as inlet/outlet channels. This positioning prompted Pardoe (1988) to suggest that they were territorial symbols. Webb's (1984) model for the Central Murray highlights patterns and frequencies of stress and disease in skeletal remains as indicators of a sedentary or semi-sedentary people living in close proximity and living off usually highly abundant foods resources. Pardoe (1990; 1995) notes a level of biological difference between groups living on the river and those living away, specifically within the Holocene period, observing a decrease in average body size, increased population density, and increased violence as noted by skeletal trauma thought to be attributed to increased boundary maintenance.

In 1836, explorer Thomas Mitchell led a traveling party down the Lachlan, Murrumbidgee, and Murray Rivers as far as the junction with the Darling River. Mitchell recalls that his party came across a group of Aboriginal people, the Baakantji or Paakantyi, at Lake Benanee after seeing the smoke from their campfires. The two groups travelled along the Murray for a number of days before Mitchell's party grew suspicious of the Baakantji group, suspecting them of being from Menindee Lake where Mitchell's group had previously murdered a woman and her child (Mitchell 1839, Martin, 2008). Mitchell's men were convinced that the Baakantji had come to Lake Benanee to attack them and so planned an ambush. On the 27th of May 1836, Mitchell's group camped up



on high bank overlooking the Murray that Mitchell then called Mt Dispersion (Mitchell 1839 Vol II:104), Mitchell and his men began firing upon the Baakantji.

At least seven people were killed as they tried to escape by swimming across the Murray (Martin, 2008). Mitchell's account of the massacre at Mt Dispersion has proved to have many inconsistencies. It is generally accepted that the Baakantji had travelled to a ceremony at the junction of the Murray and Murrumbidgee and then went fishing at Lake Benanee, a known meeting place on Tharti Tharti or Latji Latji country, meeting Mitchell there by chance. The group attacked by Mitchell's party was likely a mix of Baakantji and local Tharti Tharti people, owing to a later account by a Tharti Tharti man who was shot in the thumb during the ambush (Tipping 1978, Martin, 2008). A later account by 'prospector' Morey had inferred that the attack at Mount Dispersion was spurred by 'quarrels over women' at Lake Benanee, leading local Tharti Tharti people to plunder Mitchell's camp, and the ambush by Mitchell's party followed (Morey 1893-1908, Martin, 2008). The meeting site at Lake Benanee and the massacre site at Mt Dispersion are of great significance to the contemporary Aboriginal communities of the Murray and Menindee regions. On 24 April 2020 the Mt Dispersion massacre site was gazetted as a Declared Aboriginal Place legally recognising and protecting it as a site of significance.

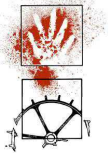
The first pastoralist in the Euston region was Edmund Morey, arriving in 1846. Thirty to forty years after he had moved away from the area, at age 72, Morey wrote detailed records about this early period of European settlement in the region including the events referred to as 'the wars' (Morey, 1893-1908). In June or July of 1846 Morey 'selected' an area along the Murray River to set up a station, naming it 'Euston Station'. Morey notes that the area was called Booiarcool by the local Aboriginal people, and in many of the pastoral maps of the 1880s the land is referred to as Boomiaricool Run. Another early pastoralist, William Ross, settled next to Morey along the Murray on an area now known as Meilman Station. The two rode along the plain together during what they called 'prospecting' expeditions, and during one of these expeditions Ross's camp was 'plundered' by a group of Aboriginal men. Ross and Morey retaliated by banding together a group of men, eight Europeans and two Aboriginal men from the Murrumbidgee, and rode along the Murray attacking anyone who 'shewed fight' (Morey 1893-1908:29-31). Morey recounts multiple encounters between his party and Aboriginal people, as well as mentions of other 'overland parties' also firing upon Aboriginal groups. He describes a particularly brutal clash wherein his war party and another party led by a Mr Yeomand were shooting upon a group of Aboriginal people from either side of the Murray River, he stated that 'this was the only occasion they suffered real loss and it virtually ended the trouble' (Morey 1893-1908:31). This marked the end of the period of the wars in Morey's recount.

The period following 'the wars' brought in the beginning of severe restriction on Aboriginal access to land. Many of the missions of the Riverine Plains would have attracted Aboriginal people from the Murray Darling Basin, particularly the missions along the Murray such as Maloga Mission. One of the earliest missions in the region was the Yelta Mission, established in 1855 by the Church of England on the southern bank of the Murray River, 15 kilometres from Mildura. Yelta Mission was abandoned in the 1860s because of depopulation of the town due to the growth of the townships of Wentworth and Mildura (Hercus, 1984). Between 1885 and 1894 the APB set up a mission at Pooncarie on the Darling River, this ran until the 1930s when the mission residents were moved to the Menindee Mission. The land of the abandoned Pooncarie Mission was absorbed into Menincourt Station until February 2001, when the land was acquired by the Indigenous Land Corporation.

6.2 Material evidence of Aboriginal land use

6.2.1 Regional archaeological context

Archaeological material evidence has been identified across the regions associated with the proposal. Data are drawn from broad cultural heritage studies and consultant reports within the heritage study corridor to provide a range of information about the types of sites found across different landscapes relevant to the proposal. Significance of different sites and site types have been addressed in these reports which may provide a foundation for this assessment. The following chronologically summarises relevant reports grouped by each bioregion.



NSW South Western Slopes

In 1983, Hiscock undertook an archaeological survey for a proposed 330kV electricity transmission line running from Wagga Wagga to Darlington Point. The study area was split up into two separate corridors as the route for the western portion of the transmission line, between Darlington Point and Yanco stream, had not been finalised. Systematic survey was completed for the eastern section however, only a cursory inspection of the likely route was able to be undertaken in the western section. Within the first corridor eighteen scarred trees and thirteen artefact sites were located. Six of the scarred trees were thought to be probable Aboriginal scarred trees, a further six were thought to be possible Aboriginal scarred trees, leaving six trees recorded as having likely natural origins. No sites were located within the western section (Hiscock, 1983).

A further study of the proposed Wagga to Darlington Point 330kV electricity transmission line was undertaken in 1985 (McIntyre, 1987). No previously recorded sites were listed in the study area although a number of the previously recorded sites by Hiscock (1983) were listed in the wider area. The survey revealed seven scarred trees and four occupation sites, with lithic artefacts located at two of the occupation sites, and three isolated artefact sites. No recorded sites were located within the impact area for the proposal.

Detailed archaeological research of the Old Man Creek floodplains, a tributary of the Murrumbidgee River, was undertaken by Klaver (1987). As a result of intensive survey 112 mound sites were recorded. These mounds were rated according to their condition using three main categories; residual, levelled, and excellent. Residual mounds are classified as mounds with no remaining elevation, either through impact from ploughing or incorporation into levees and culverts. Levelled mounds have been altered in height by agriculture or other activities, however, still retain a slight elevation. Mounds in excellent condition would not have been altered. The mounds recorded ranged in size from six metres to 58 metres in diameter. The average diameter of all mounds was 20.67 metres, with almost half of the mounds (49 per cent) falling into the 10 to 20 metre range.

As part of a proposal to relocate Naval communication facilities from the ACT to the Wagga Wagga region an archaeological survey was undertaken to assess suitable sites for this purpose (Wood, 1992). Initially, 52 locations were identified as having potential to be suitable for this purpose, from these a short list of four site options and another location for a receive station were compiled. These five locations were subject to archaeological assessment by the study. All locations were situated on the alluvial plain of the Murrumbidgee River system and fell within the Murray Basin region. Preliminary surveys were carried out mostly through vehicle transects due to time constraints and low visibility. Where the visibility was 80 to 100 per cent foot surveys were undertaken, these areas made up roughly five per cent of the total study area. Three site complexes were recorded within the receive station study area, and 38 sites were recorded across the four site option study areas. The site complexes located in the receive station study area consisted of various configurations of the same site features, mounds, lithic artefacts, and hearths. The 38 sites recorded across the four study areas consisted of eight oven mounds, 22 scarred trees and eight surface artefact scatters. Four mound sites were located in the site option study area adjacent to Old Man Creek on the Gum Creek property.

Comparisons between the Wood (1992) and Klaver (1987) surveys at Old Mans Creek provides a good foundation of archaeological site distribution in the area. As stated above, the floodplains of Old Man Creek had previously been subject to detailed research during which a total of 112 mounds were recorded (Klaver, 1987), 48 of which were recorded on the Gum Creek property. The discrepancy between the number of mounds identified by Klaver (1987; 112) was noted by Wood (1992) who only identified four. It was thought to be the result of the limited nature of the study and the recent laser levelling of the property by the property owner. A total of 107 artefacts were recorded during the survey from both the mounds and surface artefact scatters. The majority of the artefact assemblage was made up of quartz (crystal; 49.5 per cent, milky; 31.8 per cent), with small amounts of sandstone, silcrete and volcanic, and isolated, basalt, chert, granite and porcellinite artefacts noted. Wood (1992) produced a tentative model for site distribution and archaeological sensitivity for the region with input from Klaver, hypothesising that mounds, hearths, and artefact scatters are likely to be located in all areas with access to water.



Surface artefact scatters may also be located on sand sheets, regardless of distance to water. Burials may be located within mound sites as well as in sand sheets, with a preference noted for dunes. Scarred trees may be located wherever mature remnant native vegetation survives.

In 1992, Smith undertook an initial survey for a proposed optic fibre cable route for Optus Communications from Albury to Cootamundra, NSW. Smith (1992) identified 20 open campsites, or surface artefact scatters, as well as four scarred trees during this preliminary survey. The route was later amended to conclude in Wagga Wagga, making the route approximately 130km in length, largely following the eastern side of the Olympic way and the Main Southern Railway. Survey of this amended route was undertaken by Williams (1993) with the aim of relocating any previously recorded sites, conducting a more intensive review and survey of the study area, and to provide recommendations for the alignment of the optic fibre cable route. Three new sites, as well as three areas of high archaeological sensitivity, were located during this study. Significant route alternations were recommended so that the cable installation would not disturb any sites or areas of high archaeological potential.

As part of an environmental impact study for an area being investigated for road works east of Wagga Wagga the (former) Roads and Traffic Authority (RTA) contracted Australian Archaeological Survey consultants (AASC) to conduct an archaeological survey (AASC, 1995). The survey area is situated within a landscape of rolling hills, four to five kilometres from the Murrumbidgee River. There had been no previously recorded sites listed for the area and none were located during the survey. The risk of impacting any sites through the road works was considered low.

A number of cultural heritage assessments were undertaken by Navin and Officer for the Wodonga to Wagga Wagga Natural Gas Pipeline developed by East Australian Pipeline Ltd across New South Wales and Victoria (Navin, Officer and Tracy, 1996, NOHC, 1996; 1998a; 1998b). Preliminary works for the Review of Environmental Factors (REF) was undertaken in 1995 and these works were incorporated into the Environmental Impact Statement (EIS) (Navin, Officer and Tracy, 1996). The pipeline study area encompasses a 146 kilometre transect, ranging in width between 0.5 to three kilometres wide, the pipeline would be laid within 20 to 24 metre wide corridor.

The above pipeline study area is situated within a transitional zone between the western foothills of the Great Dividing Range and the flat riverine plains as the study area continues to the west. Prior to this assessment (Navin, Officer and Tracy, 1996), no Aboriginal sites and one historic site had been recorded in the study area. Initial field surveys for this assessment recorded 25 new Aboriginal sites. As they were considered to have archaeological potential, it was recommended that several areas to be subject to additional survey, and sub-surface testing where appropriate. The sites located were comprised of twelve artefact scatters, three scarred trees and ten isolated finds. No new sites of historic heritage were recorded by the assessment, however, a number of properties with historic heritage potential were flagged and it was recommended that the pipeline route should avoid all existing buildings and visible signs of demolished buildings and features (Navin, Officer and Tracy, 1996).

Further cultural heritage assessment of the pipeline was required following the EIS after the route had been pegged (NOHC, 1996). This included additional field surveys, inspection of all mature native trees within the pipeline easement and further Aboriginal consultation. As a result of the further works 32 Aboriginal sites, five historic sites and eight PADs were identified during the survey. The Aboriginal sites consisted of 17 artefact scatters, six scarred trees and nine isolated finds. The historic sites were comprised of a weatherboard cottage, a dump, two railway corridors, and a former homestead site. Seven PADs were located in the proposed pipeline easement.

A number of areas previously excluded from survey programs due to access restrictions and client-landowner negotiations were able to be surveyed in late 1997 (NOHC 1998a). This encompassed seven survey areas, one of which was later excluded from the final alignment. One site was located during these surveys, a surface artefact scatter comprising eight lithic artefacts. Following these surveys, it was recommended that no further survey was required for the project.



Following all assessments undertaken for the pipeline it was recommended that subsurface testing be undertaken at four sites, West Pomingalarna 2, Buckaringah Creek 1 & 2, and Negarie 1, and at seven PADs, PAD1-7 (NOHC, 1998b). Subsurface testing was carried out in late 1997 over a period of ten days, using a combination of both hand excavation and machine excavation with a backhoe. All PADs were found to contain artefacts and archaeological deposits. Within all test sites where significant numbers were located it was considered highly likely that the archaeological deposit would extend outside of the proposed easement. Across the ten areas, 387 artefacts were recovered from excavation. The majority of these artefacts were located at Buckaringah Creek 1 & 2 with a total of 246 artefacts recovered across the sites. The second highest density site was Negarie 1 with a total of 62 artefacts recovered. Three of the sites contained less than ten artefacts and as a result these sites were excluded from the comparative analysis as little interpretation could be made based on the assemblage size. The lithic assemblage was characterised by the almost exclusive use of quartz in artefact production, save two white quartzite artefacts. Across the six main sites there appeared to be little inter-site variation with all sites having a similar density structure. Each site structure was thought to be consistent with a settlement model of small scattered activity areas representing occasional visits or camps focused on the riparian zones of both permanent and intermittent water sources (NOHC, 1998b).

Green (2002) undertook a wide arching review of all previous archaeological and historic assessments in the Wagga Wagga LGA for the Wiradjuri Heritage Study. Developed in consultation with local Aboriginal people, government, and non-government stake holders, the study aimed at collating and interpreting the various literature and assessments that had been undertaken in the Wagga Wagga region for the development of an overarching document covering; the Aboriginal past of the region, historical and legislative context, possible sites of significance, guidelines for assessments, management recommendations, and identifying areas for possible future research. Through this research a number of broad conclusions for the region regarding site prediction were put forward by Green (2002), and are summarised below:

- quartz is the main material type found within lithic assemblages with occasional occurrences of chert, silcrete and quartzite
- artefact scatters are most likely to be located in well drained areas near reliable water sources, such as sand hills and creek levees
- hearths and their associated cultural material are likely to be located at the base of sand dunes where they have been exposed by erosion
- mussel shell deposits are often found associated with ashy grey material and charcoal
- burials are most often located in naturally elevated sand dunes or alluvial sites but are typically only detected following disturbance or erosion
- modified trees can be located anywhere old growth trees survive but are most likely to occur near water.

The studies reviewed by Green (2002) indicated a high level of activity in concentrated areas by Wiradjuri Aboriginal people in the area. This suggests that Wiradjuri people often occupied camp sites and mounds for sustained and repeated periods and did not always move between transient camps.

An Aboriginal cultural heritage assessment was undertaken by Kellerher Nightingale Consulting (KNC, 2008) as part of the Wagga Wagga Local Environment Study (LES). The study examined eight areas to be subject to rezoning including Lloyd, Bomen, Estella West, Edison Road, Hammond Avenue, Copland Street, Boorooma East, and Moorong Street. One new site was recorded during the survey for this project, an isolated find. The predictive model developed by KNC for the LES concurred with a previous model developed by Green (2002) for the Wagga Wagga region indicating that areas with the highest archaeological sensitivity are likely to occur on low rises within gently undulating terrain adjacent to drainage features.



To replace the existing bridge across the Sydney to Melbourne railway line on the Olympic Highway, near Kapooka NSW, the (former) RTA engaged OzArk to conduct an Aboriginal heritage assessment (2011a). Four potential alignments were investigated as part of this assessment, covering an area of 4.25 kilometres in length and no more than one kilometre in width. No previously recorded sites were listed within the study area. During the survey one probable scarred tree and a sensitive archaeological landform were identified. It was recommended that if impacts were to occur to the sensitive archaeological landscapes that further investigation of the landform would be required.

Following this original assessment, the project design for the bridge replacement shifted to include land not covered by the initial study and RTA commissioned a further study of the areas to be impacted (OzArk, 2011b); the additional area covered roughly 21 hectares of land. Two previously recorded sites were listed within the study area, however, only one was able to be re-found during the survey, a scarred tree with steel axe marks. No new site recordings were made during the survey.

Riverina

As noted above in Section 6.1.2, Bonhomme (1987) conducted a study of burials in the Riverine Plain bringing together site surveys, relevant literature, and an assessment of the site register. Three burial categories were noted; isolated and individual burials; many individual and unrelated burials; and cemeteries. Burials varied significantly across the Riverine Plain, with burials generally increasing in number and density towards the southwest. Cemeteries are largely concentrated in the western portion of the Riverine Plains while none were recorded in the eastern part of the plain. A large focus of the interpretation was on the role that geomorphology plays in the site location. A clear preference was noted for particular landforms, lunettes and dunes along stream channels, which had been used over long periods of time and therefore contained large numbers of burials. The increase in burials in the west was thought to be reflective of a larger population. The western Riverine Plains has a wider variety of landscape features and as a result would have greater resource availability which would have been able to support a larger population.

In the early 1990's the Hay Local Aboriginal Land Council identified a number of mound sites at Dry Lake and Tchelery on the Riverine plain approximately 60 kilometres west of Hay. A number of these mound sites contained burials and so, as part of the Burials Conservation program, the sites were investigated and recorded by the NPWS to discuss the management of these sites (Littleton and Johnston, 1993).

A number of sites have already been recorded on the eastern banks of Dry Lake, including a complex of three mounds, however, this study focused on the western side of the lake (Littleton and Johnston, 1993). Nine mounds were recorded on the western side of Dry Lake, and of these recorded mounds, five contained human burials. Three of these burial mounds, Mounds 1, 6, and 8, were highly disturbed and contained scatters of highly fragmented bone so that no further information could be inferred from these sites. Two of the burial mounds were reasonably intact and contained multiple burials, Mound 2 and Mound 4. Mound 2 contained the remains of four burials within an area of approximately 26 metres by 10 metres. These burials were thought to be the remains of two adults and two children. Mound 2 also contained a concentration of heat retainers which were not thought to be associated with the burials but rather occupation debris. Mound 4 is a far more confined burial mound with a defined concentration of heat retainers containing the burials of six individuals, all thought to be adults. Most of these burials were at least partially in situ and in reasonable condition.

Another three mounds were located at Tchelery, two kilometres west of Dry Lake, within a 355 metre area (Littleton and Johnston, 1993). One of the mounds contained only heat retainers, while another contained heat retainers, shell fragments and fragmented burnt animal bones, possible human bone was identified within this mound following this assessment. The third mound contained three burials across an area of 55 metres by 45 metres, approximately 1.3 metres high. Two of the burials are partially in situ while the other is highly fragmented. The individuals were estimated to be a young adult and two children. Littleton and Johnston (1993) note a strong association between burials and mound occupation sites within the Hay Plain region.



The burials encountered in this investigation were thought to demonstrate several characteristics that differentiate the region from surrounding areas including variability in burial position and posture, the presence of children within burial areas, the presence of small dense burials within occupation debris, and because it was a large dispersed burial grounds of 20 to 50 individuals (Littleton and Johnston, 1993).

In 1998, Telstra commissioned Central West Archaeological and Heritage Services Pty Ltd to conduct an archaeological assessment of a proposed optic fibre cable route between Morundah and Bundure in the Riverina district, NSW (Kelton, 1998). The survey area traversed alluvial floodplains with bordering dune formations. No known Aboriginal sites had been previously recorded within the study area; however, three mound sites had been recorded within two kilometres of the proposed route. As a result of this study five Aboriginal sites were recorded during the survey. Sites included a scarred tree, three mound sites, and a mound associated with a surface artefact scatter. In addition to the sites located by the survey, five locations of PAD were identified where the route intersected dune formations. Monitoring of impacts at these dune deposits and avoidance of all surface sites was recommended by the study.

An archaeological survey was undertaken in 1985 for a proposed 132 kV transmission line from Darlington Point to Deniliquin, NSW (McIntyre, 1987). The route is situated within the Riverine Plains region and is 167 kilometres in length. The landscape of study area is characterised by occasional sand hills and long tree lined creeks. A total of 27 Aboriginal sites and two historic sites were recorded during the survey, one of the sites contained both Aboriginal and historic features. Site types included scarred trees (6), hearths (3), artefact scatters (6), and site complexes (12) with a large range of site features including artefact scatters, oven mounds, hearths, and scarred trees. A total of 31 scarred trees were encountered during the survey, these were the most commonly encountered site feature. A wide range of raw material types were encountered within the artefact scatters including silcrete, quartz, basalt, siltstone, chert and unidentified fine grained siliceous rock. It is likely that the historic site associated with an Aboriginal site post dates the Aboriginal site and that there was no overlap in the occupation. The historic remains at this site were of the Thulabin Provisional School, built in 1879, falling out of use around 1925. The other historic site encountered was a small weatherboard and iron hall that housed the Birganbigil Literary Institute, established in 1894. Seven sites were to be impacted by the project (either whole or partial destruction), and all site features impacted were scarred trees as they were deemed a safety risk for the project, this equated to 13 scarred trees in total.

Several heritage assessments were undertaken between 2013 and 2017 for the Abercrombie Water Efficiency Project (RPS, 2014, OzArk 2014, 2016a, 2016b, OzArk 017a, 2017b). The project is located in the Balranald, Murray River and Hay Local Government Areas and includes a 276 kilometre long, 10 metre wide corridor for the installation of an underground pipeline. Initial surveys for the project were undertaken by the Balranald Local Aboriginal Land Council (LALC) as part of the REF (RPS, 2014) in which seven sites were identified. Following this OzArk (2014) was engaged to assess the portion of the project area located within the rural property 'Keri Keri', approximately 40 kilometres south of Balranald and, east of Keri Keri Road which covered an approximately 23.9 kilometre section of the proposed pipeline route. Three Aboriginal sites were recorded during this assessment, the sites comprised three open campsites or artefact scatters.

The entire Abercrombie Water Efficiency project area was surveyed twice, once in mid-2015 and again in late-2016, during works for the Aboriginal and Historic Cultural Heritage Assessment (OzArk 2016a, 2016b); this included an Aboriginal cultural values assessment. The mid-2015 survey had been conducted through a combination of vehicle transects (in areas with low archaeological potential) and pedestrian transects (in areas with high archaeological potential) to assess the study area. Following this assessment, an AHIP application was submitted to authorise harm, through movement, to two isolated finds (WA-IF1 and WA-IF3) and harm unrecorded stone artefacts within an area-based model. This initial application was refused by the OEH, who advised that the archaeological field assessment methodology was not considered sufficient to support an area based AHIP. A second pedestrian field assessment was undertaken in late-2016 to assess all parts of the study area previously assessed by vehicle survey. The results of this survey were combined with the previous study to support a second AHIP application which was approved in early 2017 (AHIP C0002461). Across both assessments 22 previously recorded sites were determined to be in the vicinity of the project area, with five sitting within the project footprint.



A further eleven Aboriginal sites were located, including artefacts scatters, hearths, earth mounds and a scarred tree. Two of the Aboriginal sites were associated with historical objects indicating that they are post-contact sites. In addition to the Aboriginal sites, one historical site consisting of an old cottage was located outside of the impact area for the project. Following the approval of AHIP C0002461 two Aboriginal stone artefact sites within the impact area (WA-IF1 and WA-IF3) were collected and reburied as allowed under the AHIP (OzArk, 2017b).

In 2017, OzArk was engaged by the NSW Department of Primary Industries, Water (DPI Water) to conduct a due diligence archaeological assessment for a number of amendments to the design of the Abercrombie Water Efficiency Project between Balranald and Hay (OzArk, 2017a). Two new Aboriginal sites were recorded during the assessment, YA-AWEP-OS1 and YA-AWEP-OS2. These sites were able to be avoided by the project and so no amendment to the AHIP was required.

In 2018 skeletal remains were located near Dry Lake Travelling Stock Route, Maude Road, Moulamein (Gilding, 2018). Three sites were identified as having suspected Aboriginal human remains and so John Gilding (OEH) visited the sites to assess the nature of the skeletal material. The remains of two individuals in two separate locations were able to be identified. One individual was discovered eroding out of a large Aboriginal earth mound and the other eroding out of a lunette along a mild slope. A second earth mound was identified during the assessment, the skeletal remains associated with the mound were of indeterminant species and could not be definitively assessed.

Murray Darling Depression

To mitigate against large quantities of saline groundwater entering the Murray River from a source near Mallee Cliffs a scheme was developed in the late 1980's to reduce the negative impacts of this saline water flow. The area to be impacted was assessed by Lance in 1989 for Aboriginal and historic archaeological sites. A widespread field survey was undertaken to assess a number of possible routes under consideration for the project. Two isolated finds and six occupation sites were located during the survey. The occupation sites consisted of two shell middens, two shell middens with lithic artefacts associated, a shell midden with an associated hearth and a large dispersed site complex with shell midden, hearths, and stone artefacts. Further archaeological survey and testing was recommended prior to impact.

Following Lance's (1989) recommendations, a further archaeological investigation was undertaken for the Mallee Cliffs saltwater interception project by Ferguson (1991). The finalised pipeline routes were determined prior to Ferguson's study and crossed through two areas of high archaeology sensitivity as, identified by Lance (1989) in the earlier study. Subsurface testing was undertaken on the escarpment and the colluvial slopes. Subsurface testing on the escarpment consisted of eleven auger holes across two areas. Three auger holes were completed in an area where no surface cultural material had been identified, and another eight auger holes were completed in an area with high levels of cultural material including hearths, middens, stone artefacts, and a high potential for subsurface material. Shell fragments were found at varying depths within four of the eight auger holes in the high sensitivity area. An area of colluvial slopes was intensively surveyed across 2,400 sample squares which identified, two lithic artefacts, one whole mussel shell, 260 shell fragments, and a small unidentifiable bone fragment. This area was determined to be of low archaeological sensitivity. Another area of colluvial slope was subject to survey and subsurface testing through auguring. Three lithic artefacts, a scarred tree and scattered shell fragments were located during survey. Twenty-two holes were bored as part of subsurface testing, shell fragments were located in seven of these holes. Ferguson (1991) concluded that the Mallee Cliffs Site Complex makes up only a portion of a continuous zone of occupation focused along the banks of the Murray River. Though large variation in site type and density is noted along the Murray River, Ferguson postulated that almost anywhere along its length there will be evidence of a range of domestic activities. Ferguson (1991) assumed that the Mallee Site Complex represents a generalised camping and foraging area that would have accumulated over at least 6,500 years with variation in density and site type within the site complex, favoured for its position close to a reliable water source and the proximity of natural resources.



Craib (1992) conducted a series of surveys of 625 hectares in the Wentworth Gol Gol area aimed at establishing a predictive model. The areas surveyed were broken down into five environmental groups: riparian corridor, lacustrine areas, Box plain, open environment and sand hills. Archaeological sensitivity for each environment was measured in terms of cultural items per hectare, and not in terms of site significance. The riparian corridor includes the margins and immediate floodplains of all flowing watercourses; archaeological sensitivity along the Murray River was assessed as moderate. Lacustrine settings such as the margins of lakes and other bodies of still water tended to have a higher site density with very high sensitivity noted around areas such as Lake Gol Gol West. Within the Box plains the most common site type was the scarred tree, with surface scatters of stone artefacts also common in areas bordering riparian and lacustrine zones. Such scatters were usually extensions of sites that continue across both environmental units. The open environment comprised bare ground and sand/saltbush to the east of Fletchers Lake lunette; there was a low density artefact scatter across a large portion of the area. Sandhills such as source bordering dunes and lunettes were found to have a low sensitivity, however their preponderance for burials makes the significance of such topographic features very high.

In 1993, Heritage Consulting Australia (HCA) undertook an assessment of two middens for the Dareton Gol Gol Water Supply Scheme. Subsurface testing undertaken at the Gol Gol Midden found that the site was confined between Adelaide Street and the Murray River, increasing in density closer to the river. Auguring was undertaken through the midden revealing densely stratified deposits close to the river edge and lower density deposits in the areas closer to Adelaide Street. Subsurface testing confirmed nil deposits on the northern side of Adelaide Street. The large, dense shell deposits consisted mainly of freshwater mussels (*Alathyria jacksoni*) with smaller components of bone and charcoal. Radiocarbon dating of samples produced dates from 17,250 BP with more recent layers showing 5000 to 6000 BP. The most recent phase of occupation dated to 200 BP, showing the site to be active up until European settlement in the region. These are the earliest dates for shell middens along the central Murray River.

Johnston and Witter's (1996) study aimed to refine the understanding of the model of Aboriginal occupation for western New South Wales. Of particular relevance to the current project, the study undertook analysis of 200 metre transect samples for presence/absence of archaeological material. The results of that analysis revealed the lowest frequencies of archaeological material being present were in swales, sandplain flat, dune and lake beds where the incidence of archaeology was between 11 per cent and 23 per cent. Lake margin, box swamp and alluvial plain were extensively sampled and had a 40 to 55 per cent incidence of archaeology being present. Furthermore, while the sample size from ridge/range, source bordering dunes, watercourse and floodplain margins was much smaller, these were the landforms with the highest incidence of archaeology being present (50 to 71 per cent) and there was also a trend for sites within these landforms (ridge/range excepted) to be associated with water (Johnston and Witter 1996: 32-35).

In terms of relationships between site types and landforms it was noted that middens are most common in source bordering dunes, lake margins and floodplain margins. Ground stone artefacts follow a similar pattern to middens, while flaked stone occurs more evenly across different landscape units. Hearths on the other hand are most common on alluvial flats, watercourses, box swamps, floodplain margins and lake margins (Johnston and Witter 1996: 35).

The resultant model of occupation put forward by Johnston and Witter (1996: 40-41) is summarised below:

- sites are more likely to occur within two kilometres of 'water based' (lacustrine or alluvial) landforms
- the abundance of Aboriginal occupation should be proportional to water quality, so water sources should be ranked in terms of reliability, salinity and duration
- occupation is expected to increase around ecotonal boundaries
- different environmental types or archaeographic systems are likely to have differential occupation that can be qualitatively assessed in terms of their relative value/potential



- visibility needs to be established for different environmental types/archaeographic systems so that artefact frequencies can be calculated more accurately
- stone resources are likely to result in a two kilometres radius area of high abundance and a wider (20 kilometre) radius of inflated presence.

Bonhomme Craib and Associates (1999) review of archaeology in the Murray Darling Basin concluded that much of the current site patterning or clustering within western NSW is a reflection of the varying degrees of research and survey conducted, that is, sites are clustered where work has been concentrated. Furthermore, the focus of attention has been on lakes, rivers and creeks. Our understanding of Aboriginal occupation of areas beyond the floodplains and lakes is limited. The potential for 'significant data' is recognised, and already demonstrated in the range of sites previously recorded. There is a need for further work, especially in areas that have not yet undergone concentrated and/or systematic archaeological study (Bonhomme Craib & Associates 1999: 39-40).

So, while the current site patterning reflects clustering around water features, this clustering may reflect the focus of archaeological attention in these areas or may indeed be a largely accurate reflection of site patterning (Bonhomme Craib & Associates 1999). The only way that such possibilities may be tested is if adequate levels of survey are undertaken in areas away from watercourses. Sand landforms close to water have a high probability of containing human remains, although, unless the site has been disturbed it is unlikely that there will be evidence of the site visible upon the surface (Bonhomme Craib & Associates 1999).

Archaeological assessment of a proposed residential subdivision within the Gol Gol parish, NSW, was undertaken in 2007 (Gilding and Watts 2007). The study area was bounded to the south by the Murray River and the Sturt Highway to the north. One previously recorded Aboriginal site was listed in the study area, a shell midden site (AHIMS # 46-3-0030), and no sites of historic heritage were recorded in the study area. The midden was inspected and was found to be in a highly disturbed state, dispersed due to extensive ploughing across the area, and was determined to be of low archaeological significance. No new Aboriginal or historic heritage sites were located by the study.

A hydrological study of Gol Gol Lake, NSW, was established by the Lower Murray Darling Catchment Authority to better understand ground water flow rates and patterns. They engaged Landscape (2009a) to undertake an Aboriginal cultural heritage study to investigate the impact of fifteen groundwater observation bores on Aboriginal heritage. Nineteen previously recorded sites were identified within approximately two kilometres of the proposed bores, and three previously recorded sites were identified as occurring at proposed bore locations. These three sites are all open site complexes containing midden shell, lithic artefacts, and hearths. One of the sites also contains modified trees, and another site contains a single human burial. All three sites were re-found during the survey, no additional sites were located during the study. It was recommended that drilling be avoided at these sites.

Landscape (2009b) undertook a cultural heritage assessment of a residential block situated along the Murray River on Murray Street, Gol Gol, NSW. The Gol Gol section of the Murray River is known to contain rich midden deposits (HCA, 1993., Gilding and Watts, 2007) and as such a s90 consent application was required in order to impact the block. The survey located sparse scatters of fragmented freshwater mussel shell within the flood zone area of the property (the acre closest to the river). Shell remnants were assessed as being of low significance due to their heavily disturbed and fractured state, impacted by repetitive ploughing and ground clearance.

Increased water scarcity due to the extended Millennium drought (2001-2009) in south-eastern Australia demanded a number of water saving projects to be implemented along the Murray River. One of these projects involved the temporary cutting off of the Murray River water to dry up the shallow lakes that feed off its tributaries, principally Dry Lake and Lake Benanee near Euston. This raised important questions into the effects of these projects upon the cultural heritage resources of the lakes, inlet and outlet creeks of the Murray River floodplain. The Billa Downs property, purchased by the Indigenous Land Corporation and, which has frontage along the Murray River, Dry Lake and Lake Benanee stood to be heavily affected by these effects.



The property had never been subject to archaeological survey and, in order to assess the impact upon the heritage values, an intensive cultural heritage study was undertaken for the property (Martin, 2008). This included a thorough historical background of early European accounts of the local Aboriginal people, a thorough archaeological background, anthropological interviews, and an intensive survey of the property. Through a review of the existing data from the NSW site database, and the intensive survey undertaken for the project a total of 1,267 sites were located. This included 384 locations with middens, 372 culturally modified trees, 167 sites with surface artefacts, 66 sites with burials, 60 locations with ovens and 100 with possible ovens, 56 sites with heat retainer, 14 sites with ashy deposits, 30 historic features, 18 mound sites, and one soak. Additionally, the shared early contact history is unusually detailed, with multiple written accounts of the events at Lake Benanee, Washpen Creek and other parts of Billa Downs between explorer Thomas Livingstone Mitchell, and the local Thathi people and visiting Menindee Paakantyi people (Martin, 2008).

Much of the research in the Euston area up to this point had focused on the Murray River and its tributaries. The Billa Downs study contrasted these findings, as well as other regional evidence, against the results of the survey (Martin, 2008). One particular focus was to compare the mounds, identified at Billa Downs with those recorded across the Hay Plain, Balpool on the Edwards River, and the Barham State Forest on the Murray River. Martin (2008) found that the mounds located at Billa Downs were, in general, smaller in size and lower in height, and found at a much lower frequency than had been identified in other areas. This led her to tentatively conclude that this area is outside of the main distribution of mound sites in the region, however, more work on the western Murray Riverine Plain is required to verify this. The main site management issues raised by the cutting of water to the lakes were the impact of saline water and lack of water to the shorelines, destabilising the lake edges and causing erosion which would result in the movement of stone artefact scatters and middens, as well as the deterioration of fragile modified trees. Other management issues unrelated to the water saving project included the destabilisation of mound and burial sites due to ploughing and rabbit burrowing. The variation and high density of sites and archaeological material at Billa Downs, as well as the rich natural resources and complex historical narrative, work to create a strong cultural landscape. It was recommended by Martin (2008) that Billa Downs be recognised as an Aboriginal Place under the National Parks & Wildlife Act 1974.

During field survey for the redevelopment of James King Park in 2017, Biosis (2017a) identified several locations of exposed shell midden material along a 200 by 40 metre section of the Murray River bank. They recorded this midden site as James King Park Earth Mound Site (46-3-0193) and this site is a continuation of the previously recorded Gol Midden site. Following this Biosis conducted a subsurface testing program at the James King Park Earth Mound Site consisting of two, two metre square test pits and 19 auger holes. Subsurface testing revealed shell material in surface and subsurface deposits along the river bank frontage, subsurface deposits decreased further from the bank (Biosis, 2017a).

The Limondale Sun Farm, a large-scale solar generation facility located 14 kilometres south of Balranald, commissioned Biosis to undertake a cultural heritage assessment for the State Significant Development. Biosis undertook both an Aboriginal Cultural Heritage Assessment report, or ACHAR (2017b), and archaeological report (2017c) as part of the EIS for the Limondale Sun Farm (EMM Consulting 2017). Five previously recorded Aboriginal sites were recorded within the study area and a further eleven Aboriginal sites, including one with PAD, and one historic site, a small cottage, were located during survey for this stage of the project. The Aboriginal sites included artefacts scatters, hearths, earth mounds and a scarred tree. Two of these sites contained evidence of post-contact material. The property had been highly modified and disturbed through ongoing agricultural land use, such as recent ploughing and harvesting. Though the land had been heavily impacted, a number of vulnerable site types including earth mounds, artefact scatters and campfires, were all recorded. It was noted that while earth mounds are usually associated with water sources there was no evident water source within the Limondale study area.

Following the EIS, test excavations and salvage of the sites detailed above was recommended, as well as the preparation of a chance finds protocol and a cultural heritage management plan. The cultural heritage management plan (Biosis, 2017d) was undertaken prior to any salvage to ensure that the impacts to Aboriginal and non-Aboriginal heritage by the project are minimised and to ensure that all works were within the scope of the approvals.



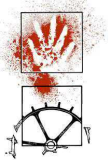
Salvage was undertaken following Minster approval for the cultural heritage management plan (Biosis, 2018). Two areas of PAD were identified as being located within the construction footprint, sites Transmission Line 5 (AHIMS # 47-6-0605) and Transmission Line 6 (AHIMS 47-6-0606) and as such were subject to test excavations. A total of 16 test pits (four metre squared total) were excavated across these two sites; no subsurface sites or artefacts were located during testing. Three surface sites were salvaged as part of this phase of the project which located a total of 21 lithic artefacts. The dominant artefact types located were angular fragments and complete flakes. Other artefact types found in smaller numbers included medial flakes, a distal flake fragment, a longitudinal flake fragment, a multiplatform core, and a tool. The dominant material types were quartzite, followed by silcrete, rhyolite, and chert. The findings of the subsurface testing conform to previous testing results by Biosis undertaken on the Hay Plain in which little to no cultural material has been recovered from test excavations (Biosis 2016, 2018b from Biosis, 2018a). This is thought to be the result of aeolian sand loss over the past 200 years due to a combination of soil instability from the grazing of hard hooved animals in combination with high winds, causing the loss of up to two metres of soil in places (Biosis, 2018). As the soil has eroded the artefacts have accumulated on a harder base layer which is often the current ground surface, leading to large quantities of sites settling on the surface of claypan exposures.

A cultural heritage assessment was undertaken by Past Traces (2019) to upgrade and relocate a section of powerlines within Gol Gol. One hundred metres of the proposed easement was located within a Crown land parcel that incorporates part of Brings Hills Reserve (Lots 7300 and 7301 DP1176238) which in June 2015 was recognised in the Barkandji Traditional Owners No.8 determination as having nonexclusive native title. During the assessment three previously recorded Aboriginal heritage sites were relocated including two shell middens and one earth mound (Gol Gol Shell Midden, Gol Gol 2 Midden, and James King Park Earth Mound). The Gol Gol Shell Midden and James King Park Earth Mound sites have been previously subjected to extensive subsurface testing and so no further works were assessed as being required for the low level proposed impacts. Gol Gol 2 Midden was confirmed as being outside the impact area. No additional sites were located during the assessment.

6.3 Aboriginal heritage recordings within heritage study corridor

A series of searches on the Heritage NSW AHIMS database for Aboriginal sites were undertaken on March 4 and 6 2020 (Client IDs: 488741 – 488747 – 488750 - 488754 – 488759 – 488766 – 488767 - 488772 – 488776 - 488779 – 489239 - 489258 – 489261). The searches aimed to identify Aboriginal sites within a broader heritage study corridor was conducted in order to further investigate site typologies and site patterning across differing landscapes the around proposal study area. This search focused on broadening the pool of AHIMS data to ten kilometres either side of the proposal study area centreline (heritage study corridor) (See Figure 6.1 for an overview). A total of 869 known Aboriginal sites occur within this search area, and encompassed the following archaeological site types/features:

- artefacts (both isolated finds and artefact scatters)
- Aboriginal burials
- hearths
- earth mounds
- modified trees
- freshwater shell
- non-human bone and organic material
- potential archaeological deposits



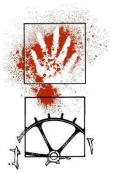
To further analyse this data the results from the AHIMS within five kilometres on each side of the proposal area can be scrutinised to get a more detailed picture of the surrounding site types and frequency (Table 6.1). The search identified 399 sites and indicates that modified tree sites are the most common site type occurring throughout the extension of the corridor with 46.11 per cent (n=187) of the total of sites identified. Artefact sites are the second most commonly occurring type accounting for 10.27 per cent (n=41) of the total of registered sites throughout the extension of the corridor.

Table 6.1 AHIMS sites previously recorded within five kilometres of the proposed corridor

Site Feature/Type	Total	%
Aboriginal Ceremony and Dreaming, Artefact, Burial, Hearth, Non-Human Bone and Organic Material, Shell	2	0.50
Aboriginal Ceremony and Dreaming, Modified Tree (Carved or Scarred)	1	0.25
Aboriginal Resource and Gathering	2	0.50
Aboriginal Resource and Gathering, Earth Mound, Modified Tree (Carved or Scarred), Water Hole	1	0.25
Artefact	41	10.27
Artefact, Burial	1	0.25
Artefact, Burial, Hearth	1	0.25
Artefact, Burial, Hearth, Modified Tree (Carved or Scarred)	1	0.25
Artefact, Burial, Hearth, Non-Human Bone and Organic Material, Potential Archaeological Deposit (PAD), Shell, Modified Tree (Carved or Scarred) -1	1	0.25
Artefact, Burial, Hearth, Shell	3	0.75
Artefact, Burial, Hearth, Shell, Non-Human Bone and Organic Material	1	0.25
Artefact, Burial, Non-Human Bone and Organic Material	1	0.25
Artefact, Burial, Non-Human Bone and Organic Material, Potential Archaeological Deposit (PAD), Shell	1	0.25
Artefact, Burial, Non-Human Bone and Organic Material, Shell	1	0.25
Artefact, Burial, Shell, Modified Tree (Carved or Scarred)	1	0.25
Artefact, Earth Mound	4	1.0
Artefact, Earth Mound, Habitation Structure, Potential Archaeological Deposit (PAD)	1	0.25
Artefact, Earth Mound, Hearth	2	0.50
Artefact, Earth Mound, Hearth, Shell	1	0.25
Artefact, Earth Mound, Modified Tree (Carved or Scarred)	1	0.25



Site Feature/Type	Total	%
Artefact, Earth Mound, Potential Archaeological Deposit (PAD)	5	1.25
Artefact, Earth Mound, Potential Archaeological Deposit (PAD), Shell	1	0.25
Artefact, Earth Mound, Shell	2	0.50
Artefact, Earth Mound, Shell, Modified Tree (Carved or Scarred)	1	0.25
Artefact, Hearth	11	2.75
Artefact, Hearth, Modified Tree (Carved or Scarred)	1	0.25
Artefact, Hearth, Non-Human Bone and Organic Material, Potential Archaeological Deposit (PAD), Shell	2	0.50
Artefact, Hearth, Potential Archaeological Deposit (PAD)	1	0.25
Artefact, Hearth, Potential Archaeological Deposit (PAD), Shell	3	0.75
Artefact, Hearth, Shell	4	1.0
Artefact, Hearth, Shell, Modified Tree (Carved or Scarred)	2	0.50
Artefact, Modified Tree (Carved or Scarred)	3	0.75
Artefact, Potential Archaeological Deposit (PAD)	3	0.75
Burial	16	4.01
Burial, Artefact, Shell	1	0.25
Burial, Earth Mound, Hearth	2	0.50
Burial, Hearth, Modified Tree (Carved or Scarred)	1	0.25
Ceremonial Ring (Stone or Earth), Hearth, Shell	1	0.25
Conflict	1	0.25
Earth Mound	10	2.50
Earth Mound, Hearth	7	1.75
Earth Mound, Hearth, Modified Tree (Carved or Scarred)	2	0.50
Earth Mound, Hearth, Non-Human Bone and Organic Material, Shell	1	0.25
Earth Mound, Hearth, Potential Archaeological Deposit (PAD)	2	0.50
Earth Mound, Potential Archaeological Deposit (PAD), Burial	1	0.25
Earth Mound, Shell	2	0.50
Earth Mound, Shell, Artefact, Burial	1	0.25
Habitation Structure, Modified Tree (Carved or Scarred)	1	0.25



Site Feature/Type	Total	%
Hearth	29	7.26
Hearth, Modified Tree (Carved or Scarred)	10	2.50
Hearth, Potential Archaeological Deposit (PAD)	5	1.25
Hearth, Potential Archaeological Deposit (PAD), Shell	2	0.50
Hearth, Shell	5	1.25
Hearth, Shell, Modified Tree (Carved or Scarred)	3	0.75
Modified Tree (Carved or Scarred)	184	46.11
Shell	4	1.0
Water Hole	1	0.25

While modified tree sites are located across the extension of the corridor and within the searched area, the majority of these sites type are concentrated in the eastern half of the corridor, particularly towards the Wagga Wagga region.

Sensitive sites such as ceremonial and burial sites are located within the searched area. No sensitive sites have been identified within the boundaries of the proposed corridor, however, some of these sites are located within close proximity to the corridor boundaries. Table 6.2 summarises these sites and their distance from the proposed corridor boundaries.

Table 6.2 Previously recorded sensitive sites from the AHIMS database and in proximity to the proposal corridor

AHIMS	Site Name	Site Feature/Type	Location
47-4-0135	Billa Downs 193	Aboriginal Ceremony and Dreaming, Artefact, Burial, Hearth, Non-Human Bone and Organic Material, Shell	4.5 km
47-4-0152	Billa Downs 3	Aboriginal Ceremony and Dreaming, Artefact, Burial, Hearth, Non-Human Bone and Organic Material, Shell	4.8 km
47-4-0026	Billa Downs 18	Aboriginal Ceremony and Dreaming, Modified Tree (Carved or Scarred)	4.68 km
47-4-0154	Billa Downs 5	Artefact, Burial	4.8 km
47-4-0022	Lake Benanee Burials 5	Artefact, Burial, Hearth	2.15 km
47-4-0077	Billa Downs 73 & 74	Artefact, Burial, Hearth, Modified Tree (Carved or Scarred)	4.2 km
47-4-0081	Billa Downs 78	Artefact, Burial, Hearth, Non-Human Bone and Organic Material, Potential Archaeological Deposit (PAD), Shell, Modified Tree (Carved or Scarred)	3.4 km



AHIMS	Site Name	Site Feature/Type	Location
47-4-0086	Billa Downs 85	Artefact, Burial, Hearth, Shell	3.4 km
47-4-0103	Billa Downs 103	Artefact, Burial, Hearth, Shell	4.4 km
47-4-0130	Billa Downs 183	Artefact, Burial, Hearth, Shell	4.5 km
47-4-0133	Billa Downs 189	Artefact, Burial, Hearth, Shell, Non-Human Bone and Organic Material	4.88 km
47-4-0020	Lake Benanee Burials 4	Artefact, Burial, Non-Human Bone and Organic Material	2.27 km
47-4-0132	Billa Downs 187	Artefact, Burial, Non-Human Bone and Organic Material, Potential Archaeological Deposit (PAD), Shell	4.6 km
47-4-0150	Billa Downs 1 (same as 51-4-0104)	Artefact, Burial, Non-Human Bone and Organic Material, Shell	4.5 km
47-4-0080	Billa Downs 77	Artefact, Burial, Shell, Modified Tree (Carved or Scarred)	3 km
48-4-0013	Kerrie East #4;	Burial	3.67 km
48-4-0014	Tchelery / Abercrombie Creek	Burial	3.87 km
47-6-0159	Lintot Lake 14	Burial	2.56 km
47-6-0380	Allens 1	Burial	870 m
47-6-0382	Allens 3	Burial	362 m
47-6-0037	CONDOULPE	Burial	1.82 km
47-6-0041	Condoulpe Creek	Burial	1.82 km
47-5-0001	Lake Waldaira;	Burial	2.31 km
47-4-0003	Lake Benanee;Robinvale;	Burial	1.77 km
47-4-0012	Lake Benanee Burial 3;	Burial	2.33 km
47-4-0021	Lake Benanee Burials 6	Burial	2.25 km
47-4-0328	Lake Benanee	Burial	1.71 km
47-4-0005	Dry Lake;	Burial	4.2 km
46-3-0079	Gol Gol Lake Midden;	Burial	3.79 km
46-3-0080	Gol Gol Swamp: reburial of remains	Burial	3.8 km
47-4-0013	Dry Lake Burial;	Burial, Artefact, Shell	4.2 km



AHIMS	Site Name	Site Feature/Type	Location
48-4-0078	Back Baldon;Baldon;	Burial, Earth Mound, Hearth	3.78 km
48-4-0075	Back Baldon;Baldon;	Burial, Earth Mound, Hearth	3.78 km
47-4-0160	Billa Downs 11	Burial, Hearth, Modified Tree (Carved or Scarred)	3.98 km
47-4-0023	Dry Lake Midden 1	Ceremonial Ring (Stone or Earth), Hearth, Shell	600 m
47-6-0772	West Abercrombie Open Site 36 (WA-OS36)	Earth Mound, Potential Archaeological Deposit (PAD), Burial	4.65 km
55-2-0001	Lake Cullivel;	Earth Mound, Shell, Artefact, Burial	4.70 km

6.4 Aboriginal heritage recordings in the proposal study area

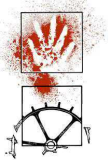
Of the 399 sites within five kilometres of the proposal 11 are located within the proposal survey area:

- BU-IF-001 (AHIMS #47-4-0331)
- BU-IF-002 (AHIMS #47-5-0047)
- BU-IF-003 (AHIMS #47-5-0048)
- Transmission Line 7 (AHIMS #47-5-0008)
- Transmission Line 3 (AHIMS #47-6-0603),
- Transmission Line 4 (AHIMS #47-6-0604),
- Transmission Line 5 (AHIMS #47-6-0605),
- Transmission Line 6 (AHIMS #47-6-0606),
- Limondale 12 (AHIMS #47-6-0832)
- D-B#22; Booroorban (AHIMS #48-5-0022)
- Boiling Down Road 1 (AHIMS #56-1-0001).

6.5 Aboriginal site types and locations

Based on the results and analytical conclusions of previous archaeological records and surveys in similar landscape contexts it is possible to predict the types and topographic contexts of sites which may occur in the proposal study area. From this existing body of work, the following set of broad site location criteria have been summarised for the proposal.

The occurrence and survival of archaeological sites is dependent on many factors including micro-topography and the degree of land surface disturbance. It should also be noted that for practical reasons, archaeological surveys tend to focus on environments identified as archaeologically sensitive based on previous research and aided by effective ground visibility. As a result, predictive site location models can tend to reflect previous survey bias and to become self-perpetuating.



Artefact scatters

Open artefact scatters are likely to be the most common site type encountered. They may occur almost anywhere that Aborigines have travelled and may be associated with hunting or gathering activities, domestic camps, or the manufacture and maintenance of stone tools. The spatial extent and density of artefacts represented in these scatters can vary dramatically. Within the general region of the transmission line, artefact scatters tend to be dominated by assemblages of quartz, with lesser percentages of other rock types such as silcrete, sandstone, quartzite and volcanic.

Previous survey results suggest that artefact scatters are most likely to occur in well drained elevated contexts within riparian zones, flood plains and adjacent to water sources. Level or gently sloping surfaces are typical site locations, with few sites recorded from moderate to high gradient contexts. Within the heritage study corridor potential site locations include elevated banks, terraces and sand bodies associated with streamlines, flood channels, paleochannels, water holes, lagoons and wetland basins. Larger and denser sites are more likely to occur in association with stable sedimentary contexts adjacent to (past or present) permanent water sources, and major tributaries.

Isolated

Isolated finds are artefacts which occur without any associated evidence for prehistoric activity or occupation. They are defined as single artefacts located more than 60 metres from any other artefact. Isolated finds can occur anywhere in the landscape and may represent the random loss or deliberate discard of artefacts, or the remains of dispersed artefact scatters.

Hearths

In archaeology, a hearth is a firepit or other fireplace feature. Hearths are common within the proposal study area and are often made of fired clay balls and sometimes reflect multiple use. Hearths typically occur close to water such as streams, creeks and lakes or eroding out of dunes.

Burials

Burials within the region are generally found either in mound sites, or in elevated natural topographies consisting of soft, easily dug, sediments, such as aeolian sands or unconsolidated alluvial silts. They may occur in isolation or in groups and may also be association with occupation site debris. Burials are generally only visible where there has been some disturbance of subsurface sediments or where some erosional process has exposed them.

Within the proposal study area burials may occur in sand bodies, in mound sites and on elevated fine sediment topographies on floodplains. It should be noted that the incidence of some isolated burials cannot be accurately predicted beyond the broad parameters of deposits with deep, fine sediments.

Freshwater middens

Freshwater middens are defined as a concentration of artefactual debris that includes a significant percentage of freshwater shell (predominantly mussel shell *Velesunio sp.* or *Alathyria sp.*) that may also contain animal bone and other botanicals. They are usually the result of interim or base camp activity and are normally situated within riparian zones characterised by relatively permanent water.

Within the proposal study area freshwater middens may be associated with creeks, rivers, billabongs, and prior stream channels. Midden material may be buried by overlying silt deposits.



Modified trees

These sites may occur almost anywhere mature native trees have been retained, including fluvial corridors, larger stands of vegetation in greenfield sections, and isolated shade trees on grazing land. The identification of scars as Aboriginal in origin can often remain problematical. Most of the current transmission line easement has been cleared of native vegetation. The potential for scarred trees to survive within the corridor is moderate to high.

Other site types

More fragile/rare sites such as ceremonial bora rings, stone arrangements, habitation structures, and carved trees may also be present in the proposal study area as evidenced by these site types being present within five kilometres of the proposal study area at very low densities. Based on the cleared status of most of the transmission line easement, and the likely agricultural practices which have occurred since white settlement (ploughing and levelling, trampling by stock, crop cultivation, construction of drainage canals, fences, roads and access tracks), the potential for these more fragile/rare sites to have survived in the corridor to the present day is considered low.

The site types which are most likely to occur in the proposal study area are artefact scatters, isolated finds, modified/scarred trees, and hearths. Other site types which may occur in the transmission line easement are mound sites, freshwater middens, and burials. The most archaeologically sensitive topographic contexts in the proposal study area are elevated ground adjacent to water sources, lunettes, sand bodies and sand sheets within valley floor contexts, and the margins of lakes and river terraces.

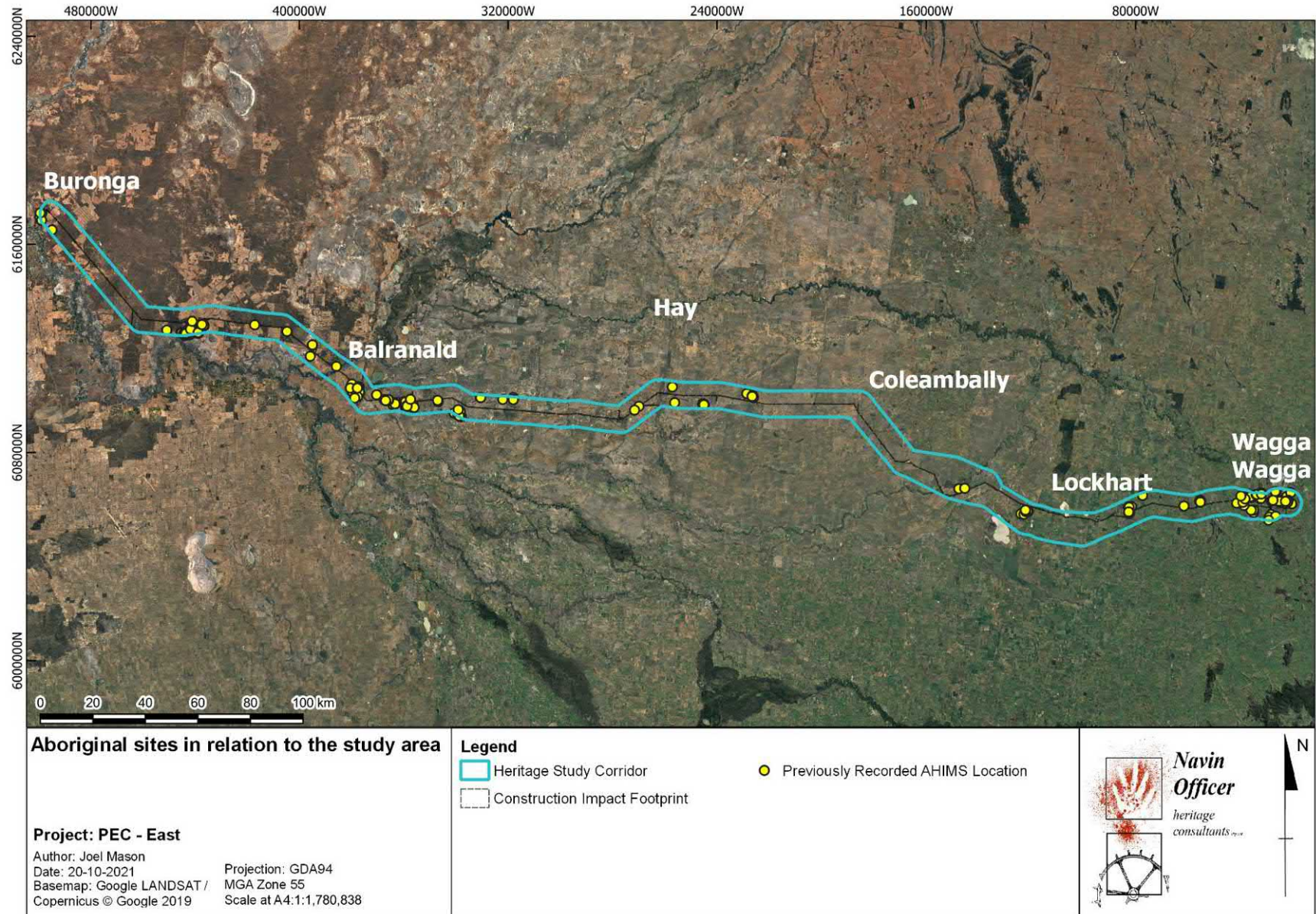


Figure 6.1 Previously recorded Aboriginal sites within the heritage study corridor (overview)



6.6 Site location model

The most common Aboriginal site type present in the proposal study area and the broader region is the open artefact scatter (also termed open campsite on many of the AHIMS site cards for the region), which may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting or gathering activities, domestic camps, or the manufacture and maintenance of stone tools. The density of artefacts represented in these scatters can vary dramatically, based on several variables including landscape features, proximity to water, and proximity of food resources.

Isolated finds, generally defined as a single stone artefact which occurs without any associated evidence of Aboriginal occupation within a radius of 60 metres, are also common in the proposal study area. Isolated finds may be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or subsurface artefact scatter. Except in the case of the latter, isolated finds are constituent components of the *background scatter* of Aboriginal artefacts present within any landform.

Previous archaeological studies in and around the proposal as well as the broader Murray Darling region suggest the following archaeological attributes and site location parameters for the proposal study area:

- the largest and most dense archaeological sites correlate to freshwater resources (lakes, rivers, claypans, swamps (e.g. Figure 6.1)
- sand bodies including lunettes and dunes, are of high sensitivity due to their association with Aboriginal burials
- transitional zones between plant communities may be a predictor for Aboriginal occupation
- aeolian sands commonly obscure surface sites within the region, and ground exposure and visibility should be considered where assessing site significance as well as subsurface potential.



7. Archaeological survey and subsurface test excavation program

This section presents the results of all of the field survey events of the heritage survey area (100 metres wide corridor) and site inspections.

7.1 Previously recorded sites in the heritage survey area

There are eleven Aboriginal sites recorded on AHIMS that are located within the heritage survey area. Of these nine sites were able to be accessed as part of the assessment. One site was found to be previously impacted by farming activity, five sites have been determined to be a part of one site complex and recorded as one site and PAD in this assessment, three sites were not able to be re-found (all isolated finds) and two recorded scarred trees were not able to be found and identified at the AHIMS-listed location.

BU-IF-001 (AHIMS #47-4-0331)

This site was recorded as an isolated find by Kyandel in 2019 (AHIMS site card). The site was recorded as part of the assessment for the Proposed Fibre Optic Cable Installation, Buronga to Balranald. This site could not be re-found during the current field survey.

BU-IF-002 (AHIMS #47-5-0047)

This site was recorded as an isolated find by Kyandel in 2019 (AHIMS site card). The site was recorded as part of the assessment for the Proposed Fibre Optic Cable Installation, Buronga to Balranald. This site could not be re-found during the current field survey.

BU-IF-003 (AHIMS #47-5-0048)

This site was recorded as an isolated find by Kyandel in 2019 (AHIMS site card). The site was recorded as part of the assessment for the Proposed Fibre Optic Cable Installation, Buronga to Balranald. This site could not be re-found during the current field survey.

Transmission Line 7 (AHIMS #47-5-0008)

This site was originally recorded by Niche in 2012 (AHIMS site card) during the assessment for the Limondale Solar Farm. The site was recorded as a cluster of 13 intact earth mounds (on average approximately 20 metres in diameter and one metre height), 16 mound scatters, several hearths and artefact scatters. The mounds were clustered around a swamp/lagoon feature which has not been subjected to intensive ploughing for wheat cropping. A water pipe and trench extend through the mounds providing some additional protection. Termite nest hearths are the most common within the site and stone artefacts are dominated by silcrete flakes. The site was assessed to be in fair condition. The site was also assessed to be of high archaeological significance.

During the current survey, the site was revisited. It was noted that this site has been heavily impacted by ploughing since the original site recording. At the time of the field survey the area was very wet and a full re-recording could not be made. This site is proposed to be revisited and full record made of the remaining site.



Transmission Line 3 (AHIMS #47-6-0603), Transmission Line 4 (AHIMS #47-6-0604), Transmission Line 5 (AHIMS #47-6-0605), Transmission Line 6 (AHIMS #47-6-0606), and Limondale 12 (AHIMS #47-6-0832)

These five sites were originally recorded by Niche in 2012 during the assessment for the Limondale Solar Farm. All of these sites were recorded as scattered hearths with clay heat retainers. During the current survey additional hearth locations were recorded in the same general area as these recordings and the site area is also within PEC-E-PAD4 from this assessment.

D-B#22; Booroorban (AHIMS #48-5-0022)

This site is recorded on AHIMS as a scarred tree and site card indicates that the site has been destroyed. The survey of this site in February 2022 did not locate the AHIMS-listed scarred tree at this location.

Boiling Down Road 1 (AHIMS #56-1-0001)

This site is recorded on AHIMS as a scarred tree. The survey of this site in December 2022 did not locate the AHIMS-listed scarred tree at this location.

7.2 New sites and PADs

A total of 105 new Aboriginal sites have been recorded in the survey area. In addition, 45 areas of PAD have been defined. Please see Appendix 2 for full descriptions of all sites. Table 7.1 and Figure 7.1 includes all sites recorded for this assessment including sites recorded as part of the pre geotechnical investigations in 2020 and the field surveys in 2021 and 2022.



Table 7.1 Newly Recorded Sites

Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-01	Isolated Find	The information in this column has been removed due to the restricted nature of this information	
PEC-E-02	Isolated Find		
PEC-E-03	Midden		
PEC-E-04	Isolated Find		
PEC-E-05	Isolated Find		
PEC-E-06	Hearth (2)		PEC-E-PAD07
PEC-E-07	Isolated Find		
PEC-E-08	Isolated Find		
PEC-E-09	Isolated Find		
PEC-E-10	Artefact Scatter (2), Hearth (3)		PEC-E-PAD10, PEC-E-PAD11
PEC-E-11	Artefact Scatter (2)		
PEC-E-12	Isolated Find		
PEC-E-13	Isolated Find, Hearth (2)		PEC-E-PAD12
PEC-E-14	Artefact Scatter (2), Hearth		PEC-E-PAD13
PEC-E-15	Isolated Find		



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-16	Modified Tree and Artefact Scatter (2)		PEC-E-PAD14
PEC-E-17	Modified Tree		PEC-E-PAD14
PEC-E-18	Artefact Scatter (2)		PEC-E-PAD15
PEC-E-19	Hearth (2)		PEC-E-PAD15
PEC-E-20	Isolated find, Hearth		PEC-E-PAD15
PEC-E-21	Isolated Find		
PEC-E-22	Artefact Scatter (25), Hearth		PEC-E-PAD16
PEC-E-23	Isolated Find		
PEC-E-24	Isolated Find, Hearth		PEC-E-PAD17
PEC-E-25	Earth Mound		
PEC-E-26	Earth Mound		
PEC-E-27	Artefact Scatter (5), Hearth (6)		PEC-E-PAD18
PEC-E-28	Artefact Scatter (25), Hearth (9)		PEC-E-PAD18
PEC-E-29	Artefact Scatter (3)		PEC-E-PAD19
PEC-E-30	Artefact scatter (3), Hearth (4)		PEC-E-PAD19
PEC-E-31	Isolated Find, Hearth (5)		PEC-E-PAD19
PEC-E-32	Hearth (2)		PEC-E-PAD20



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-33	Isolated Find		PEC-E-PAD20
PEC-E-34	Isolated find, Hearth		PEC-E-PAD21
PEC-E-35	Artefact Scatter (3)		
PEC-E-36	Artefact Scatter (100) Hearth (30), Modified Tree (3)		PEC-E-PAD22
PEC-E-37	Artefact Scatter (12), Hearth (10)		PEC-E-PAD23
PEC-E-38	Artefact Scatter (6)		
PEC-E-39	Artefact Scatter (30)		PEC-E-PAD25
PEC-E-40	Isolated Find		
PEC-E-41	Isolated Find		
PEC-E-42	Modified Tree		
PEC-E-43	Artefact Scatter (4)		
PEC-E-44	Isolated Find		PEC-E-PAD27
PEC-E-45	Artefact Scatter (3)		PEC-E-PAD27
PEC-E-46	Artefact Scatter (3)		
PEC-E-47	Hearth		
PEC-E-48	Modified Tree		
PEC-E-49	Modified Tree		



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-50	Hearth		
PEC-E-51	Isolated Find		
PEC-E-52	Artefact Scatter (50)		
PEC-E-53	Isolated Find		
PEC-E-54	Isolated Find		PEC-E-PAD28
PEC-E-55	Isolated Find		
PEC-E-56	Earth Mound		PEC-E-PAD29
PEC-E-57	Isolated Find, Earth Mound, Hearth		PEC-E-PAD29
PEC-E-58	Isolated Find		PEC-E-PAD29
PEC-E-59	Artefact Scatter (5)		PEC-E-PAD30
PEC-E-60	Artefact Scatter (8)		PEC-E-PAD32, PEC-E-PAD33
PEC-E-61	Isolated Find		
PEC-E-62	Modified Tree		
PEC-E-63	Artefact Scatter (20)		PEC-E-PAD34
PEC-E-64	Artefact Scatter (9)		PEC-E-PAD35
PEC-E-65	Isolated Find		PEC-E-PAD35



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-66	Artefact Scatter (4)		PEC-E-PAD35
PEC-E-67	Isolated Find		
PEC-E-68	Isolated Find		
PEC-E-69	Isolated Find		
PEC-E-70	Artefact Scatter (10)		PEC-E-PAD36
PEC-E-71	Isolated Find		
PEC-E-72	Isolated Find		
PEC-E-73	Isolated Find		
PEC-E-74	Artefact scatter and Modified tree		PEC-E-PAD38/39
PEC-E-75	Isolated Find		
PEC-E-76	Modified Tree		
PEC-E-77	Modified Tree		
PEC-E-78	Modified Tree		
PEC-E-79	Isolated Find		
PEC-E-80	Artefact Scatter (5)		PEC-E-PAD40
PEC-E-81	Isolated Find		PEC-E-PAD40
PEC-E-82	Isolated Find		PEC-E-PAD40



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-83	Artefact Scatter (20)		PEC-E-PAD40
PEC-E-84	Isolated Find		PEC-E-PAD40
PEC-E-85	Isolated Find		PEC-E-PAD40
PEC-E-86	Isolated Find		PEC-E-PAD40
PEC-E-87	Isolated Find		PEC-E-PAD40
PEC-E-88	Isolated Find		
PEC-E-89	Isolated Find		PEC-E-PAD43
PEC-E-90	Artefact Scatter (2)		
PEC-E-91	Isolated Find		
PEC-E-92	Isolated Find		
PEC-E-93	Isolated Find		PEC-E-PAD26
PEC-E-94	Isolated Find		PEC-E-PAD26
PEC-E-95	Artefact scatter		PEC-E-PAD27
PEC-E-96	Artefact Scatter		PEC-E-PAD46
PEC-E-97	Isolated Find		
PEC-E-98	Isolated find, Hearth		
PEC-E-99	Artefact Scatter		



Site name	Site features	GPS Location (GDA2020 / MGA zone 55)	Associated PAD
PEC-E-100	Artefact scatter & Hearth		
PEC-E-101	Isolated find		
PEC-E-102	Artefact scatter		
PEC-E-103	Hearths		
PEC-E-104	Isolated find		
PEC-E-105	Artefact Scatter, Hearths and Modified Trees		



7.2.1 Potential archaeological deposits

The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region (see Section 6). The boundaries of PADs are generally defined by the extent of particular micro-landforms known to have high correlations with archaeological material.

A PAD may or may not be associated with surface artefacts. In the absence of artefacts, a location with potential has been recorded as a PAD. Where one or more surface artefacts occur on a sedimentary deposit, a PAD may also be identified where there is insufficient evidence to assess the nature and content of the underlying deposit. This situation is due mostly to poor ground surface visibility. All PADs are considered to have moderate to high archaeological potential. All areas of low potential have been discounted.

A total of 45 areas of PAD have been identified in the survey area (Table 7.2). PADs have been numbered to 46; however, following further survey PADs PEC-E-PAD38 and PEC-E-PAD39 have been combined into one PAD and renamed PEC-E-PAD38/39. Of these 45 PADs, 26 have been identified as having one or more Aboriginal sites associated with them (associated sites in the table below).

Table 7.2 PADs Summary

Site Name	Area m2	Easting	Northing	Associated site
PEC-E-PAD01	7,062,715	The information in these columns has been removed due to the restricted nature of this information		
PEC-E-PAD02	9,884,774			
PEC-E-PAD03	1,011,514			
PEC-E-PAD04	1,668,313			
PEC-E-PAD05	2,905,685			
PEC-E-PAD06	490,371			
PEC-E-PAD07	203,083			PEC-E-06
PEC-E-PAD08	709,179			
PEC-E-PAD09	450,665			
PEC-E-PAD10	23,470			PEC-E-10
PEC-E-PAD11	4,194			PEC-E-10
PEC-E-PAD12	8,084			PEC-E-13
PEC-E-PAD13	2,287			PEC-E-14
PEC-E-PAD14	10,228			PEC-E-16 PEC-E-17
PEC-E-PAD15	266,715			PEC-E-18 PEC-E-19 PEC-E-20



Site Name	Area m2	Easting	Northing	Associated site
PEC-E-PAD16	26,911			PEC-E-22
PEC-E-PAD17	19,312			PEC-E-24
PEC-E-PAD18	107,056			PEC-E-27 PEC-E-28
PEC-E-PAD19	738,468			PEC-E-29 PEC-E-30 PEC-E-31
PEC-E-PAD20	104,166			PEC-E-33 PEC-E-33
PEC-E-PAD21	1,184,802			PEC-E-34
PEC-E-PAD22	477,281			PEC-E-36
PEC-E-PAD23	142,541			PEC-E-37
PEC-E-PAD24	395,832			
PEC-E-PAD25	645,743			PEC-E-39
PEC-E-PAD26	475,795			
PEC-E-PAD27	2,112,529			PEC-E-45 PEC-E-46
PEC-E-PAD28	198,602			PEC-E-54
PEC-E-PAD29	156,052			PEC-E-56 PEC-E-57 PEC-E-58
PEC-E-PAD30	75,970			PEC-E-59
PEC-E-PAD31	15,676			
PEC-E-PAD32	51,024			PEC-E-60
PEC-E-PAD33	24,472			PEC-E-60
PEC-E-PAD34	59,037			PEC-E-63
PEC-E-PAD35	2,787,793			PEC-E-64 PEC-E-65 PEC-E-66
PEC-E-PAD36	17,464			PEC-E-70
PEC-E-PAD37	30,020			
PEC-E-PAD38/39	703,135			PEC-E-74



Site Name	Area m2	Easting	Northing	Associated site
PEC-E-PAD40	1,409,196			PEC-E-80 to PEC-E-87
PEC-E-PAD41	79,731			
PEC-E-PAD42	82,017			
PEC-E-PAD43	18,964			PEC-E-89
PEC-E-PAD44	140,461			
PEC-E-PAD45	120,797			
PEC-E-PAD46	26/021			PEC-E-96

7.2.2 Additional scarred trees identified by the RAPs

During the field survey four trees with scars were identified by the RAPs as being possible scarred trees. The archaeologists undertaking the survey assessed the scars as being due to natural causes and the trees were therefore deemed to not be Aboriginal scarred trees according to the criteria set out in Appendix 2. A global position system (GPS) location and photograph were recorded for each of these trees (Table 11.1 in Appendix 2).

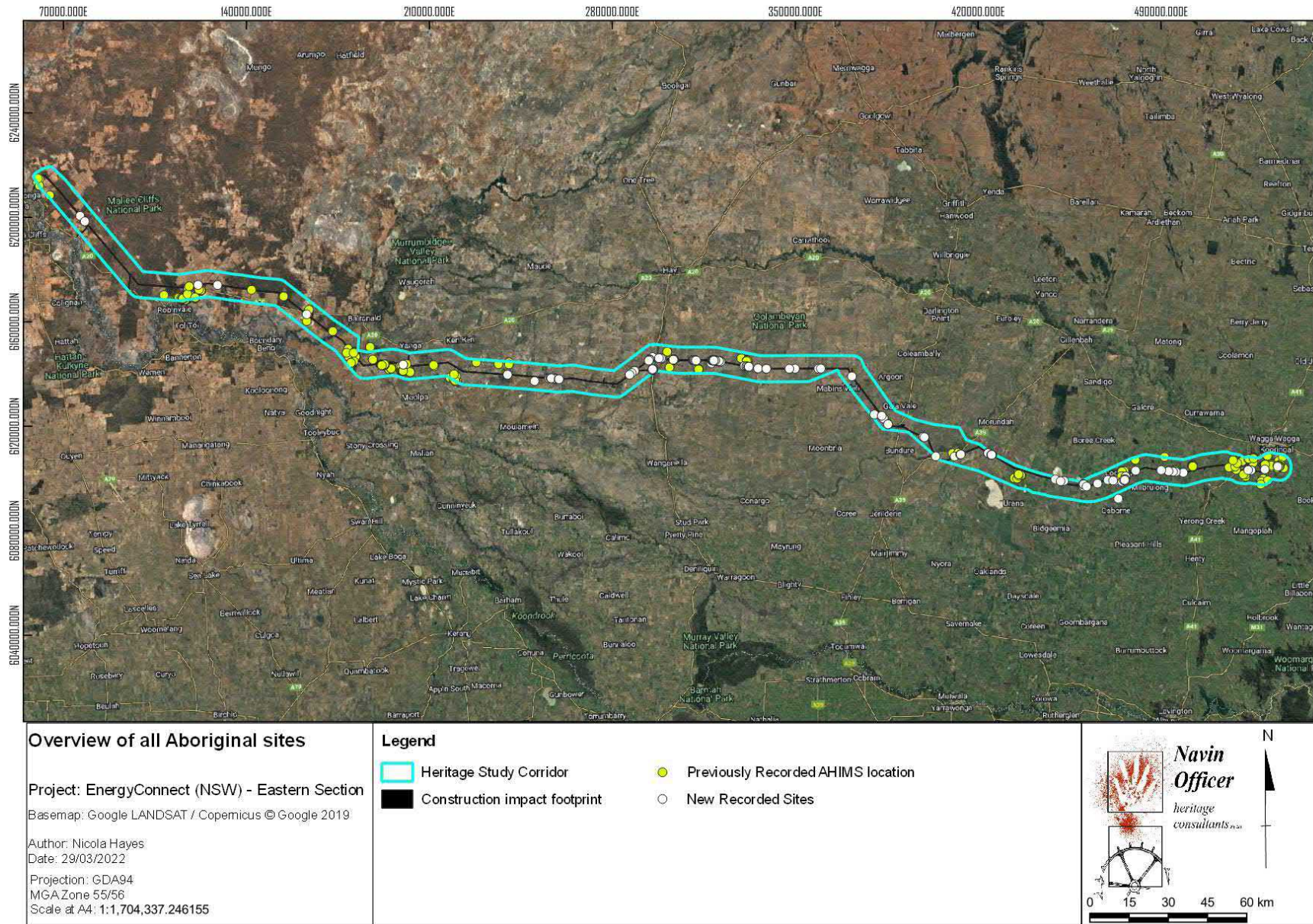


Figure 7.1 Overview of all Aboriginal sites



7.3 Survey coverage and visibility variables

The effectiveness of archaeological field survey is to a large degree related to the obtrusiveness of the sites being looked for and the incidence and quality of ground surface visibility. Visibility variables were estimated for all areas of comprehensive survey within the survey area. These estimates provide a measure with which to gauge the effectiveness of the survey and level of sampling conducted. They can also be used to gauge the number and type of sites that may not have been detected by the survey.

Ground surface visibility is a measure of the bare ground visible to the archaeologist during the survey. There are two main variables used to assess ground surface visibility, the frequency of exposure encountered by the surveyor and the quality of visibility within those exposures. The predominant factors affecting the quality of ground surface visibility within an exposure are the extent of vegetation and ground litter, the depth and origin of exposure, the extent of recent sedimentary deposition, and the level of visual interference from surface gravels. Two variables of ground surface visibility were estimated during the survey:

- a percentage estimate of the total area of ground inspected which contained useable exposures of bare ground, and
- a percentage estimate of the average levels of ground surface visibility within those exposures. This is a net estimate and accounts for all impacting visual and physical variables including the archaeological potential of the sediment or rock exposed.

The obtrusiveness of different site types is also a crucial factor in assessing the impact of visibility levels. Sites based on rock exposures, such as rock shelters, open engravings and grinding grooves are more likely to be encountered than sites with no surface relief located on, or within, sedimentary matrices.

In another example, artefacts made from locally occurring rock such as quartz may be more difficult to detect under usual field survey conditions than rock types that are foreign to the area. The impact of natural gravels on artefact detection was taken into account in the visibility variables estimates outlined above.

The incidence of old growth trees, are important considerations in identifying both survey effectiveness and site location patterns outside of environmentally determined factors.

The total area covered by this assessment is 49,269,891 metres square.

Table 7.3 summarises estimates for the degree to which separate landforms within the survey area were examined and also indicates the ground surface exposure incidence and average ground visibility present in each case. Figure 7.2 depicts the survey units recorded for the field survey. A total of 52.8 per cent of the surveyed ground area was inspected during the survey, with 34.4 per cent providing useable archaeological exposures.

Taking into account survey coverage, archaeologically useable exposures, and visibility variables, the effective survey coverage (ESC) was 18.16 per cent of the total surveyed area. The ESC attempts to provide an estimate of the proportion of the proposal study area that provided a net 100 per cent level of ground surface visibility to archaeological surveyors.



Table 7.3 Survey coverage across the survey area

Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
1	Completed	Undulating Sandplain	363,967	80	80	232,938	64
2	Completed	Undulating Sandplain	294,332	80	70	164,825	56
3	Completed	Undulating Sandplain	833,200	90	50	374,940	45
4	Completed	Undulating Sandplain	134,150	80	70	75,124	56
5	Completed	Undulating Sandplain	101,062	60	30	18,191	18
6	Completed	Undulating Sandplain	225,710	70	60	94,798	42
7	Completed	Undulating Sandplain	650,248	90	50	292,612	45
8	Completed	Undulating Sandplain	417,060	90	70	262,748	63
9	Completed	Undulating Sandplain	61,018	90	50	27,458	45
10	Completed	Undulating Sandplain	265,206	40	40	42,433	16
11	Completed	Undulating Sandplain	503,247	90	60	271,753	54
12	Completed	Undulating Sandplain	524,356	70	50	183,525	35
13	Completed	Undulating Sandplain	344,696	90	60	186,136	54
14	Completed	Undulating Sandplain	442,422	50	40	88,484	20
15	Completed	Undulating Sandplain	165,782	90	40	59,682	36
16	Completed	Undulating Sandplain	155,564	80	80	99,561	64
17	Completed	Undulating Sandplain	375,207	30	20	22,512	6
18	Completed	Undulating Sandplain	178,518	50	40	35,704	20
19	Visual inspect	Undulating Sandplain	296,956	40	30	35,635	12
20	Completed	Undulating Sandplain	399,347	40	30	47,922	12



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
21	Completed	Undulating Sandplain	132,407	70	70	64,879	49
22	Completed	Undulating Sandplain	340,687	60	30	61,324	18
23	Completed	Undulating Sandplain	315,127	50	30	47,269	15
24	Completed	plain	491,602	80	90	353,953	72
25	Completed	Undulating Sandplain	240,898	50	30	36,135	15
26	Visual inspect	Undulating Sandplain	214,637	50	30	32,196	15
27	Completed	Undulating Sandplain	289,596	40	30	34,752	12
28	Completed	Undulating Sandplain	101,483	60	60	36,534	36
29	Completed	Undulating Sandplain	942,489	50	40	188,498	20
30	Completed	Undulating Sandplain	125,774	30	40	15,093	12
31	Completed	Undulating Sandplain	244,866	30	40	29,384	12
32	Completed	Undulating Sandplain	109,033	50	60	32,710	30
33	Completed	Dune	23,376	50	60	7,013	30
34	Completed	Undulating Sandplain	183,626	40	50	36,725	20
35	Completed	Dune	26,442	50	60	7,933	30
36	Completed	High Bank (floodplain)	10,490	40	50	2,098	20
37	Completed	Floodplain	255,564	30	40	30,668	12
38	Completed	Watercourse	36,042	80	70	20,184	56
39	Completed	Floodplain	75,226	90	90	60,933	81
40	Completed	Watercourse	11,952	90	90	9,681	81
41	Completed	Stream Bank	9,682	80	80	6,196	64



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
42	Completed	Dune	15,778	80	90	11,360	72
43	Completed	Crest	36,499	60	90	19,709	54
44	Completed	Undulating Sandplain	165,686	70	80	92,784	56
45	Completed	Undulating Sandplain	99,742	60	70	41,892	42
46	Completed	Dune	14,526	60	90	7,844	54
47	Completed	Undulating Sandplain	582,679	60	50	174,804	30
48	Completed	Floodplain	56,164	60	80	26,959	48
49	Completed	Stream bank	10,827	60	70	4,547	42
50	Completed	Paleochannel	103,299	40	40	16,528	16
51	Completed	Watercourse	5,423	0	0	0	0
52	Completed	Paleochannel	48,823	40	40	7,812	16
53	Completed	Paleochannel	2,139	40	40	342	16
54	Completed	Paleochannel	27,634	40	40	4,421	16
55	Completed	Floodplain	282,339	80	90	203,284	72
56	Completed	Plain	126,309	90	100	11,3678	90
57	Completed	Crest	11,060	60	60	3982	36
58	Completed	Undulating Plain	199,780	90	100	17,9802	90
59	Completed	Undulating Plain	311,003	90	100	279,903	90
60	Completed	Plain	176,271	90	100	158,644	90
61	Completed	Undulating Plain	159,938	40	60	38,385	24
62	Completed	Alluvial Plain	154,662	100	100	154,662	100



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
63	Completed	Dune	18,327	90	90	14,845	81
64	Completed	Alluvial Plain	173,708	60	70	72,957	42
65	Completed	Plain	77,161	60	70	32,408	42
66	Completed	Alluvial Plain	291,079	100	100	291,079	100
67	Completed	Stream Bank	42,192	80	90	30,378	72
68	Completed	Watercourse	10,156	80	70	5,687	56
69	Completed	Stream Bank	7,732	80	80	4,948	64
70	Completed	Alluvial Plain	188,132	90	90	152,387	81
71	Completed	Alluvial Plain	409,695	60	60	147,490	36
72	Completed	Alluvial plain	242,604	60	60	87,337	36
73	Completed	Dry Lake	28,198	60	50	8,459	30
74	Completed	Alluvial plain	55,021	60	60	19,808	36
75	Completed	High bank	61,665	40	50	12,333	20
76	Completed	Alluvial plain	161,151	90	100	145,036	90
77	Completed	Dune	16,134	30	40	1,936	12
78	Completed	Alluvial plain	946,962	30	40	113,635	12
79	Completed	Alluvial plain	2,212,035	30	40	265,444	12
80	Completed	Alluvial Plain	565,097	40	10	22,604	4
81	Completed	Alluvial Plain	46,925	40	10	1,877	4
82	Completed	Alluvial Plain	352,731	40	20	28,218	8



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
83	Completed	Alluvial Plain	113,703	40	20	9,096	8
84	Completed	Alluvial Plain	535,814	40	30	64,298	12
85	Completed	Alluvial Plain	345,528	80	60	165,853	48
86	Visual inspect	Alluvial Plain	447,355	80	60	214,730	48
87	Completed	Alluvial Plain	108,405	80	30	26,017	24
88	Completed	Watercourse	23,380	50	30	3,507	15
89	Completed	Floodplain	9,323	60	30	1,678	18
90	Completed	High Bank (floodplain)	11,878	80	30	2,851	24
91	Completed	Alluvial Plain	814,173	80	30	195,402	24
92	Visual inspect	Watercourse	17,567	50	30	2,635	15
93	Visual inspect	Alluvial Plain	390,629	80	30	93,751	24
94	Completed	Alluvial Plain	135,171	50	10	6,759	5
95	Completed	Alluvial Plain	816,678	10	10	14,335	1
95a	Not Completed	Not surveyed	616,856				
96	Completed	Alluvial Plain	713,051	90	60	385,048	54
97	Completed	Alluvial Plain	324,899	80	10	25,992	8
98	Completed	Plain	311,417	80	20	49,827	16
99	Completed	Watercourse	67,172	80	10	5,374	8
100	Completed	Alluvial Plain	222,031	80	10	17,762	8



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
101	Completed	Watercourse	7,270	80	30	1,745	24
102	Completed	Alluvial Plain	25,433	80	10	2,035	8
103	Completed	Dune	9,464	90	80	6,814	72
104	Completed	Alluvial Plain	296,492	30	10	8,895	3
105	Completed	Dune	37,958	90	40	13,665	36
106	Completed	Alluvial Plain	33,273	80	40	10,647	32
107	Completed	Watercourse	8,137	80	40	2,604	32
108	Completed	Floodplain	13,627	80	40	4,361	32
109	Completed	Watercourse	7,422	80	40	2,375	32
110	Completed	High Bank	10,612	80	40	3,396	32
111	Completed	Dune	49,445	80	10	3,956	8
112	Completed	Alluvial Plain	298,467	80	10	23,877	8
113	Completed	Watercourse	5,191	80	10	415	8
114	Completed	Alluvial Plain	153,417	70	10	10,739	7
115	Completed	Watercourse	13,424	80	20	2,148	16
116	Completed	Alluvial Plain	241,185	80	50	96,474	40
117	Completed	Alluvial Plain	14,556	80	30	3,493	24
118	Completed	Alluvial Plain	723,745	80	30	173,699	24
119	Completed	Alluvial Plain	377,646	80	30	90,635	24
120	Completed	Alluvial Plain	705,839	20	20	28,234	4
121	Completed	Watercourse	9,107	20	20	364	4
122	Completed	Alluvial Plain	383,780	20	30	23,027	6
123	Completed	Dry lake	19,036	20	20	761	4



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
124	Completed	Alluvial Plain	723,003	30	30	65,070	9
125	Completed	Swamp	55,424	0	0	0	0
126	Completed	Alluvial Plain	156,293	10	20	3,126	2
127	Completed	Watercourse	58,174	10	10	582	1
128	Completed	Alluvial Plain	1,105,538	10	40	44,222	4
129	Completed	Channel	14,956	50	50	3,739	25
130	Completed	Plain	147,504	40	20	11,800	8
131	Completed	Dry Lake	21,393	40	20	1,711	8
132	Completed	Alluvial Plain	886,334	40	20	70,907	8
133	Completed	Alluvial Plain	105,519	40	20	8,442	8
134	Completed	Alluvial Plain	66,415	100	30	19,925	30
135	Completed	Watercourse	13,022	50	30	1,953	15
136	Completed	Alluvial Plain	529,543	20	50	52,954	10
137	Completed	Watercourse	14,521	20	20	581	4
138	Completed	Alluvial Plain	248,578	50	10	12,429	5
139	Completed	Watercourse	27,577	50	50	6,894	25
140	Completed	Alluvial Plain	288,436	90	10	25,959	9
141	Completed	Watercourse	6,357	90	10	572	9
142	Completed	Alluvial Plain	40,214	90	10	3,619	9
143	Completed	Alluvial Plain	11,620	80	10	930	8
144	Completed	Alluvial Plain	1,814,484	60	10	108,869	6
145	Completed	Watercourse	40,499	60	10	2,430	6
146	Completed	Alluvial Plain	297,644	60	10	17,859	6



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
147	Not completed	Not Surveyed	163,957				
148	Completed	Alluvial Plain	373,003	80	20	59,680	16
149	Not completed	Not Surveyed	454,469				
150	Completed	Watercourse	1,545	0	0	0	0
151	Completed	Floodplain	141,603	90	10	12,744	9
152	Completed	High Bank	24,026	40	30	2,883	12
153	Completed	Alluvial Plain	103,720	40	10	4,149	4
154	Visual inspect	Alluvial Plain	247,098	40	10	9,884	4
155	Completed	Alluvial Plain	23,568	50	10	1,178	5
156	Visual inspect	Alluvial Plain	89,795	50	10	4,490	5
157	Visual inspect	Watercourse	12,659	50	10	633	5
158	Visual inspect	Alluvial Plain	145,290	50	10	7,265	5
159	Completed	Alluvial Plain	285,597	80	10	22,848	8
160	Completed	Watercourse	9,989	80	30	2,397	24
161	Completed	Stream Bank	30,725	80	10	2,458	8
162	Completed	Watercourse	10,824	80	30	2,598	24
163	Completed	Alluvial Plain	107,956	80	60	51,819	48
164	Completed	Watercourse	6,887	80	20	1,102	16
165	Completed	Alluvial Plain	934,721	60	10	56,083	6
166	Completed	Stream Bank	2,468	60	20	296	12
167	Completed	Watercourse	2,029	0	0	0	0
168	Completed	Stream Bank	3,537	60	20	424	12
169	Completed	Alluvial Plain	363,250	80	10	29,060	8



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
170	Completed	Watercourse	3,584	80	10	287	8
171	Completed	Alluvial Plain	177,388	80	10	14,191	8
172	Completed	Watercourse	8,437	80	10	675	8
173	Completed	Alluvial Plain	387,597	10	40	15,504	4
174	Completed	Alluvial Plain	291,270	30	60	52,429	18
175	Completed	Alluvial Plain	10,817	80	10	865	8
176	Completed	Watercourse	13,710	80	10	1,097	8
177	Completed	Alluvial Plain	69,312	80	10	5,545	8
178	Not completed	Not Surveyed	349,526				
179	Completed	Plain	70,334	30	20	4,220	6
180	Completed	Plain	63,178	30	20	3,791	6
181	Completed	Plain	155,355	80	80	99,427	64
182	Completed	Plain	49,299	10	10	493	1
183	Completed	Plain	64,749	70	10	4,532	7
184	Completed	Plain	150,596	70	60	63,250	42
185	Completed	Plain	34,177	70	60	14,354	42
186	Completed	Slope	68,251	30	30	6,143	9
187	Visual inspect	Slope	27,638	30	30	2,487	9
188	Completed	High Bank	2,313	30	30	208	9
189	Completed	High Bank	31,665	30	30	2,850	9
190	Completed	Swamp	81,495	60	60	29,338	36
191	Completed	High Bank	32,670	60	60	11,761	36
192	Completed	Swamp	50,425	60	60	18,153	36



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
193	Completed	Alluvial Plain	9,367	80	70	5,246	56
194	Completed	Alluvial Plain	80,586	90	90	65,275	81
195	Completed	Alluvial Plain	351,150	70	50	122,902	35
196	Completed	Alluvial Plain	120,982	20	30	7,259	6
197	Completed	Plain	90,033	30	20	5,402	6
198	Completed	Dune (lake)	4,537	50	10	227	5
199	Completed	Swamp	58,854	0	0	0	0
200	Completed	Dune (lake)	4,767	50	10	238	5
201	Completed	Plain	69,279	50	10	3,464	5
202	Completed	Plain	31,409	10	10	314	1
203	Completed	Plain	250,623	10	10	250	1
204	Completed	Plain	218,404	60	50	65,521	30
205	Completed	Plain	149,986	80	10	11,999	8
206	Completed	Plain	89,791	80	70	50,283	56
207	Completed	Plain	180,443	50	10	9,022	5
208	Completed	Stream bank	2,228	60	50	668	30
209	Completed	Watercourse	1,312	0	0	0	0
210	Completed	Stream bank	4836	80	10	387	8
211	Completed	Plain	148,855	50	10	7,443	5
212	Completed	Watercourse	1,359	0	0	0	0
213	Completed	Plain	101,002	20	10	2,020	2
214	Completed	Plain	200,085	60	20	24,010	12
215	Completed	Watercourse	7,093	70	10	497	7



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
216	Completed	Plain	73,003	80	70	40,882	56
217	Completed	Watercourse	10,723	50	10	536	5
218	Completed	Plain	65,174	30	20	3,910	6
219	Completed	Watercourse	5,237	50	10	262	5
220	Completed	Plain	25,565	30	20	1,534	6
221	Not completed	Not Surveyed	172,383				
222	Completed	Plain	152,546	50	10	7,627	5
223	Completed	Watercourse	12,057	50	20	1,206	10
224	Completed	Plain	134,795	50	20	13,480	10
225	Completed	Slope	92,696	50	20	9,270	10
226	Completed	Slope	80,234	50	20	8,023	10
227	Completed	Slope	232,524	50	20	23,252	10
228	Completed	Watercourse	53,413	50	10	2,671	5
229	Completed	Alluvial Plain	234,093	50	30	35,114	15
230	Completed	Watercourse	11,119	50	10	556	5
231	Completed	Alluvial Plain	322,953	40	60	77,509	24
232	Completed	Watercourse	2,148	0	0	0	0
233	Completed	Plain	579,469	50	30	86,920	15
234	Visual inspect	Plain	145,029	50	30	21,754	15
235	Completed	Alluvial Plain	49,640	10	10	496	1
236	Completed	Watercourse	5,173	0	0	0	0
237	Completed	Alluvial Plain	43,305	70	30	9,094	21
238	Completed	Plain	498,707	10	10	4,987	1



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
239	Completed	Slope	89,034	10	30	2,671	3
240	Completed	Crest	15,757	10	30	473	3
241	Completed	Slope	14,690	10	30	441	3
242	Completed	Plain	86,531	10	10	865	1
243	Completed	Slope	58,297	20	20	2,332	4
244	Completed	Crest	13,103	80	40	4,193	32
245	Completed	Slope	79,185	50	20	7,919	10
246	Completed	Plain	446,427	10	10	4,464	1
247	Not completed	Not Surveyed	181,699				
248	Completed	Plain	121,763	10	10	1,218	1
249	Completed	Watercourse	8,209	10	10	82	1
250	Completed	Alluvial plain	76,054	10	10	761	1
251	Completed	Watercourse	3,488	20	20	140	4
252	Completed	Plain	124,119	10	10	1,241	1
253	Completed	Slope	102,510	10	10	1,025	1
254	Completed	Crest	11,739	10	10	117	1
255	Completed	Slope	49,807	10	10	498	1
256	Completed	Slope	126,840	10	10	1,268	1
257	Completed	Crest	18,710	10	10	187	1
258	Completed	Slope	35,529	10	10	355	1
259	Completed	Crest	24,428	10	10	244	1
260	Completed	Slope	91,594	10	10	916	1
261	Completed	Plain	158,258	10	10	1,583	1



Survey Unit	Completed	Landform	Survey unit area (square metre)	Visibility per cent	Exposure per cent	Effective coverage area (square metre) survey unit area x visibility per cent x exposure per cent)	Effective coverage per cent (effective coverage area / survey unit area x 100)
262	Completed	Watercourse	21,351	50	10	1,068	5
263	Completed	Plain	158,207	10	10	1,582	1
264	Completed	Plain	154,950	10	10	1,549	1
265	Completed	Plain	327,868	10	10	3,279	1
266	Completed	Plain	205,338	10	10	2,053	1
Total			49,269,891	52.8	34.4	8,948,988	18.16

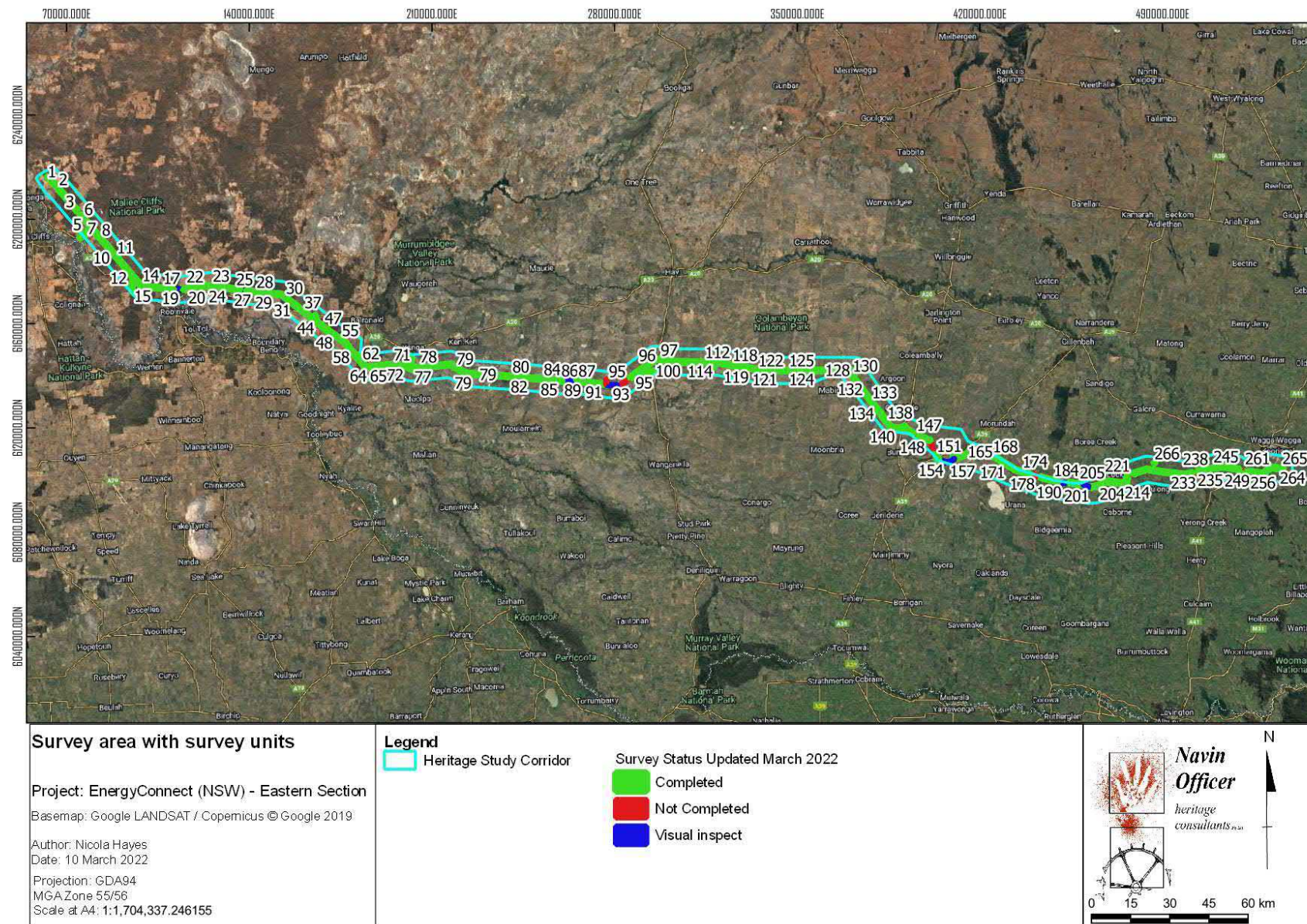


Figure 7.2 Survey coverage mapping



7.4 Analysis of Aboriginal archaeological survey and discussion

The archaeological survey identified a total of 105 sites. Artefact isolated finds were the most common site type identified throughout the extent of the proposal study area corridor with 42.8 per cent (n=45) of the total of sites. Artefact scatters were the second most common site identified with 23 (21.9 per cent) sites recorded. Modified trees 7.61 per cent (n=8), Hearths 5.71 per cent (n=6), earth mounds 2.85 per cent (n=3) and a shell midden 1.09 per cent (n= 1) were also identified within the proposal study area during the survey. A further 13 sites (12.38 per cent) had multiple site features such as artefacts, hearths and modified trees. All of the recorded sites presented a degree of ground disturbance associated with sheet erosion. Grazing, wind, ploughing, water wash, vehicle and grading impacts were also recurrent forms of ground disturbance identified within the recorded sites in addition to erosional impact.

The landscape varies across the extension of the corridor as it extends across three different bioregions which have different soils, geology and topography. As shown in Figure 7.3 and Figure 7.4 most of the sites were identified within alluvial plain landforms and flat plain landforms. Sites were also identified on floodplains, undulating sandplains, plains, on a hill, a dune crest, a levee and on a stream channel.

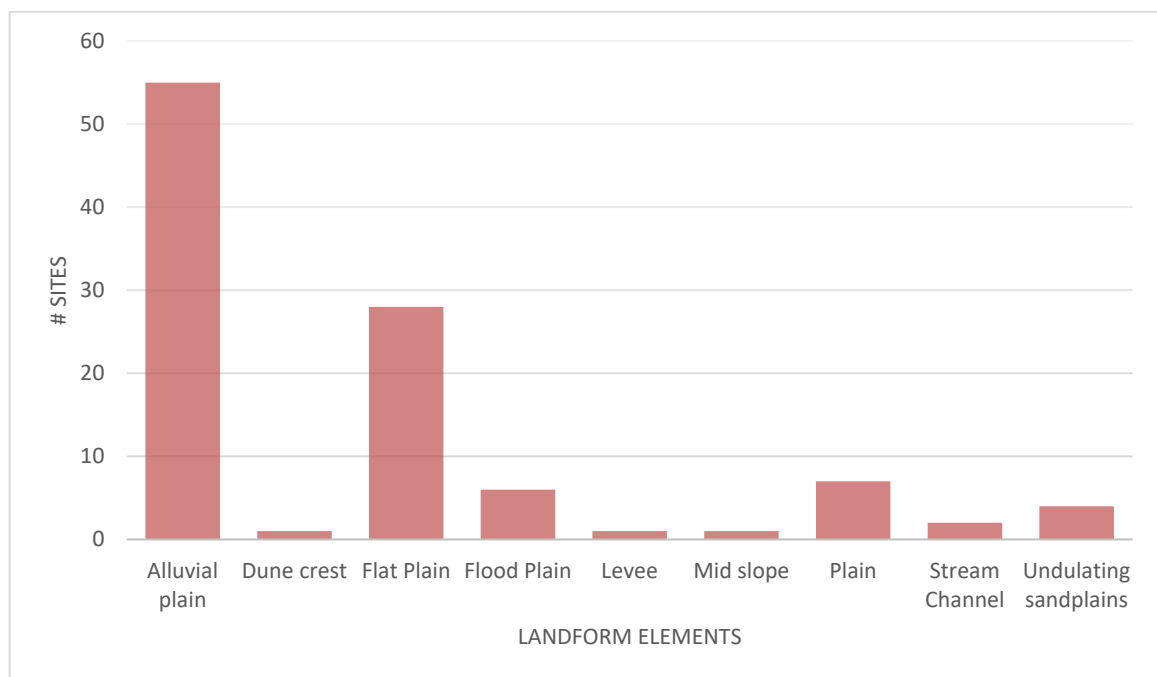


Figure 7.3 Sites within landform elements

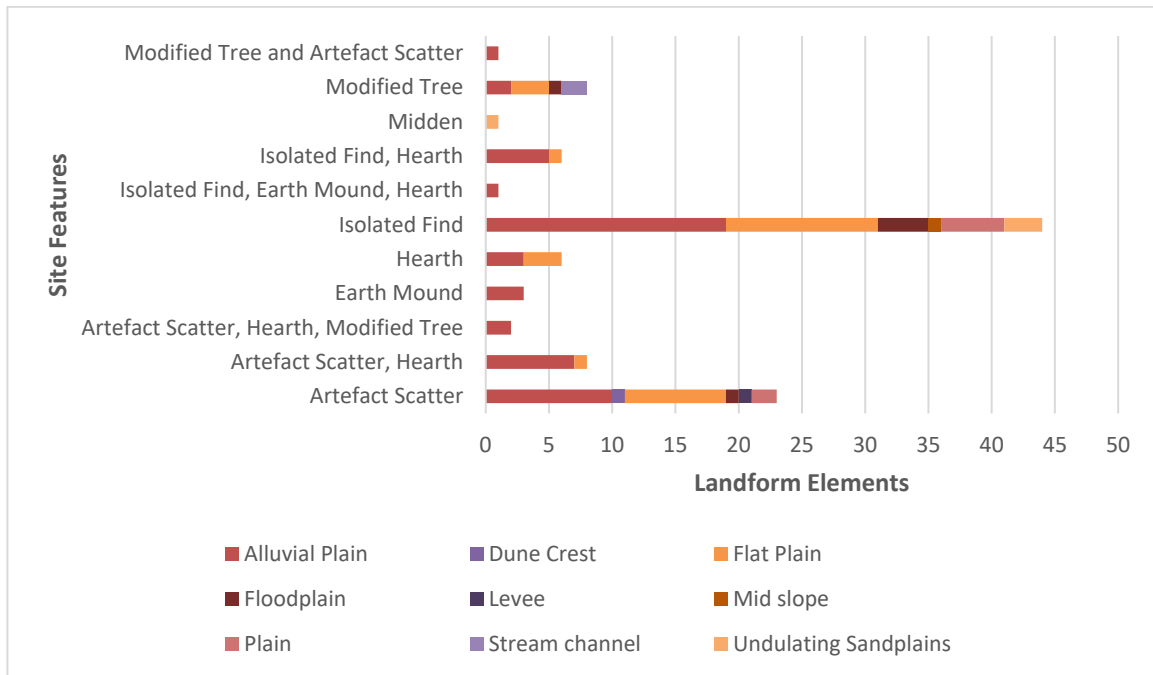


Figure 7.4 Site distribution within landform elements

The proposal study area extends near and across low order non-perennial and high order perennial watercourses, dry lakes and waterbodies. The relation between sites and landforms is intrinsically associated with proximity to water sources as the majority of the sites were identified within landform elements located near water resources. The correlation of sites identified during the field survey to water resources is consistent with the predictive model discussed in Section 6.6.

Clusters of sites were generally identified in areas near and across high order perennial watercourses within the corridor. Within Hay LGA sites were concentrated in relation to Curtains Creek, Nyangay Creek and Eurolie Creek and some low order watercourses linked the major creeks. None of the sites identified within the cluster exceeded a distance of 1.5 kilometres from the nearest watercourse.

Distance to water appears to be a determinant for site density. Clusters of sites were identified in areas located within close proximity and across perennial and non-perennial watercourses and lakes. In areas where the alignment of the proposal study area extended further away from water courses, sites were identified more scattered and in lower numbers. For instance, within Murrumbidgee LGA clusters of sites (PEC-E-44, PEC-E-45, PEC-E-46, PEC-E-47 PEC-E-48 & PEC-E-49) were identified near low order non-perennial watercourses that extended across the corridor and are linked to the Delta Creek approximately 5 kilometres south of the proposal study area. None of the identified sites exceeded a distance of one kilometre from the creeks.

At Lockhart LGA several clusters of sites were identified in proximity to Lake Cullivel, Hallidays Creek, Brookong Creek, as well as low order creek lines linked to Brookong Creek and Bullenbong Creek and a large un-named water body north of Brookong Creek that intersects with the corridor. Sites identified near major water sources were located an average buffer of 500 metres whereas sites identified in relation to low order creek were located to a maximum distance of 1.8 kilometres from these features. Similarly, sites were identified in Federation LGA where Colombo Creek and a low order creek linked to Yanco Creek intersects with the corridor.

Within Balranald LGA a site was identified less than 500 metres from Box Creek while other sites were identified approximately 1.5 to 2 kilometres from low order creeks linked to Arumpo Creek and Lake Benanee. In Edward River LGA sites were identified approximately 3 to 3.5 kilometres from the Forest Creek. Also, at Wagga Wagga sites were also identified less than 500 metres from low order creeks linked to Sandy Creek and Stringybark creek.



While the corridor intersects with Abercrombie Creek, water bodies and low order creeks as well as it extends in proximity to several lakes such as Lintot, Condoloupe and Dusty lake within Murray River LGA, only one site was identified within one kilometre buffer from a dry lake and Lintot Lake. This was likely because of low ground surface visibility by overgrown vegetation associated with the recent rainy season.

As discussed, most of the sites identified within the corridor were located near water sources. Proximity to water would have provided reliable access to fresh water and access to fauna and vegetation suitable for camping. However, sites identified within Wentworth LGA (PEC-E-01 & PEC-E-02) were identified as far as seven kilometres away from any water source. These sites consisted of isolated finds within undulating sandplains landform which suggests that these sites were likely evidence of routes from and to water sources.

The general moderate to high degree of ground surface visibility enabled reliable site identification during the archaeological field survey, it also contributed to reliable identification and definition of potential archaeological deposits (PADs). PADs were defined in areas in close proximity to water likely to contain subsurface archaeological material. Some of these PADs were defined within areas where sites were identified during the archaeological survey and some were defined based on landform and proximity to water following the predictive model.

7.5 Archaeological subsurface test excavation program preliminary results

Archaeological subsurface test excavations have been completed at all of the 26 PADs that were identified as requiring archaeological subsurface test excavations as outlined in Section 3.6. Short memo reports have been prepared outlining the preliminary results for each PAD and are included in Appendix 6.

A summary of the results is included in Table 7.4.



Table 7.4 Summary of test excavation results

PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD01	Eight transmission line towers (numbered tower #529 to #536) are located in this PAD	No lithic items or cultural material were recovered from PEC-E-PAD01 during the test excavation works	Towers #529 to #536 have low to zero potential to contain intact subsurface archaeological deposits. The test excavations indicate that the PAD is not in close proximity to a reliable source of water. Locations that are closer to Lake Waldaira are more likely to have been the focus of past Aboriginal occupation. The test excavations therefore show that this area is not a PAD
PEC-E-PAD02	Nine transmission line towers (numbered tower #514 to #522) are located in this PAD.	No lithic items or cultural material were recovered from PEC-E-PAD02 during the test excavation works	Towers #514 to #522 have low to zero potential to contain intact subsurface archaeological deposits. The area which had been identified as a PAD is an extensive area which commences within a kilometre of the Murrumbidgee River but continues up to 3 kilometres distant from the river which is the only perennial water source. The test excavations confirm that the tower locations are within an area that is confirmed not to have archaeological potential, however observations in the field note that that part of the area identified as a PAD to the northwest of the proposed tower locations remains a PAD as it contains several parallel dunes bordering the river. After consideration of the test excavation results and field observations the southwestern boundary of the PAD has been refined to exclude the tower locations (Figure 7.5)



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD03	Two transmission line towers (numbered tower #492 and #493) are located in this PAD.	<p>No lithic items were recovered from PEC-E-PAD03.</p> <p>A number of heat retainers from a disturbed termite nest hearth were identified at tower #493.</p> <p>One heat retainer was identified at tower #492</p>	<p>The finds (heat retainers) suggests that the area to be impacted by proposed transmission line tower #493 has moderate potential to contain intact subsurface archaeological deposits..</p> <p>Excavation at transmission line tower #492 revealed a single heat retainer from a termite mound hearth in Test Pit 5 at a depth of 0-10cm. Although a heat retainer was recovered, it was within topsoil disturbed from ploughing, and in conjunction with the shallow soils in this tower area this suggests that proposed transmission line tower #492 has low potential to contain intact subsurface archaeological deposits.</p> <p>After consideration of the test excavation results and field observations the boundary of the PAD has been refined to include the previously recorded site and exclude tower #492 (see Figure 7.6).</p>
PEC-E-PAD04	Two transmission line towers (numbered tower #484 and #485) are located in this PAD.	No lithic items or cultural material were recovered from PED-E-PAD04 during the test excavation works	Towers #484 and #485 have low to zero potential to contain intact subsurface archaeological deposits. The test excavations indicate that the PAD is not in close proximity to a reliable source of water and that the location of PEC-E-PAD04 was not a focus of past Aboriginal land use. The test excavations therefore show that the area is not a PAD
PEC-E-PAD05	Seven transmission line towers (numbered tower #461 to #467) are located in this PAD.	No lithic items or cultural material were recovered from PEC-E-PAD05 during the test excavation works	Towers #461 to #467 have low to zero potential to contain intact subsurface archaeological deposits. The test excavations indicate that the PAD is not in close proximity to a reliable source of water and that Condoulpe Creek is not a focus of past Aboriginal land use. The test excavations therefore show that the areas is not a PAD.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD06	Two transmission line tower locations (numbered tower #449 and #450) are located in this PAD	No lithic items or cultural material were recovered from PEC-E-PAD06 during the test excavation works	Soils profiles within towers #449 and #450 were generally shallow (up to a maximum depth of 20cm below surface). The test excavations indicate that the PAD is highly eroded with no archaeological deposit. The test excavations therefore show that this area is not a PAD.
PEC-E-PAD08	Two transmission line towers (tower #439 and #440) are located in this PAD.	One lithic item was recovered from PEC-E-PAD08 during the test excavation works.	The test excavations identified a low density of lithic material and indicate that proposed transmission line towers #439 and #440 have low potential to contain substantial archaeological deposits.
PEC-E-PAD09	Three transmission line towers (numbered tower #418, #419, and #420) are located in this PAD.	A total of one lithic item was recovered from PEC-E-PAD09. No other cultural features were encountered	Proposed transmission line towers #419 and #420 have low potential to contain intact subsurface archaeological deposits. Proposed tower location #418 was not excavated and it straddles the nominal boundary for the area that had been identified as a PAD and which the test excavations have demonstrated has low potential for archaeological deposits and is therefore no longer considered a PAD. The test excavations indicate that the PAD is not in close proximity to a reliable source of water and that the location of PEC-E-PAD09 was not a focus of past Aboriginal land use. The test excavations therefore show that the area is not a PAD.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD17	One transmission line tower (numbered tower #223) is located in this PAD.	No lithic items or cultural material were recovered from PEC-E-PAD17 during the test excavation works. Two artefacts (one chert and one silcrete flake) and a disturbed, dispersed hearth have previously been recorded within the tower area	The results of the excavations suggest that soils within the tower #223 area are generally shallow, and consist of firm brown silty clay loam to a depth of between 12-20cm (A2-horizon) overlying strong brown to reddish brown clay (B-horizon). Proposed transmission line tower #223 is considered to have low potential to contain intact subsurface archaeological deposits due to the shallow nature of the soils, and relative distance from permanent sources of fresh water suggesting this area is unlikely to have been a focus of past Aboriginal occupation. The test excavations therefore show that this area is not a PAD..
PEC-E-PAD18	One transmission line tower (numbered tower #211) is located in this PAD.	One lithic item and evidence of hearths were recovered from PEC-E-PAD18 during the test excavation works	The excavations confirm the results of the field survey in that there is a low-density scatter of artefacts and hearths in this location. Proposed transmission line tower #211 has a moderate potential to contain intact subsurface archaeological deposits. Upon further surface inspection following recent rains the PAD has been modified to eliminate the area of Curtains Creek (Figure 7.7)



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD19	Two transmission line towers (towers #195 and #196) are located in this PAD	No lithic items or other cultural material were recovered from the test excavations at PEC-E-PAD19	<p>No Aboriginal objects were identified during the test excavations for proposed transmission line towers #195 and #196 within PEC-E-PAD19. Tower area #195 encompasses part of one previously recorded Aboriginal site, PEC-E-31, of which one artefact (a silcrete core) and four hearths are located within the tower area. The ground surface at the nearest test pits to the recorded features (test pits 7 and 9) is approximately 91.8 metres Above Sea Level. The elevation of these features suggests that additional material may be present within the sand dune. Therefore the area to be impacted by proposed transmission line tower #195 in the vicinity of Test Pit 1 is assessed as having moderate potential to contain intact subsurface archaeological deposits.</p> <p>Proposed transmission line tower #195 is considered to have low-moderate potential to contain intact subsurface archaeological deposits due to the shallow nature of the dune and the nearby occurrence of surface artefacts.</p> <p>Proposed transmission line tower #196 is considered to have low potential to contain intact subsurface archaeological deposits due to the shallow nature of the soils, and impacts from erosion.</p>
PEC-E-PAD20	One transmission line tower (tower #194) are located in this PAD	A total of three lithic items (stone artefacts) were recovered from PEC-E-PAD-20. No other cultural features were identified.	Excavation at PEC-E-PAD20 revealed a very sparse artefact scatter of three clustered silcrete artefacts. No other <i>in situ</i> cultural features were identified within the five test pits. The recovered artefacts are indicative of a sparse background scatter or reflect a one-off campsite.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD21	Two transmission line towers (numbered towers #193 and #192) are located in this PAD	One lithic item was recovered from the test excavations at PEC-E-PAD21.	One previously recorded site PEC-E-34 (an isolated find and hearth) is located at PEC-E-PAD21. Excavation revealed one lithic item within the tested areas of PEC-E-PAD21 at a depth of 90 centimeters. This result is consistent with a background scatter of artefacts that one may expect to find across the inter-riverine plains landscape. There is low potential for there to be intact subsurface archaeological deposits within proposed transmission line tower locations #193 and #192 and these deposits are likely to be deep, well below any impacts from track construction or works areas.
PEC-E-PAD22	Four transmission line towers (numbered towers #177, #178, #179, and #180) are located in this PAD	Four lithic items were recovered from PEC-E-PAD22. Hearths and clay heat retainers were encountered on the surface and sub-surface at PEC-E-PAD22	The finds suggests that the area to be impacted by proposed transmission line towers #177, #178 and #179 has moderate potential to contain intact subsurface archaeological deposits. No lithic items or cultural materials were found at tower #180 and therefore has low potential to contain intact subsurface archaeological deposits.
PEC-E-PAD23	Two transmission line towers (numbered towers #173 and #174) are located in this PAD	No lithic items or other cultural material were recovered from the test excavations at PEC-E-PAD23.	There is low potential for there to be intact subsurface archaeological deposits within transmission line towers #173 and #174.
PEC-E-PAD24	One transmission line towers (numbered tower #143) are located in in this PAD	One lithic item was recovered from proposed tower #143 in PEC-E-PAD24.	In general, the area displays low levels of deep underground disturbance. Ground disturbance is mostly associated to high levels of soil erosion and bioturbation of the area as well as trampling, water and vehicle movement.. Therefore, there is low potential for there to be intact subsurface archaeological deposits within transmission line tower #143.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD25	Two transmission line tower (tower #135 and #136) are located in this PAD	Four lithic items (stone artefacts) were recovered from within PEC-E-PAD25	PEC-E-PAD25 displays evidence of continuous ground disturbance. While two artefacts were recovered from proposed transmission line towers #135 and #136, the general stratigraphic profile and ground disturbance within the area suggests that the artefacts identified are unlikely to be in situ and there is low potential for undisturbed subsurface archaeological material to be present within the location of proposed transmission line towers #135 and #136 within PEC-E-PAD25.
PEC-E-PAD26	Three transmission line towers (numbered tower #92 to #94) are located in in this PAD	Two surface finds were recorded at PEC-E-PAD26, one just outside the area of tower #94 and one within #92. No lithic items were recovered from the test excavations at PEC-E-PAD26.	This result is consistent with a background scatter of artefacts that one may expect to find across the inter-riverine plains landscape. There is low potential for there to be intact subsurface archaeological deposits. The PAD area has been modified to remove the disturbed areas of the formed vehicle tracks (Figure 7.8).
PEC-E-PAD27	Five transmission line tower locations (numbered tower #18 to #22) are located in this PAD	Two surface artefacts were recorded at PEC-E-PAD27 within the area of tower #21. One lithic item was recovered from the test excavations at PEC-E-PAD27 within the proposed tower #19, pit 7	This result is consistent with a background scatter of artefacts that one may expect to find across the inter-riverine plains landscape. There is low potential for there to be intact subsurface archaeological deposits proposed transmission line tower locations #18 to #22. The boundary of the PAD was reassessed and redrawn following the results of the test excavation (Figure 7.9).
PEC-E-PAD28	A new access track is proposed at this location.	No lithic items or cultural material were recovered from PEC-E-PAD28	There is low potential for there to be intact subsurface archaeological deposits. The test excavations indicate that the PAD is not a focus of past Aboriginal occupation. The test excavations therefore show that this area is not a PAD.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD29	One transmission line tower (numbered tower #292) is located in this PAD.	No artefacts or features were identified during the test excavations undertaken within this area.	There is very low potential for subsurface archaeological material to be present within the area of tower #292. The boundary of the PAD was reassessed and redrawn and tower #292 is no longer in the area of PAD (Figure 7.10).
PEC-E-PAD32	One transmission line tower #263a is located in this PAD.	A total of six lithic items were recovered from PEC-E-PAD32. No other cultural features were encountered	A low-density artefact scatter (PEC-E-60), consisting of silcrete and quartzite artefacts, was identified in association with the PEC-E-PAD32 during the survey. Given the sites proximity to a water course, and presence of surface and subsurface artefacts, it is likely that further artefacts would be identified in undisturbed deposits across the impact area, however there is a likely to be a low density of artefacts.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD35	<p>Three transmission line towers (numbered tower #180 to #182) are located in this PAD.</p> <p>Following the completion of the subsurface test excavation program, the proposed construction impact area boundary through PEC-E-PAD35 was modified. An inspection was undertaken of the modified tower location for proposed tower #179. On inspection of proposed tower #179 by NOHC archaeologists with Wagga Wagga LALC RAPs, it was decided that the shape and size of the PEC-E-PAD35 was adjusted, and no longer extends into the area of tower #179</p>	A total of 11 lithic items were recovered from PEC-E-PAD35	Following field inspection the boundary of PEC-E-PAD35 has been modified to reflect areas only on or within 200m of the lake on the southern and eastern margins but maintained the boundary to the north and northwest. No transmission line towers are now within the area of PEC-E-PAD35 (Figure 7.11).
PEC-E-PAD38/39	Two transmission line tower locations (tower #145 and #146) are located in this PAD. A vehicle access track that utilizes the pre-existing farm tracks and creek crossing was also proposed.	A total of three lithic items were recovered from PEC-E-PAD38/39. No other cultural features were encountered.	Towers #145 and #146 and the access track have low potential to contain intact subsurface archaeological deposits. The test excavations indicate that a low density of Aboriginal artefacts are likely present across the PAD in shallow deposits. Surface artefacts are evident in eroded areas in proximity to the creek lines where visibility is good.



PAD	Proposed impact type from the proposal	Results	Preliminary interpretation
PEC-E-PAD40	Seven transmission line towers (numbered tower #98, #99, #100, #101, #102, #103, #104) are located in in this PAD	A total of 25 lithic items were recovered from PEC-E-PAD40. No other cultural features were encountered.	These results mirror those of the survey that identified a large artefact scatter on the surface (including PEC-E-80 and PEC-E-83). Although these artefacts were identified in cropped fields, they were identified throughout the soil profile, from surface to 30 cm below the surface. Although it is likely that much of this material has been disturbed by farming practices, lower deposits may remain intact. No hearth material was excavated during the test program and therefore the extent of past human activity is unknown. Despite this, the number of artefacts identified, and the sites proximity to Kengal Aboriginal Place and the creek, suggests that this deposit does not reflect a random artefact scatter and instead a large event/s. There is moderate potential for PEC-E-PAD40 to contain intact subsurface archaeological deposits.
PEC-E-PAD41	A new access track is proposed at this location.	No artefacts or features were identified during the test excavations undertaken within this area.	The test excavations indicate that the PAD is not in close proximity to a reliable source of water and that the location of PEC-E-PAD41 was not a focus of past Aboriginal land use. The test excavations therefore show that the area is not a PAD.

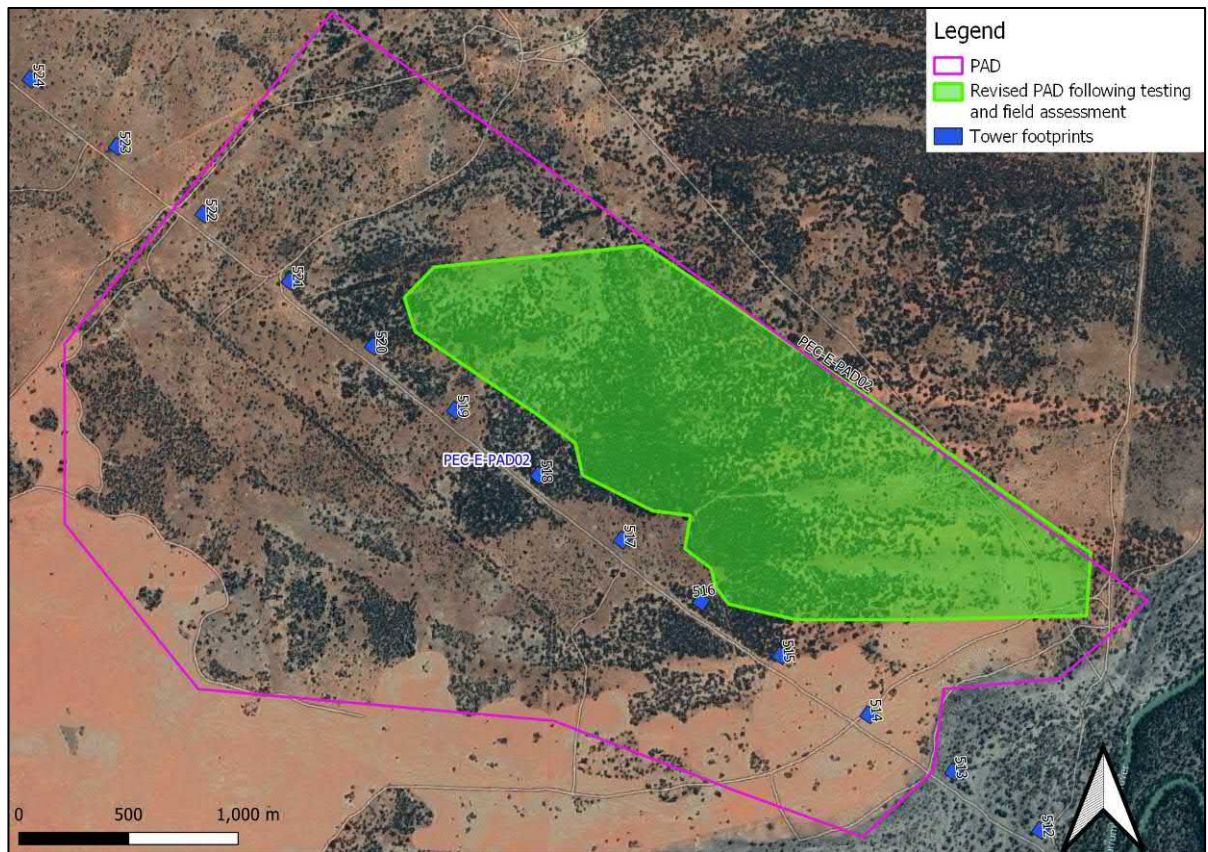


Figure 7.5 Revised PEC-E-PAD02 area

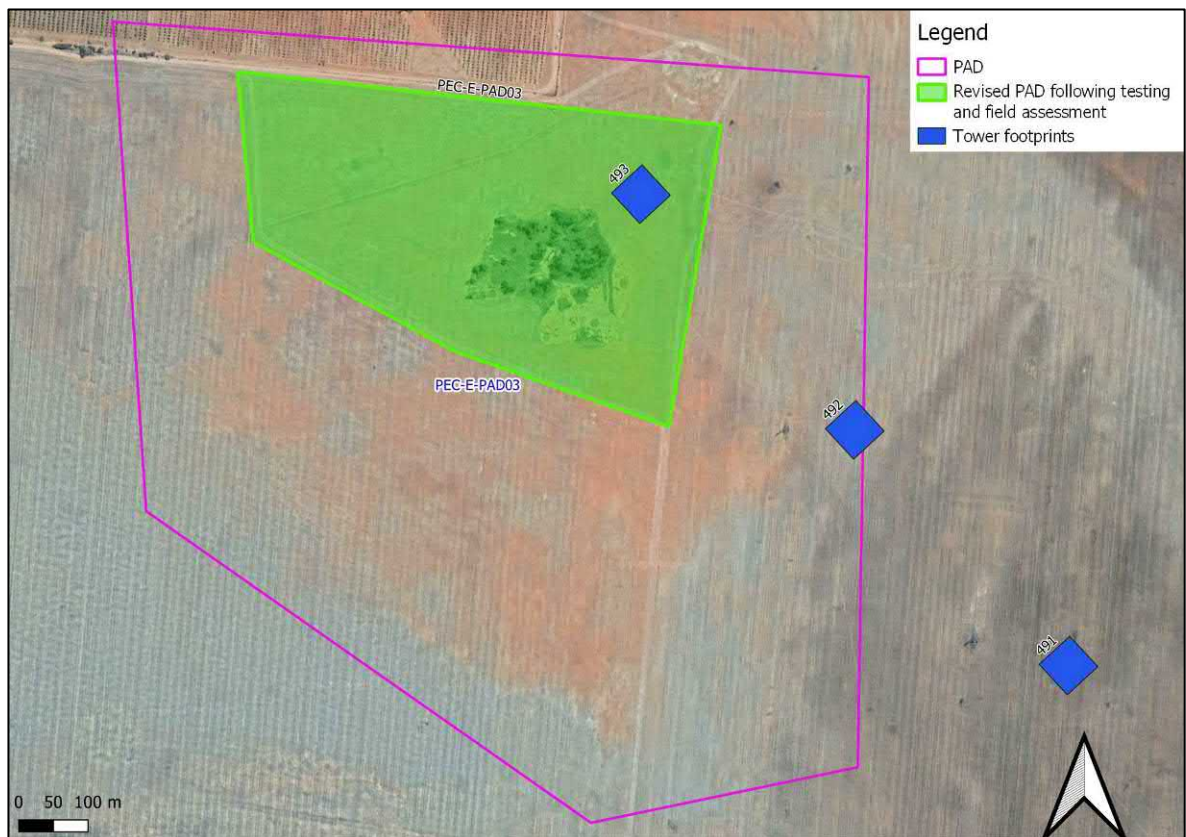


Figure 7.6 Revised PEC-E-PAD03 area

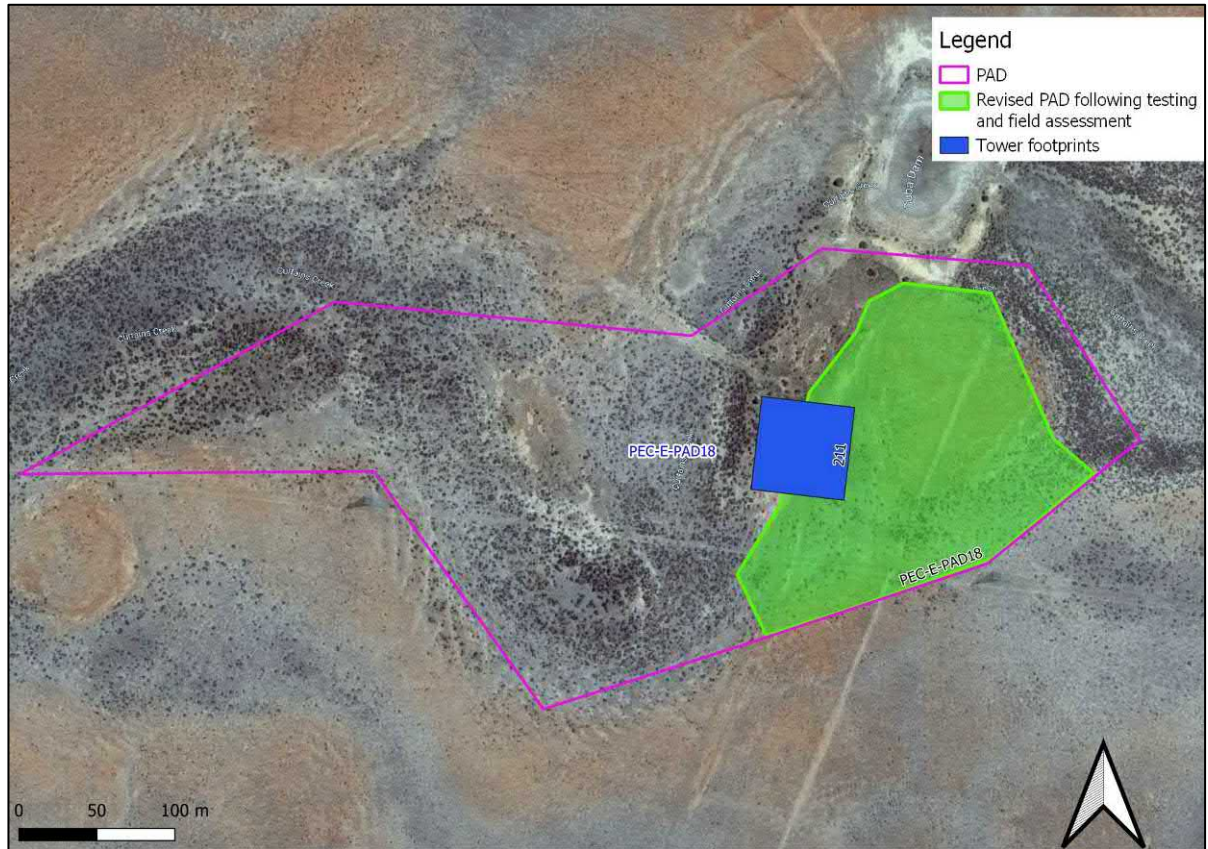


Figure 7.7 Revised PEC-E-PAD18 area



Figure 7.8 Revised PEC-E-PAD26 area

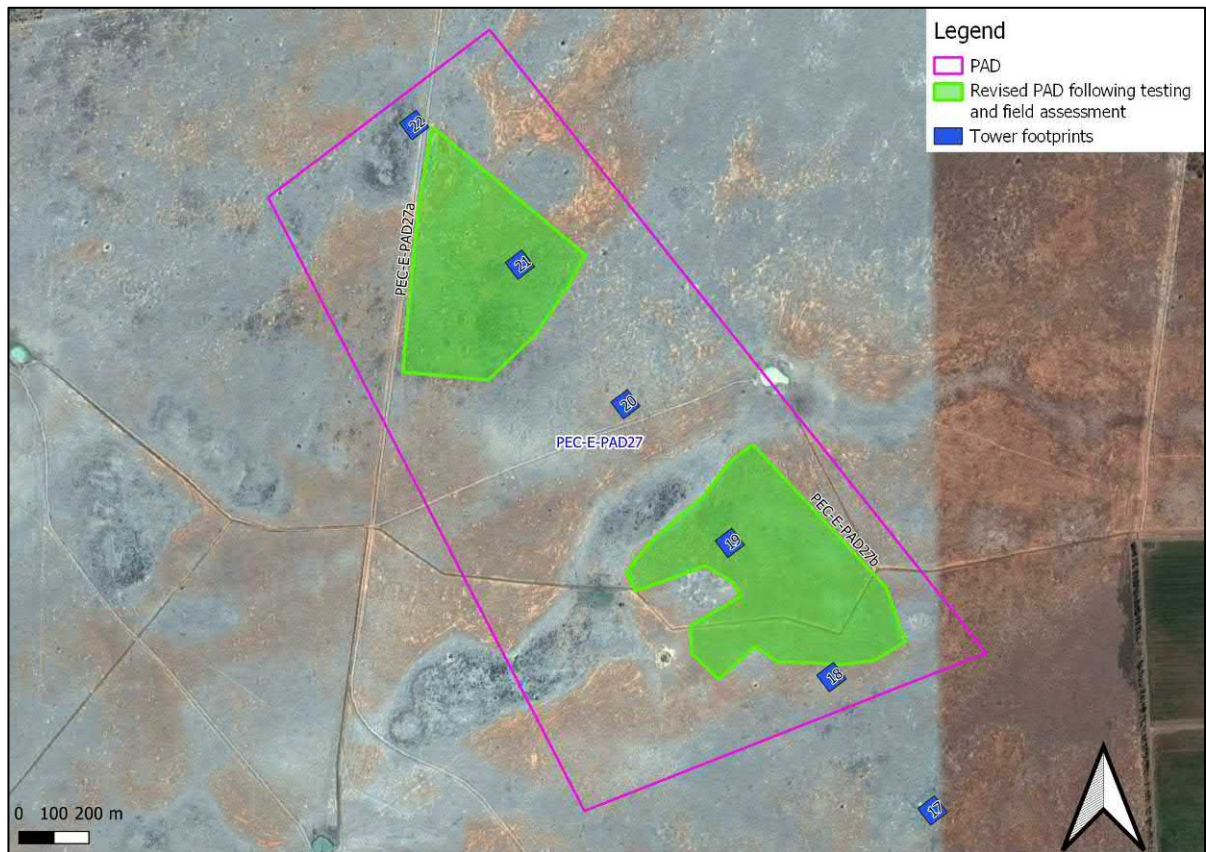


Figure 7.9 Revised PEC-E-PAD27 area

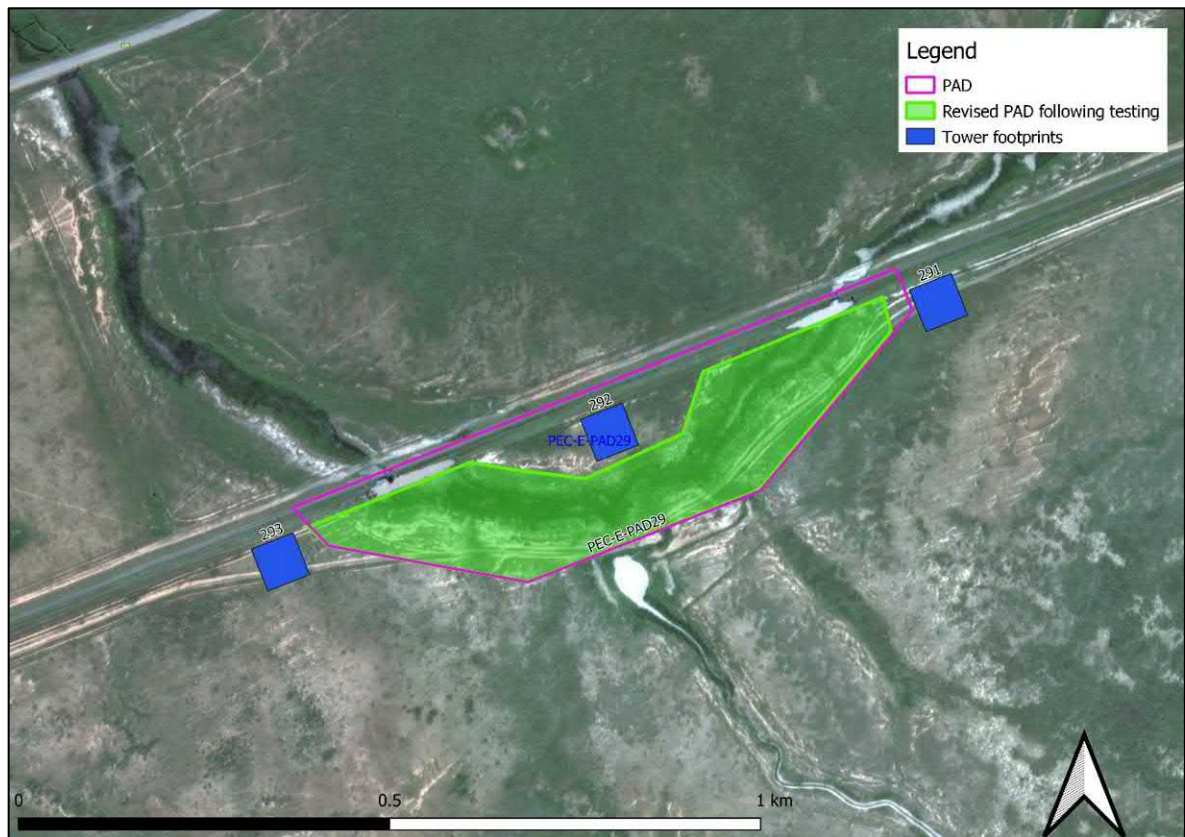


Figure 7.10 Revised PEC-E-PAD29 area



Figure 7.11 Revised PEC-E-PAD35 area

7.5.1 PADs following the results of the subsurface test excavations

As outlined above following the subsurface test excavations eight PADs were found to not have subsurface archaeological potential, they are PEC-E-PAD01, 04, 05, 06, 09, 17, 28 and 41, these areas are no longer considered to be PADs. There are therefore 37 areas of PAD remaining in the proposal area.



8. Cultural heritage values and statement of significance

8.1 Assessment criteria

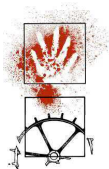
The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance defines cultural significance as 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' (Australia ICOMOS Burra Charter, 2013a). Assessing the Aboriginal cultural significance of a place involves identifying the range of values that are present and assessing them against relevant criteria, in order to define why a place is important and inform future planning and management. Table 8.1 provides definitions of these values and outlines the criteria for assessment.

The *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* identify that 'Aboriginal people are the primary determinants of the cultural significance of their heritage' (DECCW, 2010: iii). The significance of a place can be the result of several factors including continuity of tradition, occupation or action; historical association; custodianship or concern for the protection and maintenance of places; and the value of sites as tangible and meaningful links with the lifestyle and values of ancestors. Aboriginal cultural significance may or may not parallel the archaeological significance of a site.

The following sections provide an assessment of significance with reference to the criteria outlined in Table 8.1.

Table 8.1 Criteria used to assess the cultural significance of a place

Definition of value	Assessment criteria (after OEH 2011:10)
Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community (OEH, 2011:9).	Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
Scientific (or archaeological) value refers 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 (Australia ICOMOS, 2013b). Sites may meet this criterion because they: contain intact archaeological deposits, have potential to answer research questions on past human behaviour, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, are well preserved, or form part of a larger site complex or cultural landscape.	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?



Definition of value	Assessment criteria (after OEH 2011:10)
<p>Aesthetic value refers to the sensory and perceptual experience of a place—that is, how we respond to visual and non-visual aspects such as sounds, smells and other factors having a strong impact on human thoughts, feelings and attitudes. Aesthetic qualities may include the concept of beauty and formal aesthetic ideals (Australia ICOMOS, 2013b:3).</p>	<p>Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?</p>
<p>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 value is how people express their connection with a place and the meaning that place has for them (OEH, 2011:8).</p>	<p>Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?</p>
<p>Spiritual value is included in the definition of social value and refers to the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of Aboriginal people (Australia ICOMOS, 2013b:4).</p>	

8.2 Historic value

No information has been provided by Aboriginal stakeholders to suggest the proposal study area is historically important in terms of persons, events, phases or activities in the Aboriginal community. This is not to say that they do not have such significance, simply that no evidence has been forthcoming. If evidence of historically significant information relevant to the proposal study area becomes available, it would be discussed with relevant Aboriginal stakeholders.

8.3 Scientific (archaeological) value

Archaeological sites recorded during the archaeological survey (and earlier geotechnical clearance) and previously recorded sites that were able to be re-found have been placed into the following assessment categories:

- previously recorded sites not accessed so not able to be confirmed
- cannot assess the scientific significance prior to excavation
- low scientific significance
- moderate (local) scientific significance
- moderate to high (local) scientific significance.

No sites have been assessed to have national or scientific significance.

A total of 45 PADs have been identified across the proposal alignment. Areas of PAD that are not associated with surface artefacts can only be assessed for archaeological significance through subsurface archaeological testing.



Archaeological subsurface test excavation has been undertaken at the 26 PAD sites potentially impacted by construction. The remaining PADs have not been assessed at this point as a subsurface impact to them from the proposal is not expected. All of these remaining PADs have been identified as having moderate to high archaeological potential (Table 8.2).

Following the results of the archaeological test excavation program any portions of the PADs that yield artefacts or cultural material have been able to be assessed from a scientific perspective. The areas of PADs which have not been tested or PADs not subject to archaeological test excavations at all are still considered a PAD. Areas that are not found to yield artefacts or cultural material during the archaeological test excavations have been re-assessed and some have been deemed to be 'not a PAD'.

Appendix 6 includes the archaeological subsurface test excavation memorandums for each of the PADs tested and provides figures which outline the areas which have been tested in the program of works.



Table 8.2 PAD site status

Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
PEC-E-PAD01	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD02	PAD	Potential for subsurface archaeological deposits.	<p>Towers #514 to #522 have low to zero potential to contain intact subsurface archaeological deposits. After consideration of the test excavation results and field observations the southwestern boundary of the PAD has been refined to exclude the tower locations.</p> <p>Construction is considered suitable for tower locations #514 to #522 in the locations that have been tested. If towers were locations are required to be shifted as part of the design refinement process, the results of the excavation indicate that the area is not a PAD there is therefore there is no impediment to them shifting to the south-west and along the current alignment. An Aboriginal heritage unexpected find protocol would still apply in this circumstance. However, should tower locations be shifted into the redefined PAD then further testing would be required</p>
PEC-E-PAD03	PAD	Potential for subsurface archaeological deposits.	<p>There is moderate potential to contain intact subsurface archaeological deposits at tower #493 Given the variable pre-existing land use disturbance in the vicinity of proposed tower #493 construction is likely to be suitable in this area. However, given that it is within a registered site and Test Pit 1 revealed evidence of insitu cultural material further investigation should be undertaken prior to any additional impacts at proposed transmission line tower #493 and the track through the revised PAD as per as per Appendix 6 and mitigation measure AH6.</p>



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			<p>Given the low density and disturbed nature of the material recovered, and shallow soils, the potential for substantial and intact material at the location of proposed transmission line tower #492 is considered low. Construction is considered suitable for tower location #492 in the locations that have been tested as well as for the impacts proposed as per Appendix 6</p> <p>The remaining area of PEC-E-PAD03 must still be regarded as having potential to contain Aboriginal cultural objects/deposits, therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD03 would require further archaeological test excavation AH6.</p>
PEC-E-PAD04	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD05	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD06	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD07	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
PEC-E-PAD08	PAD	Potential for subsurface archaeological deposits.	<p>The test excavations identified a low density of lithic material and indicate that proposed transmission line tower locations #439 and #440 have low potential to contain substantial subsurface archaeological deposits. Construction is considered suitable for tower locations towers #439 and #440 in the locations that have been tested as well as for the impacts proposed as per the construction impact footprint.</p> <p>The depths of soils and areas affected by erosion within the remaining area of PEC-E-PAD08 are variable, and parts must still be regarded as having potential to contain Aboriginal objects. Therefore, any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining area of PEC-E-PAD08 requires further testing.</p>
PEC-E-PAD09	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD10	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD11	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD12	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal impact expected. Site remains a PAD.
PEC-E-PAD13	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
PEC-E-PAD14	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD15	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD16	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD17	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD18	PAD	Potential for subsurface archaeological deposits.	<p>Proposed transmission line tower location #211 has a moderate potential to contain intact subsurface archaeological deposits. Further investigation and salvage excavations as per mitigation measure AH6 should be undertaken in the areas identified in Appendix 6 as not cleared prior to any impacts in proposed transmission line tower #211.</p> <p>The remaining area of PEC-E-PAD18 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD18 would require further archaeological test excavation.</p>
PEC-E-PAD19	PAD	Potential for subsurface archaeological deposits.	No Aboriginal objects were identified during the test excavations for proposed transmission line towers #195 and #196 within PEC-E-PAD19. The findings indicate a low-moderate potential for subsurface archaeological deposits within PEC-E-PAD19. Construction is considered suitable for towers #195 and #196 in the location that has been tested as well as for the impacts proposed as per Appendix 6



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			<p>The depths of soils and areas affected by erosion within the remaining area of PEC-E-PAD19 are variable. Those parts associated with dune formations must still be regarded as having potential to contain Aboriginal objects; therefore, any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining area of PEC-E-PAD19 requires further testing.</p> <p>As proposed transmission line tower #195 has the potential to impact the artefact and hearths identified in the tower area, mitigation measures may be required prior to construction. Appropriate management actions, which may include salvage excavation, artefact movement or collection.</p>
PEC-E-PAD20	PAD	Potential for subsurface archaeological deposits.	<p>Construction is considered suitable for proposed transmission line towers #194 and for the impacts as indicated in Appendix 6.</p> <p>If tower locations are shifted elsewhere within the PAD as part of the design refinement process, then test excavation of the new location would be required.</p>
PEC-E-PAD21	PAD	Potential for subsurface archaeological deposits.	<p>There is low potential for there to be intact subsurface archaeological deposits within proposed transmission line tower locations #193 and #192 and these deposits are likely to be deep, well below any impacts from track construction or works areas. Construction is considered suitable for proposed transmission line tower locations #193 and #192 in the locations that have been tested as well as for the impacts proposed as per Appendix 6.</p>



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			The remaining area of PEC-E-PAD21 must still be regarded as having potential to contain Aboriginal cultural objects/deposits, therefore any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining area of PEC-E-PAD21 requires further testing.
PEC-E-PAD22	PAD	Potential for subsurface archaeological deposits.	<p>There is moderate potential to contain intact subsurface archaeological deposits in transmission line tower locations #177, #178 and #179. Further investigation should be undertaken prior to any additional impacts in proposed transmission line towers #177, #178 and #179 and access tracks as indicated in Appendix 6. This investigation may indicate the need for further salvage actions such as wider area subsurface excavations, as per mitigation measure AH6.</p> <p>No archaeological features were identified in the area to be impacted by proposed transmission line tower #180. Construction is considered suitable in this area as indicated in Appendix 6.</p> <p>The remaining area of PEC-E-PAD22 must still be regarded as having potential to contain Aboriginal cultural objects/deposits, Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD22 would require further archaeological test excavation.</p>
PEC-E-PAD23	PAD	Potential for subsurface archaeological deposits.	There is low potential for there to be intact subsurface archaeological deposits within transmission line towers #173 and #174. Construction is considered suitable for proposed transmission line tower locations #173 and #174 in the locations that have been tested as well as for the impacts proposed as per Appendix 6.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			The remaining area of PEC-E-PAD23 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD23 requires further testing.
PEC-E-PAD24	PAD	Potential for subsurface archaeological deposits.	<p>There is low potential for there to be intact subsurface archaeological deposits within tower #143. Construction is considered suitable for tower locations #143 as well as for the impacts proposed as per Appendix 6.</p> <p>The remaining area of PEC-E-PAD24 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD24 requires further testing.</p>
PEC-E-PAD25	PAD	Potential for subsurface archaeological deposits.	<p>Construction is considered suitable for towers #135 and #136 in the locations that have been tested as per Appendix 6.</p> <p>The remaining area of PEC-E-PAD25 must still be regarded as having potential to contain Aboriginal cultural objects/deposits, therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD25 would require further archaeological test excavation.</p>
PEC-E-PAD26	PAD	Potential for subsurface archaeological deposits.	There is low potential for there to be intact subsurface archaeological deposits within tower locations #92 to #94. The PAD area has been modified to remove the disturbed areas of the formed vehicle tracks. Construction is considered suitable for proposed transmission line towers #92 to #94 in the locations that have been tested and as per Appendix 6.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			The remaining area of PEC-E-PAD26 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining area of PEC-E-PAD26 requires further testing.
PEC-E-PAD27	PAD	Potential for subsurface archaeological deposits.	<p>The findings indicate a low density scatter and a low potential for intact subsurface archaeological deposits within PEC-E-PAD27. Construction is considered suitable for tower line locations #18 to #22 in the areas that have been tested as well as for the impacts proposed as per Appendix 6.</p> <p>The remaining area of PEC-E-PAD27 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD27 would require further archaeological test excavation.</p>
PEC-E-PAD28	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD29	PAD	Potential for subsurface archaeological deposits.	There is very low potential for subsurface archaeological material to be present within the area of tower #292. The boundary of the PAD was reassessed and redrawn. Construction is considered suitable for proposed transmission line tower location #292 in the locations that have been tested as well as for the impacts proposed as per Appendix 6.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			The remaining area of PEC-E-PAD29 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining area of PEC-E-PAD29 requires further testing.
PEC-E-PAD30	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD31	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD32	PAD	Potential for subsurface archaeological deposits.	<p>There is moderate potential to contain intact subsurface archaeological deposits in PEC-E-PAD32. Construction is considered suitable for proposed transmission line tower location #263a in the locations that have been tested as well as for the impacts proposed as per Appendix 6.</p> <p>The remaining area of PEC-E-PAD32 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD32 requires further testing.</p>
PEC-E-PAD33	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD34	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
PEC-E-PAD35	PAD	Potential for subsurface archaeological deposits.	<p>Following field inspection the boundary of PEC-E-PAD35 has been modified to reflect areas only on or within 200m of the lake on the southern and eastern margins but maintained the boundary to the north and northwest. No towers are proposed in the reassessed PAD boundary area. Construction is considered suitable for proposed transmission line tower locations #179 to 182 as well as for the impacts proposed as per Appendix 6.</p> <p>The remaining area of PEC-E-PAD35 must still be regarded as having potential to contain Aboriginal cultural objects/deposits. Therefore any adjustment to the proposed transmission line tower locations outside of the tested area, and within the remaining PAD would require further testing.</p>
PEC-E-PAD36	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD37	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD38/39	PAD	Potential for subsurface archaeological deposits.	<p>Towers #145 and #146 and the access track have low potential to contain intact subsurface archaeological deposits. The test excavations indicate that a low density of Aboriginal artefacts are likely present across the PAD in shallow deposits.</p> <p>Construction is considered suitable for tower locations #145 and #146 in the locations that have been tested as well as for the impacts proposed as per Appendix 6.</p>



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
			<p>If towers were required to be shifted as part of the design refinement process, the results of the excavation indicate that it is likely a low-density scatter is present across the area identified as PAD. An Aboriginal heritage unexpected find protocol would still apply in this circumstance.</p>
PEC-E-PAD40	PAD	Potential for subsurface archaeological deposits.	<p>There is moderate potential for tower locations #98, #99, #100, #101, #102, #103, #104 to contain intact subsurface archaeological deposits. Further investigation should be undertaken prior to any additional impacts within PEC-E-PAD40 at all direct impact areas as per Appendix 6. This investigation may indicate the need for further salvage actions such as wider area subsurface excavations, as per mitigation measure AH6</p> <p>The remaining area of PEC-E-PAD40 must still be regarded as having potential to contain Aboriginal cultural objects/deposits, therefore any adjustment to the tower location outside of the tested area, and within the remaining PEC-E-PAD40 would require further archaeological test excavation.</p>
PEC-E-PAD41	PAD	Potential for subsurface archaeological deposits.	Assessed as not a PAD
PEC-E-PAD42	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD43	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.



Site number	Preliminary site description	Characteristics relevant to significance assessment	Assessment following archaeological subsurface testing
PEC-E-PAD44	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD45	PAD	Potential for subsurface archaeological deposits.	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.
PEC-E-PAD46	PAD	Potential for subsurface archaeological deposits	Not subject to archaeological subsurface testing as no proposal subsurface impact expected. Site remains a PAD.



Low scientific significance has been attributed to all surface sites that have been identified as either highly disturbed (relative to the surrounding landscape) or, have been assessed as having low or low to moderate subsurface archaeological potential (Table 8.3). These sites have low numbers of artefacts and little potential to provide data that would substantially add to our understanding of Aboriginal occupation and land-use in the local area, beyond the information they have already provided through being discovered and recorded during this study.

Table 8.3 Sites of low scientific significance

Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-01	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-02	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-04	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-05	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-07	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-08	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-09	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-11	Artefact Scatter (2)	Low artefact numbers and no assessed archaeological potential
PEC-E-12	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-15	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-21	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-23	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-35	Artefact Scatter (3)	Low artefact numbers and no assessed archaeological potential
PEC-E-38	Artefact Scatter (7)	Low artefact numbers and no assessed archaeological potential
PEC-E-40	Isolated Find	Low artefact numbers and no assessed archaeological potential



Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-41	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-43	Artefact Scatter (4)	Low artefact numbers and no assessed archaeological potential
PEC-E-46	Artefact Scatter (3)	Low artefact numbers and no assessed archaeological potential
PEC-E-51	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-53	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-55	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-61	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-67	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-68	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-69	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-71	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-72	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-73	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-75	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-79	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-88	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-90	Artefact Scatter	Low artefact numbers and no assessed archaeological potential
PEC-E-91	Isolated Find	Low artefact numbers and no assessed archaeological potential
PEC-E-92	Isolated Find	Low artefact numbers and no assessed archaeological potential



Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-93	Isolated Find	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-94	Isolated Find	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-95	Artefact Scatter	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-97	Isolated Find	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-99	Artefact Scatter	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-101	Isolated Find	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-102	Artefact scatter	Low artefact numbers and test excavations found no subsurface artefacts
PEC-E-104	Isolated find	Low artefact numbers and test excavations found no subsurface artefacts
BU-IF-001 (AHIMS #47-4-0331)	Isolated Find	Low artefact numbers and no assessed archaeological potential
BU-IF-002 (AHIMS #47-5-0047)	Isolated Find	Low artefact numbers and no assessed archaeological potential
BU-IF-003 (AHIMS #47-5-0048)	Isolated Find	Low artefact numbers and no assessed archaeological potential

Moderate (local) scientific significance has been attributed to all surface sites that are associated with areas of moderate to high or high potential for subsurface archaeological deposits (Table 8.4) and rarer site types such as modified trees and middens. Any subsurface deposits at these sites are predicted to contain a higher number of artefacts compared to the other sites in the survey area and, therefore, have potential to provide a large enough sample to enable analyses of assemblage compositions that could be used to derive statements on the technological systems being employed by Aboriginal groups living in this region.

Table 8.4 Sites of moderate (local) scientific significance

Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-03	Midden	Midden site
PEC-E-06	Hearth (2)	Hearth and associated PAD



Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-10	Isolated Find, Hearth (2)	Artefact, hearth and associated PAD
PEC-E-13	Isolated Find, Hearth (2)	Artefact, Hearth and associated PAD
PEC-E-14	Artefact Scatter (2), Hearth	Artefact, Hearth and associated PAD
PEC-E-16	Modified Tree Isolated Find	Modified tree, rarer site type
PEC-E-17	Modified Tree	Modified tree, rarer site type
PEC-E-18	Artefact Scatter (2)	Moderately high artefact numbers and associated PAD
PEC-E-19	Hearth (2)	Hearth and associated PAD
PEC-E-20	Artefact Scatter (2), Hearth	Moderately high artefact numbers and associated PAD
PEC-E-22	Artefact Scatter (25), Hearth	Moderately high artefact numbers and associated PAD
PEC-E-24	Isolated Find, Hearth	Artefact, hearth and associated PAD
PEC-E-27	Artefact Scatter (2), Hearth (2)	Moderately high artefact numbers and associated PAD
PEC-E-28	Artefact Scatter (40+), Hearth (5+)	Moderately high artefact numbers and associated PAD
PEC-E-29	Artefact Scatter (2)	Moderately high artefact numbers and associated PAD
PEC-E-30	Isolated Find, Hearth (2)	Artefact, hearth and associated PAD
PEC-E-31	Isolated Find, Hearth (5)	Artefact, hearth and associated PAD
PEC-E-32	Hearth (2)	Hearth and associated PAD
PEC-E-33	Isolated Find	Associated with a PAD
PEC-E-34	Isolated find, Hearth	Artefact, hearth and associated PAD
PEC-E-37	Artefact Scatter (12), Hearth (10+)	Moderately high artefact numbers and associated PAD
PEC-E-39	Artefact Scatter (30+)	Moderately high artefact numbers and associated PAD



Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-42	Modified Tree	Modified tree, rarer site type
PEC-E-44	Isolated Find	Associated with a PAD
PEC-E-45	Artefact Scatter (3)	Moderately high artefact numbers and associated PAD
PEC-E-48	Modified Tree	Modified tree, rarer site type
PEC-E-49	Modified Tree	Modified tree, rarer site type
PEC-E-54	Isolated Find	Associated with a PAD
PEC-E-56	Earth Mound	Hearth and associated PAD
PEC-E-57	Earth Mound, Hearth	Hearth and associated PAD
PEC-E-58	Isolated Find	Associated with a PAD
PEC-E-59	Artefact Scatter (5)	Moderately high artefact numbers and associated PAD
PEC-E-60	Artefact Scatter (8)	Moderately high artefact numbers and associated PAD
PEC-E-62	Modified Tree	Modified tree, rarer site type
PEC-E-63	Artefact Scatter (20+)	Moderately high artefact numbers and associated PAD
PEC-E-64	Artefact Scatter (9)	Moderately high artefact numbers and associated PAD
PEC-E-65	Isolated Find	Associated with a PAD
PEC-E-66	Artefact Scatter (4)	Moderately high artefact numbers and associated PAD
PEC-E-70	Artefact Scatter (10+)	Moderately high artefact numbers and associated PAD
PEC-E-74	Artefact Scatter (110) and Modified Tree	High artefact numbers, modified tree and associated PAD
PEC-E-76	Modified Tree	Modified tree, rarer site type
PEC-E-77	Modified Tree	Modified tree, rarer site type
PEC-E-78	Modified Tree	Modified tree, rarer site type
PEC-E-80	Artefact Scatter (5)	Moderately high artefact numbers and associated PAD
PEC-E-81	Isolated Find	Associated with a PAD
PEC-E-82	Isolated Find	Associated with a PAD
PEC-E-83	Artefact Scatter (20+)	Moderately high artefact numbers and associated PAD



Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-84	Isolated Find	Associated with a PAD
PEC-E-85	Isolated Find	Associated with a PAD
PEC-E-86	Isolated Find	Associated with a PAD
PEC-E-87	Isolated Find	Associated with a PAD
PEC-E-89	Isolated Find	Associated with a PAD
PEC-E-96	Artefact scatter (16+)	Moderately high artefact numbers and associated PAD
PEC-E-98	Isolated find, Hearth	Artefact and hearth
PEC-E-100	Artefact scatter (10+) and Hearth	Moderately high artefact numbers and hearth
PEC-E-103	Hearth (2)	Hearth
PEC-E-105	Artefact Scatter, Hearths and Modified Trees	Moderately high artefact numbers, modified tree and hearths
Transmission Line 7 (AHIMS #47-5-0008)	Artefacts scatter, Mounds Hearths	Artefacts, hearths and associated PAD
Transmission Line 3 (AHIMS #47-6-0603), Transmission Line 4 (AHIMS #47-6-0604), Transmission Line 5 (AHIMS #47-6-0605), Transmission Line 6 (AHIMS #47-6-0606), and Limondale 12 (AHIMS #47-6-0832)	Hearths	Hearths and associated PAD

Moderate to high (local) scientific significance has been attributed to all surface sites that are associated with areas of moderate to high or high potential for subsurface archaeological deposits (Table 8.5) and have a range of site features such as hearths, scarred trees, and artefacts in the one site area. The subsurface deposits at these sites are predicted to contain a higher number of artefacts compared to the other sites in the survey area and, therefore, have potential to provide a large enough sample to enable analyses of assemblage compositions that could be used to derive statements on the technological systems being employed by Aboriginal groups living in this region.



Table 8.5 Sites of moderate to high (local) scientific significance

Site number	Summary description	Characteristics relevant to significance assessment
PEC-E-36	Artefact Scatter (100+) Hearth (30+), Modified Tree (3)	High number of surface artefacts, also a range of site features and associated PAD.

Criteria have been developed to assist with determining whether the scars on trees can be attributed to deliberate action by Aboriginal people. 'Aboriginal scarred tree' or 'Modified Tree' is generic term given to trees where the bark has been deliberately removed by Aboriginal people in the past for one of a variety of purposes (including use for torches, huts, coolamons, boomerangs, canoes, etc.). However, scars on trees can result from a number of non- Aboriginal causes such as mechanical damage, historic and modern survey/boundary marks, limb loss, bird and insect damage, damage from goats and cattle rubbing and stripping bark and fire. Four trees with scars were identified by the RAPs as possible Aboriginal scarred trees but after being assessed against these criteria were determined not to be Aboriginal scarred trees. (Table 8.6).

Table 8.6 Trees with scars of non-Aboriginal origin

Site number	Summary description	Archaeological assessment
PEC-E-Tree 1	Tree with a scar	Not of Aboriginal origin
PEC-E-Tree 2	Tree with a scar	Not of Aboriginal origin
PEC-E-Tree 3	Tree with a scar	Not of Aboriginal origin
PEC-E-Tree 4	Tree with a scar	Not of Aboriginal origin

8.4 Aesthetic value

As noted in the OEH *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage* (OEH, 2011), aesthetic value is often closely associated with social values. Culturally significant places outside the survey area, such as Lake Victoria, are of high aesthetic value to the local Aboriginal community and expectations are that any development in the area would be sympathetic to such vistas.

To date, RAPs have not identified any cultural landscape values/aesthetic values in the proposal area

8.5 Social (or cultural) value

Aboriginal people alone can determine the Aboriginal cultural significance of a place. The following is the result of the ongoing consultation that has occurred as part of this assessment.

All archaeological objects and sites have cultural value for present-day Aboriginal people, as they were created by ancestral Aboriginal people and provide tangible evidence of past occupation of the landscape. All sites have cultural significance to present-day Aboriginal groups as manifestations of their ancestors' past occupation of the landscape.

Some objects and places might have cultural value that were not communicated to NOHC. This could be the case for objects or places that are associated with information that is culturally restricted.



9. Proposed activity

9.1 Historical overview

The survey area has been subject to varying degrees of disturbance by European (post-contact) activities. The native vegetation in the proposal study area was variably cleared in the historic period and is now a mixture of cleared open pastures for grazing, mallee scrub and open forest. Clearance of trees, where it has occurred in the proposal study area, can substantially disturb archaeological material on the surface and in subsurface sediments (Wildesen 1982). If trees are uprooted, they drag subsurface sediments up to the surface. If tree stumps are left in the ground to rot, or are burned out, their roots create vacuities that are filled by intrusive sediment. This intrusive sediment can carry archaeological material down through the sediment profile.

In addition, the introduction of stock has contributed significantly to degradation of landscapes in the proposal study area. Properties subject to overstocking and dryland cropping have been most heavily degraded. A combination of overstocking and vegetation clearance has intensified erosion, which can move archaeological material across ground surfaces, and can mix material together that was initially separated, as the intervening sediment is stripped away. Erosion as well as accretion can also bury archaeological sites in areas where mobilised sediments settle, such as on floodplains and sandplains.

9.2 The proposal

As described in Section 1.3.2, the key components of the amended proposal include:

- about 375 kilometres of new 330 kilovolt (kV) double circuit transmission line and associated infrastructure between the Buronga substation and the proposed Dinawan 330kV substation
- connection of the proposed transmission lines to the existing Buronga 330kV substation
- construction of a new 330kV substation around 30 kilometres south of Coleambally, referred to as the proposed Dinawan 330kV substation
- about 162 kilometres of new 500kV double circuit transmission line and associated infrastructure between the proposed Dinawan 330kV substation and the existing Wagga Wagga substation at Wagga Wagga
- upgrade and expansion of the Wagga Wagga substation to accommodate three new line bays, two reallocated bays and associated civil works (road, kerb, gutter, drainage works and earthworks)
- provision of three optical repeater structures and associated connections to existing local electrical supplies
- new and/or upgrade of access tracks as required
- ancillary works required to facilitate the construction of the proposal (e.g. laydown and staging areas, concrete batching plants, brake/winch sites, site offices and accommodation camps).



9.3 Potential impact types

The above described proposal components may impact heritage in the following ways:

- total direct harm or disturbance to all surface and/or subsurface features at an item. This would generally result a total loss of heritage value at a site. An example of a direct impact for the proposal is the installation of transmission line towers.
- partial direct harm or disturbance, where direct impacts would occur to only some of the surface and/or subsurface features at an item. Partial direct harm generally results in partial loss of value at a site. An example of a partial direct harm would be where part of a site is impacted due to the installation of an access track or transmission line infrastructure
- potential direct harm or disturbance (total or partial), where direct impacts are occurring adjacent to sites, or where vegetation clearance/maintenance requires the use of heavy machinery to be active near sites. Such impacts would likely be inadvertent.

For the purposes of this assessment:

- direct impacts are assumed to occur across the construction impact area for the following components of the proposal:
 - proposed Dinawan substation construction
 - Wagga Wagga substation upgrade and expansion
 - construction compounds and accommodation camps at Balranald, Cobb Highway, the Dinawan substation site Lockhart and Wagga Wagga
 - optical repeater site installations
 - new access track constructions
 - excavation and boring as part of structure installation
 - surface impacts associated with brake and winch equipment for line stringing
 - surface impacts from tower pads and laydown areas
 - surface impacts associated access track construction/upgrade
- for sites along the transmission line impacts may be direct and potential indirect impacts, to all or parts of a site. Indirect impacts would include impacts from vegetation clearance, disturbance from surface water drainage and workers driving over sites. Indirect impacts may also occur to cultural values and views. Direct impacts would include excavation and boring as part of structure installation, surface impacts associated with brake and winch equipment for line stringing and surface impacts associated access track construction/upgrade.

As discussed in Section 3.3.3, the final construction impact area is subject to confirmation as part of the finalisation of the proposal design and construction methodology. The tower locations have the potential to be adjusted during the finalisation of design. This movement would have the potential to adjust some of the final locations of disturbance areas A and B along the alignment. As stated above the potential for indirect impacts may extend outside of disturbance areas A and B depending on the nature of impact, for example works occurring adjacent to sites. The minor movement of towers laterally within the easement would be done to further minimise impacts on heritage and other environmentally sensitive areas wherever practicable. This would be assessed further as part of finalisation of the proposal design.



9.4 Aboriginal heritage impact assessment

The potential impacts associated with the proposal include:

- direct impacts associated with tower locations
- potential direct impacts to ground surface from brake and winch sites, and upgrading of existing or construction of new vehicle tracks, within disturbance area A
- potential direct impacts associated with vegetation clearance in the centreline (disturbance area A – centreline) (with retention of vegetation of heights approximately six to 12 inches height in this area) for stringing lines in disturbance area A - centreline, which extend between the transmission line towers
- potential direct impacts to some sites and scarred trees where vegetation clearance to certain heights is required in disturbance area B. For the purposes of this assessment, this is assumed to be all vegetation that is, or can grow, above four metres in height in the centre areas of the easement and up to 10 metres growth height on the outer sections of the easement
- indirect impacts including inadvertent direct impacts during vegetation clearance activities, disturbance from surface water drainage and workers driving over sites.

The number of sites affected, based on the above type of impact, are summarised in Table 9.1. This table includes all sites including previously recorded sites and new sites. This table has been revised in this report to incorporate the proposal refinements which are documented in Chapter 3 of the Amendment report and the additional field works completed.

The sites potentially impacted by the proposal are summarised in Table 9.2 and depicted in Appendix 5. Impacts outlined in Table 9.2 may change as part of finalisation of the proposal design. Any refinements to the design or construction methodology that have the potential to change impacts to sites would be reconsidered and addressed. The aim of the design refinement is to reduce impacts

Indirect impacts, depending on the site type, site context, and its archaeological and cultural significance, may not result in a loss of heritage value. Indirect impacts may occur to areas beyond the indicative disturbance area, however, the impact would be dependent on several factors, including spatial extent of the site, depth of deposits, and the works being conducted adjacent to these areas. Whilst the number of sites potentially indirectly impacted have not been quantified, construction planning and management for the proposal would eliminate or reduce the potential indirect impacts that could potentially result in a loss of heritage values due to physical disturbance (including physical disturbance from surface water drainage or other mechanism).

The proposal alignment has been designed to maximise the route running parallel to existing transmission lines (i.e. disturbed areas) as far as possible in consideration of other constraints and operational requirements. The alignment of the proposal easement would be parallel to existing transmission lines for around 407 kilometres of the full approximately 537 kilometre-long route.

Of the 147 remaining Aboriginal sites (previously and newly identified), and PADs within the heritage survey area, 55 would not be impacted at all by the proposal. As part of the refinement of the construction methodology, impacts to items have been avoided in relation to two temporary construction facilities in the areas of Cobb Highway and Booororban. The identified heritage constraints (including avoidance of impacts to PEC-E-PAD15 and PEC-E-19 at a Cobb Highway camp option and PEC-E PAD44 at a Booororban compound option location (Figure 9.1 and Figure 9.2), in conjunction with other land owner considerations, resulted in these two facilities not being progressed as part of the proposal.



Additional avoidance of impact to heritage items has also resulted from refinement of the transmission line easement position around Lake Cullivel (avoiding impact to PEC-E-PAD34 and PEC-E-63 (Figure 9.3). Modification has been undertaken on a second Cobb Highway camp option (confirmed as the selected camp location since the display of the EIS) including modification of the proposed camp area and subsurface impact avoidance for an access track and asset protection zone to avoid impact to PEC-E-PAD45.

Refinement has also occurred to the construction methodology being undertaken in the disturbance area A, A - centreline and B areas as well as the utilisation of existing formed tracks by the proposal, wherever practicable. Further, the construction methodology associated with the centreline - A areas has been adapted for areas of PAD to prevent subsurface disturbance in these areas so as not to impact the PADs.

Tower location refinements may be completed to further reduce impacts. While the proposal would aim to avoid all heritage items as a first principle, where this is not possible, design would prioritise the avoidance/minimisation of impacts and harm at locations of moderate and above, scientific significance, as well as moderate and high archaeological potential. This is further discussed in Section 10.



Note: This figure has been removed due to the restricted nature of the information shown

Figure 9.1 Former location of Booroorban Camp and sites no longer impacted by the proposal



Note: This figure has been removed due to the restricted nature of the information shown

Figure 9.2 Former location option of the Cobb highway Camp and site no longer impacted by the proposal



Note: This figure has been removed due to the restricted nature of the information shown

Figure 9.3 Former alignments around Lake Cullivel and sites no longer impacted by the proposal



Table 9.1 Transmission line alignment – impact summary

Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Artefact scatter									
Low scientific significance	PEC-E-95	PEC-E-35 PEC-E-90		PEC-E-102	PEC-E-38 PEC-E-99	6	PEC-E-11 PEC-E-46	PEC-E-43	3
Moderate scientific significance		PEC-E-45 PEC-E-52 PEC-E-70		PEC-E-39 PEC-E-60 PEC-E-80 PEC-E-83	PEC-E-59	8	PEC-E-29	PEC-E-18 PEC-E-63 PEC-E-64 PEC-E-66 PEC-E-96	6
Artefact scatter and Modified Tree									
Moderate scientific significance				PEC-E-74		1			
Artefact Scatter, Hearth									
Moderate scientific significance				PEC-E-27 PEC-E-28 PEC-E-37 PEC-E-100	PEC-E-22 PEC-E-30	6	PEC-E-10 PEC-E-14		2



Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Artefact Scatter, hearth, modified tree									
Moderate scientific significance				PEC-E-105		1			
Moderate to high scientific significance				PEC-E-36		1			
Artefact scatter, Mounds, Hearths									
Moderate scientific significance				47-5-0008		1			
Earth Mound									
Moderate scientific significance			PEC-E-26			1	PEC-E-25 PEC-E-56		2



Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Hearth									
Moderate scientific significance		PEC-E-50	(47-6-0603 47-6-0604 47-6-0605 47-6-0606 47-6-0832)		PEC-E-06 PEC-E-103	4	PEC-E-47	PEC-E-19 PEC-E-32	3
Isolated find									
Low scientific significance	PEC-E-94 47-5-0047	PEC-E-40 PEC-E-41 PEC-E-51 PEC-E-53 PEC-E-55 PEC-E-67 PEC-E-68 PEC-E-71 PEC-E-75	PEC-E-69 PEC-E-79 PEC-E-88		PEC-E-91 PEC-E-97 PEC-E-101	17	PEC-E-01 PEC-E-02 PEC-E-04 PEC-E-05 PEC-E-07 PEC-E-09 PEC-E-12 PEC-E-15 PEC-E-21 PEC-E-23 PEC-E-61 PEC-E-93 PEC-E-104 47-4-0331 47-5-0048	PEC-E-08 PEC-E-72 PEC-E-73 PEC-E-92	19



Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Moderate scientific significance		PEC-E-58 PEC-E-86	PEC-E-54 PEC-E-84 PEC-E-89			5	PEC-E-82	PEC-E-33 PEC-E-44 PEC-E-65 PEC-E-81 PEC-E-85 PEC-E-87	7
Isolated Find, Earth Mound, Hearth									
Moderate scientific significance							PEC-E-57		1
Isolated find, hearth									
Moderate scientific significance	PEC-E-24	PEC-E-13	PEC-E-98	PEC-E-31		4	PEC-E-34	PEC-E-20	2



Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Midden									
Moderate scientific significance			PEC-E-03			1			
Modified tree									
Moderate scientific significance			PEC-E-42* PEC-E-48* PEC-E-49* PEC-E-76* PEC-E-77*			5	PEC-E-17	PEC-E-62 PEC-E-78	3
Modified tree, artefact scatter									
Moderate scientific significance							PEC-E-16		1



Site features and significance	Number of sites impacted based on impact type						Number of sites not impacted		
	Direct (Area A)	Potential direct impact (Area A centreline clearing/ track upgrade/ works area)	Potential direct impact only (Area B)	Direct and potentially direct (Area A & B)	Potential direct impact only (A centreline clearing/ track upgrade/ works area & B)	Total sites impacted	Sites not directly impacted, adjacent to impact areas	Sites not impacted	Total sites Not-impacted
Potential Archaeological Deposit									
PAD		PEC-E-PAD14	PEC-E-PAD10 PEC-E-PAD11 PEC-E-PAD13	PEC-E-PAD03 PEC-E-PAD08 PEC-E-PAD18 PEC-E-PAD19 PEC-E-PAD20 PEC-E-PAD21 PEC-E-PAD22 PEC-E-PAD23+ PEC-E-PAD24+ PEC-E-PAD25 PEC-E-PAD26+ PEC-E-PAD27+ PEC-E-PAD29+ PEC-E-PAD35+ PEC-E-PAD40	PEC-E-PAD12 PEC-E-PAD16 PEC-E-PAD38/39 PEC-E-PAD07 PEC-E-PAD30 PEC-E-PAD31 PEC-E-PAD32 PEC-E-PAD33 PEC-E-PAD36 PEC-E-PAD37 PEC-E-PAD42 PEC-E-PAD43	31		PEC-E-PAD02 PEC-E-PAD15 PEC-E-PAD34 PEC-E-PAD44 PEC-E-PAD45 PEC-E-PAD46	6
Total	4	19	18	29	22	92	28	27	55

*Disturbance Area B and A centreline impacts may or may not be direct for scarred trees depending on their height, and the vegetation clearance height required for their position relative to the final design of proposal infrastructure

+ Archaeological subsurface testing completed at PAD and found to have low potential for intact deposits in the tested locations



Table 9.2 Summary of impacts to Aboriginal sites

Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-01	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-02	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-03	Midden	Moderate	All sites have cultural value	Disturbance Area B	Direct and potential direct	Partial loss
PEC-E-04	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-05	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-06	Hearth (2)	Moderate	All sites have cultural value	Disturbance Area A centreline only and Area B	Direct	Partial loss
PEC-E-07	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Direct	Total loss
PEC-E-08	Isolated Find	Low	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-09	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-10	Artefact Scatter (2), Hearth (3)	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-11	Artefact Scatter (2)	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-12	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-13	Isolated Find, Hearth (2)	Moderate	All sites have cultural value	Disturbance Area A works area only	Direct	Total loss
PEC-E-14	Artefact Scatter (2), Hearth	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-15	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-16	Modified Tree and Artefact Scatter (2)	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-17	Modified Tree	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-18	Artefact Scatter (2)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-19	Hearth (2)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-20	Isolated find, Hearth	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-21	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-22	Artefact Scatter (25 artefacts), Hearth	Moderate	All sites have cultural value	Disturbance Area A centreline only and B	Potential direct	Partial loss
PEC-E-23	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-24	Isolated Find, Hearth	Moderate	All sites have cultural value	Disturbance Area A	Direct	Total loss
PEC-E-25	Earth Mound	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-26	Earth Mound	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Partial loss
PEC-E-27	Artefact Scatter (5), Hearth (6)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-28	Artefact Scatter (25), Hearth (9)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-29	Artefact Scatter (3)	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-30	Artefact scatter (3), Hearth (4)	Moderate	All sites have cultural value	Disturbance Area A centreline only and B	Potential direct	Partial loss
PEC-E-31	Isolated Find, Hearth (5)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-32	Hearth (2)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-33	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-34	Isolated find, Hearth	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-35	Artefact Scatter (3)	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-36	Artefact Scatter (100) Hearth (30), Modified Tree (3)	Moderate to high	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-37	Artefact Scatter (12), Hearth (10)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-38	Artefact Scatter (6)	Low	All sites have cultural value	Disturbance Area A centreline only and Area B	Potential direct	Partial loss
PEC-E-39	Artefact Scatter (30)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-40	Isolated Find	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss
PEC-E-41	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-42	Modified Tree	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-43	Artefact Scatter (4)	Low	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-44	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-45	Artefact Scatter (3)	Moderate	All sites have cultural value	Area A centreline only	Potential direct	Partial loss
PEC-E-46	Artefact Scatter (3)	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-47	Hearth	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-48	Modified Tree	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-49	Modified Tree	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-50	Hearth	Moderate	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-51	Isolated Find	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss
PEC-E-52	Artefact Scatter (50)	Moderate	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss
PEC-E-53	Isolated Find	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss
PEC-E-54	Isolated Find	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Partial loss
PEC-E-55	Isolated Find	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss
PEC-E-56	Earth Mound	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-57	Isolated Find, Earth Mound, Hearth	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-58	Isolated Find	Moderate	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Total loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-59	Artefact Scatter (5)	Moderate	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-60	Artefact Scatter (8)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-61	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-62	Modified Tree	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-63	Artefact Scatter (20)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-64	Artefact Scatter (9)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-65	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-66	Artefact Scatter (4)	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-67	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-68	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-69	Isolated Find	Low	All sites have cultural value	Disturbance Area B	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-70	Artefact Scatter (10)	Moderate	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-71	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only	Potential direct	Partial loss
PEC-E-72	Isolated Find	Low	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-73	Isolated Find	Low	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-74	Artefact scatter and Modified tree	Moderate	All sites have cultural value	Disturbance Area A and B	Potential direct	Partial loss
PEC-E-75	Isolated Find	Low	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Partial loss
PEC-E-76	Modified Tree	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-77	Modified Tree	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-78	Modified Tree	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-79	Isolated Find	Low	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-80	Artefact Scatter (5)	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-81	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-82	Isolated Find	Moderate	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Partial loss
PEC-E-83	Artefact Scatter (20)	Moderate	All sites have cultural value	Disturbance Area A and B	Potential direct	Partial loss
PEC-E-84	Isolated Find	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-85	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-86	Isolated Find	Moderate	All sites have cultural value	Disturbance Area A track upgrade only	Potential direct	Partial loss
PEC-E-87	Isolated Find	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-88	Isolated Find	Low	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-89	Isolated Find	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-90	Artefact Scatter (2)	Low	All sites have cultural value	Disturbance Area A works area only	Potential direct	Partial loss
PEC-E-91	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only and disturbance Area B	Potential direct	Total loss
PEC-E-92	Isolated Find	Low	All sites have cultural value	Not impacted	No impact	No loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-93	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-94	Isolated Find	Low	All sites have cultural value	Disturbance Area A	Direct	Total loss
PEC-E-95	Artefact scatter	Low	All sites have cultural value	Disturbance Area A	Direct	Total loss
PEC-E-96	Artefact scatter	Moderate	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-97	Isolated Find	Low	All sites have cultural value	Disturbance Area A centreline only and disturbance Area B	Potential direct	Total loss
PEC-E-98	Isolated find, Hearth	Moderate	All sites have cultural value	Disturbance Area B	Potential direct	Total loss
PEC-E-99	Artefact scatter	Low	All sites have cultural value	Disturbance Area A works area only and disturbance Area B	Potential direct	Total loss
PEC-E-100	Artefact scatter (10+) and Hearth	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-101	Isolated Find	Low	All sites have cultural value	Disturbance Area A works area only and disturbance Area B	Potential direct	Total loss
PEC-E-102	Artefact scatter	Low	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-103	Hearths	Moderate	All sites have cultural value	Disturbance Area A centreline only and disturbance Area B	Potential direct	Partial loss
PEC-E-104	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
PEC-E-105	Artefact Scatter, hearths and Modified Trees	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
BU-IF-001 (AHIMS #47-4-0331)	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
BU-IF-002 (AHIMS #47-5-0047)	Isolated Find	Low	All sites have cultural value	Disturbance Area A	Direct	Total loss
BU-IF-003 (AHIMS #47-5-0048)	Isolated Find	Low	All sites have cultural value	Not directly impacted, adjacent to impact areas	Potential direct	Total loss
Transmission Line 7 (AHIMS #47-5-0008)	Artefacts scatter, Mounds, Hearths	Moderate	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
Transmission Line 3 (AHIMS #47-6-0603), Transmission Line 4 (AHIMS #47-6-0604), Transmission Line 5 (AHIMS #47-6-0605), Transmission Line 6 (AHIMS #47-6-0606), and Limondale 12 (AHIMS #47-6-0832)	Hearths	Moderate	All sites have cultural value	Disturbance Area B	Direct	Partial loss
D-B#22; Booroorban (AHIMS #48-5-0022)	Modified tree - destroyed	Site destroyed				



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
Boiling Down Road 1 (AHIMS #56-1-0001)	Modified tree	Site destroyed				
PEC-E-PAD01	PAD	Not a PAD				
PEC-E-PAD02	PAD	Not a PAD in construction impact area	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-PAD03	PAD	Moderate to low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD04	PAD	Not a PAD				
PEC-E-PAD05	PAD	Not a PAD				
PEC-E-PAD06	PAD	Not a PAD				
PEC-E-PAD07	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and B	Potential direct	Partial loss
PEC-E-PAD08	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD09	PAD	Not a PAD				
PEC-E-PAD10	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area B	Indirect	Partial loss
PEC-E-PAD11	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area B	Indirect	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-PAD12	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline and track upgrade only and B	Potential direct	Partial loss
PEC-E-PAD13	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD14	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A track upgrade	Potential direct	Partial loss
PEC-E-PAD15	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-PAD16	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline and track upgrade only and B	Potential direct	Partial loss
PEC-E-PAD17	PAD	Not a PAD				
PEC-E-PAD18	PAD	Moderate in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD19	PAD	Low to moderate in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD20	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD21	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-PAD22	PAD	Moderate in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD23	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD24	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD25	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD26	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD27	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD28	PAD	Not a PAD				
PEC-E-PAD29	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD30	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD31	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD32	PAD	Moderate in area tested	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-PAD33	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD34	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-PAD35	PAD	Low in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD36	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD37	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD38/39	PAD	Low in area tested	All sites have cultural value	Disturbance Area A centreline and track upgrade only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD40	PAD	Moderate in area tested	All sites have cultural value	Disturbance Area A and B	Direct	Partial loss
PEC-E-PAD41	PAD	Not a PAD				
PEC-E-PAD42	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss



Site number	Feature(s)	Scientific Significance	Cultural significance	Impact zone	Impact type	Potential loss of significance
PEC-E-PAD43	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Disturbance Area A centreline only and Disturbance Area B	Potential direct	Partial loss
PEC-E-PAD44	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Not impacted	No impact	No loss
PEC-E-PAD45	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Track designed to have no subsurface impacts	Potential direct	Partial loss
PEC-E-PAD46	PAD	Not subject to archaeological subsurface testing	All sites have cultural value	Not impacted	No impact	No loss



9.5 Predictive archaeological sensitivity for unsurveyed areas

Access to some properties within the proposal study area was not granted for the archaeological field survey program by landholders. Prior to the draft ACHAR approximately 114 kilometres was unsurveyed, a further 96 kilometres was able to be surveyed for this revised ACHAR. Only 18 kilometres remains to be surveyed or approximately 3 per cent of the total length (540 kilometres).

This section of the report assesses the potential archaeological sensitivity of the areas that could not be surveyed during the archaeological field survey program. This assessment is based on landform, proximity to water and land use in accordance with the predictive model discussed on Section 6.6. However, this is only a desktop assessment aimed to provide an initial evaluation of the archaeological potential of these areas and does not substitute an archaeological field survey of the area.

Table 9.3 outlines the areas that could not be surveyed during the archaeological field survey program for the proposal, an initial evaluation of the archaeological potential of each area and a preliminary heritage risk assessment.



Table 9.3 Predictive archaeological sensitivity for unsurveyed areas

Survey unit number	Length (kilometres)	LGA	Lot & DP	Landform and proximity to water	Disturbance	Archaeological sensitivity	Risk of heritage impact
95	4.1	Edward River	Lot 107 DP820129	The proposal study area within this property extends across a plain landform and a non-perennial low order creek line. A dry waterbody and a mainly dry watercourse is located approximately 1.5 kilometres south of the alignment of the corridor within this property. This property is located within the Riverina bioregion and aerial imagery shows sandy soils within this area.	Aerial imagery indicates that the section of the property where the proposal study area extends have been subjected to land clearance and agricultural practices. This section runs parallel to the existing transmission line. Sandy soils are visible on aerial imagery and likely display moderate levels of soil erosion. Several road tracks run across the proposal study area within this property.	The area is considered to have moderate archaeological potential.	Moderate



Survey unit number	Length (kilometres)	LGA	Lot & DP	Landform and proximity to water	Disturbance	Archaeological sensitivity	Risk of heritage impact
147	2.1	Murrumbidgee	Lot 3 DP564466	The proposal study area within these properties is located on a plain and an alluvial plain landform within the Riverina bioregion. The nearest watercourse from the corridor alignment on the northern section within this property is located approximately six kilometres south and it consists of a non-perennial low order creek. There is evidence of a waterbody 500 metres north from the corridor alignment within the same property but it is unknown if this is an artificial hydrological feature. The southern section extends to the banks of Yanco Creek.	Aerial imagery indicates that the section of the property where the proposal study area extends has been subjected to land clearance and agricultural practices. The ground surface is likely to be eroded. Several road tracks run across the proposal study area within this property.	The northern section of the property is considered to have low archaeological potential. The southern section of the property is considered to have moderate archaeological potential	Low to moderate
149	5.3		Lot 33 & 34 DP756396 Lot 1 DP564465 Lot 22, 23, 24, 25, 27, 28, 89 DP756397				



Survey unit number	Length (kilometres)	LGA	Lot & DP	Landform and proximity to water	Disturbance	Archaeological sensitivity	Risk of heritage impact
178	2.6	Federation	Lot 122 DP756440	The proposal study area within this property is located on a plain landform mostly within the NSW South Western Slopes bioregion and partly within the Riverina bioregion to the west. The nearest water source from this property is located approximately one kilometre to the west and it consists of a low order non perennial watercourse.	Aerial imagery indicates that the section of the property where the proposal study area extends has been subjected to land clearance and agricultural practices. The ground surface is likely to be eroded. Several road tracks run across the proposal study area within this property.	The area is considered to have low archaeological potential	Low
221	1.9	Lockhart	Lot 118 DP756429 Lot 1 DP660656 Lot 142 DP627043	The proposal study area within this property is located on a very gentle slope landform within the NSW South Western Slopes bioregion. A low order non perennial watercourse runs approximately 350 kilometres south of the corridor alignment within this property	Aerial imagery indicates that the section of the property where the proposal study area extends has been subjected to land clearance and agricultural practices. This section runs parallel to the existing transmission line. The ground surface is likely to be eroded. Several road tracks run across the proposal study area within this property.	The area is considered to have moderate archaeological potential	Moderate



Survey unit number	Length (kilometres)	LGA	Lot & DP	Landform and proximity to water	Disturbance	Archaeological sensitivity	Risk of heritage impact
221	200 metres	Lockhart	Lot 20 DP756429	The proposal study area within this property is located on a very gentle slope landform within the NSW South Western Slopes bioregion. A low order non perennial watercourse runs approximately 350 metres south of the corridor alignment within this property	Aerial imagery indicates that the section of the property where the proposal study area extends has been subjected to land clearance and agricultural practices. This section runs parallel to the existing transmission line. The ground surface is likely to be eroded. Several road tracks run across the proposal study area within this property.	The area is considered to have moderate archaeological potential	Moderate
247	2	Wagga	Lot 51 DP654169	The proposal study area within this property is located on a plain landform within the NSW South Western Slopes bioregion. A low order non perennial watercourse runs approximately 350 metres to the north of the corridor alignment within this property.	Aerial imagery indicates that the section of the property where the proposal study area extends has been subjected to land clearance and agricultural practices. This section runs parallel to the existing transmission line. The ground surface is likely to be eroded. Several road tracks run across the proposal study area within this property.	The area is considered to have moderate archaeological potential	Moderate



9.6 Impacts from the removal of hazard/high risk trees

Disturbance area – hazard / high risk trees have the potential to impact and remove scarred trees that are within these zones. As removal would not involve root ball removal impacts would not occur to other Aboriginal sites types such as stone artefacts, hearths and PADs. The individual trees that are within these identified zones have not been individually assessed for the presence of cultural scars or modification.

9.7 Impacts to Aboriginal cultural values

All Aboriginal sites within the proposal study area are of cultural significance to the local Aboriginal community. Also, independent of archaeological sites and objects within the heritage survey area, the landscape, native flora, and fauna of the proposal are of high cultural significance.

9.8 Consideration of the principles of ecological sustainable development

According to the Operational Policy: Protecting Aboriginal Cultural Heritage, an object of the *National Parks and Wildlife Act 1974* is to conserve places, objects and features of significance to Aboriginal people (s.2A(1)(b)(i)). This is to be achieved by applying the principles of ecologically sustainable development (ESD) (s.2A(2)). An ESD (defined in section 6 of the *Protection of the Environment Administration Act 1991*) requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. In regard to heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

9.8.1 Intergenerational equity

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity and productivity of the environment for the benefit of future generations. The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation. In applying the precautionary principle, decisions should be guided by:

- a careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment
- an assessment of the risk-weighted consequences of various options.

Intergenerational equity is being considered through the avoidance of impact to archaeological sites where possible, and through the salvaging of archaeological sites where impacts cannot be avoided. Measures taken to avoid impact to sites (including planning the location of work to physically avoid sites, and the use of protective measures such as site fencing) ensures that these sites remain in their current condition and are available for future generations. The initial design and construction planning process has sought to minimise potential impacts to sites and features of Aboriginal heritage significance, for example tower locations have been reviewed and moved to avoid smaller PAD areas. In addition, a change in the vegetation clearing methodology would also result in the reduction of direct impacts to sites, for example the approach is to retain root-balls in areas of PADs to avoid impacts.

Where impacts are unavoidable for Aboriginal sites/PADs, salvage of the archaeological material through surface collection and/or excavation would identify, recover and analyse Aboriginal objects that would potentially be subject to harm. To ensure that the objects themselves would be available for future generations to potentially access they would be subject to continuing consultation with the appropriate RAPs regarding their long term storage and keeping.



9.8.2 Precautionary principle

The precautionary principle is relevant to the consideration of potential impacts to Aboriginal cultural heritage where:

- the proposal involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places
- there is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

Where this is the case, a precautionary approach should be taken, and all cost-effective measures should be implemented to prevent or reduce damage to the objects/place.

The archaeological survey and subsurface test excavations, engagement with the RAPs and preparation of a thorough ACHAR has vastly improved the knowledge on the cultural heritage of the proposal area. This has allowed design and construction measures to be prepared with this knowledge and impacts to be avoided.

Where impacts cannot be avoided the proposed salvage of surface artefacts and subsurface deposits (Aboriginal and non-Aboriginal sites), as well as archival recording (historic sites), represents a precautionary measure against the harm to archaeological material at these locations. The recorded finds from these actions would inform an understanding of past human behaviour and the subsequent written record created through the reporting process would create new knowledge. The knowledge generated through the reporting process acts as a measure to mitigate harm.

9.9 Cumulative impacts

Assessing cumulative impacts involves the consideration of the proposed impact in the context of existing developments and past destruction of heritage sites, as well as the population of heritage sites that still exist in the region of interest (Godwin 2011). The assessment of cumulative impacts also considers projects that are currently under development, or at the planning state that may also influence the assessment of this proposal's potential impacts. The concept of assessing cumulative impacts aims to avoid discussing the impact of a development in isolation and aims to assess the impact in terms of the overall past and future degradation of a region's heritage resource.

Projects with the potential for cumulative impacts with the proposal were identified through a review of publicly available information and environmental impact assessments from the following databases:

- NSW Major Projects website (NSW Government, searched October 2020)
- Wagga Wagga, Narrandera, Edward River, Murray River, Balranald, Hay council websites (searched October 2021)
- Australian Government – Department of Environment and Energy, EPBC Public notices list (Australian Government, searched October 2020).

A number of proposed developments have been identified and these include:

- EnergyConnect – Western Section
- Buronga Solar Farm
- Buronga Landfill Expansion
- Buronga – Gol Gol residential expansion



- Inland Rail – Albury to Illabo
- Uranquinty Solar Farm
- Gregadoo Solar Farm.

9.9.1 EnergyConnect (NSW – Western Section)

The EnergyConnect (NSW – Western Section) would comprise around 135 kilometres of new 330kV double circuit transmission line and associated infrastructure between the SA/NSW border and the existing Buronga substation, upgrade of the Buronga substation and upgrade of the existing 22 kilometre 220kV single circuit transmission line between the Buronga substation and the NSW/Victoria border at Monak. EnergyConnect (NSW – Western Section) has been approved. This project area is immediately adjacent to the current proposal area.

The EnergyConnect (NSW – Western Section) was approved in September 2021. Construction of the proposal is scheduled to commence in early-2022 (enabling phase). The construction of the transmission lines would take about 18 months while the Buronga substation upgrade and expansion would be delivered in two components and be operational by mid-2025.

One-hundred and thirty-one previously unidentified and unrecorded Aboriginal sites, as well as 28 PADs, were identified during the archaeological field survey completed for the EIS (NOHC 2021). Of these 77 sites have potential to be impacted to be impacted by the project.

9.9.2 Buronga Solar Farm

The Buronga Solar Farm development includes a 400 MW solar farm with energy storage and associated infrastructure located adjacent to the proposal Buronga substation. The Buronga substation is at the western extent of the proposal.. The EIS for the project is currently being prepared. The project would also involve the construction of a 220kV or 330kV transmission line for connection to the existing Buronga substation. The construction schedule for the proposal is identified as being about 18 to 24 months from site establishment to completion (noting commencement subject to approval from DPIE).

The EIS for the development is currently under preparation. The preliminary environmental assessment (Renew Estate 2018) suggests that an AHIMS basic search found five Aboriginal sites within the proposed development area.

9.9.3 Buronga Landfill Expansion

The proposal includes the expansion to the existing Buronga landfill to allow for an increase in the total quantity of waste that can be accommodated from 30,000 tonnes to 100,000 tonnes of general waste per annum. The proposal would consist of the construction of multiple additional landfill cells over the next 30 years comprising a volume of about 4.8 million cubic metres over an area of about 395,000 square metres (including the current active landfill cell). The project is located approximately 16 kilometres east of the proposal study area.

SEARs have been issued for this project but there are no associated EIS or archaeological assessment report. There is one site listed on AHIMS for the Buronga landfill, the site is listed as an artefact scatter.

9.9.4 Buronga – Gol Gol residential expansion

Wentworth Shire Council is proposing new subdivisions to provide about 500 new large residential housing allotments in the Buronga – Gol Gol growth area, about 10 kilometres to the west of the proposal study area.



Wentworth Shire Council in 2020 estimated that there are 54 previously recorded Aboriginal sites within an area of 150 square kilometres in and around the study area (Wentworth Shire Council 2020). Results of extensive searches in the Aboriginal Heritage Information System (AHIMS) indicated that about seventeen Aboriginal sites are located within the study area or immediately adjacent to its boundaries (Wentworth Shire Council 2020). These sites represent activities including the collection, processing and consumption of shellfish; extraction of bark; and general activities associated with camping such as cooking and stone tool production, use and/or maintenance (Wentworth Shire Council 2020)

9.9.5 Inland rail – Albury to Illabo

ARTC is proposing to upgrade the Albury to Illabo section of the inland rail network. This project would cover 185 kilometres of existing operational narrow-gauge railway from the Victorian/New South Wales border to Illabo in regional NSW. The ARTC project study area crosses this alignment. The Proposal would provide clearance of the existing 'Main South' corridor to operate 1,800 metres long, 6.5 metres high, double stacked trains and includes the provision of dual track in areas for train passing. The project is made up of discrete sections of proposed upgrade, including upgrades within the existing rail corridor at Uranquinty, The Rock and within the centre of Wagga Wagga.

Subject to planning approval, construction is planned to commence in mid-2023 and complete by late 2024. Operations to commence in 2025.

The scoping report for the project (ARTC 2020) identifies that a total of 30 known Aboriginal sites are in close proximity to the ARTC project study area, based on desktop searches alone. The sites consist of Artefacts (isolated finds or scatters), some with associated areas of Potential Archaeological Deposit (PAD), resource and gathering sites and culturally modified trees. All sites are recorded as being 'Valid' (i.e. intact), although aerial imagery indicates some of these valid sites may have been destroyed through development or construction. It was identified that the proposed works have potential to result in impacts to known Aboriginal heritage sites across the Proposal site.

9.9.6 Uranquinty Solar Farm

Origin Energy is proposing to develop a commercial scale solar photovoltaic site and associated battery storage at Uranquinty. The proposal would have a capacity of up to 200 megawatts (MW) of renewable energy production for the local electricity supply. The site is located north west of Uranquinty village along Uranquinty Cross Road, around 15 kilometres south west of Wagga Wagga and 4 kilometres north of the proposal study area. Given current timing for the proposed solar farm, there is the potential for the proposal and the solar farm construction periods to overlap.

The scoping report for this project (GHD 2021) identified 113 registered Aboriginal places or sites within a 10 kilometres radius of the proposal site. Of these, 17 sites were located within one kilometre of the proposal site, with two sites (artefacts) located on the eastern boundary of the site associated with an existing drainage line (Sandy Creek).

9.9.7 Gregadoo Solar Farm

The Gregadoo Solar Farm would be located about 13 km south-east of Wagga Wagga and adjacent to the proposal study area. The project is proposed to comprise construction, operation and decommissioning of a maximum 47 MW solar farm and associated infrastructure. Construction is expected to commence mid-2021.

NGH Environmental (2018) reported for the EIS assessment that seven Aboriginal stone artefacts were found across the proposal area. A single modified tree was also recorded. Based on the land use history, an appraisal of the landscape, soil, level of disturbance and the results from the field survey it was concluded that there was negligible potential for the presence of intact subsurface deposits with high densities of objects or cultural material within the proposal area



9.9.8 Summary

The areas traversed by the proposal study area have not been historically subject to high levels of impact from residential, commercial, or government development. The linear nature of the proposal, as well as the large spans between tower location impacts (around 500 metres) would result in impacts being spread across landforms. Impacts to PADs and many sites would be partial in most cases, rather than total, resulting in many impacted sites being partially preserved within the new transmission easement. Wherever the direct impacts do occur in the proposal study area, there are likely to be numerous similar landforms within the surrounding landscape that would be retained and preserved. Therefore, the cumulative impacts from the proposal on the Aboriginal heritage of the region are assessed as low.



10. Mitigation measures

10.1 Environmental management

Environmental management for the proposal would be carried out in accordance with the environmental management approach as detailed in Chapter 23 (Environmental management) of the EIS.

This would include a heritage management sub-plan, prepared as part of the Construction Environmental Management Plan. The sub-plan would manage impacts for Aboriginal heritage, and would include (but is not limited to):

- appropriate heritage mitigation measures, including identification, protection and/or management of heritage constraints within or adjacent to construction areas
- details of management measures to prevent and minimise impacts to heritage items/sites (including additional investigations, recordings, or measures to protect items/sites that would not be directly impacted in the vicinity of construction works)
- procedures for unexpected finds, including procedures for dealing with human remains (refer to Appendix 2 of this technical paper)
- heritage monitoring and compliance management
- induction requirements.

10.2 Mitigation measures

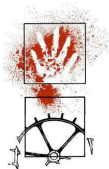
The mitigation measures to manage potential Aboriginal heritage impacts of the proposal during construction and operation are listed in Table 10.1. The 'applicable locations' are current at the time of drafting this document. The applicable locations may change as the disturbance area is refined. All ongoing operational activities would be managed through existing internal policies and management practices of Transgrid.

Table 10.1 Mitigation measures

Reference	Mitigation measure	Timing	Applicable location(s)
AH1	The finalisation of the proposal design and construction methodology, and associated final disturbance areas, would be developed to avoid harm to features/items of moderate or above Aboriginal heritage significance as far as practical. The objective is to further reduce potential impacts through tower location and design refinement and construction methodology. Avoidance and minimisation of harm to features/items and Potential Archaeological Deposits (PADs) are to be prioritised.	Pre-construction impacts	All locations



Reference	Mitigation measure	Timing	Applicable location(s)
AH2	<p>Aboriginal stakeholder consultation would be carried out in accordance with the <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (DECCW, 2010a).</p> <p>Engagement with Registered Aboriginal Parties (RAPs) would consist of the following:</p> <ul style="list-style-type: none"> > Aboriginal heritage site surveys (AH3) – review of proposed methodologies and involvement in the survey activities in the field (for ground or vegetation disturbance outside of previously surveyed areas) > test excavation activities (AH4) – review of proposed methodologies and involvement in the test excavation activities in the field > review of the draft addendum report/s to the ACHAR (relating to surveys (AH3), test excavations (AH4) and scar trees (AH5)), and consultation on the draft reports > provision of final addendum report/s to the ACHAR to RAPs (AH3, AH4, AH5) > involvement in establishment of Aboriginal heritage exclusion zones prior to construction commencing at each location (AH7). <p>Further cultural information would be gathered during consultation undertaken in association with these activities.</p>	Pre-construction impacts	All locations
AH3	<p>Additional assessment would occur in accordance with the <i>Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW</i> (2010) for areas where ground disturbing activities and/or where hazard / high risk tree removal are required in locations outside of the previously surveyed heritage survey area. Where required, additional heritage surveys would be carried out with the RAPs prior to ground disturbing activities occurring in any such areas (including areas where only visual inspection has been undertaken).</p> <p>If no Aboriginal objects are found or if Aboriginal objects are found and they would not be impacted, then a letter report would be prepared by an archaeologist that documents the findings and gives clearance to proceed.</p>	Pre-construction impacts	All locations (outside of the previously surveyed heritage survey area) and in identified areas of hazard / high risk tree removal



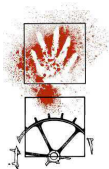
Reference	Mitigation measure	Timing	Applicable location(s)
	<p>Where Aboriginal objects, scarred trees or area of PAD are located and would be impacted, a draft survey addendum report/s to the ACHAR would be prepared for the survey areas. The report(s) would:</p> <ul style="list-style-type: none"> > detail findings of the survey activities > detail where test excavation is required in accordance with AH4 > outline any additional mitigation strategies beyond those required by AH4 to AH14 > be presented to the RAPs for comment. <p>Final reports would be provided to RAPs and to Heritage NSW for their information prior to the commencement of ground disturbing activities in these locations.</p>		
AH4	<p>An archaeological subsurface test excavation program would be carried out in parts of any PADs where project activities would have direct impact and a test excavation program has not already been completed in the area of impact. Direct impacts include grading of tracks and construction areas, excavation for tower construction and tree removal that includes the root ball.</p> <p>Should the finalisation of the project design and construction methodology identify activities that would result in direct impacts in PADs PEC-E-PAD07, PEC-E-PAD12, PEC-E-PAD14, PEC-E-PAD16, PEC-E-PAD33 and PEC-E-PAD43, archaeological subsurface test excavation would need to occur before there is any direct impact within the relevant PAD.</p> <p>The purpose of the test excavations would be to determine the presence or absence and significance of intact subsurface archaeological deposits to inform design development and construction planning and / or requirements for salvage activities.</p> <p>Test excavations works would be carried out in accordance with a methodology that is presented to and consulted on with the RAPs.</p> <p>Test excavation addendum report/s to the ACHAR would be prepared to detail the findings of the test excavation activities.</p>	Pre-construction impact in the PAD	PAD areas



Reference	Mitigation measure	Timing	Applicable location(s)
AH5	<p>Harm to scarred trees (including those of cultural significance) would be avoided where possible through design development and construction planning. Scarred trees must only be removed to directly facilitate construction of permanent infrastructure and/or to meet <i>Vegetation Clearance Requirements at Maximum Line Operating Conditions</i> (Transgrid, 2003).</p> <p>If the removal of a scarred tree cannot be avoided, the tree would be subject to 3D scanning, followed by salvage of the scarred trunk. The results of this assessment would be reported on in addendum reports.</p> <p>Reports would be provided to RAPs for comment and to Heritage NSW.</p>	Pre-construction impacts	PEC-E-03 PEC-E-42 PEC-E-77 PEC-E-76 PEC-E-17 PEC-E-48 PEC-E-49
AH6	<p>All portions of artefact scatters and isolated finds that are to be directly impacted would require surface collection and salvage prior to construction commencement in those areas.</p> <p>Hearths would be the subject of photographic recording and samples taken of hearth material prior to disturbance.</p> <p>Additionally, based on the outcomes of the test excavations, the parts of PADs with confirmed intact subsurface archaeological deposits that would be harmed by project activities would be subject to salvage excavations prior to those activities commencing. Items of archaeological significance would be managed in accordance with measures set out in AH12.</p> <p>The activities would be documented in a salvage report.</p>	Pre-construction impacts	All artefact scatters, hearths and PADs PADs requiring salvage excavations: PEC-E-PAD03 PEC-E-PAD18 PEC-E-PAD22 PEC-E-PAD40



Reference	Mitigation measure	Timing	Applicable location(s)
AH7	<p>Aboriginal heritage exclusion zones would be established to protect sites, including:</p> <ul style="list-style-type: none"> > known features/items of significance that have been identified to remain in-situ throughout construction (and not subject AH6) > scarred trees that are to remain in-situ. > any portions of PADs that become a known site following subsurface testing and which are identified for no impact. <p>Suitable controls would be identified in the heritage management sub-plan, which may include temporary site fencing and sediment control. Aboriginal heritage zones would be demarcated by a suitably qualified archaeologist in consultation with the RAPs prior to the commencement of construction at each location.</p> <p>PADs in locations where vegetation clearing is required but there would be no ground disturbance would be managed through construction methodologies and would not be delineated as exclusion zones. These methodologies would be developed in the heritage management sub-plan.</p>	Pre-construction impacts	All sites confirmed with the final construction impact area and disturbance areas to not directly impacted
AH8	<p>Any existing access tracks in areas of PAD that require upgrading for use during construction would not be the subject of direct ground disturbance such as grading.</p> <p>The methodology to be used for the upgrade would be designed to avoid this disturbance and may include laying of geotextile on the surface.</p> <p>If avoidance is not possible, then additional test excavation would be required and salvage completed as necessary prior to works commencing (in accordance with AH4 and AH6).</p>	Construction	Locations where existing access tracks are required to be upgraded in areas of sites and PADs
AH9	<p>Construction planning and management would make sure that indirect impacts that could potentially result in a loss of known heritage values due to harm would not occur. Indirect harm could result from physical disturbance from surface water drainage or construction workers driving over sites that are to be protected.</p>	Construction	All locations



Reference	Mitigation measure	Timing	Applicable location(s)
AH10	Cultural heritage awareness training would be carried out for all personnel working on the proposal prior to the personnel participating in construction activities. The training shall cover features of heritage significance within and adjacent to proposal locations and proposal protocols that must be complied with to minimise and manage potential impacts to those features.	Construction	All locations
AH11	If at any time during construction, any items of potential Aboriginal archaeological or cultural heritage significance, or human remains are discovered outside of previously recorded sites or PAD, they would be managed in accordance with an Aboriginal heritage unexpected finds protocol aligned with the protocol in Appendix 3.	Construction	All locations
AH12	Retrieved archaeological materials would be stored in appropriate, secure facilities confirmed in consultation with the relevant Aboriginal stakeholders. The strategy for the long-term conservation of salvaged or collected Aboriginal objects would be determined in consultation with the RAPs.	Construction	As relevant
AH13	Features/items of heritage significance that would remain in-situ within the transmission line easement would be mapped and recorded within GIS systems managed by Transgrid and would be entered on the NSW Aboriginal Heritage Information Management System (AHIMS). Relevant Transgrid systems and procedures would be updated as required with protocols that would be implemented during operation to ensure that impacts to the features/items of significance do not occur during maintenance activities.	Operation	Transmission line



10.3 Managing residual impacts or uncertainties

The Aboriginal heritage assessment is based on the current identified construction impact area. The assessment aims to develop an understanding of the nature of potential impacts from the proposal and retain a level of flexibility during design refinement relating primarily to final tower locations along the alignment (refer to Section 3).

During design refinement, the locations of recorded Aboriginal sites and PADs would be used to inform the final location of transmission line structures and construction facilities, with an aim to:

- Protect, conserve and/or manage the heritage significance of Aboriginal objects and places to ensure the proposal does not diminish the cultural understanding of Aboriginal people in New South Wales
- Avoid or minimise impacts on areas of archaeological potential and scientific significance, where feasible and reasonable. Where this is not possible areas of moderate or high archaeological potential and significance are prioritised for avoidance or impact minimisation.

Aspects of the proposal that may be subject to further refinement include:

- the final transmission line component locations, including the specific location, height and type of transmission line structures, location of some access tracks and associated allocations of the subset disturbance area A, A (centreline) and B categories
- final locations and layouts of the main construction compound and accommodation camp sites - including selection of the final site where location options have been provided at Balranald and Lockhart
- final arrangement of the Dinawan substation facility within the identified parcel of land
- water supply points and other ancillary construction facilities
- construction methods and staging.

Refinements to optimise the design outcomes and construction method would be carried out to further avoid or minimise environmental impacts. This includes approaches to avoid or minimise native vegetation clearing, and areas of moderate to high Aboriginal archaeological potential. Generally refinements would be developed and planned to keep disturbance within areas that have been already subject to heritage survey.

Some refinements might however require changes that could disturb locations outside surveyed or assessed areas. In such circumstances additional heritage survey would occur as required before confirming the change. These circumstances would include:

- Where impacts to a newly identified environmental constraint of very high significance cannot be avoided by simple refinements (i.e. with movement contained in the current surveyed and assessed areas) such as Aboriginal heritage sites including:
 - burial sites
 - sites of such significance that the narrative and or understanding of Aboriginal heritage occupation in the region would be substantially changed or enhanced based on its identification and/or it's potential for future research.
- Where an additional access track, water supply point or other construction ancillary facility (i.e. brake and winch site) are identified as being required which do not substantially adversely impact on Aboriginal heritage in addition to those presented this report and the landholder is supportive of the required use.



The final design would be reviewed for consistency with the assessment contained in this report including the proposed mitigation measures, and any conditions of approval. If design refinements are not consistent with the environmental assessment, and any approval from the Minister for Planning, approval would be sought from the Minister for any such modifications in accordance with the requirements of Division 5.2 of the EP&A Act.

Where known Aboriginal sites are located close to construction or maintenance activities for the proposal, mitigation measures to protect the sites from accidental impacts would be implemented such as clear mapping of sites on construction plans and use of high visibility markers exclusion zones.

Where direct impacts to sites cannot be avoided during design refinement, the identified mitigation measures would be implemented to minimise the potential impacts on Aboriginal heritage, such as surface salvage of artefacts or a program of salvage excavations in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010).



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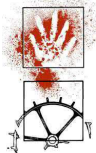
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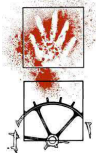


Appendix 1

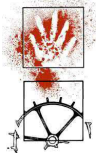
AHIMS recordings within the heritage study corridor



Site ID	Site name	Context	Site status	Site features Site types
56-1-0001	Boiling Down Rd 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0002	Lucas Prop. 2;Boiling Down Rd. 2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0003	Rodham Prop. 3;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0004	Rodham Prop. 4;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0005	Rodham Prop. 5;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0024	WW34;Jacks Road;	Open site	Valid	Artefact : -
56-1-0025	WW35;Sandy Creek;	Open site	Valid	Artefact : -
56-1-0032	EAPL IFI8;	Open site	Valid	Artefact : -
56-1-0035	Wagga Tip 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0036	Wagga Tip 2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0037	Wagga Tip 3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0038	Wagga Tip 4;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0039	Sandy Creek 4;	Open site	Valid	Artefact : -
56-1-0040	Sandy Creek 4; (Duplicate of 56-1-0039)	Open site	Valid	Artefact : -
56-1-0077	WW102	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0078	WW103	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0080	WW105	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0089	WW101	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0047	LN 1	Open site	Valid	Artefact : 2
56-1-0052	Lloyd Neighbourhood 1	Open site	Valid	Artefact : -
56-1-0107	UW-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0108	UW-05-1	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -
56-1-0104	UW-IF-3	Open site	Valid	Artefact : 1
56-1-0105	UW-IF-2	Open site	Valid	Artefact : 1
56-1-0106	UW-IF-1	Open site	Valid	Artefact : -
56-1-0113	Wagga Wagga Transmission Line 1 and PAD	Open site	Valid	Artefact : 3, Potential Archaeological Deposit (PAD) : 1
56-1-0114	Wagga Wagga Transmission Line 2	Open site	Valid	Artefact : 1
56-1-0121	Kapooka Bridge Scarred Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -



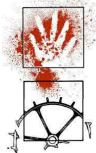
Site ID	Site name	Context	Site status	Site features Site types
56-1-0125	LLOYD SITE 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0127	Kapooka Water Tank ST 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0128	Sandy Creek Scarred Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0129	Kapooka Pump Station ST 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0373	Gabuga Water Tank 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0374	Gabuga Water Tank 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0375	Gabuga Water Tank 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0376	Gabuga Water Tank 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0377	Gabuga Water Tank 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0378	Gabuga Tank 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0379	Gabuga Tank 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0380	Gabuga Tank 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0381	Gabuga Tank 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0382	Gabuga Tank 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0346	Uranquinty TSR Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0364	Uranquinty TSR Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0365	Uranquinty TSR Fire Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0366	Uranquinty TSR Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0367	Uranquinty TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0368	Uranquinty TSR Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0369	Uranquinty TSR Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0370	Uranquinty TSR Fire Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0371	Uranquinty TSR Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0372	Uranquinty TSR Occluded Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0385	Gabuga Tank 20	Open site	Valid	Aboriginal Resource and Gathering : -
56-1-0386	Mark Saddler Gabuga 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0387	Gabuga Tank 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0388	Gabuga Tank 14	Open site	Valid	Modified Tree (Carved or Scarred) : -



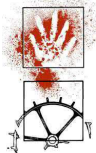
Site ID	Site name	Context	Site status	Site features Site types
56-1-0389	Gabuga Tank 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0390	Gabuga Tank 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0391	Gabuga Tank 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0392	Gabuga Tank 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0393	Rodhams Rd 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0311	Flowerdale1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0383	Gabuga Tank 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0456	Crooked Creek Ring Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0500	ROWANS TSR 1	Open site	Valid	Artefact : -
56-1-0501	ROWANS TSR 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0502	ROWANS TSR 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0503	ROWANS TSR 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0430	Rodhams Rd 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0497	Simpson TSR 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0476	plum Pudding TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0477	Plum Pudding TSR Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0483	Mitchell Rd 240 Canoe Tree	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0465	Thirteen Mile Rd scar 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0525	Gelston Homestead	Open site	Valid	Artefact : -
56-1-0539	Gregadoo Solar IF3	Open site	Valid	Artefact : -
56-1-0540	Gregadoo Solar IF1	Open site	Valid	Artefact : -
56-1-0541	Gregadoo SF IF2	Open site	Artefact : -	
56-1-0520	Springvale 957	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0586	Plum Pudding 528182	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0531	Gregadoo SF 645	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0577	Springvale 530749	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0559	Plumpton Rd 2370	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0560	Plumpton Rd 2381	Open site	Valid	Modified Tree (Carved or Scarred) : -



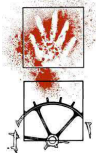
Site ID	Site name	Context	Site status	Site features Site types
56-1-0561	Plumpton Rd 2236	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0585	Stringybark Creek 529852	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0527	Gregadoo SF 463	Open site	Valid	Artefact : -
56-1-0528	Gregadoo SF 619	Open site	Artefact : -	
56-1-0529	Gregadoo SF 393	Open site	Valid	Artefact : -
56-1-0530	Gregadoo SF 360	Open site	Valid	Artefact : -
56-1-0608	Dunns road ring tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0592	Kapooka PreSchool 527789	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0622	Gregadoo SF Reburial 1	Open site	Valid	Artefact : -
56-1-0623	Gregadoo SF IF4	Open site	Valid	Artefact : -
56-4-0011	Burkes Creek;	Open site	Valid	Artefact : -
55-3-0003	Yarrawah;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0004	Bergmeier 13;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0005	Bergmeier 14;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0009	Ti Tree 3BST1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0010	Ti Tree 3BST2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0011	Ti Tree 3BST3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0012	Ti Tree 3BST4;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0013	Ti Tree 3BST5;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0016	Lyndoch 3AM3;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0017	Lyndoch 3AM4;	Open site	Valid	Earth Mound : -, Hearth : -
56-1-0006	Rodham Prop. 7;Olympic Hwy;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0007	Lewington Prop. 9;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0008	Lewington Prop. 10;Wyandra;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0023	WW33;Roping Pole Swamp Creek;	Open site	Valid	Artefact : -
56-1-0031	EAPL IFI7;Churchill Square property;	Open site	Valid	Artefact : -
56-1-0079	WW104	Open site	Valid	Modified Tree (Carved or Scarred) : 1
55-3-0039	WW 124	Open site	Valid	Modified Tree (Carved or Scarred) : 1



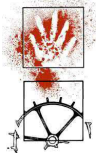
Site ID	Site name	Context	Site status	Site features Site types
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55-3-0122	Bullenbang Creek 379	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0131	The Rock TSR - S1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0322	The Rock TSR Scar Tree 27	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0323	The Rock TSR Scar Tree 26	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0324	The Rock TSR Scar Tree 28	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0325	The Rock TSR Scar Tree 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0326	The Rock TSR Rock Flakes 2	Open site	Valid	Artefact : -
56-1-0327	The Rock TSR Scar Tree 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0328	The Rock TSR Scar Tree 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0329	The Rock TSR Scar Tree 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0330	The Rock TSR Occluded Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0331	The Rock TSR Rock Core Flakes 4	Open site	Valid	Artefact : -
56-1-0332	The Rock TSR Rock Flakes 5	Open site	Valid	Artefact : -
56-1-0333	The Rock TSR Fire Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0334	The Rock TSR Scar Tree 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0335	The Rock TSR Scar Tree 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0336	The Rock TSR Scar Tree 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0337	The Rock TSR Scar Tree 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0338	The Rock TSR Occluded Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0339	The Rock TSR Scar Tree 33	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0340	The Rock TSR Scar Tree 32	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0341	The Rock TSR Scar Tree 31	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0342	The Rock TSR Scar Tree 30	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0344	The Rock TSR Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0355	The Rock TSR Scar Tree 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0356	The Rock TSR Rock Flakes 3	Open site	Valid	Artefact : -
56-1-0357	The Rock TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
56-1-0358	The Rock TSR Rock Flake 1	Open site	Valid	Artefact : -
56-1-0359	The Rock TSR Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0360	The Rock TSR Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0361	The Rock TSR Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0362	The Rock TSR Occluded Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0363	The Rock TSR Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0219	Blackwood 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0220	Blackwood 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0221	Blackwood 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0222	Blackwood 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0223	Blackwood 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0224	Blackwood 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0225	Blackwood 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0226	Blackwood 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0227	Blackwood 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0228	Blackwood 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0229	Blackwood 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0230	Blackwood 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0231	Blackwood 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0232	Blackwood 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0233	Blackwood 19	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0234	Blackwood 20	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0235	Blackwood 21	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0236	Blackwood 22	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0237	Blackwood 23	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0238	Blackwood 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0239	Kengal 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0240	Kengal 2	Open site	Valid	Modified Tree (Carved or Scarred) : -



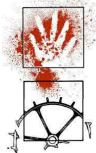
Site ID	Site name	Context	Site status	Site features Site types
56-1-0202	Vincent 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0203	Vincent 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0204	Vincent 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0205	Vincent 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0206	Vincent 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0207	Vincent 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0208	Vincent 8	Open site	Valid	Artefact : -
56-1-0209	Vincent 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0210	Vincent 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0211	Vincent 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0213	Vincent 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0214	Vincent 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0215	Blackwood 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0216	Blackwood 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0217	Blackwood 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0218	Vincent 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0113	Bullenbung Creek 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0114	Bullenbung Creek 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0115	Bullenbung Creek 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0116	Bullenbung Creek 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0117	Bullenbung Creek 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0118	Bullenbung Creek 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0119	Bullenbung Creek 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0490	The Rock Rd Side Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0491	The Rock TSR Scar Tree 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0492	The Rock TSR Scar Tree 19	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0435	Kengal 3	Open site	Valid	
55-3-0120	Wagga Lockhart Rd 890	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
55-3-0121	Wagga Lockhart Rd 848	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0514	Wagga Lockhart Rd 393	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0431	The Rock TSR Scar Tree 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0589	The Rock Ring Tree 508997	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0568	Kengal yugay 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0565	Kengal 506822	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0566	Kengal 506869	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0567	Kengal 506853	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-2-0056	W-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
49-6-0010	Boggy Creek 1;	Open site	Valid	Artefact : -
55-3-0006	Kurrie 15;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0007	Heckendorf 16;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0008	Mount Galore Shelter 1;Mt. Galore Scenic Reserve;	Closed site	Valid	Artefact : -
55-3-0036	Lockhart 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0037	Lockhart 3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0038	Lockhart 4;	Open site	Valid	Artefact : -
55-2-0001	Lake Cullivel;	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -, Burial : -
55-2-0026	Morundah M2;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0028	Morundah M5;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0029	Morundah M6;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0030	Morundah M7;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0031	Morundah M8;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0032	North Oak M9;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0033	Morundah H1;	Open site	Valid	Artefact : -
55-2-0034	Morundah H2;	Open site	Valid	Artefact : -
55-2-0035	Morundah H4;	Open site	Valid	Artefact : -
55-2-0036	Morundah H5;	Open site	Valid	Artefact : -
55-2-0037	Morundah H6;	Open site	Valid	Artefact : -



Site ID	Site name	Context	Site status	Site features Site types
55-2-0038	Morundah H7;	Open site	Valid	Artefact : -
55-2-0039	Morundah H8;	Open site	Valid	Artefact : -
55-2-0040	Morundah H9;	Open site	Valid	Artefact : -
55-2-0041	Morundah SAS1;	Open site	Valid	Artefact : -
55-2-0042	Morundah SAS2;	Open site	Valid	Artefact : -
55-2-0043	North Oak SAS3;	Open site	Valid	Artefact : -
55-2-0044	North Oak SAS4;	Open site	Valid	Artefact : -
55-2-0045	Morundah H3;	Open site	Valid	Artefact : -
55-3-0035	Lockhart 2;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0041	galore hill scar 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0112	Cemetry Stock Reserve Lockhart 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0100	Lockhart Dam 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0101	Lockhart Dam 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0102	Lockhart Dam 4	Open site	Valid	Earth Mound : -
55-3-0103	Lockhart Dam 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0104	Lockhart Dam 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0105	Lockhart Dam 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0106	Lockhart Dam 8	Open site	Valid	Earth Mound : -
55-3-0107	Lockhart Dam 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0108	Lockhart Dam 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0109	Lockhart Dam 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0110	Lockhart 50KM sign Lockhart	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0111	Lockhart Dam 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0060	Lockhart Brookong Creek Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0061	Lockhart Brookong Creek Rock Flakes 1	Open site	Valid	Artefact : -
56-1-0588	South Common 508997	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0166	South Common 475050	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0167	South Common 475250	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
55-3-0168	South Common 474948	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0169	South Common 474882	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0123	Kywong 3033	Open site	Valid	Artefact : -
55-3-0170	Cootamundra 2 Lot 555	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-2-0072	Urana 09	Open site	Valid	Artefact : -
55-2-0077	Urana 05	Open site	Valid	Artefact : -
55-2-0078	Urana 04	Open site	Valid	Artefact : -
55-2-0079	Urana 03	Open site	Valid	Artefact : -
55-2-0080	Urana 02	Open site	Valid	Artefact : -
55-2-0081	Urana 01	Open site	Valid	Artefact : -
55-2-0052	B-M/OS-1	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
55-2-0053	B-M-3	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0054	B-M-2	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0055	B-M-1	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0056	W-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
49-4-0016	DB #11;Clifford Down;	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -
49-4-0063	Coleambally Golf Club	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-6-0138	South Burrabogie 1.8	Open site	Valid	Hearth : -
48-6-0139	South Burrabogie 2	Open site	Valid	Artefact : -, Hearth : -
48-6-0140	South Burrabogie 3	Open site	Valid	Hearth : -
48-6-0131	South Burrabogie 1.1	Open site	Valid	Artefact : -, Earth Mound : -
48-6-0132	South Burrabogie 1.2	Open site	Valid	Artefact : -, Earth Mound : -
48-6-0133	South Burrabogie 1.3	Open site	Valid	Artefact : -, Hearth : -
48-6-0134	South Burrabogie 1.4	Open site	Valid	Artefact : -, Hearth : -
48-6-0135	South Burrabogie 1.5	Open site	Valid	Artefact : -
48-6-0136	South Burrabogie 1.6	Open site	Valid	Artefact : -, Hearth : -
48-6-0137	South Burrabogie 1.7	Open site	Valid	Water Hole : -
55-1-0038	Tooleybuc Bridge PAD	Open site	Valid	Potential Archaeological Deposit (PAD) : -



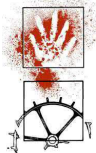
Site ID	Site name	Context	Site status	Site features Site types
49-4-0146	Coleambally Rogarts rd Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
49-4-0223	CO-ST-002	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0224	CO-ST-003	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0225	CO-ST-004	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0226	CO-ST-005	Open site	Valid	Modified Tree (Carved or Scarred) : 1
55-1-0047	BUNGONGO STATE FOREST 1 (BSF1)	Open site	Valid	Artefact : 1
48-1-0016	Back Oaks 1	Open site	Valid	Burial : 1
48-1-0017	Back Oaks.	Open site	Valid	Art (Pigment or Engraved) : -, Burial : -
48-1-0018	Back Oaks;	Open site	Valid	Burial : -
48-4-0080	Back Oaks.;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
55-6-0014	Tchelery Mounds 1-3	Open site	Valid	Burial : -
48-4-0067	Back Oaks 5;Ravensworth;	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -
48-4-0068	Back Oaks 4;Ravensworth;	Open site	Valid	Artefact : -, Burial : -, Earth Mound : -, Hearth : -
48-4-0069	Back Oaks 3;Ravensworth;	Open site	Valid	Artefact : -, Burial : -, Earth Mound : -, Hearth : -
48-4-0076	Back Oaks 2;Ravensworth;	Open site	Valid	Artefact : -
48-4-0077	Ravensworth Mounds 1-5;Ravenworth Station;	Open site	Destroyed	Earth Mound : -, Hearth : -
48-5-0021	D-B#21;Boorooban;	Open site	Valid	Modified Tree (Carved or Scarred) : -, Artefact : -
48-5-0022	D-B#22;Boorooban;	Open site	Valid	Modified Tree (Carved or Scarred) : -, Artefact : -
48-4-0008	Tchelery Mound 1-3	Open site	Valid	Earth Mound : -, Hearth : -
48-4-0011	Dry Lake 10;	Open site	Valid	Burial : -
48-4-0012	Dry Lake TSR4;	Open site	Valid	Burial : -
48-4-0017	Dry Lake West;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-5-0035	COMBERTON GRANGE ISOLATED FIND 2 (CGIF2)	Open site	Valid	Artefact : -
48-5-0037	Test Pitting Area 6 (duplicate refer to 52-5-0410)	Open site	Valid	Artefact : -
48-5-0425	RV_IF_007	Open site	Valid	Artefact : -
48-4-0097	Dry Lake TSR1	Open site	Valid	Hearth : 2
48-4-0098	Dry Lake TSR 2	Open site	Valid	Earth Mound : -



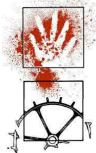
Site ID	Site name	Context	Site status	Site features Site types
48-4-0099	Dry Lake TSR 3	Open site	Valid	Earth Mound : 2
48-4-0100	Dry Lake TSR 4	Open site	Valid	Hearth : -
48-4-0101	Dry Lake TSR 5	Open site	Valid	Hearth : -, Earth Mound : -, Artefact : -
48-4-0102	Dry Lake TSR 6	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
48-4-0103	Dry Lake TSR 7	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
48-4-0104	Dry Lake TSR 8	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0105	Dry Lake TSR 9	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0106	Dry Lake TSR 10	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0107	Dry Lake TSR 11	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0108	Dry Lake TSR 12	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0109	Dry Lake TSR 13	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0110	Dry Lake TSR 14	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0111	Dry Lake TSR 15	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0112	Dry Lake TSR 16	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0113	Dry Lake TSR 17	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0114	Dry Lake TSR 18	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0115	Moulamein Road TSR 1	Open site	Valid	Burial : -
48-4-0116	Moulamein Road TSR 2	Open site	Valid	Burial : -
48-4-0117	Moulamein Road TSR 3	Open site	Valid	Burial : -
48-5-0105	16 Mile Gums 1	Open site	Valid	Hearth : -
48-5-0106	16 Mile Gums 2	Open site	Valid	Hearth : -
48-5-0107	16 Mile Gums 3	Open site	Valid	Hearth : -
48-5-0108	16 Mile Gums 4	Open site	Valid	Hearth : -
48-5-0109	16 Mile Gums 5	Open site	Valid	Hearth : -
48-4-0193	Tchelery Mound 1 Complex	Open site	Valid	Aboriginal Resource and Gathering : -, Earth Mound : -
48-5-0195	Mungadal Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0196	Mungadal Hearth 1	Open site	Valid	Hearth : -
48-5-0197	Mungadal Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -



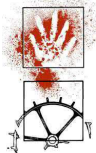
Site ID	Site name	Context	Site status	Site features Site types
48-4-0417	South Farm 004	Open site	Valid	Artefact : -
48-4-0418	South Farm 003	Open site	Valid	Artefact : -
48-4-0419	South Farm 002	Open site	Valid	Artefact : -
48-4-0420	South Farm 001	Open site	Valid	Artefact : -
48-4-0384	South Farm 024	Open site	Not a Site	Burial : -
48-4-0386	South Farm 022	Open site	Valid	Artefact : -, Earth Mound : -
48-4-0387	South Farm 021	Open site	Valid	Artefact : -, Earth Mound : -
48-4-0389	South Farm 018	Open site	Valid	Artefact : -, Burial : -
48-4-0391	South Farm 016	Open site	Valid	Burial : -
48-4-0393	South Farm 015	Open site	Not a Site	Burial : -
48-4-0394	South Farm 014	Open site	Not a Site	Artefact : -
48-4-0395	South Farm 012	Open site	Valid	Artefact : -
48-4-0396	South Farm 011	Open site	Valid	Artefact : -
48-4-0397	South Farm 010	Open site	Valid	Artefact : -
48-4-0398	South Farm 009	Open site	Valid	Artefact : -
48-4-0399	South Farm 008	Open site	Valid	Artefact : -
48-4-0400	South Farm 006	Open site	Valid	Artefact : -
48-4-0401	South farm 005	Open site	Valid	Artefact : -
48-4-0402	South Farm 007	Open site	Valid	Artefact : -
48-5-0198	Mungadal Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0199	Mungadal Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0200	Mungadal Scar Tree 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0201	Mungadal Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0202	Mungadal Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0203	Mungadal Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0204	Glenmore grinding stone 1	Open site	Valid	Artefact : -
48-5-0411	RV_HTH_002	Open site	Valid	Hearth : -
48-4-0442	Dry Lake TSR EM 2	Open site	Valid	Burial : -, Earth Mound : -



Site ID	Site name	Context	Site status	Site features Site types
48-4-0443	Dry Lake TSR B 1	Open site	Valid	Burial : -
48-4-0444	Dry Lake TSR EM 1	Open site	Valid	Earth Mound : -, Non-Human Bone and Organic Material : -
48-5-0404	RV_AFT_009	Open site	Artefact : -	
48-5-0405	RV_AFT_008	Open site	Artefact : -	
48-5-0406	RV_AFT_007	Open site	Artefact : -	
48-5-0407	RV_AFT_006	Open site	Valid	Artefact : -
48-5-0408	RV_AFT_005	Open site	Artefact : -	
48-5-0413	West Wargan H1	Open site	Valid	Hearth : -
48-5-0294	WPA IF001	Open site	Valid	Artefact : -
48-5-0295	WPA AFT001	Open site	Valid	Artefact : -
48-5-0348	RV_IF_004	Open site	Valid	Artefact : -
48-5-0350	RV_IF_005	Open site	Valid	Artefact : -
48-5-0351	RV_IF_003	Open site	Valid	Artefact : -
48-4-0390	South Farm 017	Open site	Not a Site	Burial : -
48-5-0415	RV_Reburial_001	Open site	Valid	Artefact : -
48-4-0078	Back Baldon;Baldon;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0075	Back Baldon;Baldon;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0002	Tchelery Station Moulamein	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -
48-4-0013	Kerrie East #4;	Open site	Valid	Burial : -
48-4-0014	Tchelery / Abercrombie Creek	Open site	Valid	Burial : -
48-4-0018	Kerri East Woolshed 1;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0019	KerriEast Woolshed 2	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -, Artefact : -
47-6-0099	Lintot Lake 6	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -
47-6-0100	Lintot Lake 7	Open site	Valid	Earth Mound : -
47-6-0101	Lintot Lake 8	Open site	Valid	Earth Mound : -
47-6-0102	Lintot Lake 9	Open site	Valid	Artefact : -, Earth Mound : -, Shell : -
47-6-0193	Lintot Lake 24	Open site	Valid	Modified Tree (Carved or Scarred) : -
47-6-0194	Lintot Lake 25	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -



Site ID	Site name	Context	Site status	Site features Site types
47-6-0263	Lintot Lake 26	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0264	Lintot Lake 27	Open site	Valid	Artefact : -, Hearth : -, Shell : -
47-6-0265	Lintot Lake 28	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0266	Lintot Lake 29	Open site	Valid	Hearth : -
47-6-0267	Lintot Lake 30	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0268	Lintot Lake 31	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0269	Lintot Lake 32	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0270	Lintot Lake 33	Open site	Valid	Hearth : -
47-6-0271	Lintot Lake 34	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -
47-6-0272	Lintot Lake 35	Open site	Valid	Hearth : -
47-6-0155	Lintot Lake 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
47-6-0156	Lintot Lake 11	Open site	Valid	Hearth : -, Shell : -
47-6-0157	Lintot Lake 12	Open site	Valid	Hearth : -, Shell : -
47-6-0158	Lintot Lake 13	Open site	Valid	Hearth : -
47-6-0159	Lintot Lake 14	Open site	Valid	Burial : -
47-6-0160	Lintot Lake 15	Open site	Valid	Earth Mound : -, Hearth : -
47-6-0161	Lintot Lake 16	Open site	Valid	Earth Mound : -, Hearth : -
47-6-0162	Lintot Lake 17	Open site	Valid	Hearth : -
47-6-0163	Lintot Lake 18	Open site	Valid	Earth Mound : -, Shell : -
47-6-0164	Lintot Lake 19	Open site	Valid	Hearth : -, Shell : -
47-6-0165	Lintot Lake 20	Open site	Valid	Hearth : -, Shell : -
47-6-0166	Lintot Lake 21	Open site	Valid	Hearth : -
47-6-0167	Lintot Lake 22	Open site	Valid	Hearth : -
47-6-0168	Lintot Lake 23	Open site	Valid	Hearth : -
47-6-0094	Lintot Lake 1	Open site	Partially Destroyed	Earth Mound : -
47-6-0095	Lintot Lake 2	Open site	Partially Destroyed	Earth Mound : -, Shell : -
47-6-0096	Lintot Lake 3	Open site	Partially Destroyed	Earth Mound : -



Site ID	Site name	Context	Site status	Site features Site types
47-6-0097	Lintot Lake 4	Open site	Valid	Earth Mound : -
47-6-0098	Lintot Lake 5	Open site	Valid	Earth Mound : -
48-4-0007	Kerri East Gravesite;	Open site	Valid	Burial : -
47-6-0380	Allens 1	Open site	Valid	Burial : -
47-6-0381	Allens 2	Open site	Valid	Artefact : -, Hearth : -
47-6-0382	Allens 3	Open site	Valid	Burial : -
48-4-0015	Tchelery #4	Open site	Valid	Burial : -
51-6-0764	WA-OS2	Open site	Valid	Artefact : -, Hearth : -
51-6-0765	WA-OS1	Open site	Valid	Artefact : -, Hearth : -
51-6-0766	WA-OS3	Open site	Valid	Hearth : -
47-6-0743	West Abercrombie Isolated Find 3 (WA-IF3)	Open site	Destroyed	Artefact : -
47-6-0744	West Abercrombie- Isolated Find 2 (WA-IF2)	Open site	Valid	Artefact : -
47-6-0749	WA-OS26 (West Abercrombie Open Site 26)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
48-4-0317	WA-OS24 (West Abercrombie Open Site 24)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0750	WA-OS25 (West Abercrombie Open Site 25)	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0751	WA-OS22 (West Abercrombie Open Site 22)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0752	WA-OS33 (West Abercrombie Open Site 33)	Open site	Valid	Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0753	WA-OS21 (West Abercrombie Open Site 21)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
48-4-0318	West Abercrombie Æð, Æœ Open Site 23 (WA-OS23)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0772	West Abercrombie Æð, Æœ Open Site 36 (WA-OS36)	Open site	Valid	Earth Mound : -, Potential Archaeological Deposit (PAD) : -, Burial : -
47-6-0774	WA-OS30 (West Abercrombie Open Site 30)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0775	WA-OS29 (West Abercrombie Open Site 29)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0776	WA-OS28 (West Abercrombie Open Site 28)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -



Site ID	Site name	Context	Site status	Site features Site types
47-6-0741	West Abercrombie- Open Site 19 (WA-OS19)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0742	West Abercrombie- Open Site 20 (WA-OS20)	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0807	Keri Keri AWEF Open Site 4 (KK-AWEF-OS4)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0808	Keri Keri AWEF Open Site 3 (KK-AWEF-OS3)	Open site	Valid	Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0809	Keri Keri AWEF Open Site 2 (KK-AWEF-OS2)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0845	Yanga-AWEF-OS1 (YA-AWEF-OS1)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0812	West Abercrombie - Open Site 1 (WA-OS1)	Open site	Valid	Artefact : -, Earth Mound : -
47-6-0844	WA-IF3 burial	Open site	Valid	Artefact : -
55-2-0050	Lepidium Site;	Open site		
55-2-0051	Lepium Site tree;	Open site		
55-2-0023	Lake Urana Reburial;	Open site		
55-2-0046	Lepium Site Tree;Urana Nature Reserve;	Open site		
55-2-0047	Lake Urana Scatter;Urana Nature Reserve;	Open site		
55-2-0069	Lake Urana repatriation 2019	Closed site		
55-2-0048	Lapidium Site;Urana Nature Reserve;	Open site		
55-2-0057	Urana Lake	Open site		
55-2-0060	Urangeline Rd Ring Tree 1	Open site		
55-1-0041	Colombo Creek 280	Open site		
55-1-0042	Colombo Creek 285	Open site		
55-1-0043	Colombo Creek 272	Open site		
55-1-0044	Colombo Creek 256	Open site		
55-1-0045	Colombo Creek 249	Open site		
55-1-0046	Colombo Creek 252	Open site		
55-3-0095	Brookong Creek 5	Open site		
55-3-0096	Brookong Creek 4	Open site		
55-3-0097	Brookong Creek 1	Open site		



Site ID	Site name	Context	Site status	Site features Site types
55-3-0098	Brookong Creek 2	Open site		
55-3-0099	Brookong Creek 3	Open site		
55-2-0058	Urana Caravan Park Scar Tree I Goanna	Open site		
55-2-0059	Urana Caravan Park Ring Tree 1	Open site		
55-2-0061	Urana Quarry Scatter 1	Open site		
55-2-0062	Urana Quarry artefact 2	Open site		
55-2-0063	Urana Quarry artefact 3	Open site		
55-2-0064	Urana Quarry Artefact 4	Open site		
55-2-0065	Urana Quarry Artefact 5	Open site		
55-2-0066	Lake Urana repatriation 1	Open site		
55-2-0067	Lake Urana repatriation 2	Open site		
55-2-0068	Lake Urana repatriation 3	Open site		
55-2-0070	Urana 12	Open site		
55-2-0071	Urana 11	Open site		
55-2-0073	Urana 10	Open site		
55-2-0074	Urana 08	Open site		
55-2-0075	Urana 07	Open site		
55-2-0076	Urana 06	Open site		
47-6-0004	Yanga Lake Burial Site	Open site		
47-6-0037	CONDOULPE	Open site		
47-6-0041	Condoulpe Creek	Open site		
47-6-0253	Condoulpe Lake 24	Open site		
47-6-0255	Condoulpe Lake 26	Open site		
47-6-0256	South Dusty Lake 4	Open site		
47-6-0257	South Dusty Lake 5	Open site		
47-6-0258	South Dusty Lake 6	Open site		
47-6-0259	South Dusty Lake 7	Open site		
47-6-0260	South Dusty Lake 8	Closed site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0261	South Dusty Lake 9	Open site		
47-6-0262	South Dusty Lake 10	Open site		
47-6-0146	Condoulpe 18	Open site		
47-6-0147	Condoulpe 19	Open site		
47-6-0148	Condoulpe 20	Open site		
47-6-0149	Condoulpe 21	Open site		
47-6-0150	Condoulpe 22	Open site		
47-6-0151	Condoulpe 23	Open site		
47-6-0152	South Dusty Lake 1	Open site		
47-6-0153	South Dusty Lake 2	Open site		
47-6-0154	South Dusty Lake 3	Open site		
47-6-0068	Condoulpe 1	Open site		
47-6-0069	Condoulpe 2	Open site		
47-6-0070	Condoulpe 3	Open site		
47-6-0071	Condoulpe 4	Open site		
47-6-0072	Condoulpe 5	Open site		
47-6-0073	Condoulpe 6	Open site		
47-6-0074	Condoulpe 7	Open site		
47-6-0075	Condoulpe 8	Open site		
47-6-0076	Condoulpe 9	Open site		
47-6-0077	Condoulpe 10	Open site		
47-6-0078	Condoulpe 11	Open site		
47-6-0079	Condoulpe 12	Open site		
47-6-0080	Condoulpe 13	Open site		
47-6-0081	Condoulpe 14	Open site		
47-6-0082	Condoulpe 15	Open site		
47-6-0083	Condoulpe 16	Open site		
47-6-0084	Condoulpe 17	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0085	North Dusty Lake-1	Open site		
47-6-0086	North Dusty Lake-2	Open site		
47-6-0087	North Dusty Lake-3	Open site		
47-6-0088	North Dusty Lake-4	Open site		
47-6-0089	North Dusty Lake-5	Open site		
47-6-0090	North Dusty Lake-6	Open site		
47-6-0091	hhims site	Open site		
47-6-0092	North Dusty Lake-7	Open site		
47-6-0093	North Dusty Lake-8	Open site		
47-6-0254	Condoulpe Lake 25	Open site		
47-6-0180	Lower Boundary 29	Open site		
47-6-0181	Lower Boundary 30	Open site		
47-6-0182	Lower Boundary 31	Open site		
47-6-0183	Lower Boundary 32	Open site		
47-6-0184	Lower Boundary 33	Open site		
47-6-0185	Lower Boundary 34	Open site		
47-6-0186	Lower Boundary 35	Open site		
47-6-0187	Lower Boundary 36	Open site		
47-6-0188	Lower Boundary 37	Open site		
47-6-0189	Lower Boundary 38	Open site		
47-6-0190	Lower Boundary 39	Open site		
47-6-0191	Lower Boundary 40	Open site		
47-6-0192	Lower Boundary 41	Open site		
47-6-0179	Lower Boundary 28	Open site		
47-6-0233	Lower Boundary 56	Open site		
47-6-0234	Lower Boundary 57	Open site		
47-6-0235	Lower Boundary 58	Open site		
47-6-0236	Lower Boundary 59	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0237	Lower Boundary 60	Open site		
47-6-0238	Lower Boundary 61	Open site		
47-6-0239	Lower Boundary 62	Open site		
47-6-0240	Lower Boundary 63	Open site		
47-6-0241	Lower Boundary 64	Open site		
47-6-0242	Lower Boundary 65	Open site		
47-6-0243	Lower Boundary 66	Open site		
47-6-0244	Lower Boundary 67	Open site		
47-6-0245	Lower Boundary 68	Open site		
47-6-0246	Lower Boundary 69	Open site		
47-6-0247	Lower Boundary 70	Open site		
47-6-0248	Lower Boundary 71	Open site		
47-6-0249	Lower Boundary 72	Open site		
47-6-0250	Lower Boundary 73	Open site		
47-6-0251	Lower Boundary 74	Open site		
47-6-0252	Lower Boundary 75	Open site		
47-6-0061	Lower Boundary 0	Open site		
47-6-0219	Lower Boundary 42	Open site		
47-6-0220	Lower Boundary 43	Open site		
47-6-0221	Lower Boundary 44	Open site		
47-6-0222	Lower Boundary 45	Open site		
47-6-0223	Lower Boundary 46	Open site		
47-6-0224	Lower Boundary 47	Open site		
47-6-0225	Lower Boundary 48	Open site		
47-6-0226	Lower Boundary 49	Open site		
47-6-0227	Lower Boundary 50	Open site		
47-6-0228	Lower Boundary 51	Open site		
47-6-0229	Lower Boundary 52	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0230	Lower Boundary 53	Open site		
47-6-0231	Lower Boundary 54	Open site		
47-6-0232	Lower Boundary 55	Open site		
47-6-0125	Lower Boundary 7	Open site		
47-6-0126	Lower Boundary 8	Open site		
47-6-0127	Lower Boundary 9	Open site		
47-6-0128	Lower Boundary 10	Open site		
47-6-0129	Lower Boundary 11	Open site		
47-6-0130	Lower Boundary 12	Open site		
47-6-0131	Lower Boundary 13	Open site		
47-6-0132	Lower Boundary 14	Open site		
47-6-0133	Lower Boundary 15	Open site		
47-6-0134	Lower Boundary 16	Open site		
47-6-0135	Lower Boundary 17	Open site		
47-6-0136	Lower Boundary 18	Open site		
47-6-0137	Lower Boundary 19	Open site		
47-6-0138	Lower Boundary 20	Open site		
47-6-0139	Lower Boundary 21	Open site		
47-6-0140	Lower Boundary 22	Open site		
47-6-0141	Lower Boundary 23	Open site		
47-6-0142	Lower Boundary 24	Open site		
47-6-0143	Lower Boundary 25	Open site		
47-6-0144	Lower Boundary 26	Open site		
47-6-0145	Lower Boundary 27	Open site		
47-6-0062	Lower Boundary 01	Open site		
47-6-0063	Lower Boundary 02	Open site		
47-6-0064	Lower Boundary 03	Open site		
47-6-0065	Lower Boundary 04	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0066	Lower Boundary 05	Open site		
47-6-0067	Lower Boundary 06	Open site		
47-5-0007	Transmission Line 2	Open site		
47-6-0603	Transmission Line 3	Open site		
47-6-0604	Transmission Line 4	Open site		
47-6-0605	Transmission Line 5	Open site		
47-6-0606	Transmission Line 6	Open site		
47-5-0008	Transmission Line 7	Open site		
47-5-0009	Transmission Line 8	Open site		
47-6-0813	Sunraysia Solar Open Site 1	Open site		
47-6-0816	Sunraysia Solar Open Site Complex 1	Open site		
47-5-0045	Limondale 1	Open site		
47-6-0826	Limondale 2	Open site		
47-6-0827	Limondale 3	Open site		
47-6-0828	Limondale 4	Open site		
47-6-0829	Limondale 5	Open site		
47-6-0830	Limondale 6	Open site		
47-6-0831	Limondale 7	Open site		
47-6-0832	Limondale 12	Open site		
47-6-0833	Limondale 11	Open site		
47-5-0046	Limondale 9	Open site		
47-6-0834	Limondale 8	Open site		
47-6-0814	Sunraysia Solar Oven 2	Open site		
47-6-0815	Sunraysia Solar Oven 1	Open site		
47-5-0001	Lake Waldaira;	Open site		
47-5-0002	Balranald;	Open site		
47-5-0003	Balranald;	Open site		
47-5-0022	Waldaira PAD	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-5-0017	Waldaira 2	Open site		
47-5-0018	Waldaira AS 1	Open site		
47-5-0019	Waldaira IF 4	Open site		
47-5-0020	Waldaira IF 1	Open site		
47-5-0021	Waldaira AS 2	Open site		
47-5-0014	Waldaira AS 3	Open site		
47-5-0015	Waldaira Complex 2	Open site		
47-5-0016	Waldaira Complex 1	Open site		
47-5-0010	Waldaira IF 3	Open site		
47-5-0011	Waldaira AS 4	Open site		
47-5-0012	Waldaira IF 2	Open site		
47-5-0013	Waldaira IF 5	Open site		
47-5-0048	BU-IF-003	Open site		
47-4-0003	Lake Benanee;Robinvale;	Open site		
47-4-0012	Lake Benanee Burial 3;	Open site		
47-4-0020	Lake Benanee Burials 4	Open site		
47-4-0021	Lake Benanee Burials 6	Open site		
47-4-0022	Lake Benanee Burials 5	Open site		
47-4-0096	Billa Downs 96 Midden	Open site		
47-4-0127	Billa Downs 151	Open site		
47-4-0133	Billa Downs 189	Open site		
47-4-0134	Billa Downs 192	Open site		
47-4-0135	Billa Downs 193	Open site		
47-4-0136	Billa Downs 197	Open site		
47-4-0328	Lake Benanee	Open site		
47-4-0329	Lake Benanee Scatter 1	Open site		
47-5-0047	BU-IF-002	Open site		
47-3-0013	Dry Lake Burial;	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0001	Robinvale	Open site		
47-4-0005	Dry Lake;	Open site		
47-4-0008	two;	Open site		
47-4-0009	three;	Open site		
47-4-0013	Dry Lake Burial;	Open site		
47-4-0028	Billa Downs 20	Open site		
47-4-0029	Billa Downs 21, 22, 23	Open site		
47-4-0030	Billa Downs 24	Open site		
47-4-0031	Billa Downs 26	Open site		
47-4-0033	Billa Downs 28	Open site		
47-4-0019	Dry Lake north 01	Open site		
47-4-0079	Billa Downs 76	Open site		
47-4-0080	Billa Dowsn 77	Open site		
47-4-0081	Billa Downs 78	Open site		
47-4-0082	Billa Downs 79	Open site		
47-4-0083	Billa Downs 80	Open site		
47-4-0084	Billa Downs 81-83	Open site		
47-4-0085	Billa Downs 84	Open site		
47-4-0086	Billa Downs 85	Open site		
47-4-0023	Dry Lake Midden 1	Open site		
47-4-0042	Bill Downs 37	Open site		
47-4-0043	Billa Downs 38	Open site		
47-4-0044	Billa Downs 39	Open site		
47-4-0035	Billa Downs 30	Open site		
47-4-0036	Billa Downs 31	Open site		
47-4-0041	Billa Downs 36	Open site		
47-4-0087	Billa Downs 86	Open site		
47-4-0088	Billa Downs 87	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0089	Billa Downs 88	Open site		
47-4-0090	Billa Downs 89, 90, 91	Open site		
47-4-0091	Billa Downs 92	Open site		
47-4-0092	Billa Downs 93	Open site		
47-4-0093	Billa Downs 94	Open site		
47-4-0094	Billa Downs 95	Open site		
47-4-0097	Billa Downs 97	Open site		
47-4-0099	Billa Downs 99	Open site		
47-4-0100	Billa Downs 100	Open site		
47-4-0101	Billa Downs 101	Open site		
47-4-0102	Billa Downs 102	Open site		
47-4-0103	Billa Downs 103	Open site		
47-4-0104	Billa Downs 104	Open site		
47-4-0105	Billa Downs 105	Open site		
47-4-0106	Billa Downs 106	Open site		
47-4-0107	Billa Downs 108	Open site		
47-4-0108	Billa Downs 109	Open site		
47-4-0109	Billa Downs 110	Open site		
47-4-0110	Billa Downs 111	Open site		
47-4-0111	Billa Downs 112	Open site		
47-4-0112	Billa Downs 113	Open site		
47-4-0113	Billa Downs 114	Open site		
47-4-0114	Billa Downs 115	Open site		
47-4-0115	Billa Downs 116	Open site		
47-4-0116	Billa Downs 117	Open site		
47-4-0117	Billa Downs 118	Open site		
47-4-0118	Billa Downs 119	Open site		
47-4-0024	Billa Downs 16	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0025	Billa Downs 17	Open site		
47-4-0026	Billa Downs 18	Open site		
47-4-0027	Billa Downs 19	Open site		
47-4-0034	Billa Downs 29	Open site		
47-4-0119	Billa Downs 120 & 121	Open site		
47-4-0120	Billa Downs 122	Open site		
47-4-0121	Billa Downs 123	Open site		
47-4-0122	Billa Downs 124	Open site		
47-4-0123	Billa Downs 125	Open site		
47-4-0124	Billa Downs 126	Open site		
47-4-0125	Billa Downs 127	Open site		
47-4-0130	Billa Downs 183	Open site		
47-4-0131	Billa Downs 184	Open site		
47-4-0132	Billa Downs 187	Open site		
47-4-0150	Billa Downs 1 (same as 51-4-0104)	Open site		
47-4-0151	Billa Downs 2	Open site		
47-4-0152	Billa Downs 3	Open site		
47-4-0153	Billa Downs 4	Open site		
47-4-0154	Billa Downs 5	Open site		
47-4-0159	Billa Downs 10	Open site		
47-4-0160	Billa Downs 11	Open site		
47-4-0161	Billa Downs 12	Open site		
47-4-0162	Billa Downs 13	Open site		
47-4-0163	Billa Downs 14	Open site		
47-4-0164	Billa Downs 15	Open site		
47-4-0052	Billa Downs 25 1836 Conflict Site	Open site		
47-4-0062	Billa Downs 58	Open site		
47-4-0063	Billa Downs 59	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0064	Billa Downs 60	Open site		
47-4-0065	Billa Downs 61	Open site		
47-4-0066	Billa Downs 62	Open site		
47-4-0067	Billa Downs 63	Open site		
47-4-0068	Billa Downs 64	Open site		
47-4-0069	Billa Downs 65	Open site		
47-4-0070	Billa Downs 66	Open site		
47-4-0071	Billa Downs 67	Open site		
47-4-0072	Billa Downs 68	Open site		
47-4-0073	Billa Downs 69	Open site		
47-4-0074	Billa Downs 70	Open site		
47-4-0075	Billa Downs 71	Open site		
47-4-0076	Billa Downs 72	Open site		
47-4-0077	Billa Downs 73 & 74	Open site		
47-4-0078	Billa Downs 75	Open site		
47-4-0324	Euston Floodplain 1	Open site		
47-4-0185	Euston Regional Park 19	Open site		
47-4-0331	BU-IF-001	Open site		
46-1-0105	C1 River Margin	Open site		
46-3-0065	GGs Site 34;	Open site		
46-3-0066	GGs Site 35;	Open site		
46-3-0067	GGs Site 36;	Open site		
46-3-0068	GGs Site 37;	Open site		
46-3-0069	GGs Site 38;	Open site		
46-3-0070	GGs Site 39;	Open site		
46-3-0071	GGs Site 41;	Open site		
46-3-0072	GGs Site 43;	Open site		
46-3-0073	GGs Site 44;	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0074	GGG Site 45;	Open site		
46-3-0075	GGG Site 46;	Open site		
46-3-0076	GGG Site 40;	Open site		
46-3-0077	GGG Site 42;	Open site		
46-3-0078	Kemendoe Reburial;	Open site		
46-3-0079	Gol Gol Lake Midden;	Open site		
46-3-0080	Gol Gol Swamp: reburial of remains	Open site		
46-3-0081	Bowen Park_1;	Open site		
46-3-0006	Gol Gol Lake;	Open site		
46-3-0007	Redcliffs;	Open site		
46-3-0008	Trymple;	Open site		
46-3-0046	GGG Site 15;	Open site		
46-3-0047	GGG Site 16;	Open site		
46-3-0048	GGG Site 17;	Open site		
46-3-0049	GGG Site 18;	Open site		
46-3-0050	GGG Site 19;	Open site		
46-3-0051	GGG Site 20;	Open site		
46-3-0052	GGG Site 21;	Open site		
46-3-0053	GGG Site 22;	Open site		
46-3-0054	GGG Site 23;	Open site		
46-3-0055	GGG Site 24;	Open site		
46-3-0057	GGG Site 26;	Open site		
46-3-0058	GGG Site 27;	Open site		
46-3-0059	GGG Site 28;	Open site		
46-3-0060	GGG Site 29;	Open site		
46-3-0061	GGG Site 30;	Open site		
46-3-0062	GGG Site 31;	Open site		
46-3-0010	Mildura;Mildura/Buronga Bridge;	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0016	Lawson 1;	Open site		
46-3-0017	Mallee Cliffs Site 2;	Open site		
46-3-0018	Mallee Cliffs Site 3;	Open site		
46-3-0019	Mallee Cliffs Site 4;	Open site		
46-3-0020	Malle Cliffs Site 5;	Open site		
46-3-0021	Mallee Cliffs Site 1;	Open site		
46-3-0022	Gol Gol Midden;	Open site		
46-3-0023	Bottle Bend Midden;	Open site		
46-3-0024	Bengallow Creek 1;	Open site		
46-3-0028	Mallee Cliffs;Scarred Tree 1;	Open site		
46-3-0029	malle cliffs site 6;	Open site		
46-3-0030	Pumping Station Site	Open site		
46-3-0032	GGs Site 1;	Open site		
46-3-0033	GGs Site 2;	Open site		
46-3-0034	GGs Site 3;	Open site		
46-3-0035	GGs Site 4;	Open site		
46-3-0036	GGs Site 5;	Open site		
46-3-0038	GGs Site 7;	Open site		
46-3-0039	GGs Site 8;	Open site		
46-3-0040	GGs Site 9;	Open site		
46-3-0041	GGs Site 10;	Open site		
46-3-0042	GGs Site 11;	Open site		
46-3-0043	GGs Site 12;	Open site		
46-3-0044	GGs Site 13;	Open site		
46-3-0045	GGs Site 14;	Open site		
46-3-0063	GGs Site 32;	Open site		
46-3-0064	GGs Site 33;	Open site		
46-3-0085	GOL GOL SAND HILL	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0086	TAPIO 1	Open site		
46-3-0092	Buronga Loam Pit 1	Open site		
46-3-0093	Buronga Loam Pit 2	Open site		
46-3-0095	KB1	Open site		
46-3-0090	Malle Cliffs Site 7	Open site		
46-3-0108	River Drive 1 (RD1)	Open site		
46-3-0037	GGs Site 6;	Open site		
46-3-0056	GGs Site 25;	Open site		
46-3-0110	Inland Botanical Gardens 1	Open site		
46-3-0111	Inland Botanical Gardens 2	Open site		
46-3-0112	Inland Botanical Gardens 3	Open site		
46-3-0113	Inland Botanical Gardens 4	Open site		
46-3-0115	Murray Street Midden	Open site		
46-3-0114	Gol Gol Lake Craib site 62	Open site		
46-3-0116	Gol Gol Lake Midden 4	Open site		
46-3-0117	Gol Gol Lake Midden 3	Open site		
46-3-0118	Gol Gol Lake Midden 2	Open site		
46-3-0125	Gol Gol Survey Area	Open site		
46-3-0126	Gol Gol Drings Hill Burial	Open site		
46-3-0123	Potters Drive burials	Open site		
46-3-0124	Gol Gol Inlet Creek fireplace	Open site		
46-3-0128	Buronga Botanical Gardens Burial 2	Open site		
46-3-0179	Buronga Gol Gol Conoe Tree 1	Open site		
46-3-0180	Buronga Gol Gol Scar Tree 1	Open site		
46-3-0181	Buronga Gol Gol Scar Tree 2	Open site		
46-3-0182	BOTTLE BEND RESERVE T1	Open site		
46-3-0183	BOTTLE BEND RESERVE T2	Open site		
46-3-0184	BOTTLE BEND RESERVE T3	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0185	BOTTLE BEND RESERVE T4	Open site		
46-3-0186	BOTTLE BEND RESERVE T5	Open site		
46-3-0187	BOTTLE BEND RESERVE T6	Open site		
46-3-0188	BOTTLE BEND RESERVE T7	Open site		
46-3-0189	BOTTLE BEND RESERVE T8	Open site		
46-3-0190	BOTTLE BEND RESERVE H1	Open site		
46-3-0193	James King Park Earth Mound 1	Open site		
46-3-0191	Gol Gol Midden 2	Open site		
46-3-0192	Buronga Landfill Artefact Scatter 1	Open site		
46-3-0198	Gol Gol Midden 3	Open site		
46-1-0105	C1 River Margin	Open site		Midden
46-3-0006	Gol Gol Lake;	Open site		Carved Tree
46-3-0007	Redcliffs;	Open site		Midden
46-3-0008	Trymple;	Open site		Scarred Tree
46-3-0010	Mildura;Mildura/Buronga Bridge;	Open site		Scarred Tree
46-3-0016	Lawson 1;	Open site		Open Camp Site
46-3-0017	Mallee Cliffs Site 2;	Open site		Midden,Open Camp Site
46-3-0018	Mallee Cliffs Site 3;	Open site		Midden
46-3-0019	Mallee Cliffs Site 4;	Open site		Midden,Mound (Oven)
46-3-0020	Malle Cliffs Site 5;	Open site		Midden
46-3-0021	Mallee Cliffs Site 1;	Open site		Midden,Open Camp Site
46-3-0022	Gol Gol Midden;	Open site		Midden
46-3-0023	Bottle Bend Midden;	Open site		Midden
46-3-0024	Bengallow Creek 1;	Open site		Midden
46-3-0028	Mallee Cliffs;Scarred Tree 1;	Open site		Scarred Tree
46-3-0029	malle cliffs site 6;	Open site		Midden
46-3-0030	Pumping Station Site	Open site		Midden
46-3-0032	GGs Site 1;	Open site		Scarred Tree



Site ID	Site name	Context	Site status	Site features Site types
46-3-0033	GGs Site 2;	Open site		Scarred Tree
46-3-0034	GGs Site 3;	Open site		Scarred Tree
46-3-0035	GGs Site 4;	Open site		Open Camp Site
46-3-0036	GGs Site 5;	Open site		Scarred Tree
46-3-0037	GGs Site 6;	Open site		Scarred Tree
46-3-0038	GGs Site 7;	Open site		Scarred Tree
46-3-0039	GGs Site 8;	Open site		Open Camp Site
46-3-0040	GGs Site 9;	Open site		Scarred Tree
46-3-0041	GGs Site 10;	Open site		Scarred Tree
46-3-0042	GGs Site 11;	Open site		Scarred Tree
46-3-0043	GGs Site 12;	Open site		Scarred Tree
46-3-0044	GGs Site 13;	Open site		Scarred Tree
46-3-0045	GGs Site 14;	Open site		Scarred Tree
46-3-0046	GGs Site 15;	Open site		Scarred Tree
46-3-0047	GGs Site 16;	Open site		Open Camp Site
46-3-0048	GGs Site 17;	Open site		Open Camp Site
46-3-0049	GGs Site 18;	Open site		Scarred Tree
46-3-0050	GGs Site 19;	Open site		Scarred Tree
46-3-0051	GGs Site 20;	Open site		Scarred Tree
46-3-0052	GGs Site 21;	Open site		Scarred Tree
46-3-0053	GGs Site 22;	Open site		Scarred Tree
46-3-0054	GGs Site 23;	Open site		Scarred Tree
46-3-0055	GGs Site 24;	Open site		Scarred Tree
46-3-0056	GGs Site 25;	Open site		Scarred Tree
46-3-0057	GGs Site 26;	Open site		Scarred Tree
46-3-0058	GGs Site 27;	Open site		Open Camp Site
46-3-0059	GGs Site 28;	Open site		Scarred Tree
46-3-0060	GGs Site 29;	Open site		Scarred Tree



Site ID	Site name	Context	Site status	Site features Site types
46-3-0061	GGS Site 30;	Open site		Scarred Tree
46-3-0062	GGS Site 31;	Open site		Scarred Tree
46-3-0063	GGS Site 32;	Open site		Scarred Tree
46-3-0064	GGS Site 33;	Open site		Scarred Tree
46-3-0065	GGS Site 34;	Open site		Scarred Tree
46-3-0066	GGS Site 35;	Open site		Scarred Tree
46-3-0067	GGS Site 36;	Open site		Scarred Tree
46-3-0068	GGS Site 37;	Open site		Scarred Tree
46-3-0069	GGS Site 38;	Open site		Scarred Tree
46-3-0070	GGS Site 39;	Open site		Scarred Tree
46-3-0071	GGS Site 41;	Open site		Scarred Tree
46-3-0072	GGS Site 43;	Open site		Scarred Tree
46-3-0073	GGS Site 44;	Open site		Scarred Tree
46-3-0074	GGS Site 45;	Open site		Scarred Tree
46-3-0075	GGS Site 46;	Open site		Scarred Tree
46-3-0076	GGS Site 40;	Open site		Scarred Tree
46-3-0077	GGS Site 42;	Open site		Scarred Tree
46-3-0078	Kemendoe Reburial;	Open site		Burial/s
46-3-0079	Gol Gol Lake Midden;	Open site		Burial/s
46-3-0080	Gol Gol Swamp: reburial of remains	Open site		Burial/s
46-3-0081	Bowen Park_ 1;	Open site		Midden,Open Camp Site
46-3-0085	GOL GOL SAND HILL	Open site		
46-3-0086	TAPIO 1	Open site		
46-3-0090	Malle Cliffs Site 7	Open site		
46-3-0092	Buronga Loam Pit 1	Open site		
46-3-0093	Buronga Loam Pit 2	Open site		
46-3-0095	KB1	Open site		
46-3-0108	River Drive 1 (RD1)	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0110	Inland Botanical Gardens 1	Open site		
46-3-0111	Inland Botanical Gardens 2	Open site		
46-3-0112	Inland Botanical Gardens 3	Open site		
46-3-0113	Inland Botanical Gardens 4	Open site		
46-3-0114	Gol Gol Lake Craib site 62	Open site		
46-3-0115	Murray Street Midden	Open site		
46-3-0116	Gol Gol Lake Midden 4	Open site		
46-3-0117	Gol Gol Lake Midden 3	Open site		
46-3-0118	Gol Gol Lake Midden 2	Open site		
46-3-0123	Potters Drive burials	Open site		
46-3-0124	Gol Gol Inlet Creek fireplace	Open site		
46-3-0125	Gol Gol Survey Area	Open site		
46-3-0126	Gol Gol Drings Hill Burial	Open site		
46-3-0128	Buronga Botanical Gardens Burial 2	Open site		
46-3-0179	Buronga Gol Gol Conoe Tree 1	Open site		
46-3-0180	Buronga Gol Gol Scar Tree 1	Open site		
46-3-0181	Buronga Gol Gol Scar Tree 2	Open site		
46-3-0182	BOTTLE BEND RESERVE T1	Open site		
46-3-0183	BOTTLE BEND RESERVE T2	Open site		
46-3-0184	BOTTLE BEND RESERVE T3	Open site		
46-3-0185	BOTTLE BEND RESERVE T4	Open site		
46-3-0186	BOTTLE BEND RESERVE T5	Open site		
46-3-0187	BOTTLE BEND RESERVE T6	Open site		
46-3-0188	BOTTLE BEND RESERVE T7	Open site		
46-3-0189	BOTTLE BEND RESERVE T8	Open site		
46-3-0190	BOTTLE BEND RESERVE H1	Open site		
46-3-0191	Gol Gol Midden 2	Open site		
46-3-0192	Buronga Landfill Artefact Scatter 1	Open site		



Site ID	Site name	Context	Site status	Site features Site types
46-3-0193	James King Park Earth Mound 1	Open site		
46-3-0198	Gol Gol Midden 3	Open site		
47-3-0013	Dry Lake Burial;	Open site		Burial/s
47-4-0001	Robinvale	Open site		Mia Mia
47-4-0003	Lake Benanee;Robinvale;	Open site		Burial/s
47-4-0005	Dry Lake;	Open site		Burial/s
47-4-0008	two;	Open site		Scarred Tree
47-4-0009	three;	Open site		Scarred Tree
47-4-0012	Lake Benanee Burial 3;	Open site		Burial/s
47-4-0013	Dry Lake Burial;	Open site		Burial/s,Midden
47-4-0019	Dry Lake north 01	Open site		
47-4-0020	Lake Benanee Burials 4	Open site		
47-4-0021	Lake Benanee Burials 6	Open site		
47-4-0022	Lake Benanee Burials 5	Open site		
47-4-0023	Dry Lake Midden 1	Open site		
47-4-0024	Billa Downs 16	Open site		
47-4-0025	Billa Downs 17	Open site		
47-4-0026	Billa Downs 18	Open site		
47-4-0027	Billa Downs 19	Open site		
47-4-0028	Billa Downs 20	Open site		
47-4-0029	Billa Downs 21, 22, 23	Open site		
47-4-0030	Billa Downs 24	Open site		
47-4-0031	Billa Downs 26	Open site		
47-4-0033	Billa Downs 28	Open site		
47-4-0034	Billa Downs 29	Open site		
47-4-0035	Billa Downs 30	Open site		
47-4-0036	Billa Downs 31	Open site		
47-4-0041	Billa Downs 36	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0042	Bill Downs 37	Open site		
47-4-0043	Billa Downs 38	Open site		
47-4-0044	Billa Downs 39	Open site		
47-4-0052	Billa Downs 25 1836 Conflict Site	Open site		
47-4-0062	Billa Downs 58	Open site		
47-4-0063	Billa Downs 59	Open site		
47-4-0064	Billa Downs 60	Open site		
47-4-0065	Billa Downs 61	Open site		
47-4-0066	Billa Downs 62	Open site		
47-4-0067	Billa Downs 63	Open site		
47-4-0068	Billa Downs 64	Open site		
47-4-0069	Billa Downs 65	Open site		
47-4-0070	Billa Downs 66	Open site		
47-4-0071	Billa Downs 67	Open site		
47-4-0072	Billa Downs 68	Open site		
47-4-0073	Billa Downs 69	Open site		
47-4-0074	Billa Downs 70	Open site		
47-4-0075	Billa Downs 71	Open site		
47-4-0076	Billa Downs 72	Open site		
47-4-0077	Billa Downs 73 & 74	Open site		
47-4-0078	Billa Downs 75	Open site		
47-4-0079	Billa Downs 76	Open site		
47-4-0080	Billa Dowsn 77	Open site		
47-4-0081	Billa Downs 78	Open site		
47-4-0082	Billa Downs 79	Open site		
47-4-0083	Billa Downs 80	Open site		
47-4-0084	Billa Downs 81-83	Open site		
47-4-0085	Billa Downs 84	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0086	Billa Downs 85	Open site		
47-4-0087	Billa Downs 86	Open site		
47-4-0088	Billa Downs 87	Open site		
47-4-0089	Billa Downs 88	Open site		
47-4-0090	Billa Downs 89, 90, 91	Open site		
47-4-0091	Billa Downs 92	Open site		
47-4-0092	Billa Downs 93	Open site		
47-4-0093	Billa Downs 94	Open site		
47-4-0094	Billa Downs 95	Open site		
47-4-0096	Billa Downs 96 Midden	Open site		
47-4-0097	Billa Downs 97	Open site		
47-4-0099	Billa Downs 99	Open site		
47-4-0100	Billa Downs 100	Open site		
47-4-0101	Billa Downs 101	Open site		
47-4-0102	Billa Downs 102	Open site		
47-4-0103	Billa Downs 103	Open site		
47-4-0104	Billa Downs 104	Open site		
47-4-0105	Billa Downs 105	Open site		
47-4-0106	Billa Downs 106	Open site		
47-4-0107	Billa Downs 108	Open site		
47-4-0108	Billa Downs 109	Open site		
47-4-0109	Billa Downs 110	Open site		
47-4-0110	Billa Downs 111	Open site		
47-4-0111	Billa Downs 112	Open site		
47-4-0112	Billa Downs 113	Open site		
47-4-0113	Billa Downs 114	Open site		
47-4-0114	Billa Downs 115	Open site		
47-4-0115	Billa Downs 116	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0116	Billa Downs 117	Open site		
47-4-0117	Billa Downs 118	Open site		
47-4-0118	Billa Downs 119	Open site		
47-4-0119	Billa Downs 120 & 121	Open site		
47-4-0120	Billa Downs 122	Open site		
47-4-0121	Billa Downs 123	Open site		
47-4-0122	Billa Downs 124	Open site		
47-4-0123	Billa Downs 125	Open site		
47-4-0124	Billa Downs 126	Open site		
47-4-0125	Billa Downs 127	Open site		
47-4-0127	Billa Downs 151	Open site		
47-4-0130	Billa Downs 183	Open site		
47-4-0131	Billa Downs 184	Open site		
47-4-0132	Billa Downs 187	Open site		
47-4-0133	Billa Downs 189	Open site		
47-4-0134	Billa Downs 192	Open site		
47-4-0135	Billa Downs 193	Open site		
47-4-0136	Billa Downs 197	Open site		
47-4-0150	Billa Downs 1 (same as 51-4-0104)	Open site		
47-4-0151	Billa Downs 2	Open site		
47-4-0152	Billa Downs 3	Open site		
47-4-0153	Billa Downs 4	Open site		
47-4-0154	Billa Downs 5	Open site		
47-4-0159	Billa Downs 10	Open site		
47-4-0160	Billa Downs 11	Open site		
47-4-0161	Billa Downs 12	Open site		
47-4-0162	Billa Downs 13	Open site		
47-4-0163	Billa Downs 14	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-4-0164	Billa Downs 15	Open site		
47-4-0185	Euston Regional Park 19	Open site		
47-4-0324	Euston Floodplain 1	Open site		
47-4-0328	Lake Benanee	Open site		
47-4-0329	Lake Benanee Scatter 1	Open site		
47-4-0331	BU-IF-001	Open site		
47-5-0001	Lake Waldaira;	Open site		Burial/s
47-5-0002	Balranald;	Open site		Scarred Tree
47-5-0003	Balranald;	Open site		Scarred Tree
47-5-0007	Transmission Line 2	Open site		
47-5-0008	Transmission Line 7	Open site		
47-5-0009	Transmission Line 8	Open site		
47-5-0010	Waldaira IF 3	Open site		
47-5-0011	Waldaira AS 4	Open site		
47-5-0012	Waldaira IF 2	Open site		
47-5-0013	Waldaira IF 5	Open site		
47-5-0014	Waldaira AS 3	Open site		
47-5-0015	Waldaira Complex 2	Open site		
47-5-0016	Waldaira Complex 1	Open site		
47-5-0017	Waldaira 2	Open site		
47-5-0018	Waldaira AS 1	Open site		
47-5-0019	Waldaira IF 4	Open site		
47-5-0020	Waldaira IF 1	Open site		
47-5-0021	Waldaira AS 2	Open site		
47-5-0022	Waldaira PAD	Open site		
47-5-0045	Limondale 1	Open site		
47-5-0046	Limondale 9	Open site		
47-5-0047	BU-IF-002	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-5-0048	BU-IF-003	Open site		
47-6-0004	Yanga Lake Burial Site	Open site		Burial/s
47-6-0037	CONDOULPE	Open site		
47-6-0041	Condoulpe Creek	Open site		
47-6-0061	Lower Boundary 0	Open site		
47-6-0062	Lower Boundary 01	Open site		
47-6-0063	Lower Boundary 02	Open site		
47-6-0064	Lower Boundary 03	Open site		
47-6-0065	Lower Boundary 04	Open site		
47-6-0066	Lower Boundary 05	Open site		
47-6-0067	Lower Boundary 06	Open site		
47-6-0068	Condoulpe 1	Open site		
47-6-0069	Condoulpe 2	Open site		
47-6-0070	Condoulpe 3	Open site		
47-6-0071	Condoulpe 4	Open site		
47-6-0072	Condoulpe 5	Open site		
47-6-0073	Condoulpe 6	Open site		
47-6-0074	Condoulpe 7	Open site		
47-6-0075	Condoulpe 8	Open site		
47-6-0076	Condoulpe 9	Open site		
47-6-0077	Condoulpe 10	Open site		
47-6-0078	Condoulpe 11	Open site		
47-6-0079	Condoulpe 12	Open site		
47-6-0080	Condoulpe 13	Open site		
47-6-0081	Condoulpe 14	Open site		
47-6-0082	Condoulpe 15	Open site		
47-6-0083	Condoulpe 16	Open site		
47-6-0084	Condoulpe 17	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0085	North Dusty Lake-1	Open site		
47-6-0086	North Dusty Lake-2	Open site		
47-6-0087	North Dusty Lake-3	Open site		
47-6-0088	North Dusty Lake-4	Open site		
47-6-0089	North Dusty Lake-5	Open site		
47-6-0090	North Dusty Lake-6	Open site		
47-6-0091	hhims site	Open site		
47-6-0092	North Dusty Lake-7	Open site		
47-6-0093	North Dusty Lake-8	Open site		
47-6-0094	Lintot Lake 1	Open site	Partially Destroyed	Earth Mound : -
47-6-0095	Lintot Lake 2	Open site	Partially Destroyed	Earth Mound : -, Shell : -
47-6-0096	Lintot Lake 3	Open site	Partially Destroyed	Earth Mound : -
47-6-0097	Lintot Lake 4	Open site	Valid	Earth Mound : -
47-6-0098	Lintot Lake 5	Open site	Valid	Earth Mound : -
47-6-0099	Lintot Lake 6	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -
47-6-0100	Lintot Lake 7	Open site	Valid	Earth Mound : -
47-6-0101	Lintot Lake 8	Open site	Valid	Earth Mound : -
47-6-0102	Lintot Lake 9	Open site	Valid	Artefact : -, Earth Mound : -, Shell : -
47-6-0125	Lower Boundary 7	Open site		
47-6-0126	Lower Boundary 8	Open site		
47-6-0127	Lower Boundary 9	Open site		
47-6-0128	Lower Boundary 10	Open site		
47-6-0129	Lower Boundary 11	Open site		
47-6-0130	Lower Boundary 12	Open site		
47-6-0131	Lower Boundary 13	Open site		
47-6-0132	Lower Boundary 14	Open site		
47-6-0133	Lower Boundary 15	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0134	Lower Boundary 16	Open site		
47-6-0135	Lower Boundary 17	Open site		
47-6-0136	Lower Boundary 18	Open site		
47-6-0137	Lower Boundary 19	Open site		
47-6-0138	Lower Boundary 20	Open site		
47-6-0139	Lower Boundary 21	Open site		
47-6-0140	Lower Boundary 22	Open site		
47-6-0141	Lower Boundary 23	Open site		
47-6-0142	Lower Boundary 24	Open site		
47-6-0143	Lower Boundary 25	Open site		
47-6-0144	Lower Boundary 26	Open site		
47-6-0145	Lower Boundary 27	Open site		
47-6-0146	Condoulpe 18	Open site		
47-6-0147	Condoulpe 19	Open site		
47-6-0148	Condoulpe 20	Open site		
47-6-0149	Condoulpe 21	Open site		
47-6-0150	Condoulpe 22	Open site		
47-6-0151	Condoulpe 23	Open site		
47-6-0152	South Dusty Lake 1	Open site		
47-6-0153	South Dusty Lake 2	Open site		
47-6-0154	South Dusty Lake 3	Open site		
47-6-0155	Lintot Lake 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
47-6-0156	Lintot Lake 11	Open site	Valid	Hearth : -, Shell : -
47-6-0157	Lintot Lake 12	Open site	Valid	Hearth : -, Shell : -
47-6-0158	Lintot Lake 13	Open site	Valid	Hearth : -
47-6-0159	Lintot Lake 14	Open site	Valid	Burial : -
47-6-0160	Lintot Lake 15	Open site	Valid	Earth Mound : -, Hearth : -
47-6-0161	Lintot Lake 16	Open site	Valid	Earth Mound : -, Hearth : -



Site ID	Site name	Context	Site status	Site features Site types
47-6-0162	Lintot Lake 17	Open site	Valid	Hearth : -
47-6-0163	Lintot Lake 18	Open site	Valid	Earth Mound : -, Shell : -
47-6-0164	Lintot Lake 19	Open site	Valid	Hearth : -, Shell : -
47-6-0165	Lintot Lake 20	Open site	Valid	Hearth : -, Shell : -
47-6-0166	Lintot Lake 21	Open site	Valid	Hearth : -
47-6-0167	Lintot Lake 22	Open site	Valid	Hearth : -
47-6-0168	Lintot Lake 23	Open site	Valid	Hearth : -
47-6-0179	Lower Boundary 28	Open site		
47-6-0180	Lower Boundary 29	Open site		
47-6-0181	Lower Boundary 30	Open site		
47-6-0182	Lower Boundary 31	Open site		
47-6-0183	Lower Boundary 32	Open site		
47-6-0184	Lower Boundary 33	Open site		
47-6-0185	Lower Boundary 34	Open site		
47-6-0186	Lower Boundary 35	Open site		
47-6-0187	Lower Boundary 36	Open site		
47-6-0188	Lower Boundary 37	Open site		
47-6-0189	Lower Boundary 38	Open site		
47-6-0190	Lower Boundary 39	Open site		
47-6-0191	Lower Boundary 40	Open site		
47-6-0192	Lower Boundary 41	Open site		
47-6-0193	Lintot Lake 24	Open site	Valid	Modified Tree (Carved or Scarred) : -
47-6-0194	Lintot Lake 25	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0219	Lower Boundary 42	Open site		
47-6-0220	Lower Boundary 43	Open site		
47-6-0221	Lower Boundary 44	Open site		
47-6-0222	Lower Boundary 45	Open site		
47-6-0223	Lower Boundary 46	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0224	Lower Boundary 47	Open site		
47-6-0225	Lower Boundary 48	Open site		
47-6-0226	Lower Boundary 49	Open site		
47-6-0227	Lower Boundary 50	Open site		
47-6-0228	Lower Boundary 51	Open site		
47-6-0229	Lower Boundary 52	Open site		
47-6-0230	Lower Boundary 53	Open site		
47-6-0231	Lower Boundary 54	Open site		
47-6-0232	Lower Boundary 55	Open site		
47-6-0233	Lower Boundary 56	Open site		
47-6-0234	Lower Boundary 57	Open site		
47-6-0235	Lower Boundary 58	Open site		
47-6-0236	Lower Boundary 59	Open site		
47-6-0237	Lower Boundary 60	Open site		
47-6-0238	Lower Boundary 61	Open site		
47-6-0239	Lower Boundary 62	Open site		
47-6-0240	Lower Boundary 63	Open site		
47-6-0241	Lower Boundary 64	Open site		
47-6-0242	Lower Boundary 65	Open site		
47-6-0243	Lower Boundary 66	Open site		
47-6-0244	Lower Boundary 67	Open site		
47-6-0245	Lower Boundary 68	Open site		
47-6-0246	Lower Boundary 69	Open site		
47-6-0247	Lower Boundary 70	Open site		
47-6-0248	Lower Boundary 71	Open site		
47-6-0249	Lower Boundary 72	Open site		
47-6-0250	Lower Boundary 73	Open site		
47-6-0251	Lower Boundary 74	Open site		



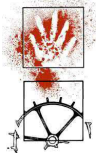
Site ID	Site name	Context	Site status	Site features Site types
47-6-0252	Lower Boundary 75	Open site		
47-6-0253	Condoulpe Lake 24	Open site		
47-6-0254	Condoulpe Lake 25	Open site		
47-6-0255	Condoulpe Lake 26	Open site		
47-6-0256	South Dusty Lake 4	Open site		
47-6-0257	South Dusty Lake 5	Open site		
47-6-0258	South Dusty Lake 6	Open site		
47-6-0259	South Dusty Lake 7	Open site		
47-6-0260	South Dusty Lake 8	Closed site		
47-6-0261	South Dusty Lake 9	Open site		
47-6-0262	South Dusty Lake 10	Open site		
47-6-0263	Lintot Lake 26	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0264	Lintot Lake 27	Open site	Valid	Artefact : -, Hearth : -, Shell : -
47-6-0265	Lintot Lake 28	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0266	Lintot Lake 29	Open site	Valid	Hearth : -
47-6-0267	Lintot Lake 30	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0268	Lintot Lake 31	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0269	Lintot Lake 32	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -
47-6-0270	Lintot Lake 33	Open site	Valid	Hearth : -
47-6-0271	Lintot Lake 34	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -
47-6-0272	Lintot Lake 35	Open site	Valid	Hearth : -
47-6-0380	Allens 1	Open site	Valid	Burial : -
47-6-0381	Allens 2	Open site	Valid	Artefact : -, Hearth : -
47-6-0382	Allens 3	Open site	Valid	Burial : -
47-6-0603	Transmission Line 3	Open site		
47-6-0604	Transmission Line 4	Open site		
47-6-0605	Transmission Line 5	Open site		
47-6-0606	Transmission Line 6	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0741	West Abercrombie- Open Site 19 (WA-OS19)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0742	West Abercrombie- Open Site 20 (WA-OS20)	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0743	West Abercrombie Isolated Find 3 (WA-IF3)	Open site	Destroyed	Artefact : -
47-6-0744	West Abercrombie- Isolated Find 2 (WA-IF2)	Open site	Valid	Artefact : -
47-6-0749	WA-OS26 (West Abercrombie Open Site 26)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0750	WA-OS25 (West Abercrombie Open Site 25)	Open site	Valid	Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0751	WA-OS22 (West Abercrombie Open Site 22)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0752	WA-OS33 (West Abercrombie Open Site 33)	Open site	Valid	Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0753	WA-OS21 (West Abercrombie Open Site 21)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0772	West Abercrombie Open Site 36 (WA-OS36)	Open site	Valid	Earth Mound : -, Potential Archaeological Deposit (PAD) : -, Burial : -
47-6-0774	WA-OS30 (West Abercrombie Open Site 30)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0775	WA-OS29 (West Abercrombie Open Site 29)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0776	WA-OS28 (West Abercrombie Open Site 28)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0807	Keri Keri AWEF Open Site 4 (KK-AWEP-OS4)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0808	Keri Keri AWEF Open Site 3 (KK-AWEP-OS3)	Open site	Valid	Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
47-6-0809	Keri Keri AWEF Open Site 2 (KK-AWEP-OS2)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
47-6-0812	West Abercrombie - Open Site 1 (WA-OS1)	Open site	Valid	Artefact : -, Earth Mound : -
47-6-0813	Sunraysia Solar Open Site 1	Open site		
47-6-0814	Sunraysia Solar Oven 2	Open site		
47-6-0815	Sunraysia Solar Oven 1	Open site		
47-6-0816	Sunraysia Solar Open Site Complex 1	Open site		



Site ID	Site name	Context	Site status	Site features Site types
47-6-0826	Limondale 2	Open site		
47-6-0827	Limondale 3	Open site		
47-6-0828	Limondale 4	Open site		
47-6-0829	Limondale 5	Open site		
47-6-0830	Limondale 6	Open site		
47-6-0831	Limondale 7	Open site		
47-6-0832	Limondale 12	Open site		
47-6-0833	Limondale 11	Open site		
47-6-0834	Limondale 8	Open site		
47-6-0844	WA-IF3 burial	Open site	Valid	Artefact : -
47-6-0845	Yanga-AWEP-OS1 (YA-AWEP-OS1)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -, Shell : -
48-1-0016	Back Oaks 1	Open site	Valid	Burial : 1
48-1-0017	Back Oaks.	Open site	Valid	Art (Pigment or Engraved) : -, Burial : -
48-1-0018	Back Oaks;	Open site	Valid	Burial : -
48-4-0002	Tchelery Station Moulamein	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -
48-4-0007	Kerri East Gravesite;	Open site	Valid	Burial : -
48-4-0008	Tchelery Mound 1-3	Open site	Valid	Earth Mound : -, Hearth : -
48-4-0011	Dry Lake 10;	Open site	Valid	Burial : -
48-4-0012	Dry Lake TSR4;	Open site	Valid	Burial : -
48-4-0013	Kerrie East #4;	Open site	Valid	Burial : -
48-4-0014	Tchelery / Abercrombie Creek	Open site	Valid	Burial : -
48-4-0015	Tchelery #4	Open site	Valid	Burial : -
48-4-0017	Dry Lake West;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0018	Kerri East Woolshed 1;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0019	KerriEast Woolshed 2	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -, Artefact : -
48-4-0067	Back Oaks 5;Ravensworth;	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -
48-4-0068	Back Oaks 4;Ravensworth;	Open site	Valid	Artefact : -, Burial : -, Earth Mound : -, Hearth : -
48-4-0069	Back Oaks 3;Ravensworth;	Open site	Valid	Artefact : -, Burial : -, Earth Mound : -, Hearth : -



Site ID	Site name	Context	Site status	Site features Site types
48-4-0075	Back Baldon;Baldon;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0076	Back Oaks 2;Ravensworth;	Open site	Valid	Artefact : -
48-4-0077	Ravensworth Mounds 1-5;Ravenworth Station;	Open site	Destroyed	Earth Mound : -, Hearth : -
48-4-0078	Back Baldon;Baldon;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0080	Back Oaks.;	Open site	Valid	Burial : -, Earth Mound : -, Hearth : -
48-4-0097	Dry Lake TSR1	Open site	Valid	Hearth : 2
48-4-0098	Dry Lake TSR 2	Open site	Valid	Earth Mound : -
48-4-0099	Dry Lake TSR 3	Open site	Valid	Earth Mound : 2
48-4-0100	Dry Lake TSR 4	Open site	Valid	Hearth : -
48-4-0101	Dry Lake TSR 5	Open site	Valid	Hearth : -, Earth Mound : -, Artefact : -
48-4-0102	Dry Lake TSR 6	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
48-4-0103	Dry Lake TSR 7	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
48-4-0104	Dry Lake TSR 8	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0105	Dry Lake TSR 9	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0106	Dry Lake TSR 10	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0107	Dry Lake TSR 11	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0108	Dry Lake TSR 12	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0109	Dry Lake TSR 13	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0110	Dry Lake TSR 14	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0111	Dry Lake TSR 15	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0112	Dry Lake TSR 16	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0113	Dry Lake TSR 17	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0114	Dry Lake TSR 18	Open site	Valid	Earth Mound : -, Artefact : -, Hearth : -
48-4-0115	Moulamein Road TSR 1	Open site	Valid	Burial : -
48-4-0116	Moulamein Road TSR 2	Open site	Valid	Burial : -
48-4-0117	Moulamein Road TSR 3	Open site	Valid	Burial : -
48-4-0193	Tchelery Mound 1 Complex	Open site	Valid	Aboriginal Resource and Gathering : -, Earth Mound : -



Site ID	Site name	Context	Site status	Site features Site types
48-4-0317	WA-OS24 (West Abercrombie Open Site 24)	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -, Potential Archaeological Deposit (PAD) : -
48-4-0318	West Abercrombie Open Site 23 (WA-OS23)	Open site	Valid	Artefact : -, Earth Mound : -, Potential Archaeological Deposit (PAD) : -
48-4-0384	South Farm 024	Open site	Not a Site	Burial : -
48-4-0386	South Farm 022	Open site	Valid	Artefact : -, Earth Mound : -
48-4-0387	South Farm 021	Open site	Valid	Artefact : -, Earth Mound : -
48-4-0389	South Farm 018	Open site	Valid	Artefact : -, Burial : -
48-4-0390	South Farm 017	Open site	Not a Site	Burial : -
48-4-0391	South Farm 016	Open site	Valid	Burial : -
48-4-0393	South Farm 015	Open site	Not a Site	Burial : -
48-4-0394	South Farm 014	Open site	Not a Site	Artefact : -
48-4-0395	South Farm 012	Open site	Valid	Artefact : -
48-4-0396	South Farm 011	Open site	Valid	Artefact : -
48-4-0397	South Farm 010	Open site	Valid	Artefact : -
48-4-0398	South Farm 009	Open site	Valid	Artefact : -
48-4-0399	South Farm 008	Open site	Valid	Artefact : -
48-4-0400	South Farm 006	Open site	Valid	Artefact : -
48-4-0401	South farm 005	Open site	Valid	Artefact : -
48-4-0402	South Farm 007	Open site	Valid	Artefact : -
48-4-0417	South Farm 004	Open site	Valid	Artefact : -
48-4-0418	South Farm 003	Open site	Valid	Artefact : -
48-4-0419	South Farm 002	Open site	Valid	Artefact : -
48-4-0420	South Farm 001	Open site	Valid	Artefact : -
48-4-0442	Dry Lake TSR EM 2	Open site	Valid	Burial : -, Earth Mound : -
48-4-0443	Dry Lake TSR B 1	Open site	Valid	Burial : -
48-4-0444	Dry Lake TSR EM 1	Open site	Valid	Earth Mound : -, Non-Human Bone and Organic Material : -
48-5-0021	D-B#21;Boooroban;	Open site	Valid	Modified Tree (Carved or Scarred) : -, Artefact : -
48-5-0022	D-B#22;Boooroban;	Open site	Valid	Modified Tree (Carved or Scarred) : -, Artefact : -



Site ID	Site name	Context	Site status	Site features Site types
48-5-0035	COMBERTON GRANGE ISOLATED FIND 2 (CGIF2)	Open site	Valid	Artefact : -
48-5-0037	Test Pitting Area 6 (duplicate refer to 52-5-0410)	Open site	Valid	Artefact : -
48-5-0105	16 Mile Gums 1	Open site	Valid	Hearth : -
48-5-0106	16 Mile Gums 2	Open site	Valid	Hearth : -
48-5-0107	16 Mile Gums 3	Open site	Valid	Hearth : -
48-5-0108	16 Mile Gums 4	Open site	Valid	Hearth : -
48-5-0109	16 Mile Gums 5	Open site	Valid	Hearth : -
48-5-0195	Mungadal Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0196	Mungadal Hearth 1	Open site	Valid	Hearth : -
48-5-0197	Mungadal Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0198	Mungadal Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0199	Mungadal Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0200	Mungadal Scar Tree 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0201	Mungadal Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0202	Mungadal Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0203	Mungadal Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
48-5-0204	Glenmore grinding stone 1	Open site	Valid	Artefact : -
48-5-0294	WPA IF001	Open site	Valid	Artefact : -
48-5-0295	WPA AFT001	Open site	Valid	Artefact : -
48-5-0348	RV_IF_004	Open site	Valid	Artefact : -
48-5-0350	RV_IF_005	Open site	Valid	Artefact : -
48-5-0351	RV_IF_003	Open site	Valid	Artefact : -
48-5-0404	RV_AFT_009	Open site	Partially Destroyed	Artefact : -
48-5-0405	RV_AFT_008	Open site	Partially Destroyed	Artefact : -
48-5-0406	RV_AFT_007	Open site	Partially Destroyed	Artefact :
48-5-0407	RV_AFT_006	Open site	Valid	Artefact : -



Site ID	Site name	Context	Site status	Site features Site types
48-5-0408	RV_AFT_005	Open site	Partially Destroyed	Artefact : -
48-5-0411	RV_HTH_002	Open site	Valid	Hearth : -
48-5-0413	West Wargan H1	Open site	Valid	Hearth : -
48-5-0415	RV Reburial_001	Open site	Valid	Artefact : -
48-5-0425	RV_IF_007	Open site	Valid	Artefact : -
48-6-0131	South Burrabogie 1.1	Open site	Valid	Artefact : -, Earth Mound : -
48-6-0132	South Burrabogie 1.2	Open site	Valid	Artefact : -, Earth Mound : -
48-6-0133	South Burrabogie 1.3	Open site	Valid	Artefact : -, Hearth : -
48-6-0134	South Burrabogie 1.4	Open site	Valid	Artefact : -, Hearth : -
48-6-0135	South Burrabogie 1.5	Open site	Valid	Artefact : -
48-6-0136	South Burrabogie 1.6	Open site	Valid	Artefact : -, Hearth : -
48-6-0137	South Burrabogie 1.7	Open site	Valid	Water Hole : -
48-6-0138	South Burrabogie 1.8	Open site	Valid	Hearth : -
48-6-0139	South Burrabogie 2	Open site	Valid	Artefact : -, Hearth : -
48-6-0140	South Burrabogie 3	Open site	Valid	Hearth : -
49-4-0016	DB #11;Clifford Down;	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -
49-4-0063	Coleambally Golf Club	Open site	Valid	Modified Tree (Carved or Scarred) : -
49-4-0146	Coleambally Rogarts rd Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
49-4-0223	CO-ST-002	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0224	CO-ST-003	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0225	CO-ST-004	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-4-0226	CO-ST-005	Open site	Valid	Modified Tree (Carved or Scarred) : 1
49-6-0010	Boggy Creek 1;	Open site	Valid	Artefact : -
51-6-0764	WA-OS2	Open site	Valid	Artefact : -, Hearth : -
51-6-0765	WA-OS1	Open site	Valid	Artefact : -, Hearth : -
51-6-0766	WA-OS3	Open site	Valid	Hearth : -
55-1-0038	Tooleybuc Bridge PAD	Open site	Valid	Potential Archaeological Deposit (PAD) : -
55-1-0041	Colombo Creek 280	Open site		



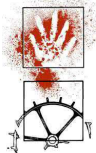
Site ID	Site name	Context	Site status	Site features Site types
55-1-0042	Colombo Creek 285	Open site		
55-1-0043	Colombo Creek 272	Open site		
55-1-0044	Colombo Creek 256	Open site		
55-1-0045	Colombo Creek 249	Open site		
55-1-0046	Colombo Creek 252	Open site		
55-1-0047	BUNGONGO STATE FOREST 1 (BSF1)	Open site	Valid	Artefact : 1
55-2-0001	Lake Cullivel;	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -, Burial : -
55-2-0023	Lake Urana Reburial;	Open site		Burial/s
55-2-0026	Morundah M2;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0028	Morundah M5;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0029	Morundah M6;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0030	Morundah M7;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0031	Morundah M8;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0032	North Oak M9;	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0033	Morundah H1;	Open site	Valid	Artefact : -
55-2-0034	Morundah H2;	Open site	Valid	Artefact : -
55-2-0035	Morundah H4;	Open site	Valid	Artefact : -
55-2-0036	Morundah H5;	Open site	Valid	Artefact : -
55-2-0037	Morundah H6;	Open site	Valid	Artefact : -
55-2-0038	Morundah H7;	Open site	Valid	Artefact : -
55-2-0039	Morundah H8;	Open site	Valid	Artefact : -
55-2-0040	Morundah H9;	Open site	Valid	Artefact : -
55-2-0041	Morundah SAS1;	Open site	Valid	Artefact : -
55-2-0042	Morundah SAS2;	Open site	Valid	Artefact : -
55-2-0043	North Oak SAS3;	Open site	Valid	Artefact : -
55-2-0044	North Oak SAS4;	Open site	Valid	Artefact : -
55-2-0045	Morundah H3;	Open site	Valid	Artefact : -
55-2-0046	Lepium Site Tree;Urana Nature Reserve;	Open site		Scarred Tree



Site ID	Site name	Context	Site status	Site features Site types
55-2-0047	Lake Urana Scatter;Urana Nature Reserve;	Open site		Open Camp Site
55-2-0048	Lapidium Site;Urana Nature Reserve;	Open site		Open Camp Site
55-2-0050	Lepidium Site;	Open site		Open Camp Site
55-2-0051	Lepium Site tree;	Open site		Scarred Tree
55-2-0052	B-M/OS-1	Open site	Valid	Earth Mound : -, Hearth : -, Artefact : -
55-2-0053	B-M-3	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0054	B-M-2	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0055	B-M-1	Open site	Valid	Earth Mound : -, Hearth : -
55-2-0056	W-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-2-0056	W-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-2-0057	Urana Lake	Open site		
55-2-0058	Urana Caravan Park Scar Tree I Goanna	Open site		
55-2-0059	Urana Caravan Park Ring Tree 1	Open site		
55-2-0060	Urangeline Rd Ring Tree 1	Open site		
55-2-0061	Urana Quarry Scatter 1	Open site		
55-2-0062	Urana Quarry artefact 2	Open site		
55-2-0063	Urana Quarry artefact 3	Open site		
55-2-0064	Urana Quarry Artefact 4	Open site		
55-2-0065	Urana Quarry Artefact 5	Open site		
55-2-0066	Lake Urana repatriation 1	Open site		
55-2-0067	Lake Urana repatriation 2	Open site		
55-2-0068	Lake Urana repatriation 3	Open site		
55-2-0069	Lake Urana repatriation 2019	Closed site		
55-2-0070	Urana 12	Open site		
55-2-0071	Urana 11	Open site		
55-2-0072	Urana 09	Open site	Valid	Artefact : -
55-2-0073	Urana 10	Open site		
55-2-0074	Urana 08	Open site		



Site ID	Site name	Context	Site status	Site features Site types
55-2-0075	Urana 07	Open site		
55-2-0076	Urana 06	Open site		
55-2-0077	Urana 05	Open site	Valid	Artefact : -
55-2-0078	Urana 04	Open site	Valid	Artefact : -
55-2-0079	Urana 03	Open site	Valid	Artefact : -
55-2-0080	Urana 02	Open site	Valid	Artefact : -
55-2-0081	Urana 01	Open site	Valid	Artefact : -
55-3-0003	Yarrowah;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0004	Bergmeier 13;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0005	Bergmeier 14;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0006	Kurrie 15;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0007	Heckendorf 16;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0008	Mount Galore Shelter 1;Mt. Galore Scenic Reserve;	Closed site	Valid	Artefact : -
55-3-0009	Ti Tree 3BST1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0010	Ti Tree 3BST2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0011	Ti Tree 3BST3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0012	Ti Tree 3BST4;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0013	Ti Tree 3BST5;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0016	Lyndoch 3AM3;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0017	Lyndoch 3AM4;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0035	Lockhart 2;	Open site	Valid	Earth Mound : -, Hearth : -
55-3-0036	Lockhart 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0037	Lockhart 3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0038	Lockhart 4;	Open site	Valid	Artefact : -
55-3-0039	WW 124	Open site	Valid	Modified Tree (Carved or Scarred) : 1
55-3-0040	Jerilderie	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0041	galore hill scar 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0060	Lockhart Brookong Creek Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -



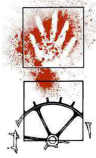
Site ID	Site name	Context	Site status	Site features Site types
55-3-0061	Lockhart Brookong Creek Rock Flakes 1	Open site	Valid	Artefact : -
55-3-0095	Brookong Creek 5	Open site		
55-3-0096	Brookong Creek 4	Open site		
55-3-0097	Brookong Creek 1	Open site		
55-3-0098	Brookong Creek 2	Open site		
55-3-0099	Brookong Creek 3	Open site		
55-3-0100	Lockhart Dam 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0101	Lockhart Dam 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0102	Lockhart Dam 4	Open site	Valid	Earth Mound : -
55-3-0103	Lockhart Dam 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0104	Lockhart Dam 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0105	Lockhart Dam 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0106	Lockhart Dam 8	Open site	Valid	Earth Mound : -
55-3-0107	Lockhart Dam 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0108	Lockhart Dam 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0109	Lockhart Dam 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0110	Lockhart 50KM sign Lockhart	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0111	Lockhart Dam 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0112	Cemetery Stock Reserve Lockhart 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0113	Bullenbung Creek 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0114	Bullenbung Creek 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0115	Bullenbung Creek 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0116	Bullenbung Creek 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0117	Bullenbung Creek 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0118	Bullenbung Creek 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0119	Bullenbung Creek 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0120	Wagga Lockhart Rd 890	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0121	Wagga Lockhart Rd 848	Open site	Valid	Modified Tree (Carved or Scarred) : -



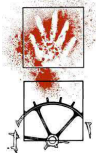
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55-3-0122	Bullenbang Creek 379	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0123	Kywong 3033	Open site	Valid	Artefact : -
55-3-0166	South Common 475050	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0167	South Common 475250	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0168	South Common 474948	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0169	South Common 474882	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-3-0170	Cootamundra 2 Lot 555	Open site	Valid	Modified Tree (Carved or Scarred) : -
55-6-0014	Tchelery Mounds 1-3	Open site	Valid	Burial : -
56-1-0001	Boiling Down Rd 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0002	Lucas Prop. 2;Boiling Down Rd. 2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0003	Rodham Prop. 3;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0004	Rodham Prop. 4;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0005	Rodham Prop. 5;Old Station Rd;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0006	Rodham Prop. 7;Olympic Hwy;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0007	Lewington Prop. 9;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0008	Lewington Prop. 10;Wyandra;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0023	WW33;Roping Pole Swamp Creek;	Open site	Valid	Artefact : -
56-1-0024	WW34;Jacks Road;	Open site	Valid	Artefact : -
56-1-0025	WW35;Sandy Creek;	Open site	Valid	Artefact : -
56-1-0031	EAPL IFI7;Churchill Square property;	Open site	Valid	Artefact : -
56-1-0032	EAPL IFI8;	Open site	Valid	Artefact : -
56-1-0035	Wagga Tip 1;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0036	Wagga Tip 2;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0037	Wagga Tip 3;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0038	Wagga Tip 4;	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0039	Sandy Creek 4;	Open site	Valid	Artefact : -
56-1-0040	Sandy Creek 4; (Duplicate of 56-1-0039)	Open site	Valid	Artefact : -
56-1-0047	LN 1	Open site	Valid	Artefact : 2



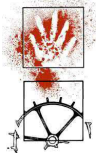
Site ID	Site name	Context	Site status	Site features Site types
56-1-0052	Lloyd Neighbourhood 1	Open site	Valid	Artefact : -
56-1-0077	WW102	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0078	WW103	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0079	WW104	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0080	WW105	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0089	WW101	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0104	UW-IF-3	Open site	Valid	Artefact : 1
56-1-0105	UW-IF-2	Open site	Valid	Artefact : 1
56-1-0106	UW-IF-1	Open site	Valid	Artefact : -
56-1-0107	UW-ST-1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0108	UW-05-1	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -
56-1-0113	Wagga Wagga Transmission Line 1 and PAD	Open site	Valid	Artefact : 3, Potential Archaeological Deposit (PAD) : 1
56-1-0114	Wagga Wagga Transmission Line 2	Open site	Valid	Artefact : 1
56-1-0121	Kapooka Bridge Scarred Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0125	LLOYD SITE 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0127	Kapooka Water Tank ST 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0128	Sandy Creek Scarred Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0129	Kapooka Pump Station ST 1	Open site	Valid	Modified Tree (Carved or Scarred) : 1
56-1-0131	The Rock TSR - S1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0202	Vincent 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0203	Vincent 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0204	Vincent 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0205	Vincent 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0206	Vincent 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0207	Vincent 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0208	Vincent 8	Open site	Valid	Artefact : -
56-1-0209	Vincent 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0210	Vincent 10	Open site	Valid	Modified Tree (Carved or Scarred) : -



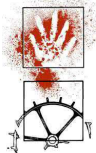
Site ID	Site name	Context	Site status	Site features Site types
56-1-0211	Vincent 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0213	Vincent 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0214	Vincent 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0215	Blackwood 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0216	Blackwood 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0217	Blackwood 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0218	Vincent 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0219	Blackwood 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0220	Blackwood 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0221	Blackwood 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0222	Blackwood 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0223	Blackwood 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0224	Blackwood 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0225	Blackwood 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0226	Blackwood 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0227	Blackwood 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0228	Blackwood 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0229	Blackwood 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0230	Blackwood 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0231	Blackwood 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0232	Blackwood 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0233	Blackwood 19	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0234	Blackwood 20	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0235	Blackwood 21	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0236	Blackwood 22	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0237	Blackwood 23	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0238	Blackwood 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0239	Kengal 1	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
56-1-0240	Kengal 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0311	Flowerdale1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0322	The Rock TSR Scar Tree 27	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0323	The Rock TSR Scar Tree 26	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0324	The Rock TSR Scar Tree 28	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0325	The Rock TSR Scar Tree 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0326	The Rock TSR Rock Flakes 2	Open site	Valid	Artefact : -
56-1-0327	The Rock TSR Scar Tree 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0328	The Rock TSR Scar Tree 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0329	The Rock TSR Scar Tree 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0330	The Rock TSR Occluded Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0331	The Rock TSR Rock Core Flakes 4	Open site	Valid	Artefact : -
56-1-0332	The Rock TSR Rock Flakes 5	Open site	Valid	Artefact : -
56-1-0333	The Rock TSR Fire Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0334	The Rock TSR Scar Tree 12	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0335	The Rock TSR Scar Tree 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0336	The Rock TSR Scar Tree 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0337	The Rock TSR Scar Tree 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0338	The Rock TSR Occluded Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0339	The Rock TSR Scar Tree 33	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0340	The Rock TSR Scar Tree 32	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0341	The Rock TSR Scar Tree 31	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0342	The Rock TSR Scar Tree 30	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0344	The Rock TSR Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0346	Uranquinty TSR Scar Tree 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0355	The Rock TSR Scar Tree 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0356	The Rock TSR Rock Flakes 3	Open site	Valid	Artefact : -
56-1-0357	The Rock TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
56-1-0358	The Rock TSR Rock Flake 1	Open site	Valid	Artefact : -
56-1-0359	The Rock TSR Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0360	The Rock TSR Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0361	The Rock TSR Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0362	The Rock TSR Occluded Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0363	The Rock TSR Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0364	Uranquinty TSR Scar Tree 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0365	Uranquinty TSR Fire Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0366	Uranquinty TSR Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0367	Uranquinty TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0368	Uranquinty TSR Scar Tree 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0369	Uranquinty TSR Scar Tree 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0370	Uranquinty TSR Fire Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0371	Uranquinty TSR Scar Tree 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0372	Uranquinty TSR Occluded Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0373	Gabuga Water Tank 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0374	Gabuga Water Tank 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0375	Gabuga Water Tank 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0376	Gabuga Water Tank 5	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0377	Gabuga Water Tank 6	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0378	Gabuga Tank 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0379	Gabuga Tank 7	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0380	Gabuga Tank 8	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0381	Gabuga Tank 10	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0382	Gabuga Tank 11	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0383	Gabuga Tank 9	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0385	Gabuga Tank 20	Open site	Valid	Aboriginal Resource and Gathering : -
56-1-0386	Mark Saddler Gabuga 1	Open site	Valid	Modified Tree (Carved or Scarred) : -



Site ID	Site name	Context	Site status	Site features Site types
56-1-0387	Gabuga Tank 13	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0388	Gabuga Tank 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0389	Gabuga Tank 15	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0390	Gabuga Tank 16	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0391	Gabuga Tank 17	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0392	Gabuga Tank 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0393	Rodhams Rd 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0430	Rodhams Rd 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0431	The Rock TSR Scar Tree 14	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0435	Kengal 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0456	Crooked Creek Ring Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0465	Thirteen Mile Rd scar 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0476	plum Pudding TSR Scar Tree 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0477	Plum Pudding TSR Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0483	Mitchell Rd 240 Canoe Tree	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0490	The Rock Rd Side Scar Tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0491	The Rock TSR Scar Tree 18	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0492	The Rock TSR Scar Tree 19	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0497	Simpson TSR 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0500	ROWANS TSR 1	Open site	Valid	Artefact : -
56-1-0501	ROWANS TSR 2	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0502	ROWANS TSR 3	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0503	ROWANS TSR 4	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0514	Wagga Lockhart Rd 393	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0520	Springvale 957	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0525	Gelston Homestead	Open site	Valid	Artefact : -
56-1-0527	Gregadoo SF 463	Open site	Valid	Artefact : -
56-1-0528	Gregadoo SF 619	Open site	Destroyed	Artefact : -

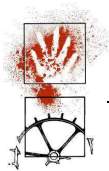


Site ID	Site name	Context	Site status	Site features Site types
56-1-0529	Gregadoo SF 393	Open site	Valid	Artefact : -
56-1-0530	Gregadoo SF 360	Open site	Valid	Artefact : -
56-1-0531	Gregadoo SF 645	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0539	Gregadoo Solar IF3	Open site	Valid	Artefact : -
56-1-0540	Gregadoo Solar IF1	Open site	Valid	Artefact : -
56-1-0541	Gregadoo SF IF2	Open site	Destroyed	Artefact : -
56-1-0559	Plumpton Rd 2370	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0560	Plumpton Rd 2381	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0561	Plumpton Rd 2236	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0565	Kengal 506822	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0566	Kengal 506869	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0567	Kengal 506853	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0568	Kengal yugay 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0577	Springvale 530749	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0585	Stringybark Creek 529852	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0586	Plum Pudding 528182	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0588	South Common 508997	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0589	The Rock Ring Tree 508997	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0592	Kapooka PreSchool 527789	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0608	Dunns road ring tree 1	Open site	Valid	Modified Tree (Carved or Scarred) : -
56-1-0622	Gregadoo SF Reburial 1	Open site	Valid	Artefact : -
56-1-0623	Gregadoo SF IF4	Open site	Valid	Artefact : -
56-4-0011	Burkes Creek;	Open site	Valid	Artefact : -



Appendix 2

Newly Recorded Site Descriptions



Artefact scatters, isolated finds, shell middens, mounds and hearths

The following includes all artefact scatters, isolated finds, shell middens, mounds and hearths recorded in the survey area.

PEC-E-1 (Isolated Find)

This site consists of a single fine grained siliceous (fgs) flake measuring 43x20x10 millimetres. The site is located 8.4 kilometres northwest of the Sturt Highway and 2,087 metres from the nearest watercourse. The landscape context is a flat situated within undulating sandplains.

Soils were a brown silty sand impacted by repeated ploughing. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

There is low to moderate potential for stone artefacts to be present in subsurface context.



Artefact



View of site facing Northeast



PEC-E-2 (Isolated Find)

This site consists of a single silcrete flake measuring 32x27x5 millimetres. The site is located 6.2 kilometres north of Sturt Highway and 1,368 metres from the nearest watercourse. The landscape context is a flat situated within undulating sandplains.

Soils were orange-brown silty sand exposed through sheet erosion, grazing stock, winds and machine ripping. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

There is low to moderate potential for stone artefacts to be present in subsurface context.



Artefact



View of site facing Southeast



PEC-E-3 (Shell Midden)

The site consists of a high density concentration of *Velesunio sp.* shell midden measuring 1x1.5 metres, with a broader spread of lower density fragmented shell over a larger five metre area. The site is located 1.8 kilometres north of Lake Benanee and 1,483 metres from the nearest watercourse. The landscape context is a low gradient slope, broadly located in undulating sandplains.

Soils were red-brown sandy silt exposed through sheet erosion, wind and stock damage. Ground exposure averaged 40 per cent with visibility being 30 per cent within exposures. Vegetation was characterised as open forest.

There is moderate potential for freshwater shell and stone artefacts to be present in the subsurface context.



Midden material



View of site facing North



PEC-E-4 (Isolated find)

This site consists of a single silcrete complete split flake measuring 21.2x13.7x4.3 millimetres. The site is located 6.5 kilometres Northeast of Lake Benanee and 655 metres from the nearest watercourse. The landscape context is a flat situated within undulating sandplains.

Soils were red-brown sandy silt in a tilled field, impacted through wind and ploughing. Ground exposure averaged 100 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as cleared.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site facing East



PEC-E-5 (Isolated find)

This site consists of a single heavily weathered proximal silcrete flake. The site is located 600 metres south of Sturt Highway and 400 metres away from the nearest watercourse. The landscape context is a floodplain.

Soils were grey clay pan, impacted by sheet erosion and wind. Ground exposure averaged 90 per cent with visibility being 85 per cent within exposures. Vegetation was characterised as scattered low shrubs.

There is low potential for stone artefacts to be present in the subsurface context given the lack of deposit.



Artefact



View of site facing South



PEC-E-6 (Hearth)

This site consists of two scattered clay heat retainer hearths. Both hearths had medium density concentrations of clay heat retainers in a 2x2 metre square area that extended across a lower density scatter of 10x10 metres. The site is located 800 metres north of Lintot Lake and 591 metres away from the nearest watercourse. The landscape context is an alluvial plain.

Soils were light brown clay exposed through sheet erosion and wind. Ground exposure averaged 100 per cent with visibility being 100 per cent within exposures. Vegetation is characterised as scrub

The site is associated with PEC-E-PAD07, there is moderate-high potential for hearth and stone artefacts to be present within the subsurface context.



Hearth



Hearth



PEC-E-7 (Isolated Find)

This site consists of a single heavily weathered grey fgs flake. The site is located 600 metres west of Baldon Road and 2636 metres from the nearest watersource. The landscape context is a flat alluvial plain

Soils were pale grey-brown clay silt with dry cracked surface, impacted by sheet erosion, wind and stock damage. Ground exposure averaged 15 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as cleared.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site facing East



PEC-E-8 (Isolated Find)

This site was located during initial Geotech works in February 2020. The site consists of single IMT flake with cortex. The site is located adjacent to Boorooban-Tchelery Road and 1,602 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils are brown sandy silt impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as scrub.

There is low potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking East



PEC-E-9 (Isolated Find)

This site consists of a single heavily weathered grey quartzite/silcrete complete retouched flake. The site is located 1.5 kilometres North of Booororban-Tchelery Road and 1,659 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were red-brown sandy silt impacted by sheet erosion, wind and stock damage. Ground exposure averaged 50 per cent with visibility being 40 per cent within exposures. Vegetation was characterised as scrub.

There is low potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking East



PEC-E-10 (Artefact Scatter & Hearth)

This site consists of three scattered heat retainer hearths and an artefact scatter consisting of two flakes. All of the hearths consisted of medium density concentrations of clay heat retainers with hearth stones scattered across a broader area. The site is located 1.7 kilometres north of Boorooban-Tchelery road and 2,176 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were light brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 70 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

The site is associated with PADs PEC-E-PAD10 and PEC-E-PAD11. There is moderate-high potential for stone artefacts to be present in the subsurface context.



Artefact



View of hearth looking east



PEC-E-11 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of two artefacts across a 50x15 metre area. Artefact types were flakes with material types being quartzite and silcrete. The site is located 1.3 kilometres north of Boorooban-Tchelery Road and 2,346 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 70 per cent with visibility being 10 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking south



PEC-E-12 (Isolated Find)

This site is an artefact scatter of silcrete flake measuring 17x15x4 millimetres. The site is located 1.2 kilometres northwest of Boorooban-Tchelery Road and 2,354 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 70 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is low potential for stone artefacts to be present in the subsurface context.



Silcrete flake



Landscape looking east



PEC-E-13 (Isolated Find & Hearth)

This site consists of a single silcrete flake and two clay heat retainer hearths. The silcrete flake measured 15x13x3 millimetres. The hearths were comprised of moderate concentrations of *in situ* clay heat retainers with additional heat retainers scattered across a broader area. The site is located 1.2 kilometres northwest of Boorooban-Tchelery Road and 2,409 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 70 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as agricultural/farmland.

The site is located within PEC-E-PAD12. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northeast



PEC-E-14 (Artefact Scatter & Hearth)

This site consists of a two silcrete artefacts and one clay heat retainer hearth. The artefacts were a silcrete core with 4 negative flake scars measuring 33x24x17 millimetres and a silcrete flake measuring 23x17x7 millimetres. The hearth comprised a disturbed heat retainer hearth with an *in situ* concentration measuring 60x60 centimetres and a scattering of heat retainers across a 9x7 metre area. The site is located 1.2 kilometres northwest of Boorooban-Tchelery Road and 2,381 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 30 per cent with visibility being 40 per cent within exposures. Vegetation was characterised as agricultural/farmland.

This site is associated with PEC-E-PAD13. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking northeast



PEC-E-15 (Isolated Find)

The site consists of a single silcrete core with two negative flake scars. The site is located 700 metres north of Boorooban-Tchelery Road and 2,012 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils are red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

There is low potential for stone artefacts to be present in the subsurface context.



Core



View of site looking north



PEC-E-18 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of two artefacts across a 20x10 metre area. Artefact types were flakes with material types being silcrete. The site is located 560 metres west of the Cobb Highway and 2,217 metres from the nearest watercourse. The landscape context is a dune within a broader flat plain.

Soils were brown silty sand impacted by sheet erosion, wind and surface water wash. Ground exposure averaged 70 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

The site is associated with PEC-E-PAD15. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking east



PEC-E-19 (Hearth)

This site consists of two scattered clay heat retainer hearths. Both hearths consisted of *in situ* dense concentrations of clay heat retainers with low density scatters across a 10x10 metre area. The site is located 400 metres West of Cobb Highway and 2,485 metres away from the nearest watercourse. The landscape context is a dune within a broader flat plain.

Soils were light brown silty sand exposed through sheet erosion, wind and stock damage. Ground exposure averaged 60 per cent with visibility being 80 per cent within exposures. Vegetation is characterised as cleared

The site is associated with PEC-E-PAD15. There is high potential for stone artefacts to be present in the subsurface context.



Hearth



View of site looking South



PEC-E-20 (Isolated Find & Hearth)

This site consists of a single split pebble and a clay heat retainer hearth scattered over a 30x25 metre area. The site is located 150 metres west of Cobb Highway and 2,241 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were grey brown sandy silt impacted by sheet erosion, wind and stock damage. Ground exposure averaged 10 per cent with visibility being 70 per cent within exposures. Vegetation was characterised as cleared.

The site is associated with PEC-E-PAD15. There is high potential for stone artefacts to be present in the subsurface context.



Clay heat retainers



View of site looking East



PEC-E-21 (Isolated Find)

The site consists of single silcrete flake. The site is located 1.9 kilometres West of Cobb Highway and 827 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils are red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 60 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland.

There is low potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking southwest



PEC-E-22 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of over 25 artefacts across a 100x70 metre area and one clay heat retainer hearth. Artefact types were flakes, retouched flakes, flaked pieces and cores with material types including quartz, quartzite and silcrete. The site is located 1.9 kilometres west of Cobb Highway and 324 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were red orange silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 70 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland.

This site is associated with PEC-E-PAD16 There is high potential for stone artefacts to be present in the subsurface context.



Silcrete flakes



View of site looking SW



PEC-E-23 (Isolated Find)

The site consists of single silcrete manuport measuring 42x28x19 millimetres. The site is located 1.1 kilometres West of Cobb Highway and 2,672 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were red-brown silty sand impacted by vehicle damage and wind. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland.

There is low potential for stone artefacts to be present in the subsurface context.



Manuport



View of site looking south



PEC-E-24 (Isolated Find & Hearth)

The site consists of an isolated chert flake and a disturbed dispersed hearth. The site is located 330 metres north of West Burrabogie Road and 2,764 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were orange-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 50 per cent with visibility being 70 per cent within exposures. Vegetation was characterised as grassland.

The site is associated with PEC-E-PAD17. There is moderate-high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking west



PEC-E-25 (Earth Mound)

This site consists of an earth mound measuring 13x15 metres. The site is located 330 metres north of West Burrabogie Road and 2,419 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were grey silty sand with red soil on mound impacted by stock damage. Ground exposure averaged 30 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



View of earth mound looking northwest



PEC-E-26 (Earth Mound)

This site consists of an earth mound measuring 16x19 metres. The site is located 380 metres north of West Burrabogie Road and 2,419 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were grey silty sand with red soil on mound impacted by stock damage. Ground exposure averaged 40 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



View of site looking north



PEC-E-27 (Artefact Scatter & Hearth)

This site consists of 6 scattered heat retainer hearths and an artefact scatter consisting of five flakes. The hearths were comprised of clay heat retainers in low density concentrations and ranged from 50x20 centimetres to 5x5 metres in area. The hearths were highly disturbed and were dispersed across broad areas. The artefact types found within the scatter were flakes and the material types were quartz and silcrete. The site is 500 metres north of W Burrabogie Road and 63 metres from the nearest watercourse. The landscape context is a stream channel within a broader flat alluvial plain.

Soils were light brown sandy clay impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as cleared.

The site is associated with PEC-E-PAD18. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northwest



PEC-E-28 (Artefact Scatter & Hearth)

This site consists of a low density artefact scatter consisting of over 25 artefacts and nine hearths across a 200x80 metre area. Artefact types were flakes, retouched flakes, cores and flaked pieces with material types including quartz, quartzite and silcrete. The site is 500 metres north of W Burrabogie Road and 102 metres from the nearest watercourse. The landscape context is a stream channel within a broader flat alluvial plain.

Soils were grey brown silty clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 80 per cent with visibility being 60 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD18 There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking southeast



Hearth



View of site looking east



PEC-E-29 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of three artefacts across a 2x2 metre area. Artefact types were flaked pieces with material types being quartz and chert. The site is located 1.2 kilometres north of W Burrabogie Road and 35 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

Soils were brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 70 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland.

The site is associated with PEC-E-PAD19. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking east



PEC-E-30 (Isolated Find & Hearth)

This site consists of an artefact scatter and four hearths. The hearths were comprised of moderately concentrated *in situ* clay heat retainers that were then loosely scattered across a broader area. The hearths measured from 50x50 centimetres to 1x1.5 metres in size. The artefact scatter consisted of three quartz flakes. The site is 1.2 kilometres north of W Burrabogie Road and 126 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

Soils were red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as isolated trees.

The site is associated with PEC-E-PAD19. There is high potential for stone artefacts to be present in the subsurface context.



Hearth



View of site looking southeast



PEC-E-31 (Isolated Find & Hearth)

This site consists of an isolated find and five hearths. The hearths were comprised of moderately concentrated *in situ* clay heat retainers that were then loosely scattered across a broader area. The hearths measured from 20x20 centimetres to 2x2 metres in size. The isolated find was a broken grey silcrete core. The site is 1.2 kilometres north of W Burrabogie Road and 386 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

Soils were red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 70 per cent within exposures. Vegetation was characterised as cleared.

The site is associated with PEC-E-PAD19. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking south



PEC-E-32 (Hearth)

This site consists of two scattered clay heat retainer hearths. Both hearths consisted of *in situ* dense concentrations of clay heat retainers measuring 50x50 centimetres and 70x40 centimetres. The site is 1.2 kilometres north of W Burrabogie Road and 93 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

Soils were red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 70 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared.

The site is associated with PEC-E-PAD20. There is high potential for stone artefacts to be present in the subsurface context.



Hearth



View of site looking southwest



PEC-E-33 (Isolated Find)

The site consists of single Indurated mudstone/tuff (IMT) flake. The site is 1.1 kilometres north of W Burrabogie Road and 12 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were red-brown silty sand impacted by vehicle damage and wind. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland.

The site is associated with PEC-E-PAD20. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northeast



PEC-E-34 (Isolated Find & Hearth)

This site consists of an isolated find and hearth. The hearth was comprised of a 10x10 centimetre concentration of clay heat retainers with a loose scattering of heat retainers across a broader nine metre area. The isolated find was a pink silcrete flake. The site is 1.2 kilometres north of W Burrabogie Road and 229 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

Soils were red-brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 40 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

The site is associated with PEC-E-PAD21. There is high potential for stone artefacts to be present in the subsurface context.



Hearth



View of site looking west



PEC-E-35 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of 3 artefacts across a 2x2 metre area. Artefact types were flakes and flaked pieces with material types including quartz and silcrete. The site is located adjacent to a vehicle track 860 metres north of W Burrabogie Road and 64 metres from the nearest watercourse.

Soils were reddish brown silty sand impacted by sheet erosion and. Ground exposure averaged 20 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

There is low potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking south



PEC-E-36 (Modified Tree, Artefact Scatter & Hearth)

This site is a complex of three modified trees, more than 30 hearths and more than 100 artefacts. The site complex covers a broad 1,600x600 metre area. Artefact types were flakes, flaked pieces, retouched flakes, cores, hammerstones and a grindstone. The material types found were quartz, quartzite and silcrete. Hearths located within the site were comprised of clay heat retainers and varied in size and disturbance. Typically the hearths were disturbed and consisted of moderately concentrated *in situ* clay heat retainers with scatters of heat retainers spread across a broader area. The site is 1.9 kilometres north of W Burrabogie Road and 47 metres from the nearest watercourse. The landscape context is a stream channel and associated floodplain within a broader flat alluvial plain.

The following artefacts were measured as a sample:

1. Grey silcrete microlith, backed flake 11x7x1 millimetres
2. Distal flake fragment, cream silcrete 10x14x3 millimetres
3. Quartz backed flake 12x 8x 4 millimetres
4. White with red bands quartz backed flake 21 x12 x 5 millimetres
5. Cream silcrete waste flake 11x10x3 millimetres
6. Grey silcrete distal flake fragment 10x15x2 millimetres
7. Fragment of grinding stone. Yellow grey sandstone shaped edge – ground upper surface 80x55x16 millimetres
8. Red fgs rock evidence of hammering. May have been used as a hatchet and appears ground on ne surface 85x 65x 30 millimetres
9. White semi translucent quartz scraper with possible backing 12 x10 x3 millimetres
10. Creamy grey silcrete distal flake fragment 12 x 10 x 3 millimetres

Soils were grey brown silty clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 80 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as grassland and isolated trees.

This site is associated with PEC-E-PAD22 There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



Artefacts



Hearth



View of site looking west



Modified Tree 1

Species: Box

Estimated Height: 6m

Girth cm: 210

Condition: Very poor

Aspect: W

Length excluding regrowth: 35cm

Length including regrowth: 55cm

Width excluding regrowth: 15cm

Width including regrowth: 53cm

Height of base of scar: 50cm

Scar condition: good

Checklist:

Tree is endemic to area- Yes

Scar is at least 100 yrs old?- Yes

Regrowth is deep/old enough? Yes

Scar does not extend to ground? Yes

Scar sides parallel? Yes

Other natural and human origins less likely than Aboriginal - Yes

Conclusion: Probably



Close up of scar



Modified tree



Modified Tree 2

Species: Cryprus Pine

Estimated Height: 7m

Girth cm: 132

Condition: Poor

Aspect: E

Length excluding regrowth: 113cm

Width excluding regrowth: 22cm

Height of base of scar: 4cm

Scar condition: good

Features: axe/hatchet marks

Checklist:

Tree is endemic to area- Yes

Regrowth is deep/old enough? Yes

Scar does not extend to ground? Yes

Scar sides parallel? Yes

Other natural and human origins less likely than Aboriginal - Yes

Conclusion: Probably



Modified tree



Modified Tree 3.

Species: Box

Estimated Height: tree lying on the ground

Girth cm: 71

Condition: Poor/dead

Length excluding regrowth: 103cm

Width excluding regrowth: 23cm

Scar depth: 15mm

Height of base of scar: 40cm

Scar condition: good

Features: axe/hatchet marks

Checklist:

Tree is endemic to area- Yes

Regrowth is deep/old enough? Yes

Scar does not extend to ground? Yes

Scar sides parallel? Yes

Other natural and human origins less likely than Aboriginal - Yes

Conclusion: Probably



Modified tree



PEC-E-37 (Artefact Scatter & Hearth)

This site consisted of 12 artefacts and more than 10 hearths. The site complex covers a broad 700x500 metre area. Artefact types were flakes and flaked pieces with material types being quartz, quartzite and silcrete. Hearths located within the site were comprised of clay heat retainers and varied in size and disturbance. Typically the hearths were disturbed and consisted of moderately concentrated *in situ* clay heat retainers with scatters of heat retainers spread across a broader area. The site is 3.9 kilometres northwest of W Burrabogie Road and 102 metres from the nearest watercourse. The landscape context is a stream channel and associated floodplain within a broader flat alluvial plain.

The following artefacts were measured as a sample:

1. Quartzite flake 14x9x2 millimetres
2. Quartzite flake 32x19x4 millimetres
3. Quartz flaked piece 16x15x5 millimetres
4. Silcrete flake 15x24x5 millimetres
5. Silcrete flake 12x9x2 millimetres.

Soils were red-yellow silty sand impacted by sheet erosion and wind. Ground exposure averaged 80 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as grassland.

This site is associated with PEC-E-PAD23 There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking east



PEC-E-38 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of 6 artefacts across a 20x20 metre area. Artefact types were flakes with material types including quartz, fgs and chalcedony. The site is located 270 metres North of North Boundary Road and 3,218 metres from the nearest watercourse. The landscape context is flat plain.

Soils were red clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 100 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as cleared.

There is low potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking southeast



PEC-E-39 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of over 30 artefacts across a 200x100 metre area. Artefact types were flakes, retouched flakes, flaked pieces and cores with material types including quartz, quartzite and silcrete. The site is located 120 metres north of North Boundary Road and 2,420 metres from the nearest watercourse. The landscape context is a flat plain.

The following artefacts were measured as a sample:

1. Quartz flaked piece, no cortex, 15 x 10 x2 millimetres
2. Quartz retouched distal flake, no cortex, scraper, 15 x 11 x 1 millimetres
3. Quartzite complete split flake 23x14x5 millimetres
4. Quartz flaked piece, 50-99% cortex rounded 30 x 10 x 2 millimetres
5. Quartz proximal flake crushed platform 20 x 14 x2 millimetres
6. Fine-grained silcrete distal flake, elongated form, feather termination, no cortex, 14x6 x1 millimetres
7. Quartzite medial flake, no cortex, 7 x 5 x 1 millimetres
8. Coarse silcrete scraper, one retouched edge in quad 2, feather termination, 20 x 16 x 9 millimetres, 4 scars from quads 2 and 3, 1-25% cortex rough in quad 1, cortex exterior platform modification and a plain platform
9. Quartzite flaked piece; no cortex 9 x 6 x2 millimetres.
10. Fine-grained silcrete, complete tool, feather termination, no cortex, scars from 1 and 3, scraper, scar, crushed platform 10x6x2 millimetres
11. Quartzite complete flake, 50-75% cortex, cobble, abrupt termination, cortex and cortical platform 15 x 10 x 5 millimetres, platform 2x1 millimetres

Soils were reddish silty clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 90 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as scrub

This site is associated with PEC-E-PAD25. There is high potential for stone artefacts to be present in the subsurface context.



Silcrete core



Silcrete flake



Artefacts



View of site facing west



PEC-E-40 (Isolated Find)

This site consists of a single quartz flake. The site is located 90 metres north of Four Corners Road and 359 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were red-brown sandy silt impacted by sheet erosion, wind and stock damage. Ground exposure averaged 50 per cent with visibility being 40 per cent within exposures. Vegetation was characterised as scrub.

There is moderate-high potential for stone artefacts to be present in the subsurface context.



Quartz flake



View of site facing east

PEC-E-41 (Isolated Find)

This site consists of a single fine grained silcrete, complete tool, Thumbnail scraper (quad 3), plain platform, trimmed exterior platform, scars from all quads (5), 14 x 13 x 2 millimetres with, 12.5x2 millimetre platform. The site is located 90 metres North of Four Corners Road and 41 metres from the nearest watercourse. Landscape is dug drainage channel within a flat plain.

Soils were reddish brown silty sand impacted by sheet erosion, wind and stock damage. Ground exposure averaged 60 per cent with visibility being 40 per cent within exposures. Vegetation was characterised as grassland.

There is moderate-high potential for stone artefacts to be present in the subsurface context.



Silcrete flake



View of site facing west



PEC-E-43 (Artefact Scatter)

This site consists of a low-density artefact scatter consisting of four artefacts across a 3x2 metre area. Artefact types were flake and flaked pieces with material types being silcrete. The site is located adjacent to Mclennons Bore Road and 1,912 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were orange-brown sandy silt impacted by sheet erosion and damage from road construction. Ground exposure averaged 100 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking south



PEC-E-44 (Isolated Find)

This site consists of a single fine grained yellow silcrete, feather termination, expanding form, four flake scars from quadrant 1, scar external platform, crushed platform, 19 x 11 x 4 millimetres, flake length: 12 millimetres. Site is 1.7 kilometres south of McLennons Bore Road and 123 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were red-brown silty clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 15 per cent with visibility being 70 per cent within exposures. Vegetation was characterised as grassland.

This site is associated with PEC-E-PAD27. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking Southeast



PEC-E-45 (Artefact scatter)

This site consists of a low-density artefact scatter consisting of three artefacts across a 2x2 metre area. Artefact types were flakes with material types including being quartz and silcrete. The site is located 2.1 kilometres south of Mclennons Bore Road adjacent to cut irrigation channel and 522 metres from the nearest watercourse. The landscape context is a flat plain.

Artefacts:

1. Quartz proximal flake, no cortex, elongated form, scar platform modification and crushed platform, 11 x 6 x 5 millimetres
2. Quartz, medial flake, elongated, no cortex, 10 x 6 x 7 millimetres
3. Silcrete, complete tool, indeterminate form, utilized flake, retouch in quadrant 3, three scars from quads 1, 2 and 4, exterior platform scar, crushed platform, 20 x 11 x 4 millimetre, 19 millimetre flake length.

Soils were orange-brown clay with gravels impacted by sheet erosion, wind and stock damage. Ground exposure averaged 100 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared

This site is associated with PEC-E-PAD27. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking South



PEC-E-46 (Artefact Scatter)

This site consists of a low-density artefact scatter consisting of three artefacts across a 3x50 metre area. Artefact types were flakes with material types including being quartz and silcrete. The site is located 2.1 kilometres South of Mclennons Bore Road adjacent to cut irrigation channel and 593 metres from the nearest watercourse. The landscape context is a flat plain.

Artefacts:

1. Silcrete flake measuring 21x18x8 millimetres
2. Quartz flake measuring 20x15x7 millimetres
3. Unmeasured quartz flake

Soils were orange-brown clay with gravels impacted by sheet erosion, wind and stock damage. Ground exposure averaged 100 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking Southeast



PEC-E-47 (Hearth)

Site consists of a scatter hearth represented by a medium density cluster stone heat retainers measuring 80x40 centimetres, with a broader spread of stones over a larger 6x4 metre area. The site is located four kilometres west of Cadell Road and 46 metres from the nearest watercourse. The landscape context is a stream channel amongst a broader flat plain.

Soils were compact brown clay silt exposed through sheet erosion, winds and stock damage. Ground exposure averaged 35 per cent with visibility being 40 per cent within exposures. Vegetation was characterised as open forest.

There is moderate potential for stone artefacts to be present in the subsurface context.



Hearth



View of hearth looking Southeast



PEC-E-50 (Hearth)

This site consists of an isolated scattered clay heat retainer hearth. High density measuring 30x30 centimetres with no additional extending scatter. The site is located four kilometres west of Cadell Road and 33 metres from the nearest watercourse. The landscape context is a stream channel located in a broader flat plain.

Soils were grey silty clay with dry surface cracking exposed through sheet erosion and wind. Ground exposure averaged 60 per cent with visibility being 70 per cent within exposures. Vegetation is characterised as isolated trees.

There is moderate potential for hearth and stone artefacts to be present within the subsurface context.



Hearth



View of site looking Southeast



PEC-E-51 (Isolated Find)

This site consists of a single volcanic hammerstone/anvil with pitting, flaking and grinding features measuring 75x62x40 millimetres. Site is 30 metres south of Bundure Road and 3,066 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were brown sandy clay impacted by sheet erosion, wind, grading and vehicle travel. Ground exposure averaged 30 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

There is high potential for stone artefacts to be present in the subsurface context.



Pitting from use as anvil



Pitting from use as hammerstone



PEC-E-52 (Artefact Scatter)

This site consists of a low-density artefact scatter consisting of over 50 artefacts across a 100x10 metre area. Artefact types were flakes with material types including being quartz and silcrete. The site is located 30 metres South of Bundure Road and 3,010 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were orange-brown clay with gravels impacted by sheet erosion, wind, grading and ploughing. Ground exposure averaged 20 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared.

There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking Southeast



PEC-E-53 (Isolated Find)

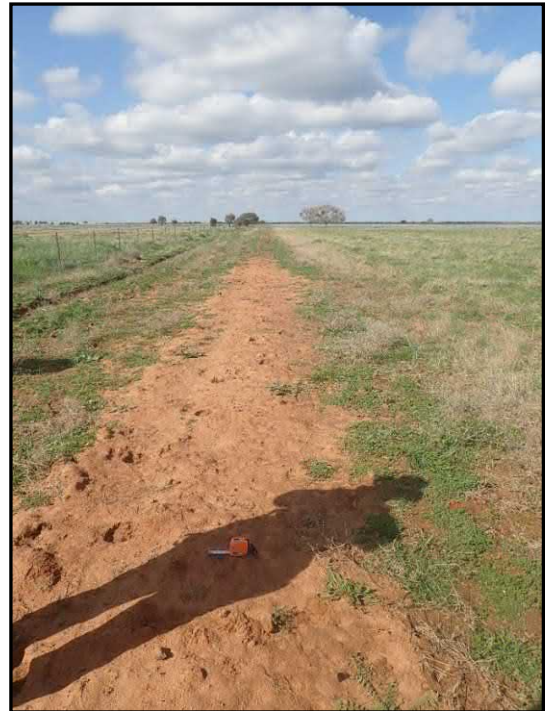
This site consists of a single retouched proximal quartzite flake measuring 14x22x4 millimetres. Site is 30 metres south of Bundure Road and 2,792 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were orange-brown silty clay impacted by sheet erosion, wind, vehicle and stock damage. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking Southeast



PEC-E-54 (Isolated Find)

This site consists of an isolated broken sandstone grindstone. The site is at a distinct soil change from grey to red, 100 metres north of the Newell Highway and 232 metres from the nearest watercourse. The landscape context was described as a low gradient slope within a broader plain.

Soils were red silty clay impacted by sheet erosion, wind and ploughing. Ground exposure averaged 10 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD28. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking East



PEC-E-55 (Isolated Find)

This site consists of a retouched glass flake measuring 60x38x8 millimetres. The site is located 1.1 kilometres east of Colombo Road and 585 metres from the nearest watercourse.

Soils were light brown sandy silt impacted by stock damage and vehicle travel. Ground exposure averaged 30 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is low potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northeast



PEC-E-56 (Earth Mound)

This site consists of a hearth mound measuring 12x12 metres. The mound consisted of a complex of *in situ* clay heat retainer hearths and scattered hearth stones. The site is located 770 metres south of Newell Highway and 59 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were grey brown silty sand with darkened burnt sediments on mound impacted by sheet erosion and wind. Ground exposure averaged 100 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD29 and has high potential for stone artefacts to be present in the subsurface context.



Hearthstones



View of site looking west



PEC-E-57 (Isolated Find, Earth Mound & Hearth)

This site consists of a hearth mound measuring 14x10 metres, a disturbed clay hearth and an isolated quartz flake. The mound consisted of a complex of *in situ* clay heat retainer hearths and scattered hearth stones. The site is located 770 metres south of Newell Highway and 51 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were grey brown silty sand with darkened burnt sediments on mound impacted by sheet erosion and wind. Ground exposure averaged 100 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD29 and has high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northwest



PEC-E-58 (Isolated Find)

This site consisted of a single flaked ceramic insulator that is assessed as flaked by Aboriginal people and is therefore an Aboriginal object. The site is located 770 metres south of Newell Highway and 30 metres from the nearest watercourse. The landform context is a stream channel located within a broader alluvial plain.

Soils were light brown silty sand impacted by stock damage. Ground exposure averaged 70 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD29 and has high potential for stone artefacts to be present in the subsurface context.



Flaked ceramic insulator



View of site looking northeast



PEC-E-59 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of 5 artefacts across a 90x80 metre area. Artefact types were flakes and flaked pieces with material types being quartz and silcrete. The site is located adjacent to Coonong Road and 272 metres from the nearest watercourse. The landscape context is a dune within a broader flat alluvial plain.

The following artefact was measured as a sample:

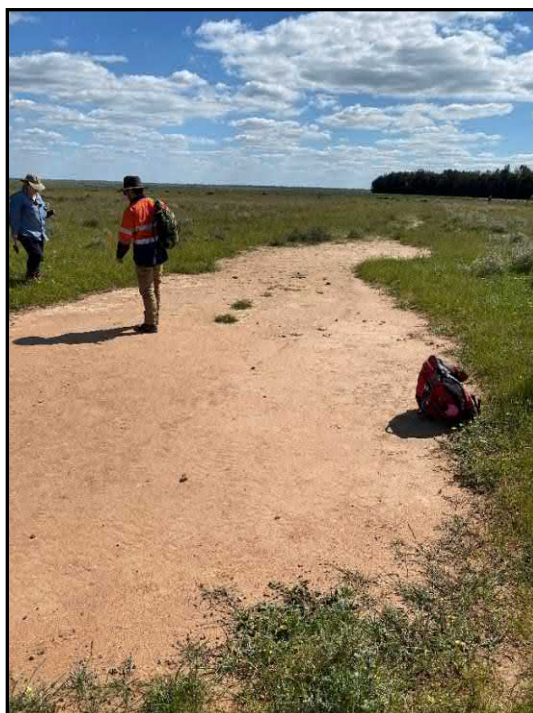
1. Quartz flake 12x21x3

Soils were orange sand impacted by sheet erosion and wind. Ground exposure averaged 90 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD30 There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northwest



PEC-E-60 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of eight artefacts across a 400x100 metre area. Artefact types were flakes and flaked pieces and a flake core with material types being quartzite and silcrete. The site is located adjacent to Coonong Road and 272 metres from the nearest watercourse. The landscape context is a flat alluvial plain.

The following artefacts were measured as a sample:

1. Silcrete flake 30x30x13 millimetres
2. Silcrete flake 19x12x5 millimetres
3. Quartzite flake core 12x19x4 millimetres
4. Quartzite flake 31x11x6 millimetres

Soils were orange brown silty sand impacted by sheet erosion and vehicle damage. Ground exposure averaged 80 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD32 and PEC-E-PAD33. There is high potential for stone artefacts to be present in the subsurface context.



Flake core



View of site looking south



PEC-E-61 (Isolated Find)

This site consists of an isolated silcrete flake measuring 22x16x4 millimetres. Site is 740 metres West of Lake Cullivel and 132 metres from the nearest watercourse. Landform context is a moderate gradient slope within a broader alluvial plain.

Soils were brown silty clay impacted by sheet erosion, wind and ploughing. Ground exposure averaged 20 per cent with visibility being 20 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Silcrete flake



PEC-E-63 (Artefact scatter)

This site consists of a moderate density artefact scatter consisting of over 20 artefacts across a 250x120 metre area. Artefact types were flakes, flaked pieces and cores with material types being quartz, quartzite and silcrete. The site is located one kilometre east of Lake Cullivel and 191 metres from the nearest watercourse. The landform context is an elevated lakeside dune within a broader alluvial plain landscape.

Soils were light brown silty sand impacted by sheet erosion and wind. Ground exposure averaged 50 per cent with visibility being 60 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD34. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking east



PEC-E-64 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of nine artefacts across a 200x30 metre area. Artefact types were flakes and flaked pieces with quartz being the only material type. The site is located 1.4 kilometres North of Urana-Lockhart Road and 166 metres from the nearest watercourse. The landscape context is a flat to low gradient plain adjacent to a dry lake with associated lakeside dunes.

Soils were reddish brown clayey silt impacted by sheet erosion, wind and ploughing. Ground exposure averaged 70 per cent with visibility being 60 per cent within exposures. Vegetation was characterised as agricultural/farmland.

This site is associated with PEC-E-PAD35. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking west



PEC-E-65 (Isolated Find)

This site consists of an isolated chert flake measuring 14x11x4 millimetres. Site is located 550 metres North of Urana-Lockhart Road and 648 metres from the nearest watercourse. The landscape context is a plain adjacent to dry lake.

Soils were brown silty clay impacted by sheet erosion, wind and stock damage. Ground exposure averaged 10 per cent with visibility being 80 per cent within exposures. Vegetation was characterised as grassland.

This site is associated with PEC-E-PAD35. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking east



PEC-E-66 (Artefact Scatter)

This site consists of a low density artefact scatter consisting of over four artefacts across a 7x2 metre area. Artefact types were flakes and flaked pieces with material types being quartz and chert. The site is located 100 metres North of Urana-Lockhart Road and 996 metres from the nearest watercourse. The landscape context is a dune crest adjacent to dry lake.

Soils were red-brown clayey silt impacted by sheet erosion, wind and stock damage. Ground exposure averaged 10 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as cleared.

This site is associated with PEC-E-PAD35. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking northeast



PEC-E-67 (Isolated Find)

This site consists of an isolated quartz flake measuring 25x15x7 millimetres. Site is 75 metres north of Urana-Lockhart Road and 2,074 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were red-brown clay silt impacted by wind and ploughing. Ground exposure averaged 50 per cent with visibility being 60 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking northwest



PEC-E-68 (Isolated Find)

This site consists of an isolated quartz flake measuring 18x15x4 millimetres. Site is 45 metres North of Tenison Lane and 1373 metres from the nearest watercourse. The site was a dirt road within a flat plain landscape context.

Soils were red-brown clay silt impacted by wind and vehicle damage. Ground exposure averaged 10 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as agricultural/farmland.

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site facing north



PEC-E-69 (Isolated Find)

This site consists of an isolated quartz core measuring 30x25x15 millimetres. Site is located 40 metres North of Tenison Lane and 622 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were brown compact sandy silt impacted by sheet erosion, wind and vehicle damage. Ground exposure averaged 90 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as agricultural/farmland

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site facing north



PEC-E-70 (Artefact Scatter)

This site consists of a low-density artefact scatter consisting of over 10 artefacts across a 40x10 metre area. Artefact types were flakes and flaked pieces with material types being quartz and silcrete. The site is located 50 metres Tenison Lane and 22 metres from the nearest watercourse. Site is a low gradient stream bank within a broader plain landscape context.

Soils were red-brown compact sandy silt impacted by sheet erosion, wind and vehicle damage. Ground exposure averaged 100 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as agricultural/farmland.

This site is associated with PEC-E-PAD36. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site facing northeast



PEC-E-71 (Isolated Find)

This site consists of an isolated quartz flake measuring 27x20x10 millimetres. Site is located 50 metres north of Tenison Lane and 570 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were brown sandy silt impacted by wind and ploughing. Ground exposure averaged 10 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as agricultural/farmland

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Dorsal view of flake



Ventral view of flake



PEC-E-72 (Isolated Find)

This site consists of an isolated quartz proximal flake measuring 10x7x3 millimetres. Site is located 500 metres East of Albury Road and 961 metres from the nearest watercourse. The landform context is low gradient mid slope within broader plain landscape context.

Soils were red-brown clay silt impacted by sheet erosion, wind and ploughing. Ground exposure averaged 90 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking north east



PEC-E-73 (Isolated Find)

This site consists of an isolated chert flake measuring 18x10x4 millimetres. Site is located 200 metres East of Albury Road and 592 metres from the nearest watercourse. The landform is low gradient base slope within broader plain landscape context.

Soils were red-brown clay silt impacted by sheet erosion, wind and ploughing. Ground exposure averaged 20 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is low-moderate potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking north



PEC-E-74 (Artefact Scatter and Modified Tree)

This site consists of a scatter of at least 115 artefacts. Site is located 1.5 kilometres South of Lockhart-The Rock Road and adjacent to the nearest watercourse. Landscape context is a floodplain between two creeks.

The following artefacts were measured as a sample:

1. White quartz core 42x35x25 millimetres
2. Grey silcrete core 45x38x28 millimetres
3. Grey silcrete core 42x37x25 millimetres
4. Black volcanic flake 47x27x10 millimetres
5. White quartz flake 23x21x10 millimetres
6. Pink quartzite flake 31x23x6 millimetres
7. White quartz flake 22x19x5 millimetres
8. White quartz flaked piece 13x8x4 millimetres
9. White volcanic Hammerstone 100 x 60
10. Silcrete complete flake with flaked platform 32x22x11 millimetres
11. Yellow quartz flaked piece 19x11x8 millimetres
12. White quartz flaked piece 14x12x4 millimetres
13. White quartz flaked piece 14x10x7 millimetres
14. White quartz flaked piece 19x11x10 millimetres
15. Grey silcrete flaked piece 36x19x22 millimetres
16. White quartz complete flake 18x11x3 millimetres
17. White quartz medial flake 13x12x6 millimetres
18. White quartz flake 13x10x5 millimetres
19. Grey silcrete flake 24x21x6 millimetres
20. Grey silcrete flaked core 36x25x15 millimetres

Modified Tree:

Species: Eucalypt

Estimated Height: 12-15m

Girth cm: 170

Condition: Dead

Aspect: S

Length excluding regrowth: 205cm

Width excluding regrowth: 38cm

Height of base of scar: 0cm

Scar condition: poor

Features: axe/hatchet marks

Checklist:

Tree is endemic to area - Yes

Scar is at least 100 yrs old? Yes

Regrowth is deep/old enough? Yes

Scar does not extend to ground? No

Scar sides parallel? Yes

Scar edges are even and regular – somewhat

Scar edge uniform and roughly symmetrical - Yes

Other natural and human origins less likely than Aboriginal - Yes



Conclusion: Possible

Soils were brown silty clay impacted by wind and vehicle damage. Ground exposure averaged 20 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is moderate potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site facing south



Modified tree



Modified tree looking north



PEC-E-75 (Isolated Find)

This site consists of an isolated quartz flake measuring 30x22x9 millimetres. Site is located 540 metres South of Lockhart-The Rock Road and 268 metres from the nearest watercourse. Landscape context is a flat flood plain.

Soils were brown silty clay impacted by wind and vehicle damage. Ground exposure averaged 20 per cent with visibility being 100 per cent within exposures. Vegetation was characterised as agricultural/farmland

There is moderate potential for stone artefacts to be present in the subsurface context.



Artefact



PEC-E-79 (Isolated Find)

This site consists of an isolated silcrete core measuring 41x40x35 millimetres. The site is located 430 metres east of Pat Gollashs Lane and is 192 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were dark brown clay silt impacted by sheet erosion and ploughing. Ground exposure averaged 50 per cent with visibility being 40 per cent within exposures. Vegetation was classified as agricultural/farmland

There is low potential for other archaeological features/objects to be present in subsurface context.



Silcrete core



View of site looking east



PEC-E- 80 (Artefact Scatter)

The site consists of a scatter of 5 artefacts across a 300x70 metre area. The site is located 1 kilometre east of French Park-Bullenbong Road and 218 metres from the nearest watercourse. The site is a planted field within a flat plain landscape context.

Artefacts:

1. Quartz flake, scar, crushed platform, contracting form, no cortex, 22.5 x 15.4 x 5 millimetres, 2.15 axial length
2. Quartz proximal flake, scar exterior platform, plain platform, no cortex, 19 x 15 x 5 millimetres, platform 15 x 6 millimetres
3. Quartz flaked piece, no cortex, 24.7 x 12.1 x 8.5 millimetres
4. Quartz flaked piece, no cortex, 28.5 x 14 x 8.3 millimetres
5. Quartz proximal flake, indeterminate, no cortex, scar exterior platform and focalized platform. 13 x 10 x 3 millimetres, platform: 5 x 3 millimetres.

Soils were red-brown waterlogged silt impacted by sheet erosion and ploughing. Ground exposure averaged 60 per cent, with 90 per cent visibility within exposures. Vegetation was classified as agricultural/farmland

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking north



PEC-E-81 (Isolated Find)

The site consists of a quartz flake measuring 16x8x4 millimetres. The flake was elongated with a scarred plain platform measuring 7.2x4.5 millimetres, three previous negative flake scars and a step termination. The site is located 1.4 kilometres east of French Park-Bullenbong Road and 243 metres from the nearest watercourse. The site is a planted field within an alluvial plain landscape context.

Soils were red-brown clay silt impacted by sheet erosion and ploughing. Ground exposure averaged 70 per cent, with 80 per cent visibility within exposures. Vegetation is agricultural/farmland

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking south



PEC-E-82 (Isolated Find)

The site consists of a distal quartz flake measuring 15x14x7 millimetres. The flake was contracting with scar exterior platform preparation, crushed platform and an axial length of 12 millimetres. The site is located 1.6 kilometres east of French Park-Bullenbung Road and 209 metres from the nearest watercourse. The site is a planted field within an alluvial flat plain landscape context.

Soils were red-brown silty clay impacted by sheet erosion and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking east



PEC-E-83 (Artefact Scatter)

The site consists of a scatter of at least 20 artefacts across a 650x100 metre area. The site is located 1.8 kilometres east of French Park-Bullenbung Road and 266 metres from the nearest watercourse. The site is a planted field within an alluvial plain landscape context.

Artefacts recorded for sample:

1. Quartz distal flake, no cortex, feather termination, 15.6 x 13.4 x 5 millimetres
2. Quartz complete flake, contracting form, feather termination, no cortex, scar exterior platform, 21 x 14 x 6 millimetres, 15 millimetre axial length, 13 x 6 millimetres platform
3. Quartz complete flake, feather termination, elongated form, scar exterior and crushed platform, 20 x 11 x 3 millimetres, 15 millimetre axial length
4. Quartz distal flake, feather termination, 19x12x3 millimetres
5. Quartz proximal flake, contracting form, scar exterior and focalized platform, 2120x2.6 millimetres, 18.1 x 4 millimetres (platform)
6. Quartz complete flake, contracting form, feather termination, scar exterior and plain platform, one previous flake scar from quad 1, 19.5 x 13.3 x 3.6 millimetres, 12 millimetre axial length, 16 x 3.6 millimetres (platform)
7. Quartz flaked piece, no cortex, 24 x 19 x 14 millimetres
8. Quartzite core, unifacial, 37 x 21 x 14 millimetres, flake 20.1 millimetre length
9. Silcrete flake, indeterminate form, feather termination, scar exterior platform, plain, 1-25% cortex, rough, 32.7 x 16 x 10 millimetres, axial length 32 millimetre, platform 10x4 millimetres

Soils were red-brown silty clay impacted by sheet erosion and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site looking east



PEC-E-84 (Isolated Find)

The site consists of a distal quartz flake measuring 11x9x2 millimetres. The site is located 195 metres east of Bullenbong Creek. The landscape context is an alluvial plain.

Soils were red-brown silty clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 80 per cent, with 20 per cent visibility within exposures. Vegetation is agricultural/farmland.

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking east



PEC-E-85 (Isolated Find)

The site consists of an isolated proximal silcrete flake measuring 26x15x7 millimetres. The flake has a plain scarred platform that measures 24x3 millimetres. The site is located 767 metres east of Bullenbong Creek. Site is a planted wheat field within an alluvial plain landscape context.

Soils were red-brown silty clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland.

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site facing east



PEC-E-86 (Isolated Find)

The site consists of an isolated proximal silcrete flake measuring 14x9.5x2 millimetres. The flake has a plain trimmed platform that measures 8x2.5 millimetres. The site is located 920 metres east of Bullenbong Creek. Site is a planted wheat field within an alluvial plain landscape context.

Soils were red-brown silty clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland.

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Dorsal view of artefact



Ventral view of artefact



PEC-E-87 (Isolated Find)

The site consists of a multiplatform elongated silcrete core measuring 28x15.6x14 millimetres. Core contains three platforms with the longest scar measuring 19x11 millimetres. The site is located 1,050 metres east of Bullenbong Creek. Site is a planted wheat field within an alluvial flat landscape context.

Soils were red-brown silty clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland.

This site is associated with PEC-E-PAD40. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking north



PEC-E-88 (Isolated Find)

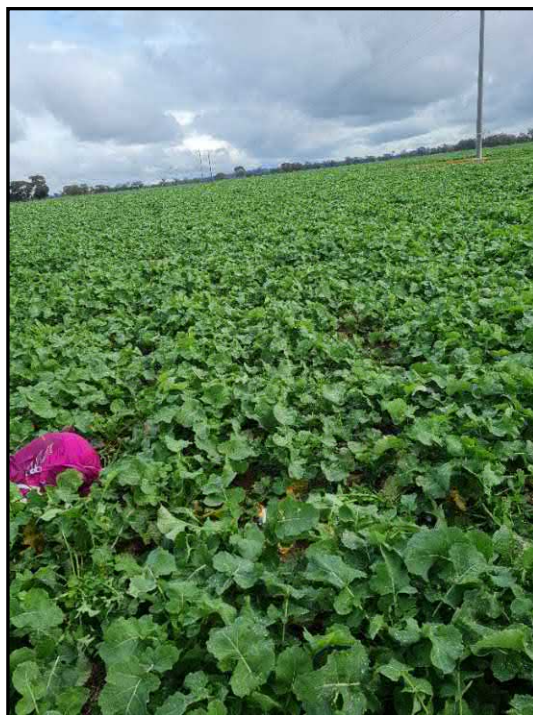
The site consists of an isolated elongated quartz flake measuring 33x19x5.6 millimetres. The flake has a plain trimmed platform that measures 20x7 millimetres, a feather termination and an axial length of 25.1 millimetres. The site is located 390 metres west of Hendersons Road and 250 metres from the nearest watercourse. Site is a planted wheat field within an alluvial plain landscape context.

Soils were red-brown silty clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 70 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland.

There is moderate potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking west



PEC-E-89 (Isolated Find)

The site consists of an isolated retouched quartz flake measuring 29x17x4 millimetres. The site is located 29 metres east of Sandy Creek. The landscape context is a stream bank in a broader flat plain.

Soils were brown clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 30 per cent, with 60 per cent visibility within exposures. Vegetation is farmland adjacent to mature trees.

This site is associated with PEC-E-PAD43. There is high potential for stone artefacts to be present in the subsurface context.



Artefact



View of site looking north



PEC-E-90 (Artefact Scatter)

The site consists of an artefact scatter containing two quartz flakes across a 25x10 metre area. The site is located 193 metres north east of Coloboralli Creek. The site is flat between two creeks amongst a broader plain landscape context.

Artefacts:

1. Quartz distal flake 19x14x4 millimetres
2. Quartz flaked piece 35x21x6 millimetres.

Soils were brown clay impacted by sheet erosion, stock damage and ploughing. Ground exposure averaged 30 per cent, with 60 per cent visibility within exposures. Vegetation is agricultural/farmland

There is moderate potential for other archaeological features/objects to be present in subsurface context.



Artefact



Artefact



PEC-E-91 (Isolated Find)

The site consists of an isolated flaked river cobble with cortex measuring 79x50x25. The site is located 580 metres west of Holbrook Road and 736 metres from the nearest watercourse. The landscape context is high gradient mid slope.

Soils were brown clay impacted by sheet erosion and wind. Ground exposure averaged 20 per cent, with 60 per cent visibility within exposures. Vegetation is isolated trees.

There is low potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking east



PEC-E-92 (Isolated Find)

The site consists of an isolated Broken ground edge measuring 25 x 22 x 8 millimetres. The site is located adjacent to Boiling Down Road and 700 metres from the nearest watercourse. The landscape context is a flat plain.

Soils were brown silty sand. The artefact was located on a vehicle track. Ground exposure averaged 80 per cent, with 90 per cent visibility within exposures. Vegetation is isolated trees.

There is low potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking west



PEC-E-93 (Isolated find)

The site consists of a coarse red silcrete flaked piece measuring 24 x 22 x 4 millimetres. The site is located 90 metres north of Four Corner Road and adjacent to the nearest watercourse in grazing land in an alluvial plain context.

Ground exposure averaged 90 per cent, with 100 per cent visibility within exposures. Vegetation is isolated trees.

This site was found during the subsurface test excavations of PEC-E-PAD26. No artefacts were found during the testing of this PAD, one additional surface find (PEC-E-94) was also located in PEC-E-PAD26.



Artefact



View of site looking north-west



PEC-E-94 (Isolated find)

The site consists of a white quartz flaked piece measuring 13 x 10 x 14 millimetres. The site is located 130 metres north of Four Corner Road and 190 metres from nearest watercourse in grazing land in an alluvial plain context.

Ground exposure averaged 50 per cent, with 100 per cent visibility within exposures. Vegetation is isolated trees.

This site was found during the subsurface test excavations of PEC-E-PAD26. No artefacts were found during the testing of this PAD, one additional surface find (PEC-E-93) was also located in PEC-E-PAD26.



Artefact



View of site looking north-west



PEC-E-95 (Artefact scatter)

The site consists of a quartzite flake 18 x 23 x 5mm and grey quartzite flake 18 x 23 x 4 millimetres. The site is located 1 kilometre south of McLennone Bore Road and 2.5 kilometres from nearest watercourse in grazing land in an alluvial plain context.

Ground exposure averaged 40 per cent, with 90 per cent visibility within exposures. Vegetation is isolated trees.

This site was found during the subsurface test excavations of PEC-E-PAD27. One lithic item was recovered from the test excavations at PEC-PAD-27. Three additional surface finds (PEC-E44 to 46) area also located in PEC-PAD-27.



Artefact



View of site looking south



PEC-E-96 (Artefact Scatter)

This site consists of a scatter of at least 16 artefacts. The site is located 2.5 kilometres south of Lockhart-The Rock Road and 800 metres south of to the nearest watercourse. Landscape context is a floodplain.

The following artefacts were measured as a sample:

1. Grey silcrete flake 13.5x16.5x5 millimetres
2. Grey silcrete flake 18x16x5 millimetres
3. Grey silcrete flake 7x11x2 millimetres
4. Grey silcrete flake (retouch) 11x9x2.5 millimetres
5. Quartz proximal flake 15x19x5 millimetres
6. Silcrete complete flake with flaked platform 32x22x11 millimetres
7. Red Sandston grindstone
8. Grey silcrete proximal flake 12x18x4 millimetres
9. White quartz proximal Flaked piece 21x18x6 millimetres
10. Milky white quartz proximal flake 22x17x6 millimetres
11. White quartzite proximal flake 30x14x7 millimetres

Soils were brown silty clay impacted by wind and vehicle damage. Ground exposure averaged 20 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as cleared

There is moderate potential for stone artefacts to be present in the subsurface context.



Artefacts



View of site facing north



PEC-E-97 (Isolated find)

The site consists of a white quartz proximal flake measuring 20 x 10 x 9 millimetres. The site is located in grazing land adjacent to an isolated clump of trees 1.2 kilometres west of the Jerilderie Road and 9 kilometres west of to the nearest watercourse.

Ground exposure averaged 50 per cent, with 80 per cent visibility within exposures. Vegetation is isolated trees.

There is low potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking south



PEC-E-98 (Isolated Find & Hearth)

This site consists of an isolated find and hearth. The hearth was comprised of a 50x50 centimetre concentration of clay heat retainers with a loose scattering of heat retainers across a broader area. The isolated find was a grey quartzite angular fragment 15 x 11 x 4 millimetres. The site is 400 metres southwest of the Jerilderie Road and 9 kilometres east from the nearest watercourse. The landscape context is a flat alluvial plain.

Soils were yellow silty clay impacted by sheet erosion and wind. Ground exposure averaged 50 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as grassland. There is low potential for other archaeological features/objects to be present in subsurface context.



Hearth



View of site looking west



PEC-E-99 (Artefact scatter)

The site consists of two artefacts. The site is located in grazing land on a flat alluvial plain 400m west of the Jerilderie Road and 1 kilometre east of to the nearest watercourse.

Artefacts:

1. Grey silcrete flake complete length 28x19x4, (broken sections proximal 16x13x4, distal 16x9x3 millimetres)
2. Quartz flaked piece 7x6x3 millimetres

Ground exposure averaged 70 per cent, with 90 per cent visibility within exposures. Vegetation is isolated trees.

There is low potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking north



PEC-E-100 (Artefact scatter & Hearth)

This site consists of an artefact scatter of at least 10 artefacts and hearth. The hearth consisted of small clay heat retainers scattered across a wider area of 80x50 metres. The site is adjacent to the Jerilderie Road and 11 kilometres east from the nearest watercourse. The landscape context is a flat alluvial plain.

Artefacts:

1. Clear Quartz flake 11x5x2 millimetres
2. White quartz flake 13x8x5 millimetres
3. Grey silcrete flake 11x8x2 millimetres
4. Grey silcrete flake 11x6x3 millimetres
5. Pink quartz 13x10x4 millimetres
6. Grey silcrete flake 30x16x8 millimetres
7. Red silcrete flake 31x25x3 millimetres
8. Orange silcrete proximal flake 15x10x4 millimetres

Soils were yellow silty clay impacted by sheet erosion and wind. Ground exposure averaged 70 per cent with visibility being 90 per cent within exposures. Vegetation was characterised as grassland. There is low to moderate potential for other archaeological features/objects to be present in subsurface context.



Artefacts



View of site looking south



PEC-E-101 (Isolated find)

The site consists of a white quartz flake measuring 24 x 14 x 9 millimetres. The site is located adjacent to the Jerilderie Road and 1.1 kilometres east of the nearest watercourse in grazing land adjacent to an isolated clump of trees.

Ground exposure averaged 50 per cent, with 80 per cent visibility within exposures. Vegetation is isolated trees.

There is low potential for other archaeological features/objects to be present in subsurface context.



Artefact



View of site looking north



PEC-E-102 (Artefact scatter)

This site consists of a low density artefact scatter across a large eroded clay pan which extends for approximately 165 x 100 metres on a grassed flat, adjacent to a patch of open woodland. It is approximately 100 metres north west of an area mapped as an unnamed watercourse or mainly dry lake, which is likely to have been a source of fresh water in the past.

Artefact types identified within the scatter included flakes, broken flakes, flake cores, an angular fragment, a grindstone fragment, and a scraper, and materials include quartz, quartzite, FGS stone, chert, mudstone and silcrete. The following artefacts were recorded as a sample:

1. White quartz flake, 20 x 14 x 8 millimetres
2. Grey silcrete flake, 21 x 22 x 10 millimetres
3. White quartz flake, 20 x 19 x 5 millimetres
4. Grey white quartz flake core, 28 x 25 x 13 millimetres
5. White quartz scraper, 20 x 18 x 10 millimetres
6. Grey quartzite flake, 28 x 12 x 5 millimetres
7. Grey silcrete flake, 20% cortex, 57 x 35 x 15 millimetres
8. Dark grey chert broken flake, proximal fragment, 48 x 22 x 10 millimetres
9. Grey quartzite broken flake, proximal fragment, 20 x 18 x 8 millimetres
10. Red silcrete angular fragment, crush damage, 20 x 21 x 6 millimetres
11. Dark grey chert flake, 29 x 11 x 8 millimetres
12. Cream mudstone flake, 25 x 26 x 5 millimetres
13. Grey quartzite flake core, 14 x 16 x 8 millimetres
14. Grey quartzite flake, 35 x 37 x 21 millimetres
15. FGS grindstone fragment, 43 x 35 x 12 millimetres

Approximately 10 additional artefacts were noted embedded in the ground surface within the clay pan, including quartz, chert, and quartzite flakes.

PEC-E-102 has low-moderate potential for subsurface Aboriginal objects to be present.



View of PEC-E-X facing south east



Artefacts #1-5



Artefacts #6-10



Artefacts #11-14



Artefact #15



PEC-E-103 (Hearths)

This site contains three partially exposed and disturbed hearths with clay heat retainers, located on a flat adjacent to an area mapped as an unnamed watercourse or mainly dry lake, which is likely to have been a source of fresh water in the past.

Ground exposure averaged 60 per cent with visibility being 50 per cent within exposures. Vegetation was characterised as open woodland and low scrub.

The following hearths were recorded:

1. Hearth with clay heat retainers, partially exposed and disturbed over an area measuring approximately 80 x 80 centimetres, no associated ash or artefacts.
2. Hearth with clay heat retainers, partially exposed and disturbed over an area measuring approximately 50 x 50 centimetres, no associated ash or artefacts.
3. Hearth with clay heat retainers, partially exposed and disturbed over an area measuring approximately 70 x 60 centimetres, , no associated ash or artefacts.

PEC-E-103 has low potential for subsurface Aboriginal objects to be present.



Hearth #1



View of hearth #1 facing north east



Hearth #2



View of hearth #2 facing north east



Hearth #3



View of hearth #3 facing south east



PEC-E-104 (Artefact)

This site consists of a single grey silcrete flake measuring 25x20x7 millimetres. The site is located on a flat located approximately 80m west an area mapped as an unnamed watercourse or mainly dry lake, within a large clay pan estimated to be approximately 20 x 30 metres in area.

PEC-E-104 has low potential for subsurface Aboriginal objects to be present.



Artefact #1



View of PEC-E-X facing east



PEC-E-105 (Artefact scatter, hearths & modified trees)

This site complex consists of a low density artefact scatter, three hearths and seven scarred trees across a large eroded ground surface exposure which extends for approximately 300 metres along the southern margin of a dry box swamp, north into the adjacent tree line and east to the edge of the cleared easement of the existing Darlington Point-Buronga 220kV transmission line.

The site is located adjacent to the existing transmission line, approximately 5.4km east of Romani Road. The landscape is characterised by low rolling hills with cleared open paddocks and a dry swamp with box woodland. The swamp would have provided a seasonal source of fresh water.

Artefact types identified within the scatter included flakes, flake cores, an angular fragment, grindstone fragments, a muller fragment and ground-edge axe, and materials include quartz, quartzite, fine grained silicious (FGS) stone, and silcrete. The following artefacts were recorded as a sample:

1. White quartz flake core, 29 x 25 W 10 millimetres
2. White quartz flake core, 15 x 10 x 2 millimetres
3. Grey chert flake, 13 x 8 x 3 millimetres
4. Grey quartzite angular fragment, 11 x 8 x 2 millimetres
5. Crystal quartz flake, 9 x 5 x 1 millimetres
6. Grey chert flake, 15 x 10 x 2 millimetres
7. Grey quartzite core, 25 x 18 x 20 millimetres
8. Grey quartzite core, 26 x 24 x 19 millimetres
9. Grey quartzite flake core, 16 x 15 x 8 millimetres
10. White quartz flake core, 20 x 15 x 9 millimetres
11. FGS ground-edge axe head, 98 x 80 x 31 millimetres
12. FGS grindstone fragment, 29 x 45 x 40 millimetres
13. FGS grindstone fragment, 45 x 70 x 35 millimetres
14. Red grey quartzite core, 50 x 50 x 40 millimetres
15. Red brown quartzite muller fragment, 63 x 50 x 42 millimetres
16. Red grey silcrete flake, 1% cortex, 19 x 18 x 4 millimetres
17. Brown quartzite grindstone fragment, 70 x 58 x 45 millimetres

Additional artefacts were embedded in the ground surface within the ground surface exposure.

PEC-E-105 has low-moderate potential for subsurface Aboriginal objects to be present.

The following hearths were recorded:

1. Hearth with clay heat retainers, scattered over an area measuring approximately 50 x 60 centimetres, no associated ash or artefacts.
2. Hearth with clay heat retainers, partially exposed and disturbed over an area measuring approximately 30 x 30 centimetres, no associated ash or artefacts,
3. Hearth with clay heat retainers, intact over an area measuring approximately 100 x 100 centimetres, associated ash.
4. Hearth with clay heat retainers, partially exposed and disturbed over an area measuring approximately 60 x 60 centimetres, associated ash.

The following modified (scarred) trees were recorded, all are assessed as being probable scarred trees:

1. Modified tree #1 is a mature box tree with a trunk that splits into two, with an oval scar on each bough. Estimated height of the tree is 10m. There is no die back or insect damage.



	Scar 1	Scar 2
Girth at 1.5 metres high:	146 cm	140 cm
Condition:	good	good
Aspect:	east	north
Length excluding regrowth:	95cm	108cm
Width excluding regrowth:	18cm	18cm
Height of base of scar:	50cm	17cm

2. Modified tree #2 is a mature box tree, with an oval scar. Estimated height of the tree is 20m. There is no die back or insect damage.

Girth at 1.5 metres high:	225 cm
Condition:	good
Aspect:	south
Length excluding regrowth:	135cm
Width excluding regrowth:	27cm
Height of base of scar:	40cm

3. Modified tree #3 is a mature box tree, with an oval scar. Estimated height of the tree is 15m. There is evidence of damage, potentially from a lightning strike. Possible axe marks at base of scar.

Girth at 1.5 metres high:	225 cm
Condition:	poor
Aspect:	south east
Length excluding regrowth:	220cm
Width excluding regrowth:	N/A – outer part of trunk is damaged
Height of base of scar:	56cm

4. Modified tree #4 is a mature box tree, with a possible scar. Estimated height of the tree is 15m.

Girth at 1.5 metres high:	225 cm
Condition:	good
Aspect:	north
Length excluding regrowth:	123cm
Width excluding regrowth:	20cm
Height of base of scar:	25cm



5. Modified tree #5 is a mature box tree, with an oval scar. Estimated height of the tree is 10m.

Girth at 1.5 metres high: 185 cm
Condition: good
Aspect: west
Length excluding regrowth: 62cm
Width excluding regrowth: 20cm
Length including regrowth: 70cm
Width including regrowth: 30cm
Height of base of scar: 113cm

6. Modified tree #6 is a mature box tree, with an oval scar. Estimated height of the tree is 10m. The tree is alive; however the heartwood is damaged and there is evidence of die back (one dead branch). Possible axe marks at base of scar.

Girth at 1.5 metres high: 186 cm
Condition: poor
Aspect: west
Length excluding regrowth: 139cm
Width excluding regrowth: 48cm
Height of base of scar: 44cm

7. Modified tree #7 is a mature box tree, with an oval scar. Estimated height of the tree is 10m.

Girth at 1.5 metres high: 169 cm
Condition: good
Aspect: east
Length excluding regrowth: 43cm
Width excluding regrowth: 23cm
Length including regrowth: 67cm
Height of base of scar: 62cm

The identified extent of the site complex incorporates the former location of one previously recorded Aboriginal site, D-B #22 (AHIMS #48-5-0022), now destroyed; a scarred tree identified as a box eucalypt.



View of PEC-E-105 ground surface exposure facing west



Artefacts #1-#5



Artefacts #6-#10



Artefacts #11-#13



Artefact #14



Artefact #15



Artefact #16



Artefact #17



Hearth #1



View of hearth #1 facing south



Hearth #2



View of hearth #2 facing south



Hearth #3



View of hearth #3 facing east



Hearth #4



View of hearth #4 facing east



Modified tree #1 facing north



Modified tree #1 facing south



Modified tree #1 facing north (detail)



Modified tree #1 facing south (detail)



Modified tree #2 facing south



Modified tree #2 facing south (detail)



Modified tree #3 facing north west



Modified tree #3 facing north west (detail)



Modified tree #4 facing south



Modified tree #4 facing south (detail)



Modified tree #5 facing east



Modified tree #5 facing east (detail)



Modified tree #6 facing east



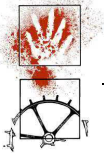
Modified tree #6 facing east (detail)



Modified tree #7 facing west



Modified tree #7 facing west (detail)



Scarred/modified trees

A range of diagnostic criteria has been developed to assist in the identification of Aboriginal scarred trees. The following criteria are based on archaeological work conducted by Simmons (1977) and Beesley (1989), and the field manual for Aboriginal scarred trees developed by Long (2005):

1. (a) the scar does not normally run to ground level: (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal origin (some ethno-historical examples of canoe scars reach the ground)

(b) if a scar extends to the ground, the sides of the original scar must be relatively parallel: (natural scars tend to be triangular in shape the scar is either approximately parallel sided or concave, and symmetrical: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular, and often adzed)
2. the scar is either approximately parallel sided or concave, and symmetrical: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular, and often adzed)
3. the scar should be reasonably regular in outline and regrowth: scars of natural origin tend to have irregular outlines and may have uneven regrowth
4. the ends of the scar should be 'shaped', either squared off, or pointed (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss)
5. a scar which contains adze or axe marks on the original scar surface is likely to be the result of human scarring. Their morphology and distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted)
6. the scar must date to the time of Aboriginal bark exploitation within its region: the traditional Aboriginal exploitation of bark probably ceased in most regions between 100 and 150 years ago – however, in some locations associated with Aboriginal settlement, the Aboriginal removal of bark may have continued to the present day or restarted as part of new cultural movements
7. the tree must be endemic to the region: (and thus exclude historic plantings).

Field-based identification of Aboriginal scars is based on surface evidence only and will not necessarily provide a definitive classification. In many cases the possibility of a natural origin cannot be ruled out, despite the presence of several diagnostic criteria or the balance of interpretation leaning toward an Aboriginal origin. For this reason, interpretations of an Aboriginal origin are qualified by the recorder's degree of certainty. The following categories were used:

- Aboriginal scar – this is a scar where an Aboriginal origin is considered the most likely; the scar conforms to all of the criteria and a natural origin is considered unlikely and improbable
- probable Aboriginal scar – this is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely; despite this, a natural origin cannot be ruled out, and
- possible Aboriginal scar – this is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes; the characteristics of this scar would also be consistent with a natural cause.



PEC-E-16 (Modified Tree & Artefact Scatter)

This site is a scarred tree of probable Aboriginal origin with associated artefact scatter. The artefact scatter consists of two flakes one being quartz and the other silcrete. The site is located 250 metres north of Boorooban-Tchelery Road and 1,507 metres from the nearest watercourse.

This site is associated with PEC-E-PAD14. There is high potential for stone artefacts to be present in the subsurface context.

Species: Box

Estimated Height: 8m

Girth cm: 213

Condition: Poor, limbs missing

Aspect: W

Length excluding regrowth: 140cm

Width excluding regrowth: 40cm

Height of base of scar: 2cm

Scar condition: poor

Checklist:

Tree is endemic to area- Yes

scar is at least 100 yrs old?- Yes

regrowth is deep/old enough? Yes

scar does not extend to ground? Yes

Scar sides parallel? Yes

scar edges are even and regular – somewhat

scar edge uniform and roughly symmetrical - Yes

other natural and human origins less likely than Aboriginal - Yes

Conclusion: Probably



Scar close up



Artefacts



PEC-E-17 (Modified Tree)

This site is a scarred tree of probable Aboriginal origin located 150 metres north of Boorooban-Tchelery Road and 2,217 metres from the nearest watercourse.

This site is associated with PEC-E-PAD14. There is high potential for stone artefacts to be present in the subsurface context.

Species: Box

Estimated Height: 6m

Girth cm: 350

Condition: Poor, limbs missing

Aspect: N

Length excluding regrowth: 160cm

Width excluding regrowth: 40cm

Height of base of scar: 2cm

Scar condition: poor

Features: visible axe marks in scar

Checklist:

Tree is endemic to area- Yes

scar is at least 100 yrs old?- Yes

regrowth is deep/old enough? Yes

scar does not extend to ground? Yes

Scar sides parallel? Yes

scar edges are even and regular – Yes

scar edge uniform and roughly symmetrical - Yes

other natural and human origins less likely than Aboriginal - Yes

Conclusion: Probably



Close up of scar



Scarred tree



PEC-E-42 (Modified Tree)

This site is a scarred tree of possible Aboriginal origin located in a flat plain landscape context. The site is located 2.8 kilometres south of Four Corners Road and 1,186 metres from the nearest watercourse. There is an open spread of other endemic eucalypts in area. The size, shape and location of scar suggest that scar is possibly a canoe scar. Damage above scar is likely natural damage as scars are too close together to be toe hold scars.

Species: Eucalypt

Estimated Height: 15 metres

Girth cm: 200

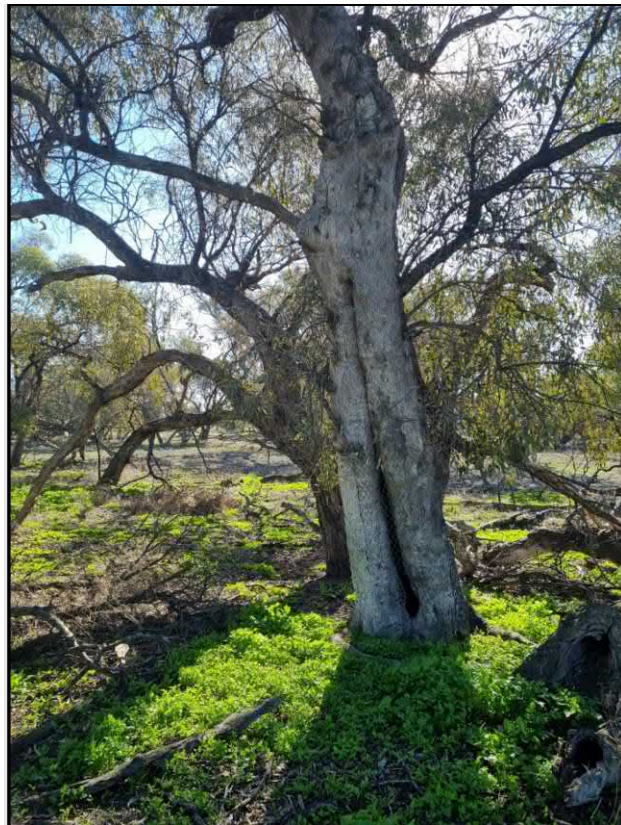
Length of Scar cm: 300

Condition: Poor, major crown limbs missing, die back, hollow. The tree has been encircled with chicken wire at some point, perhaps to protect it from further damage by stock.

Aspect: E

Large scale landform: Plain

Comments: Possible



Modified tree looking northeast



PEC-E-48 (Modified Tree)

This site is a scarred tree of probable Aboriginal origin located in a dry stream channel amongst other endemic black box trees. The site is located four kilometres west of Cadell Road and 67 metres from the nearest watercourse. The tree bears a deliberate hole with a remaining scar that is consistent with a native honey harvesting hole.

Species: Black Box

Estimated Height: 8m

Girth cm: 100

Condition: Poor, missing crown, hollow

Aspect: SE

Length excluding regrowth: 22cm

Length including regrowth: 48cm

Width excluding regrowth: 12cm

Width including regrowth: 36cm

Height of base of scar: 9cm

Features: Axe/hatchet marks are present, and this is a deliberate hole rather than a scar from the removal of bark. The tree is hollow and the mark is consistent with the extraction of native honey.

Scar condition: good, deliberate hole into the tree

Checklist:

Tree is endemic to area- Yes

scar is at least 100 yrs old?

regrowth is deep/old enough? Yes

scar does not extend to ground No

scar edges are even and regular - somewhat

Other natural and human origins less likely than Aboriginal origin: The only possible non-indigenous use would be as a makeshift fence railing support i.e. where the tree is used as a convenient upright. This appears unlikely as there would be another hole on the other side for the continuation of the fence. No evidence of old fence in this location.

Conclusion: Probably



Deliberate hollow in tree



Cut mark



PEC-E-49 (Modified Tree)

This site is a scarred tree of probable Aboriginal origin located in a dry stream channel amongst other endemic black box trees. The site is located 4 kilometres west of Cadell Road and 73 metres from the nearest watercourse. Scar of tree bears stone axe cut marks, scar is deep and formed such that alternative explanations are unlikely.

Species: Black Box

Estimated Height: 10m

Girth cm: 120

Condition: This tree is suffering from die-back

Aspect: N

Length excluding regrowth: 110cm

Length including regrowth: 137cm

Width excluding regrowth: 18cm

Width including regrowth: 63cm

Height of base of scar: 10cm

Features: There are several axe marks visible on the surface of the scar at the top. Scar condition: moderate- some damage to surface of scar

Checklist:

Tree is endemic to area? Yes

scar is at least 100 yrs old?

regrowth is deep/old enough? Yes

scar does not extend to ground? No

Conclusion: Yes



Scar



Cut mark



PEC-E-62 (Modified Tree)

This site is a scarred tree of likely Aboriginal origin located on an alluvial flat adjacent to Lake Cullivel. The site is located 320 metres from Lake Cullivel. Tree is alive and in excellent condition, scar is deep and formed such that alternative explanations are unlikely.

Species: Eucalyptus

Estimated Height: 13m

Girth cm: 350

Condition: Excellent

Aspect: S

Length excluding regrowth: 122cm

Length including regrowth: 149cm

Width excluding regrowth: 25cm

Width including regrowth: 32cm

Height of base of scar: 90cm

Checklist:

Tree is endemic to area

scar is at least 100 yrs old?

regrowth is deep/old enough?

scar does not extend to ground

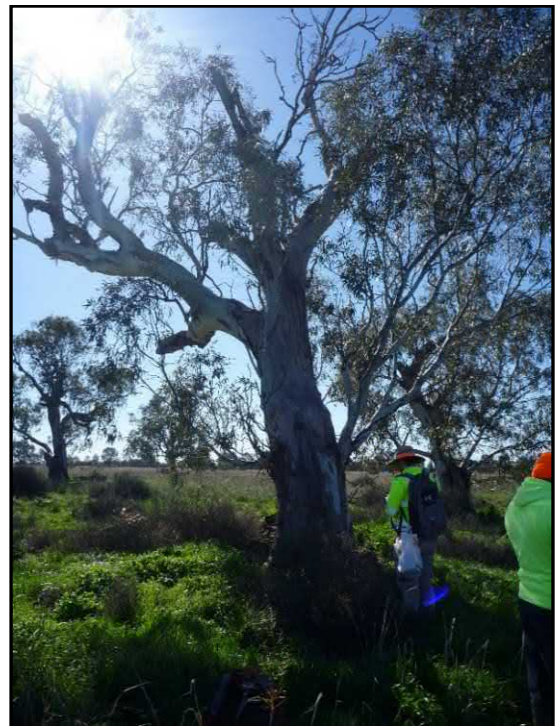
Edges are even and regular

Scar edge uniform and roughly symmetrical

Conclusion: Most likely



Scar on tree



View of tree facing north



PEC-E-76 (Modified Tree)

This site is a scarred tree of probable Aboriginal origin located in a plain landscape context amongst other endemic eucalypt trees. The site is located 50 metres south of Napier Road and 138 metres from the nearest watercourse.

The tree is alive and in good condition; it displays two scars, the first one nearest the ground is consistent with a limb fall scar and is unlikely Aboriginal in origin. The top scar is of probably Aboriginal origin, scar is deep and formed such that alternative explanations are unlikely.

Lower Scar

Species: Eucalyptus

Estimated Height: 20m

Girth cm: 200

Condition: Good

Aspect: Southeast

Length excluding regrowth: 50cm

Length including regrowth: 105

Width excluding regrowth: 6cm

Width including regrowth: 40

Height of base of scar: 90 cm

Checklist:

Tree is endemic to area? Yes

Regrowth deep/old enough? Yes

Scar does not extend to ground? Correct

Scar edges are even and regular: Indeterminate as regrowth covers scar edges

Scar edge uniform and roughly symmetrical: swelling at the base of the scar suggests a tree branch once existed and has broken away.

Features: Termite activity

Scar condition: poor

Conclusion: Possible, but likely limb fall

Alternative explanation: limb fall



Lower scar in tree

Top Scar

Species: Eucalyptus

Estimated Height: 20m

Girth cm: 200

Condition: Good

Aspect: Southeast

Length excluding regrowth: 100cm

Length including regrowth: 140cm

Width excluding regrowth: 20cm

Width including regrowth: 50cm

Height of base of scar: 190 cm

Checklist:

Tree is endemic to area? Yes

Regrowth deep/old enough? Yes

Scar does not extend to ground? correct

Scar edges are even and regular? Yes

Scar edge uniform and roughly symmetrical? Yes

Other natural or human origins not as likely as Aboriginal origin none evident

Scar condition: good

Conclusion: Yes

Alternative explanation: none evident



Top scar in tree



View of tree facing northwest



PEC-E-77 (Modified Tree)

This site is a scarred tree of probable Aboriginal origin located in a stream channel amongst an open stand of other box Eucalypts. The site is located adjacent to Strongs Lane and 35 metres from the nearest watercourse.

Tree is alive and in excellent condition, scar is consistent with a canoe scar, it is hollow and formed such that alternative explanations are unlikely.

Species: Box

Estimated Height: 35m

Girth cm: 400

Condition: Good, Hollow

Aspect: East

Length excluding regrowth: 290cm

Length including regrowth: 320cm

Width excluding regrowth: 40cm

Width including regrowth: 130cm

Height of base of scar: 20 cm

Features: Axe/hatchet marks, termite activity, scar surface burnt, core wood missing, original scar surface whole/partly missing, Other natural and human origins less likely than Aboriginal origins

Checklist:

Tree is endemic to area? Yes

Regrowth deep/old enough? Yes

Scar edge uniform and roughly symmetrical? Yes

Scar condition: poor

Conclusion: Yes – consistent with a canoe tree



Scar in tree



View of tree facing northwest



PEC-E-78 (Modified Tree)

This site is a scarred tree of likely Aboriginal origin located in a stream channel amongst an open stand of other box Eucalypts. The site is located 90 metres south of Strongs Lane and 42 metres from the nearest watercourse.

Tree is alive and in excellent condition, scar is deep and formed such that alternative explanations are unlikely.

Species: Box

Estimated Height: 14m

Girth cm: 170

Condition: Good

Aspect: North

Length excluding regrowth: 190cm

Length including regrowth: 200cm

Width excluding regrowth: 27cm

Width including regrowth: 60cm

Height of base of scar: 12 cm

Features: Axe/hatchet marks, termite activity, large/small borer holes/tracks

Checklist:

Tree is endemic to area? Yes

Scar sides are parallel if extends to ground N/A

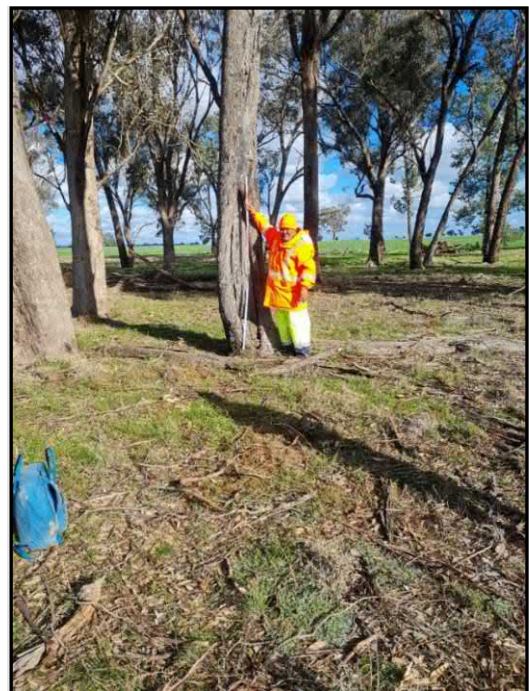
Scar edge uniform and roughly symmetrical Yes

Other natural and human origins less likely than Aboriginal origins? Non likely

Conclusion: Yes



View of tree facing south





Scar in tree





Scarred trees identified by the RAPs

Rationale for trees not being classified as an Aboriginal scar tree is discussed in section 7.2.2 (being that they do not meet the criteria for such items).

Table 11.1 Trees with scars assessed as not being Aboriginal scarred trees

ID	Easting	Northing	Rationale	Photograph
	GDA94 / MGA Zone 55			
PEC-E-Tree 1			Determined to be a natural scar as the scars are uneven and go to the ground	
PEC-E-Tree 2			Determined to be a natural scar as the scar is uneven and goes to the ground	



ID	Easting	Northing	Rationale	Photograph
	GDA94 / MGA Zone 55			
PEC-E-Tree 3			Determined to be a natural scar as the scar is uneven and goes to the ground	
PEC-E-Tree 4			Determined to be a natural scar as the scar is uneven and goes to the ground	



Appendix 3

Unanticipated discovery Protocols



Protocol to follow if Aboriginal object(s) or historical relics (other than human remains) are encountered

In the event that object(s) which are suspected of being Aboriginal object(s) or relic(s) are encountered during development works, then the following protocol would be followed.

1. Cease any further excavation or ground disturbance, in the area of the find(s):
 - a. the discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be temporarily halted, and
 - b. the site supervisor and the Principal will be informed of the find(s).
2. Do not remove any find(s) or unnecessarily disturb the area of the find(s).
3. Ensure that the area of the find(s) is adequately marked as a no-go area for machinery or further disturbance, and that the potential for accidental impact is avoided.
4. Note the location and nature of the finds, and report the find to:
 - a. relevant proposal personnel responsible for proposal and construction direction and management, and
 - b. report the find to the Heritage NSW.
5. Where feasible, ensure that any excavation remains open so that the finds can be recorded and verified. An excavation may be backfilled if this is necessary to comply with work safety requirements, and where this action has been approved by the Heritage NSW. An excavation that remains open should only be left unattended if it is safe and adequate protective fencing is installed around it.
6. Following consultation with the relevant statutory authority Heritage NSW and, where advised, any other relevant stakeholder groups, the significance of the finds should be assessed and an appropriate management strategy followed. Depending on proposal resources and the nature of the find(s), this process may require input from a consulting heritage specialist.
7. Development works in the area of the find(s) may re-commence, if and when outlined by the management strategy, developed in consultation with, and approved by the relevant statutory authority.
8. If human skeletal material is encountered, the protocol for the discovery of human remains should be followed (refer attached).



Protocol to follow in the event of the discovery of suspected human remains

The following protocol will be actioned if suspected human material is revealed during development activities or excavations.

1. All works must halt in the immediate area of the find(s) and any further disturbance to the area of the find(s) prevented.
 - a. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted; and
 - b. The site supervisor and the Principal/Proposal manager will be informed of the find(s).
2. If there is substantial doubt regarding a human origin for the remains, then consider if it is possible to gain a qualified opinion within a short period of time. If feasible, gain a qualified opinion (this can circumvent proceeding further along the protocol for remains which are not human). If conducted, this opinion must be gained without further disturbance to the find(s) or the immediate area of the find(s). (Be aware that the site may be considered a crime scene that retains forensic evidence). If a quick opinion cannot be gained, or the identification is positive, then proceed to the next step.
3. Immediately notify the following of the discovery:
 - a. the local Police (this is required by law)
4. Co-operate and be advised by the Police and/or coroner with regard to further actions and requirements concerning the find area. If required, facilitate the definitive identification of the material by a qualified person (if not already completed).
5. In the event that the Police or coroner instigate an investigation, construction works are not to resume in the designated area until approval in writing is gained from the NSW Police.
6. In the event that the Police and/or Coroner advise that they do not have a continuing or statutory role in the management of the finds then proceed with the following steps.
7. If the finds are not human in origin but are considered to be archaeological material relating to Aboriginal occupation then proceed with Protocol for the discovery of Aboriginal objects (other than human remains).
8. If the finds are **Aboriginal or probably Aboriginal in origin**:
 - a. Heritage NSW archaeologist or Aboriginal Heritage Officer
 - b. representative(s) from the registered Aboriginal parties (RAPs), and
 - c. the proposal archaeologist (if not already notified).
 - d. ascertain the requirements of Heritage NSW, the Proposal Manager, and the views of the Aboriginal Focus Group (AFG), and the proposal archaeologist;
 - e. based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:
 - i. avoiding further disturbance to the find and conserving the remains *in situ*



- ii. conducting archaeological salvage of the finds following receipt of any required statutory approvals
 - iii. scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial
 - iv. recovering samples for dating and other analyses, and/or
 - v. subsequent reburial at another place and in an appropriate manner determined by the AFG.
9. If the finds are **non-Aboriginal in origin**:
- a. ascertain the requirements of the Heritage Branch, Proposal Manager, and the views of any relevant community stakeholders and the proposal archaeologist.
 - b. based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:
 - i. avoiding further disturbance to the find and conserving the remains *in situ*
 - ii. conducting archaeological salvage of the finds following receipt of any required statutory approvals
 - iii. scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial
 - iv. recovering samples for dating and other analyses, and/or
 - v. subsequent reburial at another place and in an appropriate manner determined in consultation with the Heritage Office and other relevant stakeholders.
10. Construction related works in the area of the remains (designated area) may not resume until the proponent receives written approval in writing from the relevant statutory authority: from the Police or Coroner in the event of an investigation, from Heritage NSW in the case of Aboriginal remains outside of the jurisdiction of the Police or Coroner, and from the Heritage Branch in the case of non-Aboriginal remains outside of the jurisdiction of the Police or Coroner.



Appendix 4

Consultation log



Date	To	From	Medium	Brief Description
28/Jul/20	all in Stage 1a tab	NOHC	Mail/email	Requesting details of potential RAPs - Agency Letter
28/Jul/20	NOHC	Dareton LALC	email	registration of interest
28/Jul/20	NOHC	Western LLS	email	identified Kureinji Aboriginal Corporation and Balranald LALC (already contacted)
28/Jul/20	NOHC	Steve Young Griffith LALC	phone	Steve called and spoke to Susan (28/7/2020). He said that he had received a letter from Nicola re the EnergyConnect proposal. He has already been speaking with Sherrie from Transgrid and they have given a commitment to involve the LALC in field work. They represent the Aboriginal people in the area and they do not allow all the external people who randomly register as RAPs from around the country to work in their area. They understand that we are required by OEH/heritage NSW to send out these notices but that want to be sure the commitment from Transgrid is honoured.
28/Jul/20	NOHC	Rene Woods	phone	registered an interest in the proposal no formal connection to Hay LALC
29/Jul/20	NOHC	James McLeod (NTSCorp) for the Barkandji Native Title Group Aboriginal Corporation RNTBC	email	registration of interest
7/Aug/20	NOHC	Riverina Local Land	email	identified Wagga LALC (already contacted)
11/Aug/20	NOHC	Balranald Shire council	email	identified Balranald LALC (already contacted)
11/Aug/20	NOHC	Heritage NSW	email	provided list of possible interested groups/individuals
12/Aug/20	NOHC	Hay Shire Council	email	identified Nari Nari Tribal Council and Hay Aboriginal Corporation Community Working Party
13/Aug/20	NOHC	Robert Carroll Miyagan Culture and Heritage	email	register an interest in Hay, Carrathool, Darlington Point, Coleambally, Narrandera, Boree Creek and Wagga Wagga Council areas
13/Aug/20	NOHC	Roley Williams	phone	register an interest in the proposal for himself and Michael Lions
13/Aug/20	NOHC	Muragadi - Jesse Johnson	email	register an interest
13/Aug/20	NOHC	Merrigarn - Shaun Carroll	email	register an interest
13/Aug/20	NOHC	Murrabidgee Mullangari - Ryan Johnson	email	register an interest
14/Aug/20	NOHC	Michael Lyons	email	register an interest
18/Aug/20	NOHC	Rene Woods	email	register an interest



Date	To	From	Medium	Brief Description
19/Aug/20	NOHC	Murray Lower Darling Rivers Indigenous Nations	email	register an interest
19/Aug/20	NOHC	Hay LALC Ian woods	email	sent a list of interested parties
20/Aug/20	NOHC	all on stage 1b tab	email and post	stage 1b letters sent
20/Aug/20	NOHC	Mark Saddler	phone	register an interest, pleased with the word Dinawan being used, Lake Urana is significant
20/Aug/20	NOHC	Kelly Tyson Murrumbidgee shire council	email	Indicated she sent the stage 1b letter to number of people, I asked for contact details
20/Aug/20	NOHC	Rene Woods	email	reiterated registration
20/Aug/20	NOHC	Yalmambirra	email	register an interest
20/Aug/20	NOHC	Kaleana Reyand	email	provided a list of contacts for Balranald, happy to be point of contact for them
20/Aug/20	NOHC	BMEET	email	register an interest
24/Aug/20	NOHC	Hay LALC Ian woods	email	additional person registered by Hay LALC
24/Aug/20	Noel Thompson	NOHC	post	stage 1b letter to Noel Thompson as identified by Murrumbidgee shire council
24/Aug/20	Waddi Waddi Housing Tammi Leigh Chirgwin	NOHC	phone	phone message left as follow up to Murrumbidgee shire council email
24/Aug/20	Barbara Brown	NOHC	phone	phone message left as follow up to Murrumbidgee shire council email
24/Aug/20	Peter Kabalia	NOHC	phone	phone message left as follow up to Murrumbidgee shire council email, discussed approach, sounded ok, archaeologist, happy not to be further consulted
25/Aug/20	NOHC	Robert Carroll Miyagan Culture and Heritage	email	identifying the following as areas of interest: <ul style="list-style-type: none"> • Northern section of the Edward River Council (Prior to the NSW Local government amalgamations was the Conargo Shire) • Murrumbidgee Council (Southern section was which previously the Jerilderie Shire) • Federation Council (Northern section was which previously the Urana Shire) • Narrandera Shire Council • Lockhart Shire Council
26/Aug/20	NOHC	Kureinji Aboriginal Corporation	email	registration of interest: between Balranald and Buronga



Date	To	From	Medium	Brief Description
26/Aug/20	NOHC	Cheryl Penrith	email	registration of interest: Tumut to Balranald
27/Aug/20	NOHC	Will Carter	email	registration of interest: Murrumbidgee and Lockhart LGAs.
31/Aug/20	NOHC	Ruth Davies RMRA	email	registration of interest for Wagga and surrounds
2/Sep/20	NOHC	Sissy Pettit	email	registration list for Urana to Buronga NSW
3/Sep/20	NOHC	Ray Woods	email	registration of interest for Coleambally to Moulemin rd
4/Sep/20	NOHC	Ronald Goulding	email	registration of interest for Hay area
2/Oct/20	All RAPs	NOHC	email	Methodology sent to RAPs for comment
6/Oct/20	NOHC	Mark Saddler	email	Requested more detailed mapping alongside methodology
7/Oct/20	NOHC	Will Carter	email	"I think it looks okay for the most part. However, I think some work should be done to ensure each team has a Traditional Owner on it. "Any sites found should not be disturbed and cultural items should be recorded, buried if necessary, and left where they are. " 'it' in this situation relates to the methodology
8/Oct/20	NOHC	Yalmambirra	email	"I have read the draft [methodology] and it appears to be respectful and culturally aware of the needs to conduct the survey in an appropriate manner"
8/Oct/20	NOHC	Darleen Johnson (Murrabidgee)	email	"endorse the recommendations made" [in the methodology]
13/Oct/20	NOHC	Jesse Johnson (Murragadi)	email	"I agree with the recommendations made" [in the methodology]
15/Oct/20	NOHC	Stephen Young (GLALC)	email	Support the recommendations with provisions,
18/Nov/20	NOHC	all RAPs	email and letter	update letter postponement
5/05/2021	NOHC	Yalmambirra	email	not able to participate don't have time for survey, I replied that we are just giving RAPs opportunity and confirmed that he still wanted to receive proposal information
11/May/21	NOHC	Yalmambirra	email	confirmed that he did want to continue to be consulted
13/May/21	NOHC	Rolly Willimas	phone	wanted to register for proposal, was already registered but we only had a phone number, I asked for postal address and it was recorded for future communications
29/Oct/21	all RAPs	NOHC	email	subsurface test excavation method
1/Nov/21	all RAPs	NOHC	post	subsurface test excavation method
1/Nov/21	NOHC	Jesse Carroll Johnson	email	agrees with the method
3/Nov/21	NOHC	Mark Saddler	email	provided comment particularly on consultation during survey



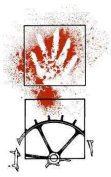
Date	To	From	Medium	Brief Description
9/Nov/21	all RAPs	NOHC	email and post	Draft ACHAR
26/Nov/21	NOHC	Ray Woods	phone	commenting on draft report. Objected to the use of just the LALCs in the field assessment. Still undertakeing cultural practices and not all in the community know of all of the information. No details provided on specific areas of concern
1/Dec/21		NOHC and Transgrid	Zoom/Teams	during december a series of online meetings were held with LALCs regarding the CHAR and subsurface test excavations, no specific feedback was supplied at this time
January to April 2022				Participation in test excavation program: <ul style="list-style-type: none"> • Balranald Local Aboriginal Land Council • Cummeragunja Local Aboriginal Land Council • Pappin Family Aboriginal Organisation • Deniliquin Local Aboriginal Land Council • Griffith Local Aboriginal Land Council • Narrandera Local Aboriginal Land Council • Hay Local Aboriginal Land Council • Wagga Wagga Local Aboriginal Land Council • Bundy Cultural Tours • Bidya Marra Consultancy
14/Apr/22	NOHC		email	Revised ACHAR was provided to RAPs for comment



Date	To	From	Medium	Brief Description
28/Apr/22	NOHC, Transgrid, WSP	Hay LALC	Online meeting	<ul style="list-style-type: none"> Agreed with the recommendations Would like for artefacts to stay on country Comfortable with the assessment completed and the consultants used <p>Would like input into which archaeologists undertake the salvage works</p>
28/Apr/22	NOHC, Transgrid, WSP	Griffith LALC	Online meeting	<ul style="list-style-type: none"> Would like to see opportunity for reconnection and protection of culture Sites are sacred Concerned about impacts and access in the future from the electricity towers Would like some compensation and continuation of consultation with the LALC to mitigate the impact to sacred sites
28/Apr/22		Bidya Marra Consultancy	Online meeting	<ul style="list-style-type: none"> All recommendations sound reasonable Will supply a written response
2/May/22	NOHC, Transgrid, WSP	Narrandera LALC,	Online meeting	<ul style="list-style-type: none"> Did not raise any objections to the recommendations or assessment
2/May/22	NOHC, Transgrid, WSP	Deniliquin LALC	Online meeting	<ul style="list-style-type: none"> Did not raise any objections to the recommendations or assessment
3/May/22	NOHC, Transgrid, WSP	Murrabidgee Mullangari	Online meeting	<ul style="list-style-type: none"> Did not raise any objections to the recommendations or assessment Will follow up with a written response



Date	To	From	Medium	Brief Description
12/May/22		Griffith LALC	Email	<ul style="list-style-type: none">Griffith LALC can confirm that the identified within the project area are of cultural and spiritual significance to the local Wiradjuri People of whom are the traditional owners and custodians of the lands.It is not customary for Aboriginal people to remove or destroy Aboriginal places of cultural and spiritual significance, we are obligated to care and protect the environment and country, this includes Aboriginal Ancestral cultural and heritage located within the boundaries of . Therefore we are opposed to Transgrid intending to cause harm and destruction to Aboriginal Ancestral places of significance.Griffith LALC recommends that Transgrid meet with its Board of Management/Traditional owners/custodians to negotiate proposed salvage, impact mitigations and management options, in further discuss re-compensate options for the local Wiradjuri peoples loss of native title rights.

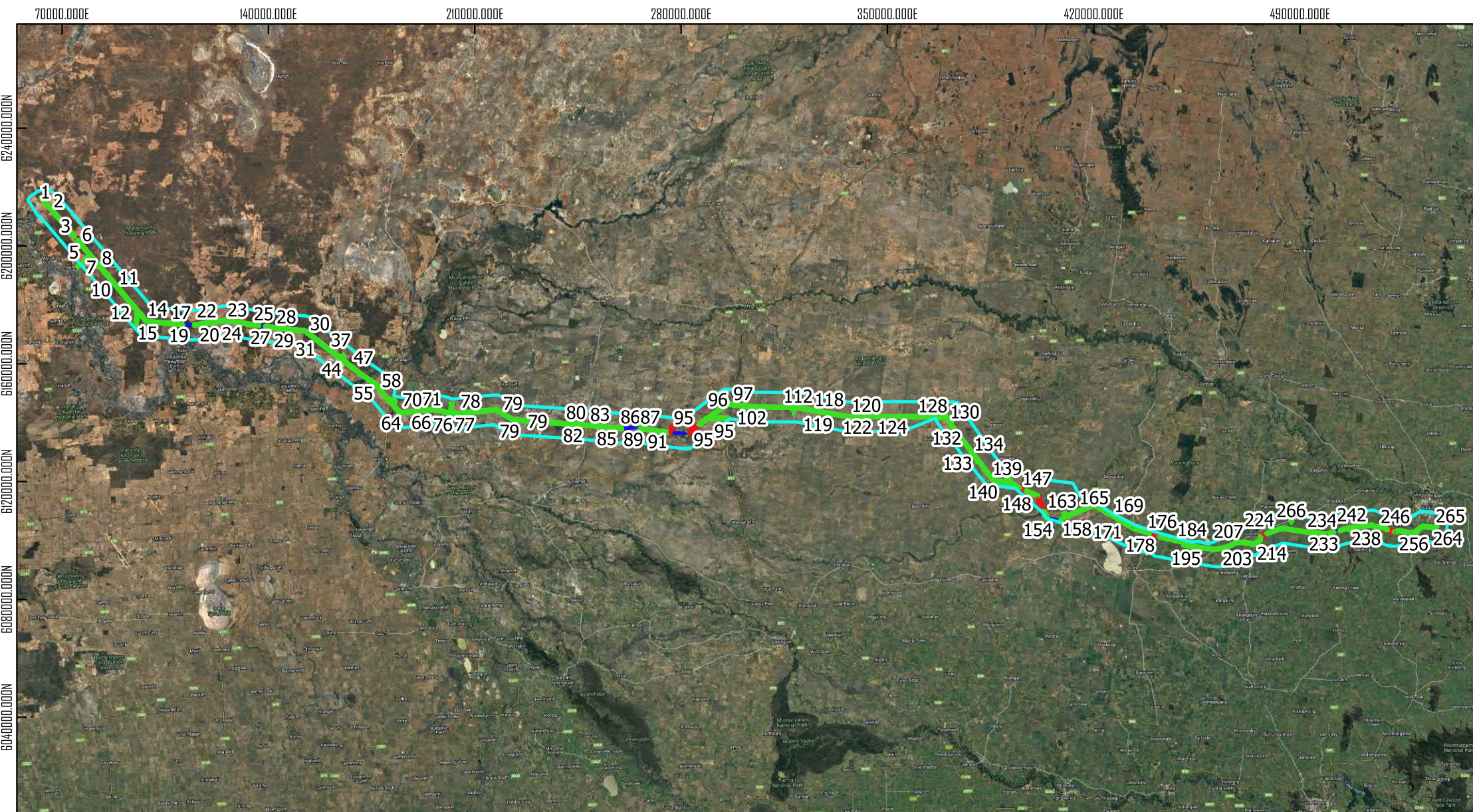


Appendix 5

Mapping



Survey extents showing areas not yet assessed



Survey area with survey units


Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes
Date: 31/03/2022


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MGA Zone 55/56
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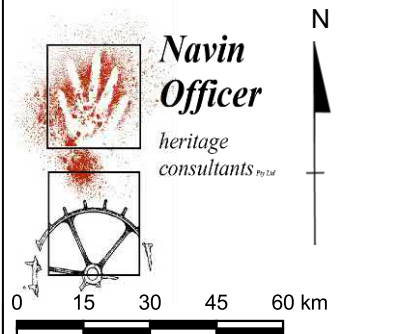
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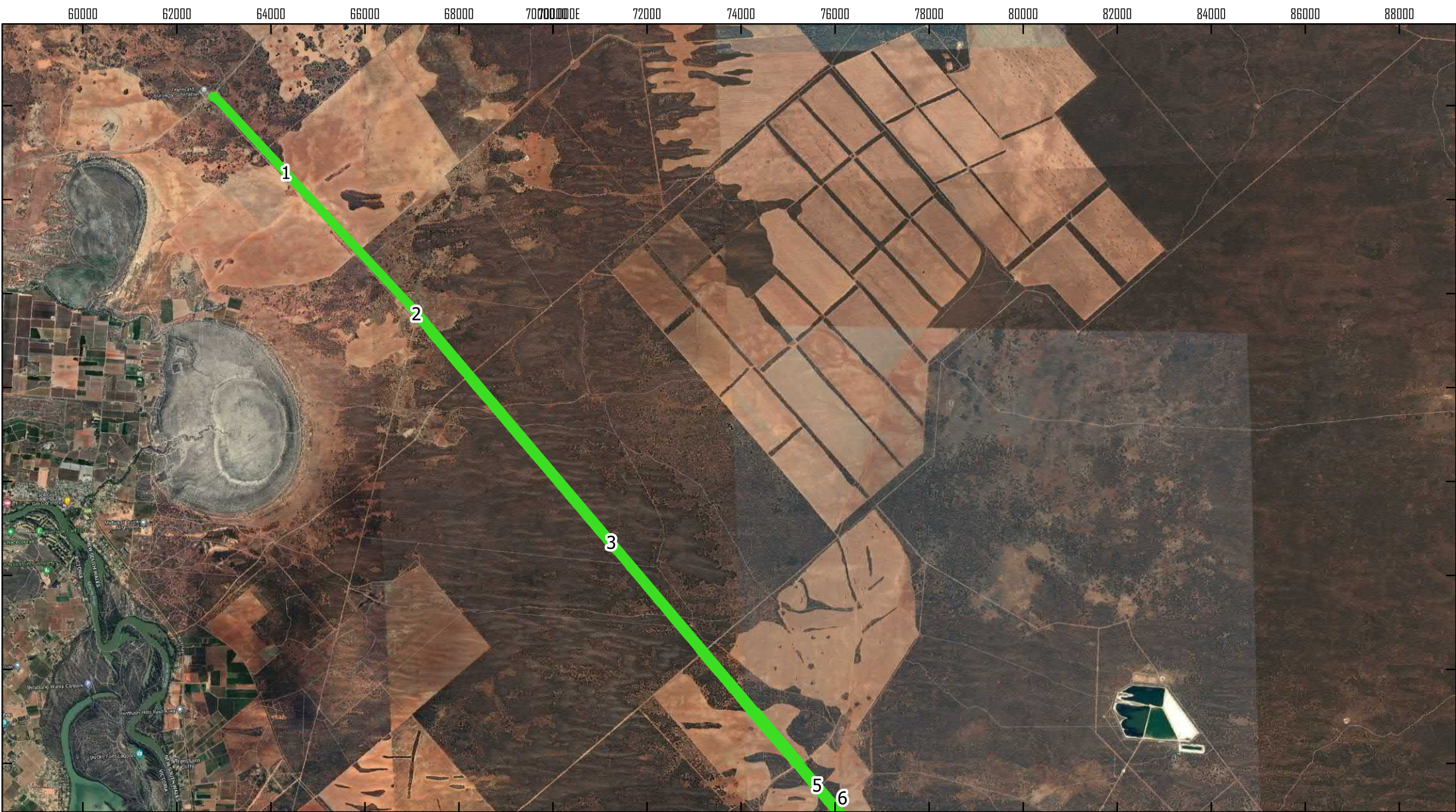
Survey Status Updated March 2022

 Completed

 Not Completed

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Survey area with survey units


Project: EnergyConnect (NSW) - Eastern Section
Basemap: Google LANDSAT / Copernicus © Google 2019

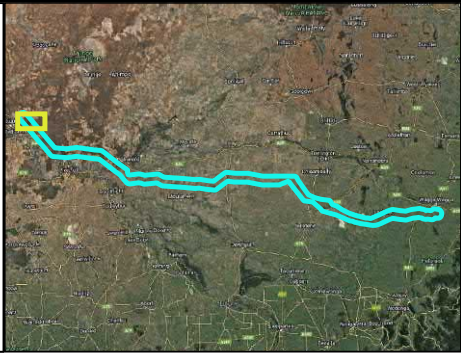
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Date: 31/03/2022

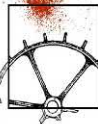

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Survey Status Updated March 2022

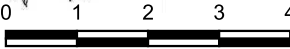

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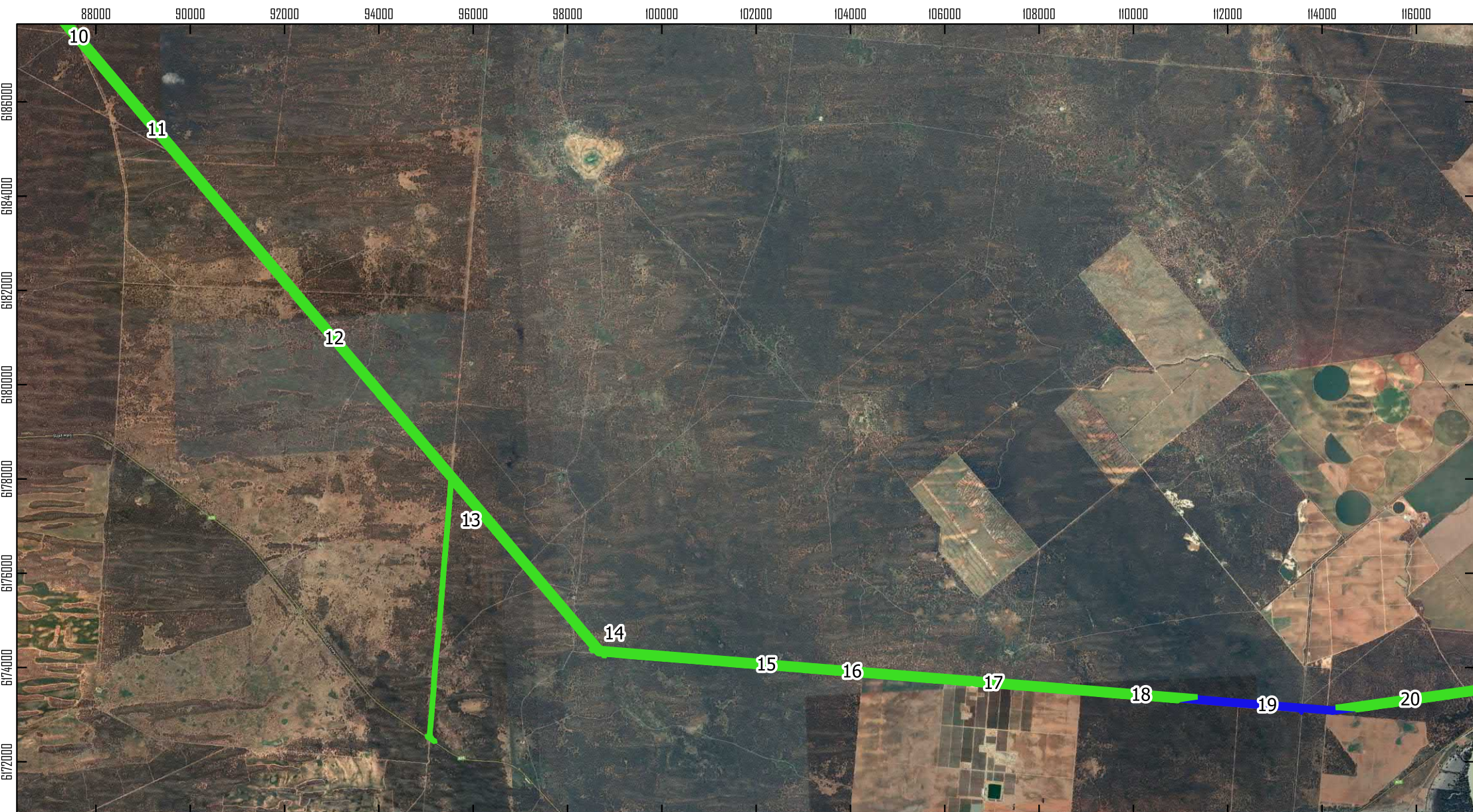




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Survey area with survey units

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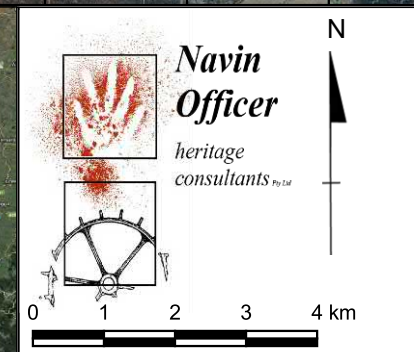
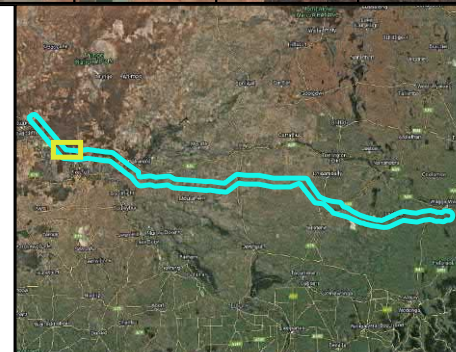
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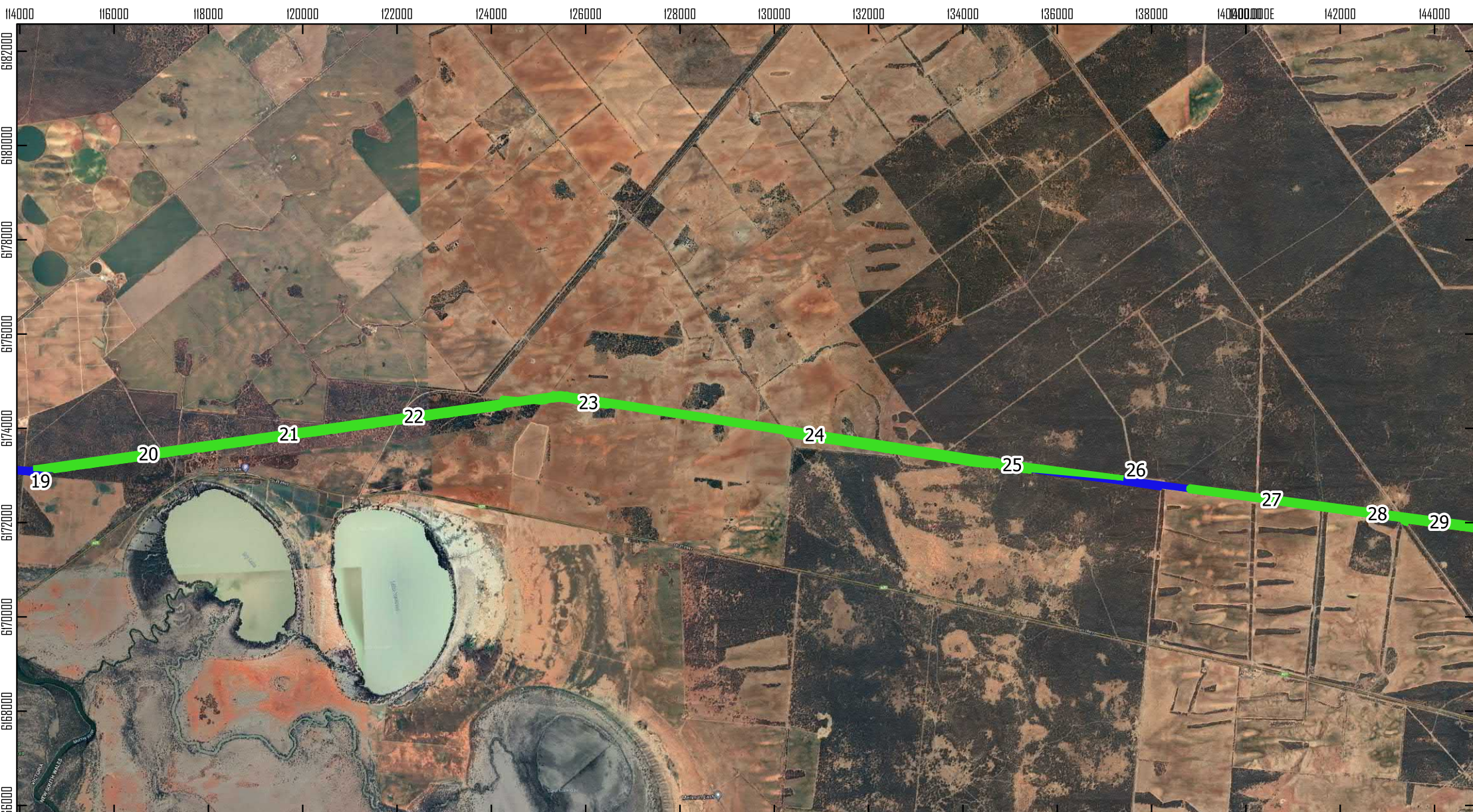
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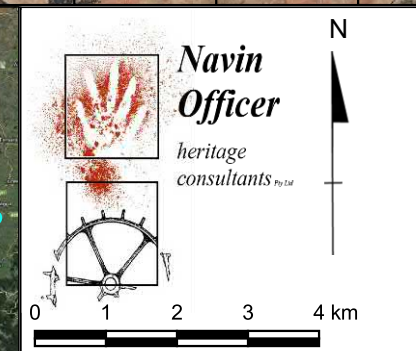
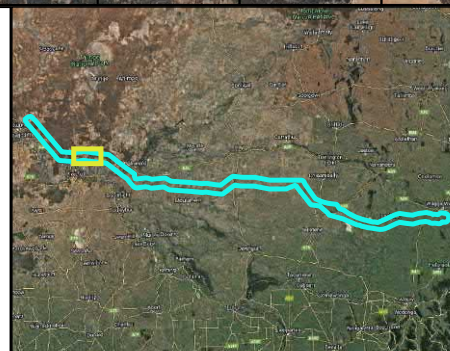
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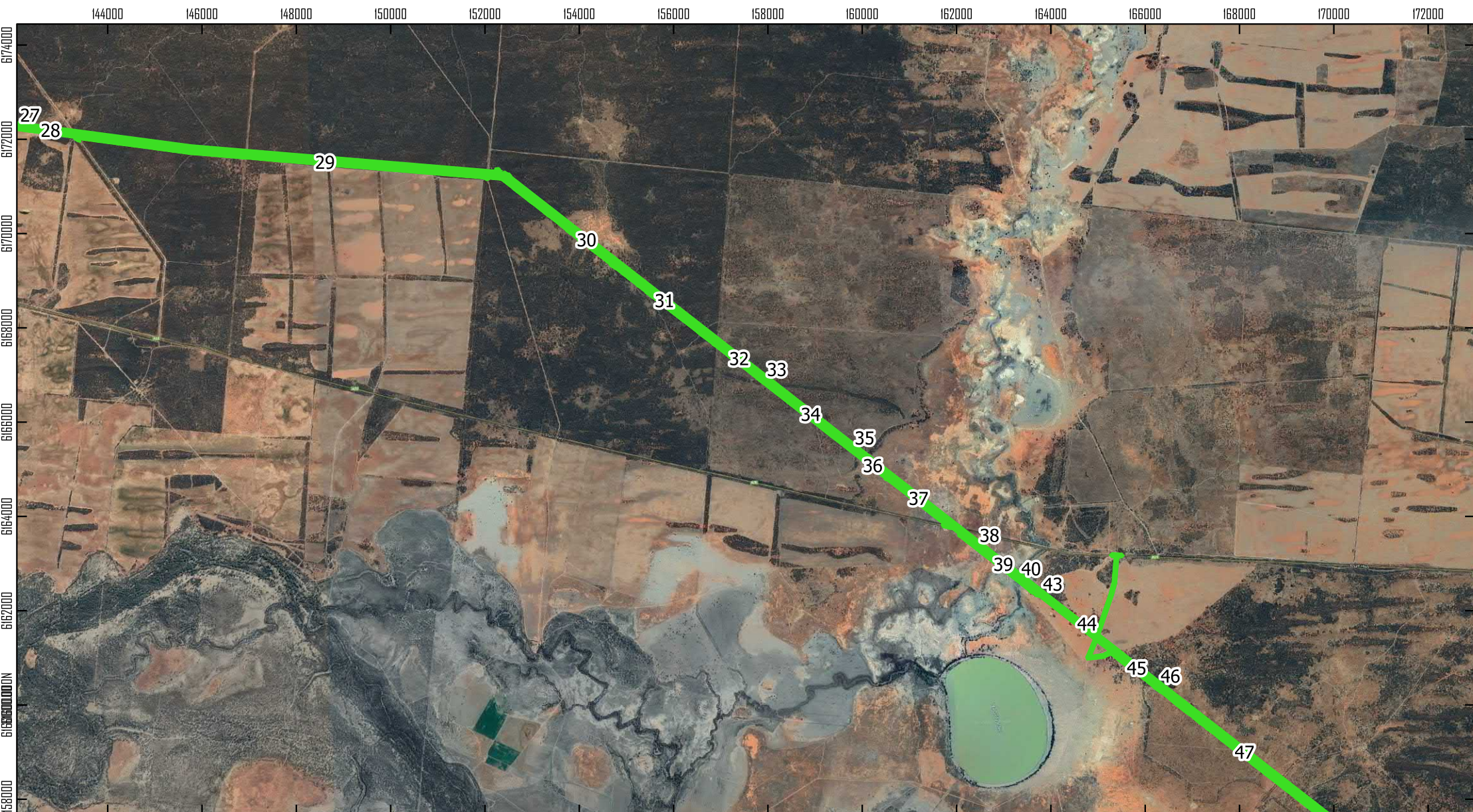
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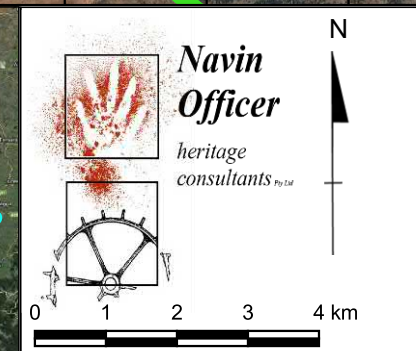
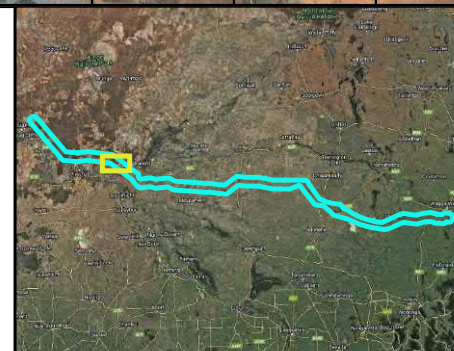
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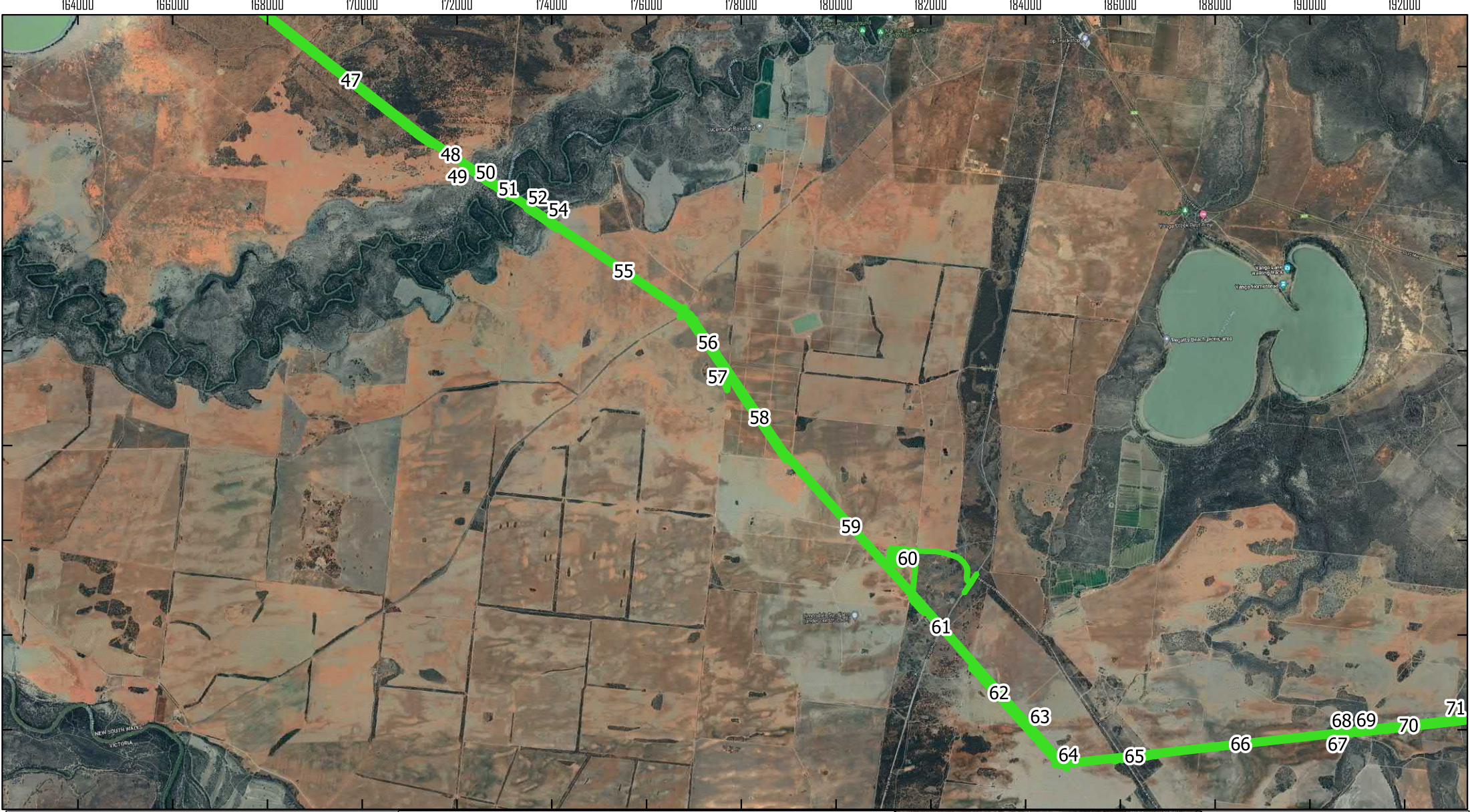
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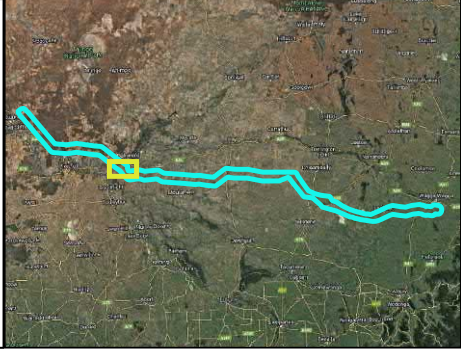
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Date: 31/03/2022

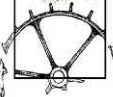

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Survey Status Updated March 2022

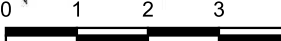

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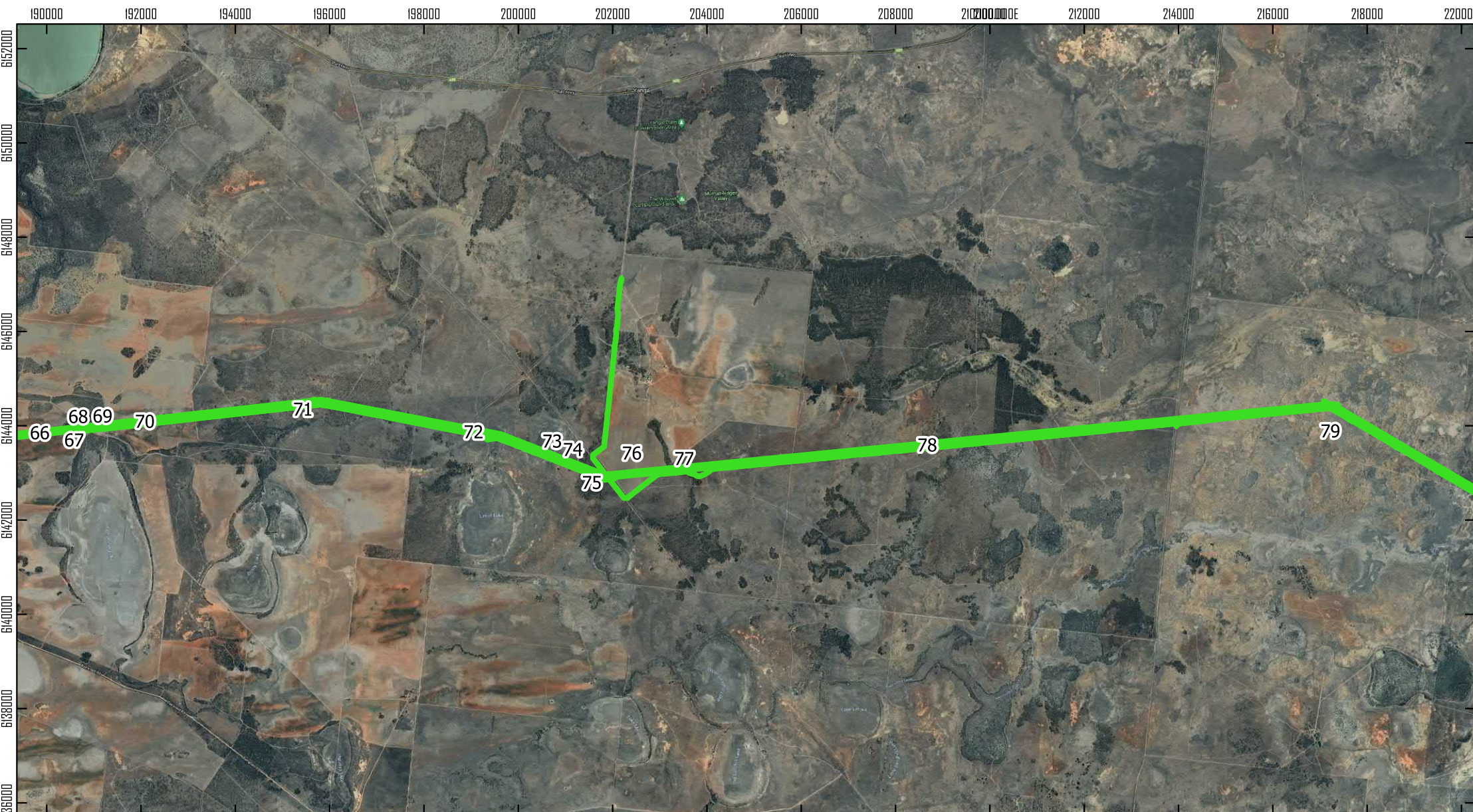




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Survey area with survey units

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Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

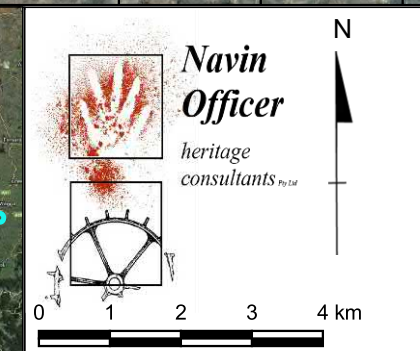
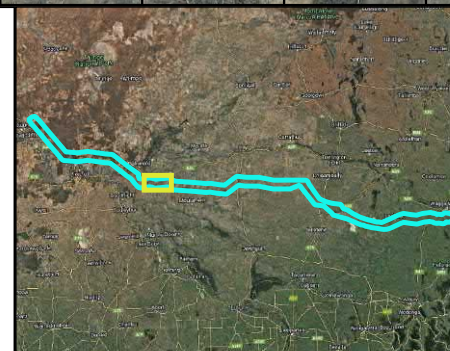
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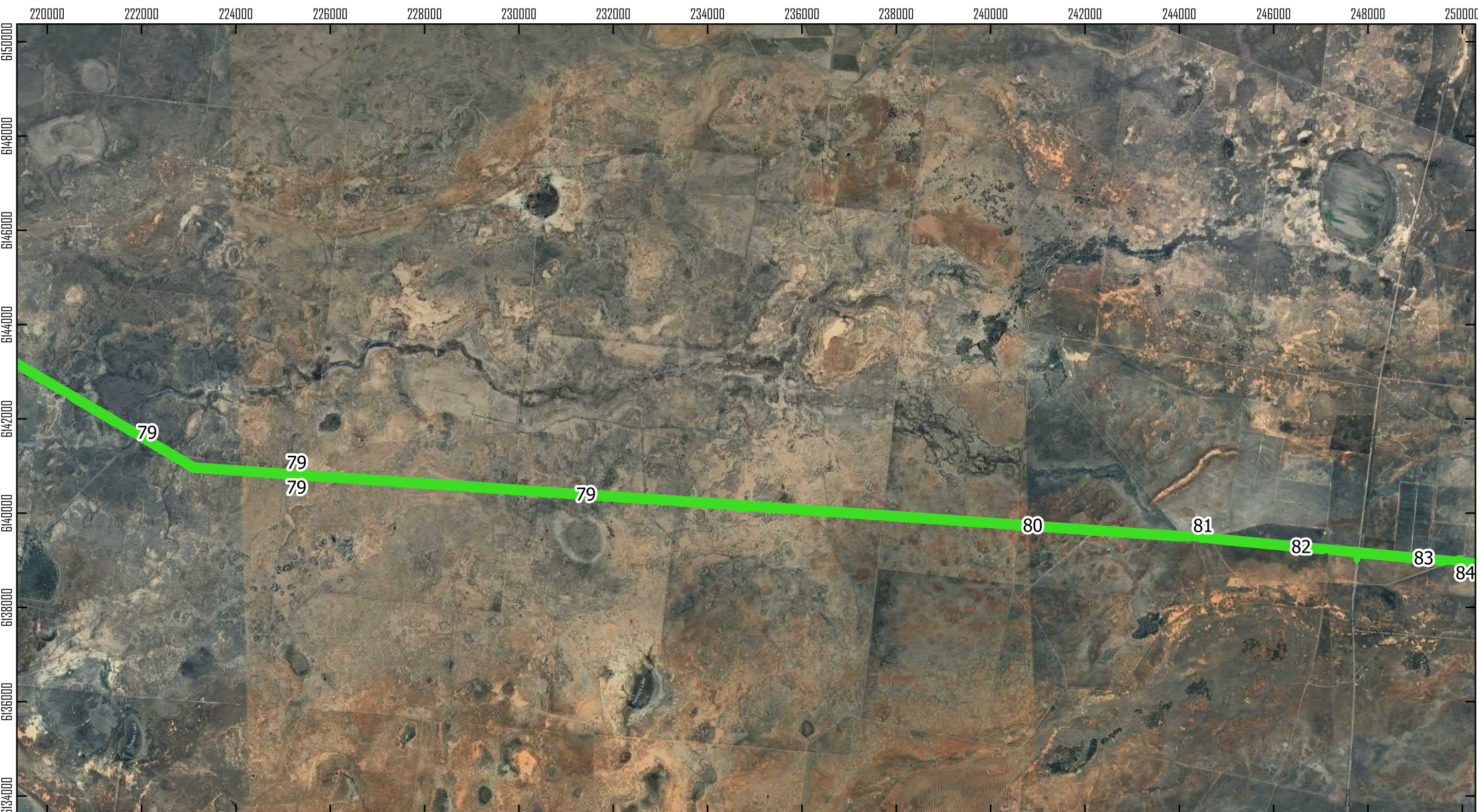
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Survey Status Updated March 2022

Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

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Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

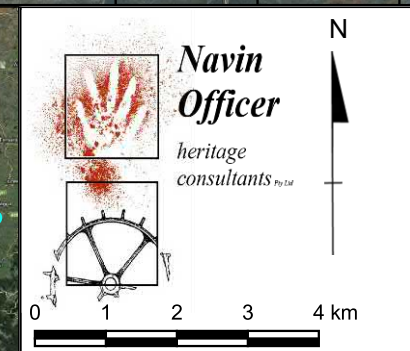
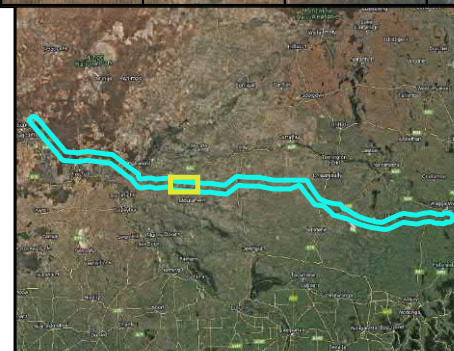
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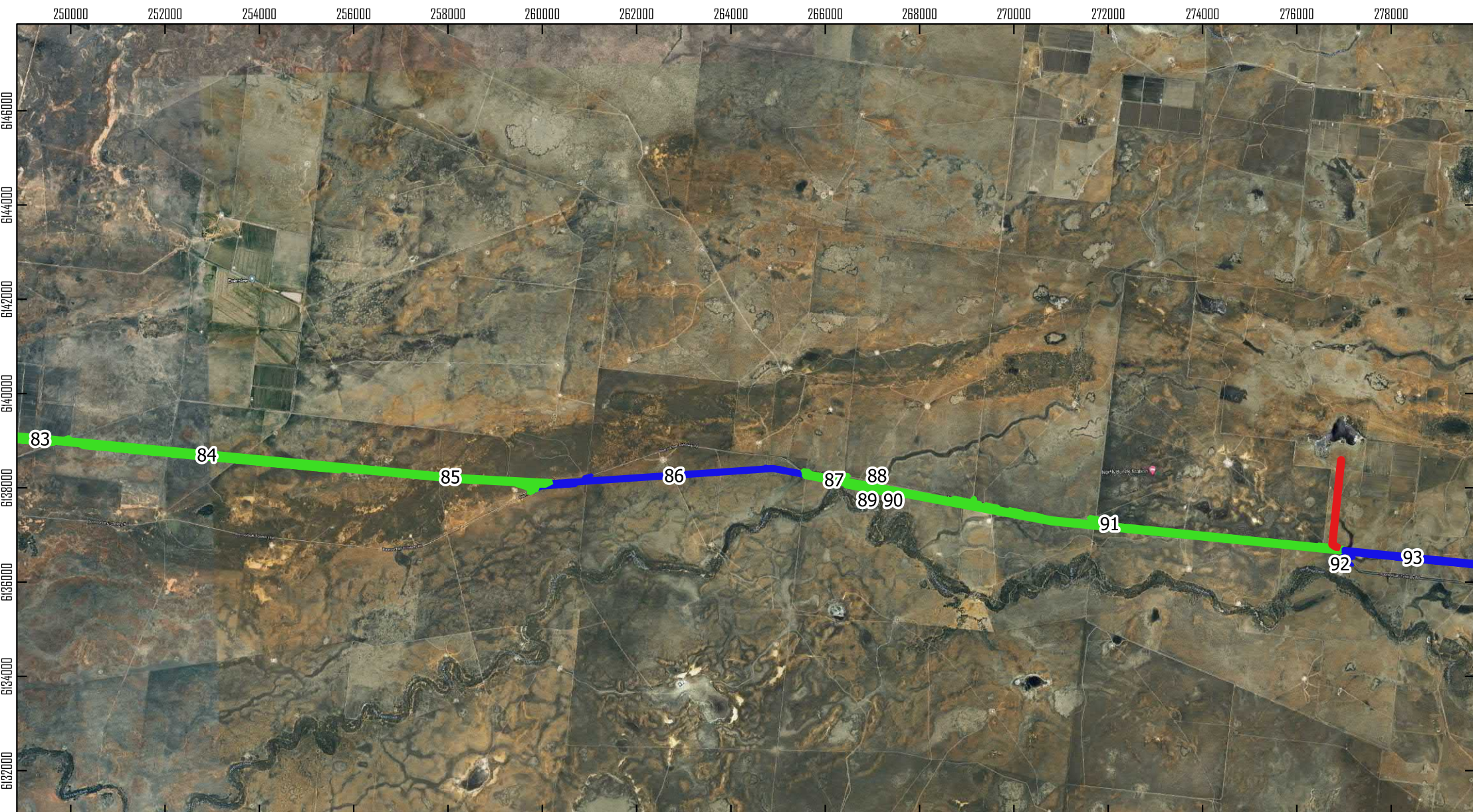
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Survey Status Updated March 2022

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Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

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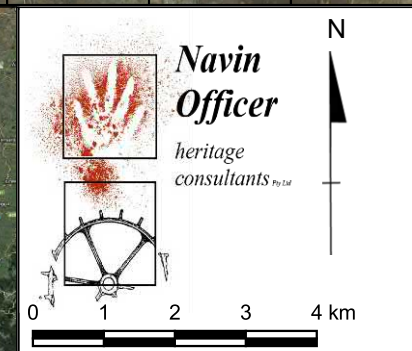
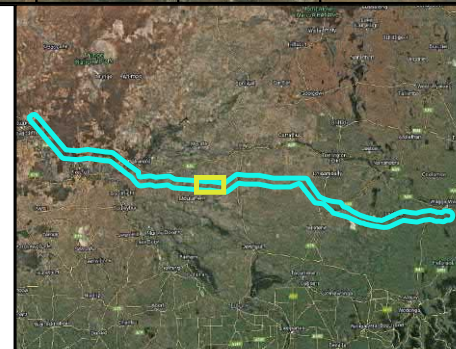
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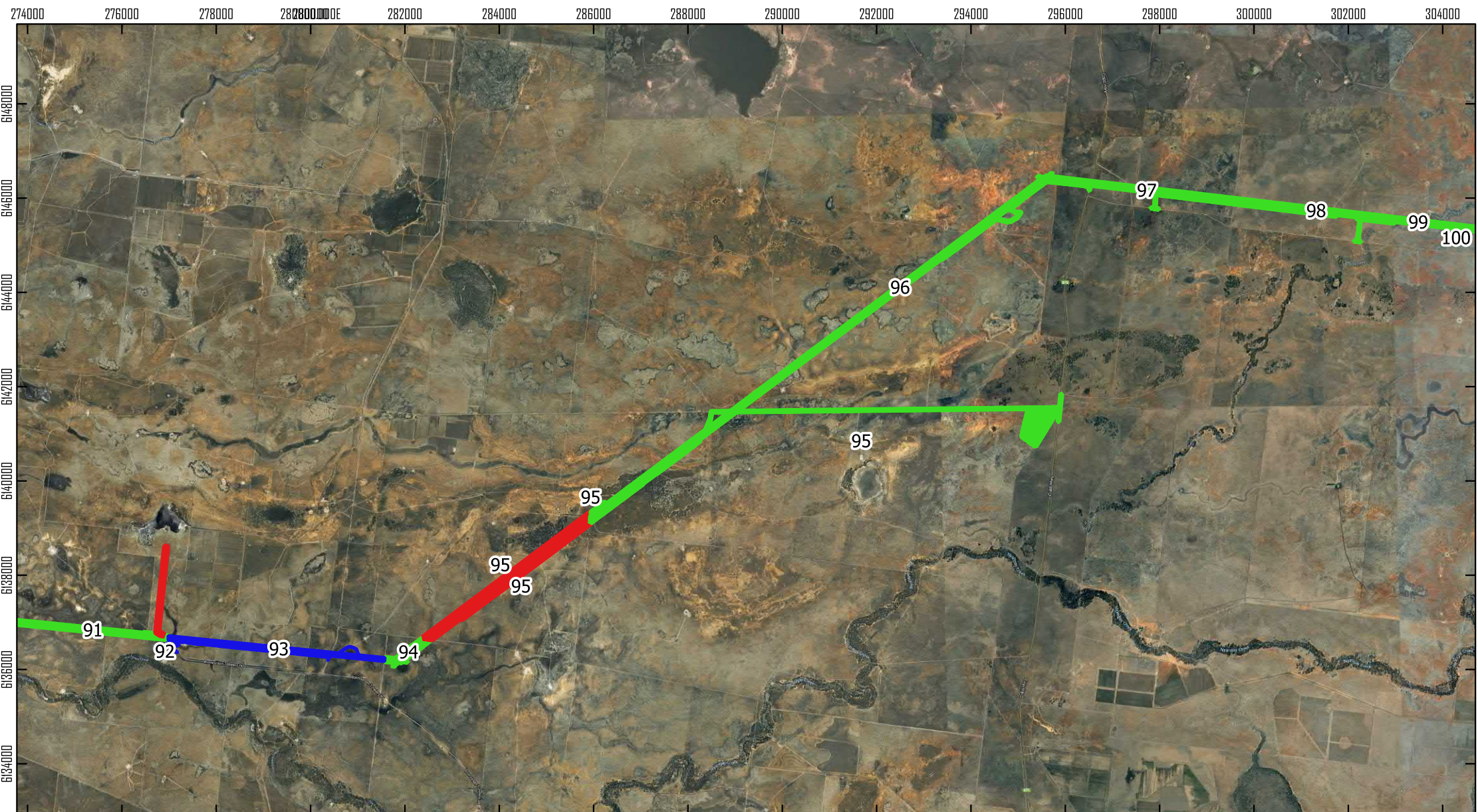
Survey Status Updated March 2022

■ Completed

■ Not Completed

■ Visual inspect





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

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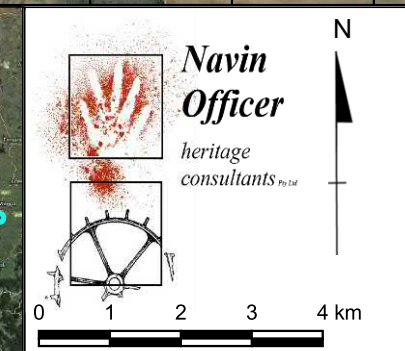
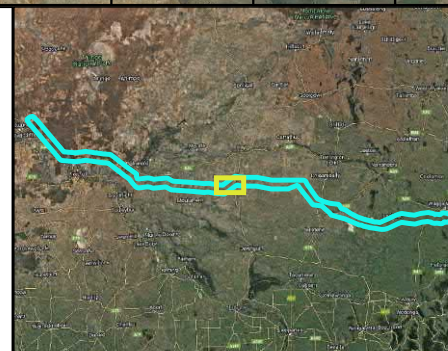
Legend

Survey Status Updated March 2022

■ Completed

■ Not Completed

■ Visual inspect





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

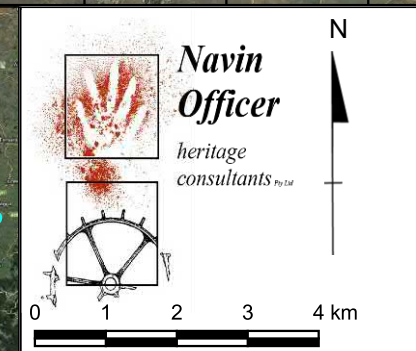
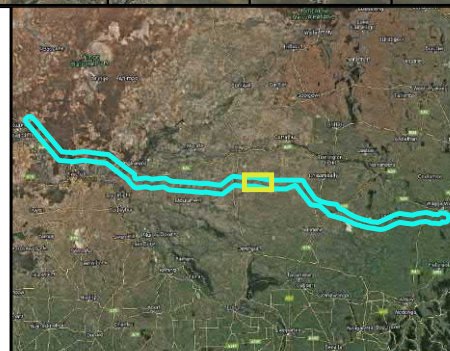
MGA Zone 55/56

Scale at A4: 1:106,521.077885

Legend

Survey Status Updated March 2022

Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

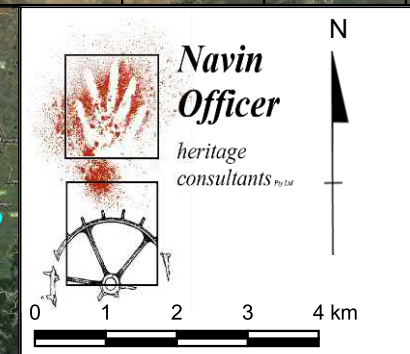
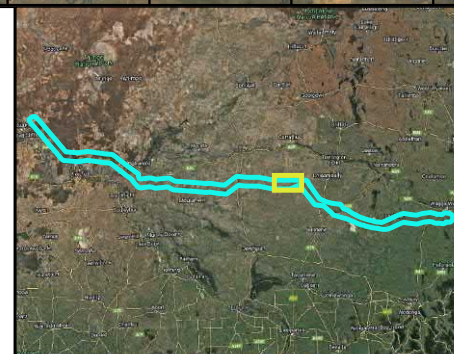
MGA Zone 55/56

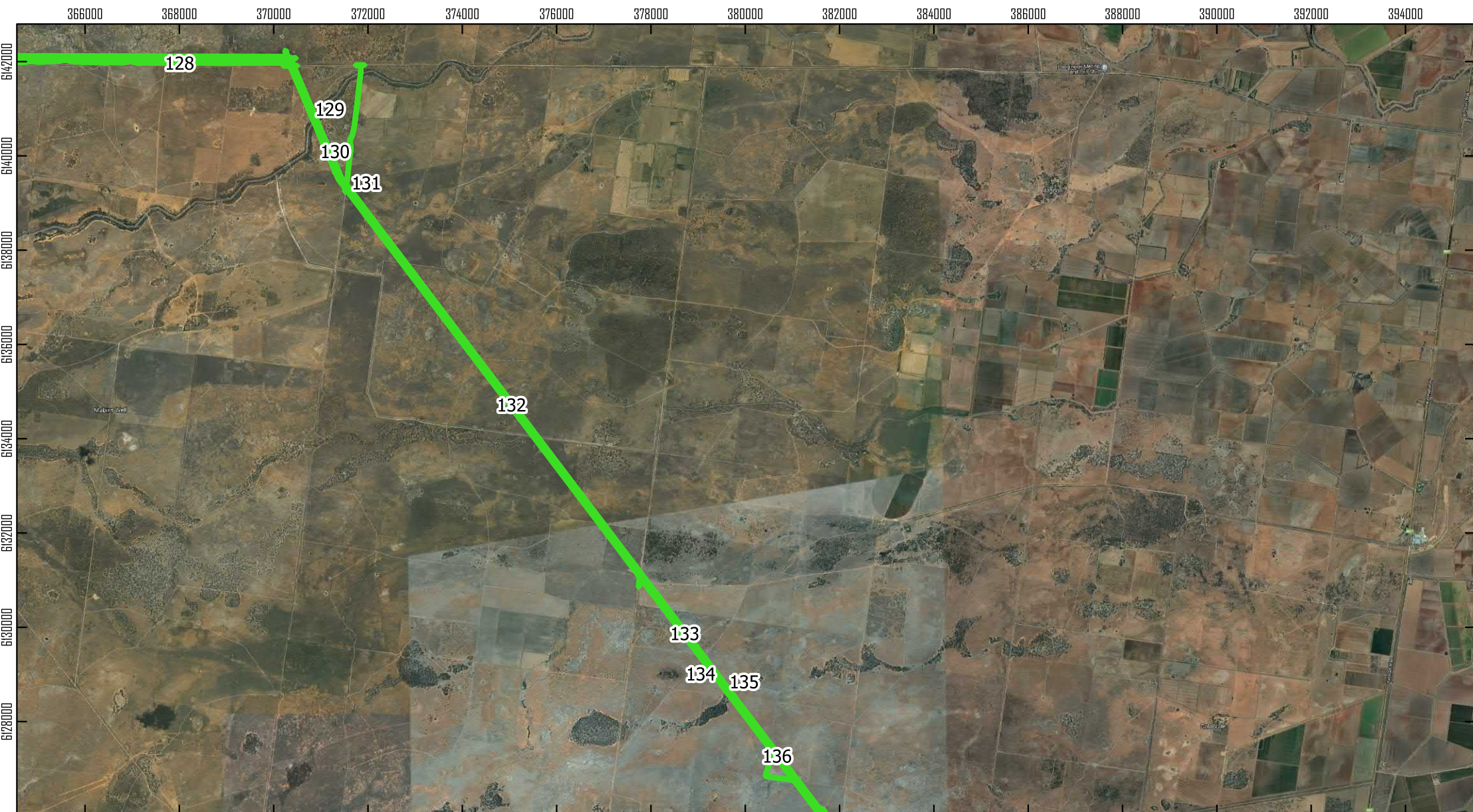
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Legend

Survey Status Updated March 2022

 Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

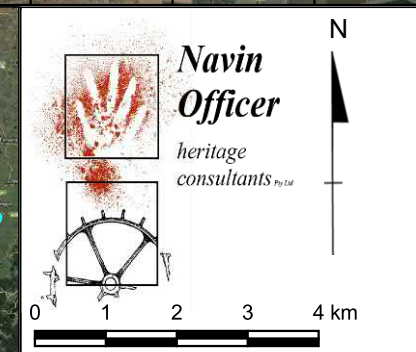
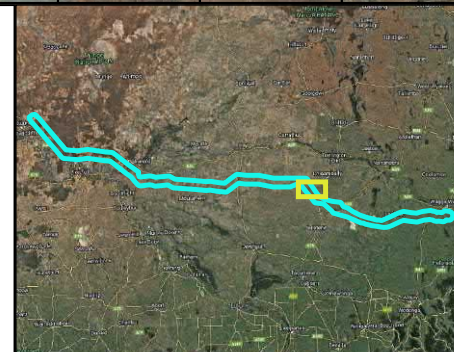
MGA Zone 55/56

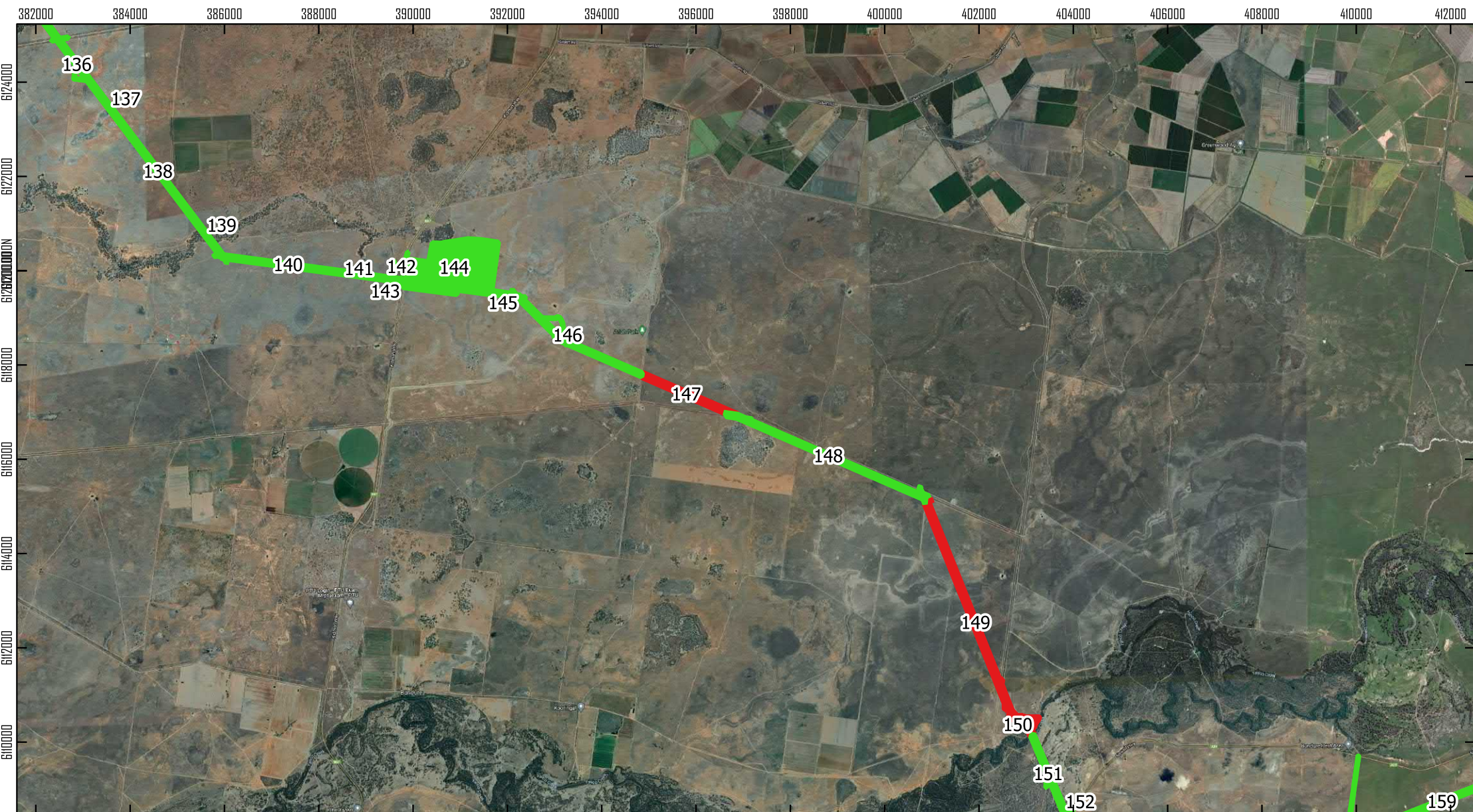
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Legend

Survey Status Updated March 2022

Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

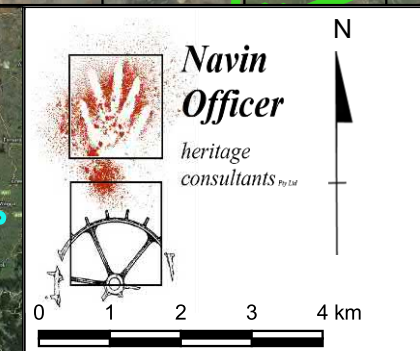
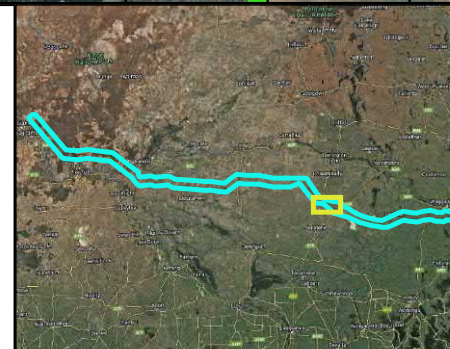
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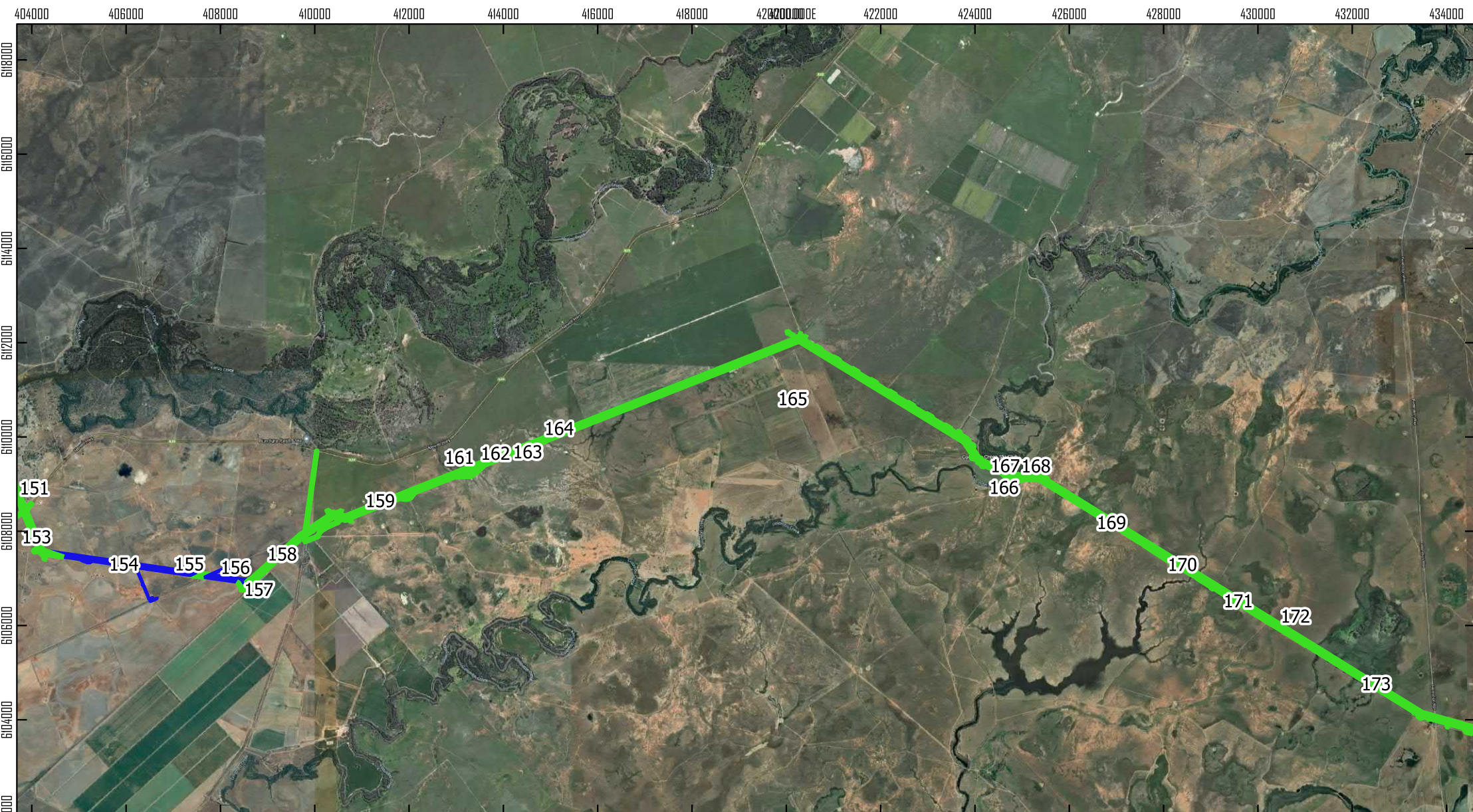
Legend

Survey Status Updated March 2022

■ Completed

■ Not Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

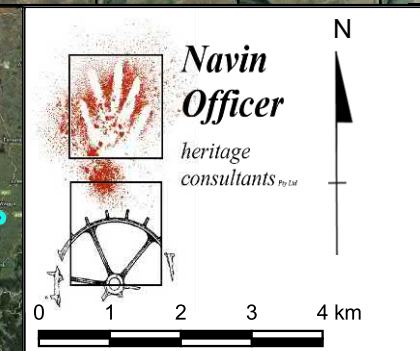
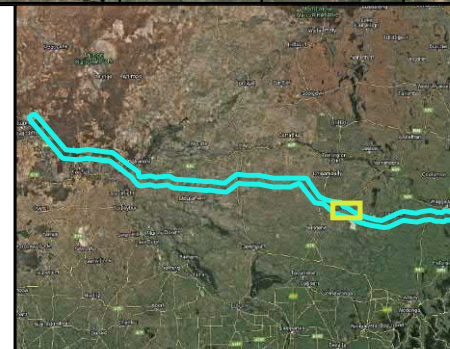
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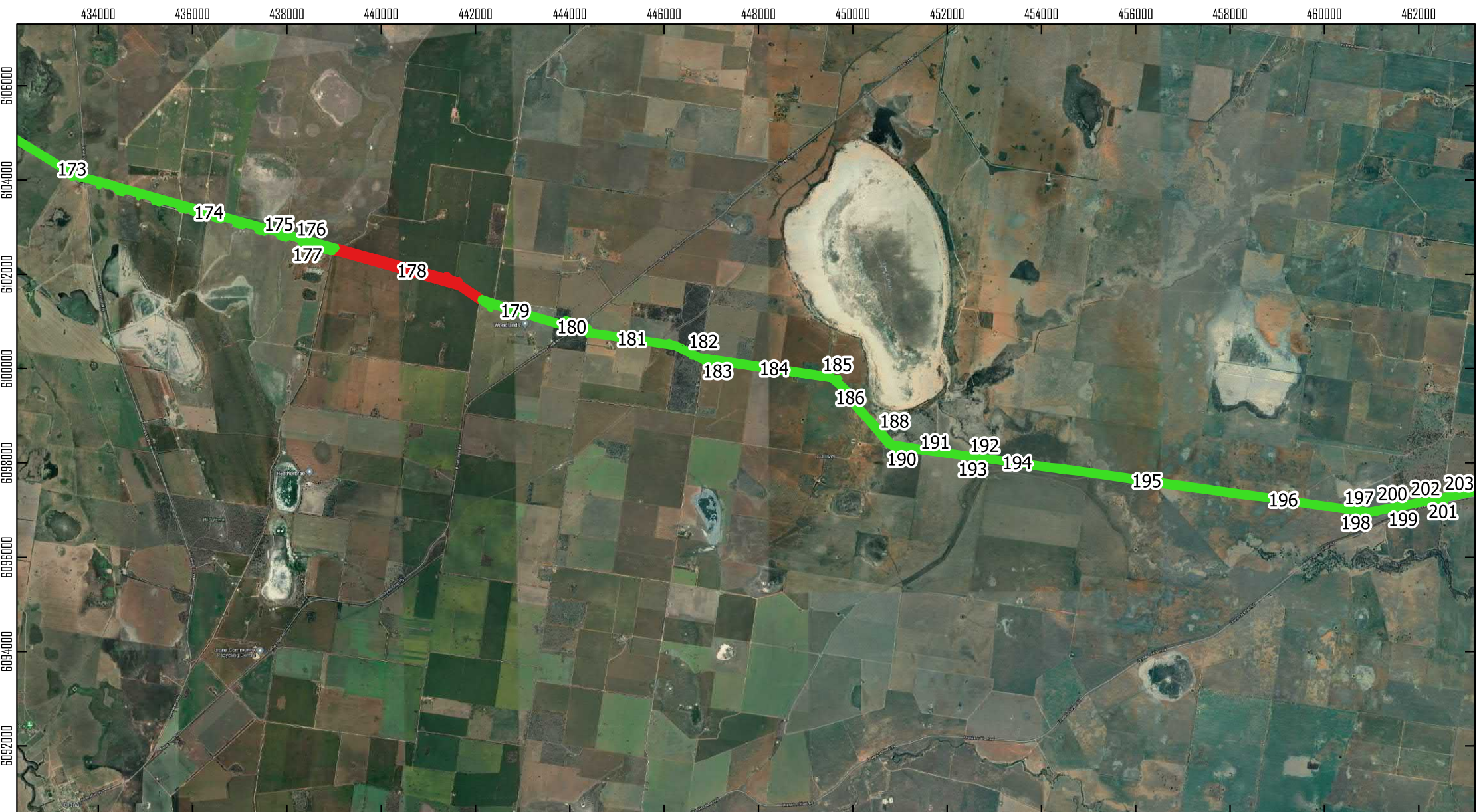
Legend

Survey Status Updated March 2022

■ Completed

■ Visual inspect





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

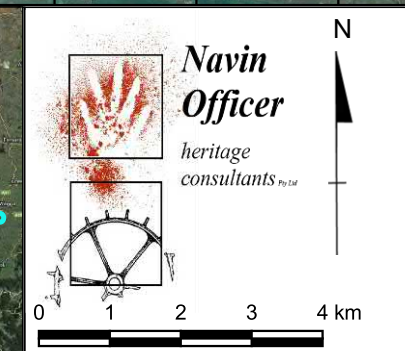
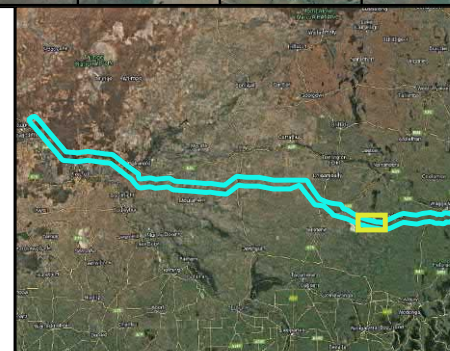
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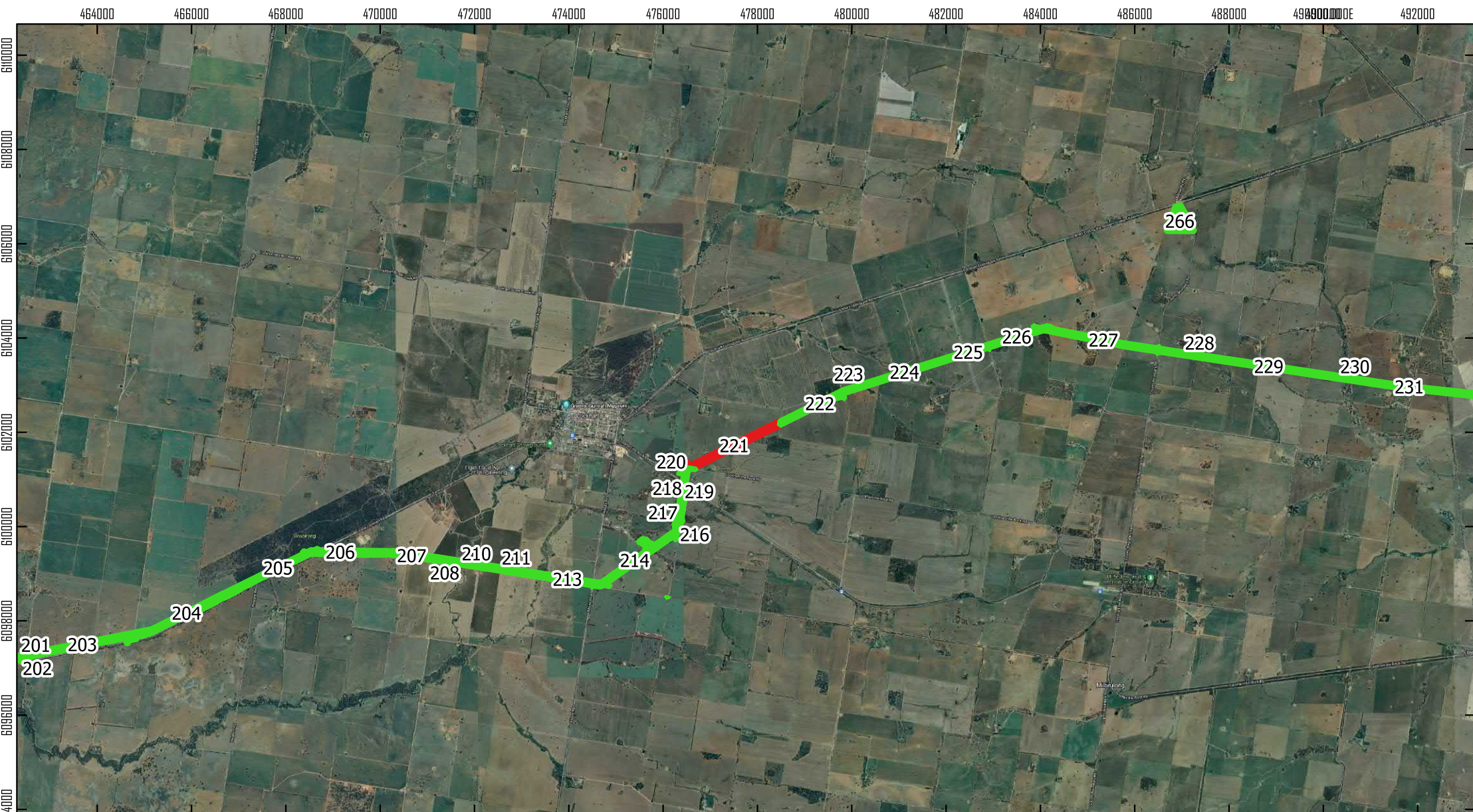
Legend

Survey Status Updated March 2022

■ Completed

■ Not Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

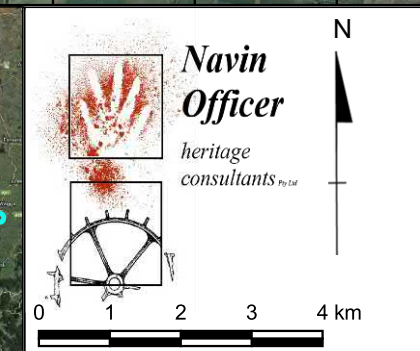
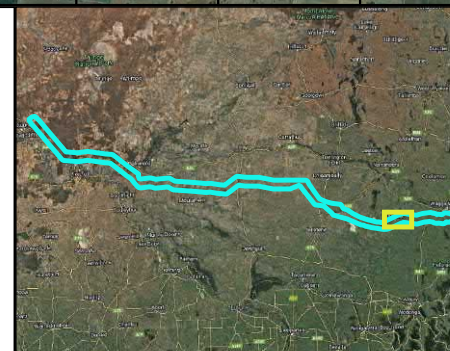
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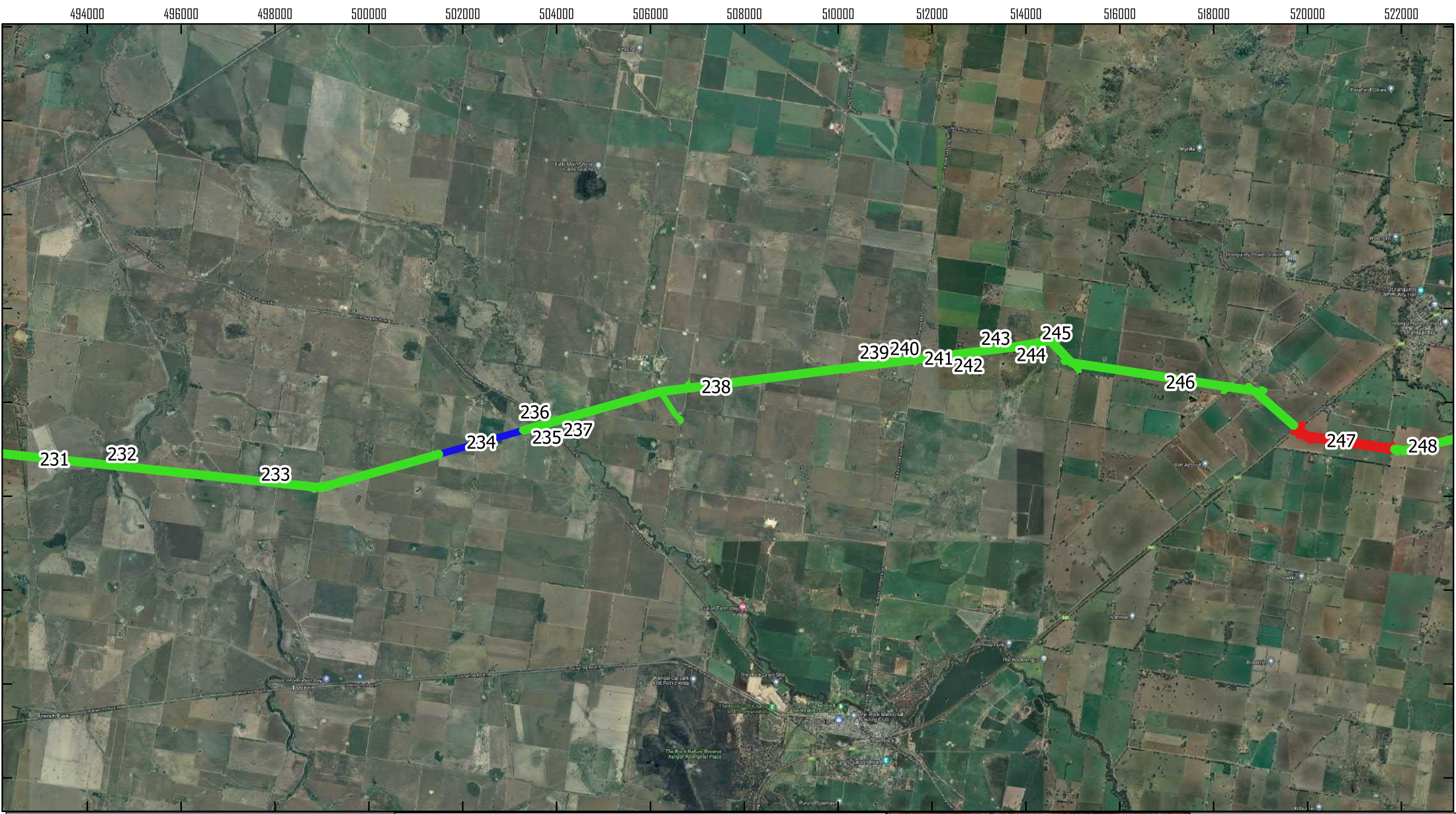
Legend

Survey Status Updated March 2022

■ Completed

■ Not Completed





Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section
Basemap: Google LANDSAT / Copernicus © Google 2019

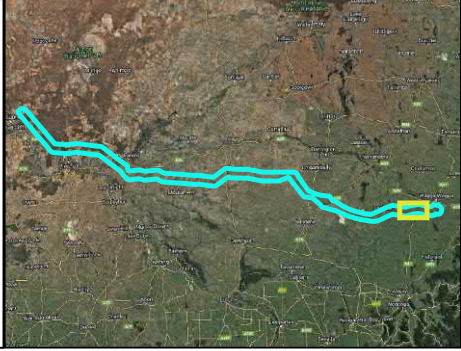
Author: Nicola Hayes
Date: 31/03/2022

Projection: GDA94
MGA Zone 55/56
Scale at A4: 1:106,521.077885

Legend

Survey Status Updated March 2022

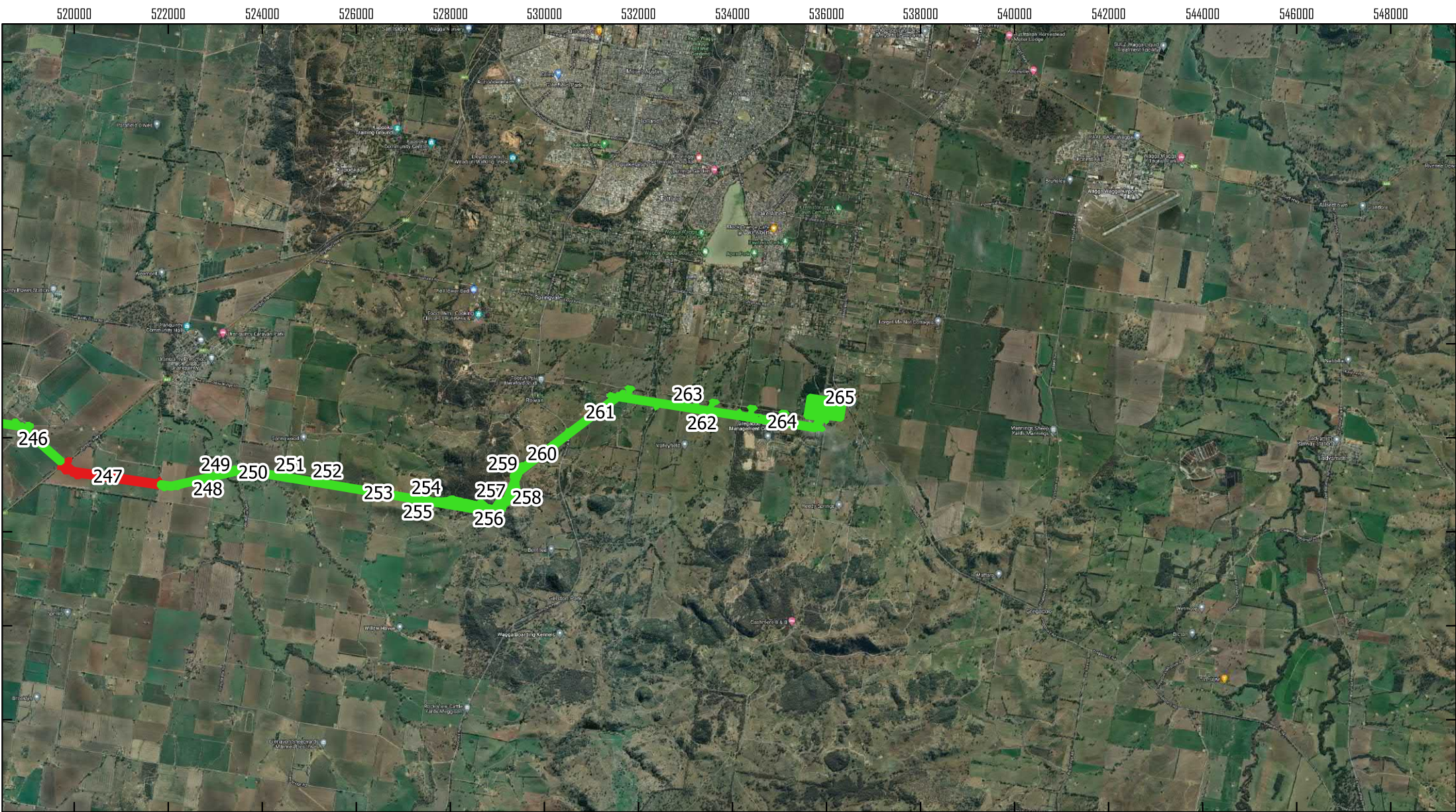
- Completed
- Not Completed
- Visual inspect



Navin Officer
heritage consultants Pty Ltd

0 1 2 3 4 km

N



Survey area with survey units

Project: EnergyConnect (NSW) - Eastern Section

Basemap: Google LANDSAT / Copernicus © Google 2019

Author: Nicola Hayes

Date: 31/03/2022

Projection: GDA94

MGA Zone 55/56

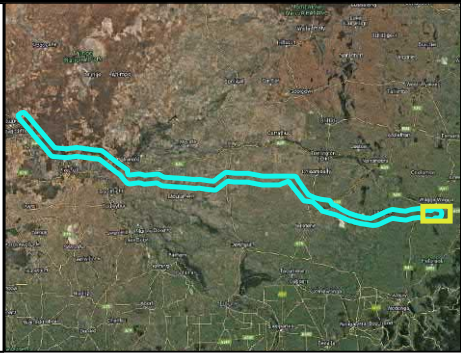
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Legend

Survey Status Updated March 2022

■ Completed



■ Not Completed





**Navin
Officer**
*heritage
consultants Pty Ltd*

N

0 1 2 3 4 km



AHIMS Sites

Note: This appendix has been removed due to the restricted nature of the information shown



All recorded sites

Note: This appendix has been removed due to the restricted nature of the information shown



Survey results

Note: This appendix has been removed due to the restricted nature of the information shown



Potential Archaeological Deposits

Note: This appendix has been removed due to the restricted nature of the information shown



Site Impacts

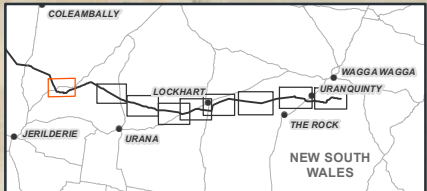
Note: This appendix has been removed due to the restricted nature of the information shown



Disturbance area Hazard / High Risk Trees



NEWELL HIGHWAY



0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Existing Railway
- Built Up Areas
- Waterbody

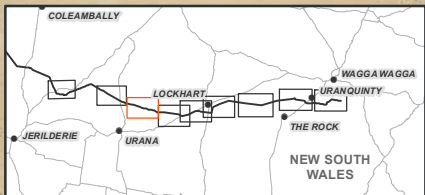
Disturbance area: hazard/high risk trees



0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Waterbody
- Built Up Areas
- Existing Railway

Disturbance area: hazard/high risk trees

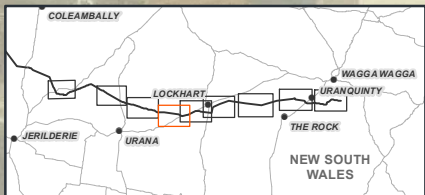


0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Built Up Areas
- Waterbody
- Existing Railway

Disturbance area: hazard/high risk trees

Sheet 3 of 9

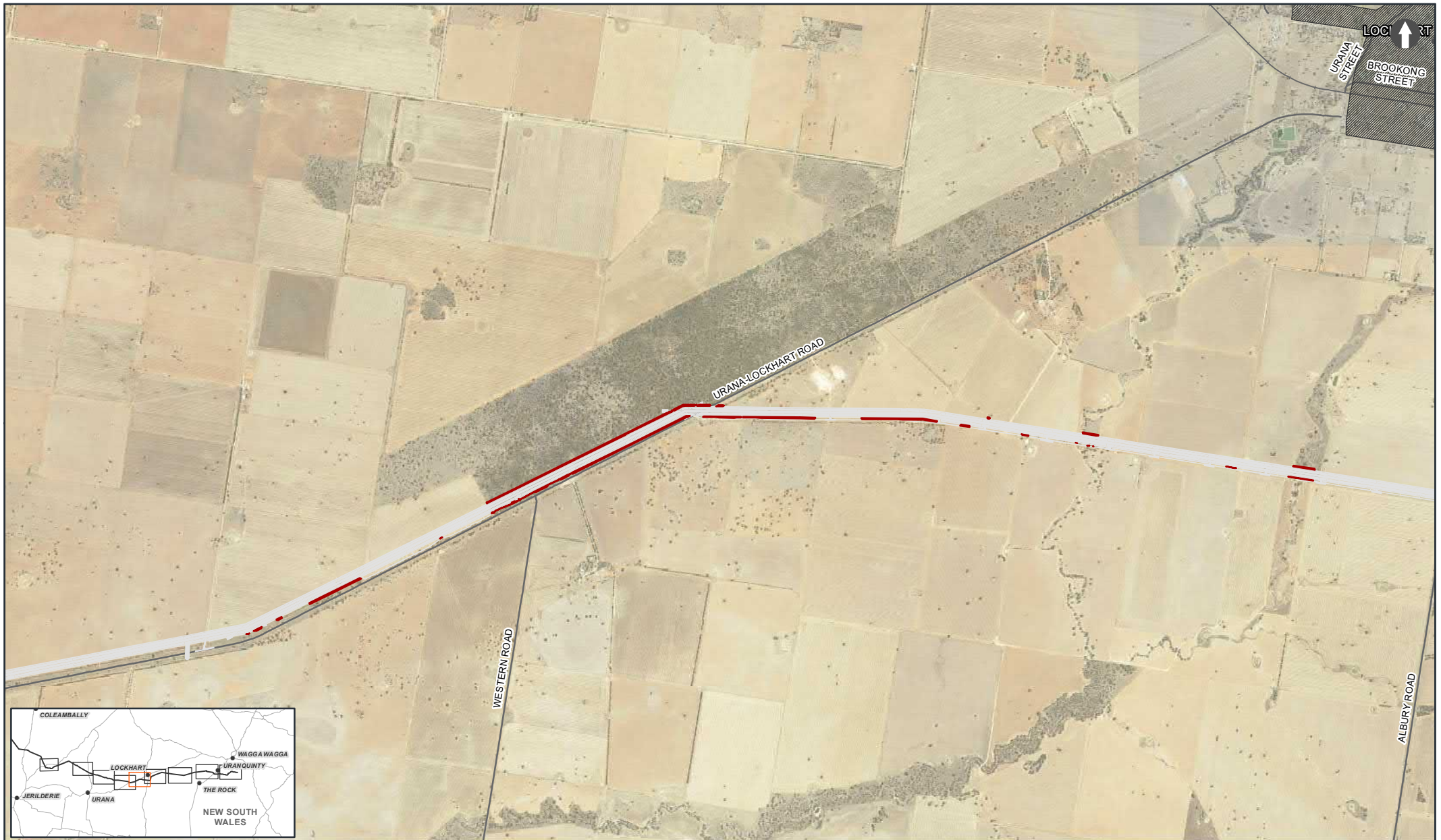


0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Existing Railway
- Built Up Areas
- Waterbody

Disturbance area: hazard/high risk trees

Sheet 4 of 9



Disturbance area: Hazard/high risk trees

Disturbance Footprint

Existing Substation

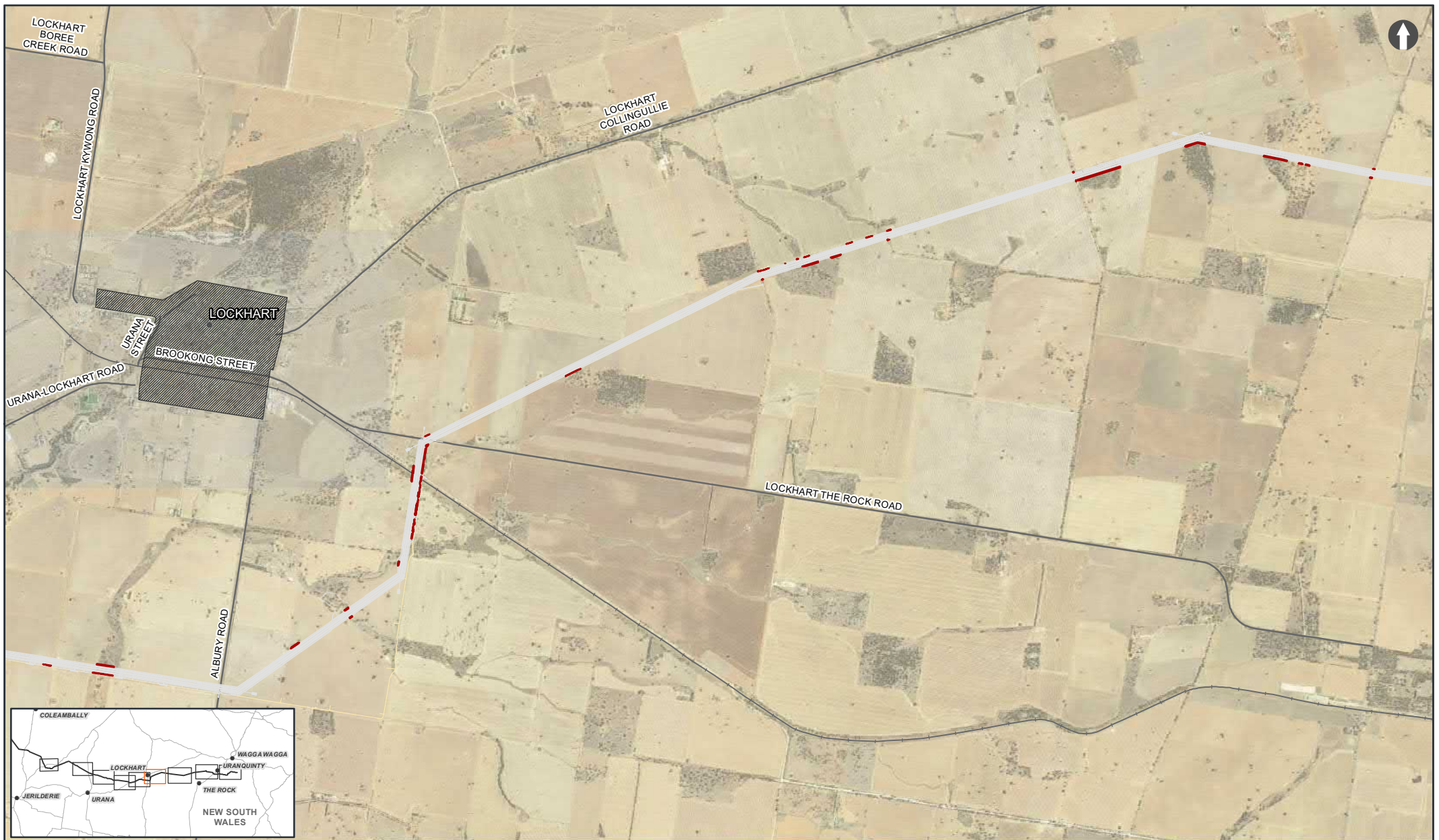
Existing Railway

Built Up Areas

Waterbody

Disturbance area: hazard/high risk trees

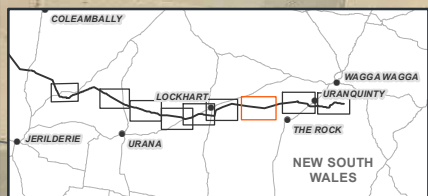
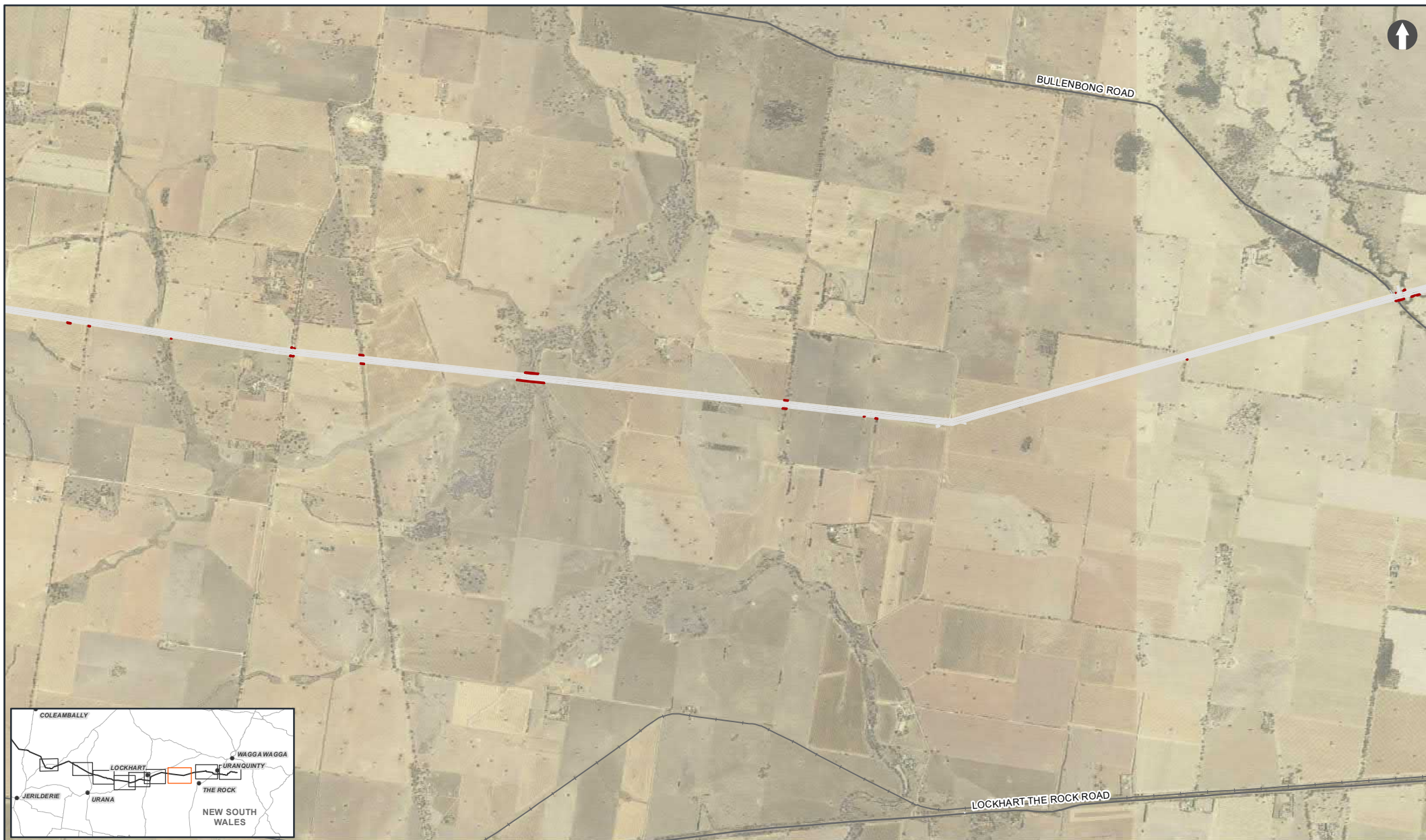
Sheet 5 of 9



0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Waterbody
- Built Up Areas
-
- Existing Railway

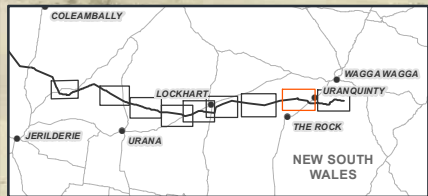
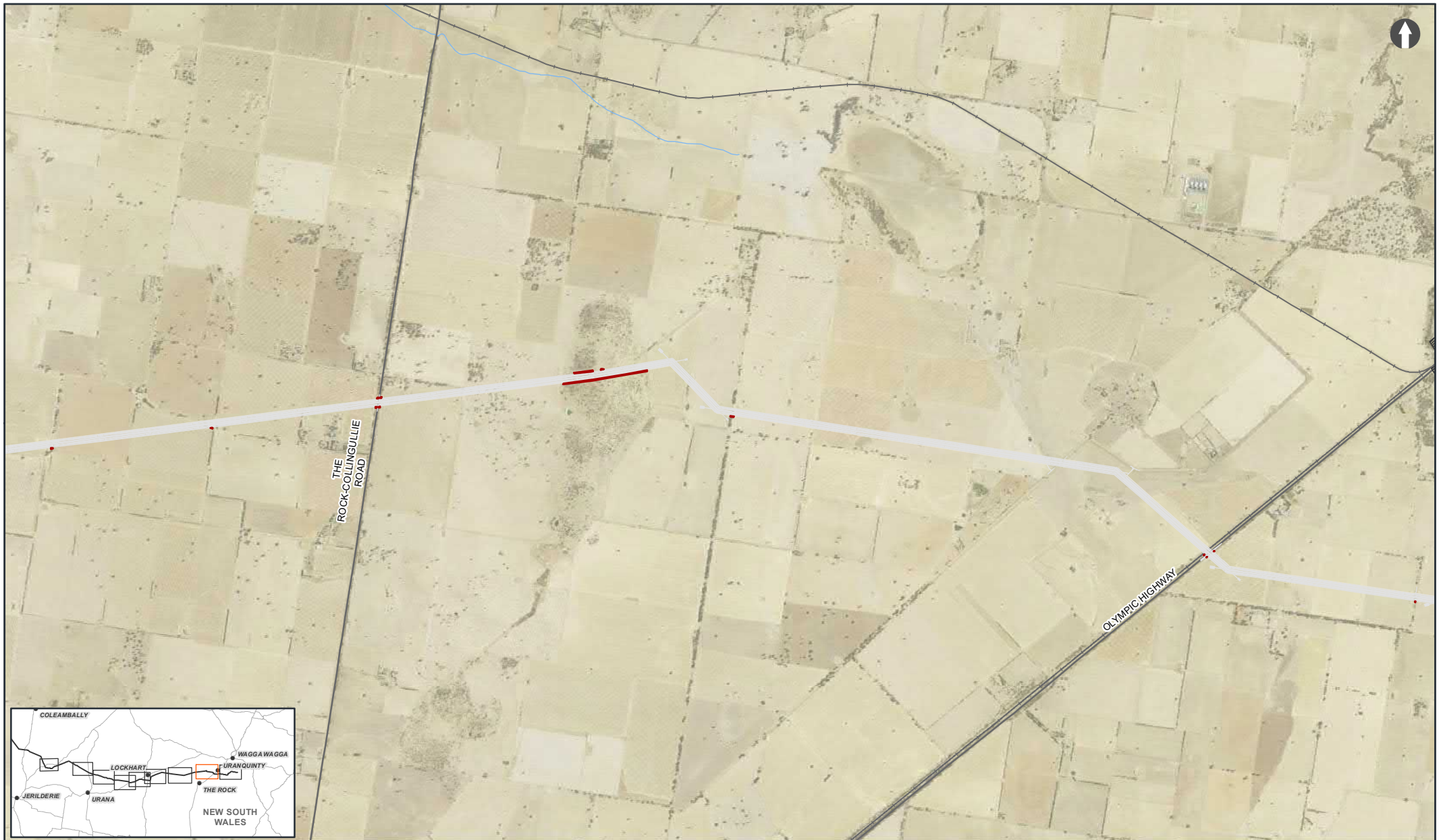
Disturbance area: hazard/high risk trees



0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Existing Railway
- Built Up Areas
- Waterbody

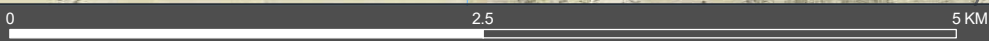
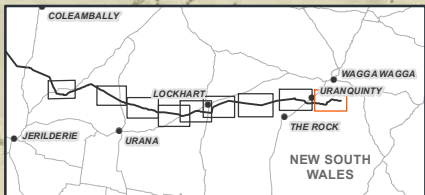
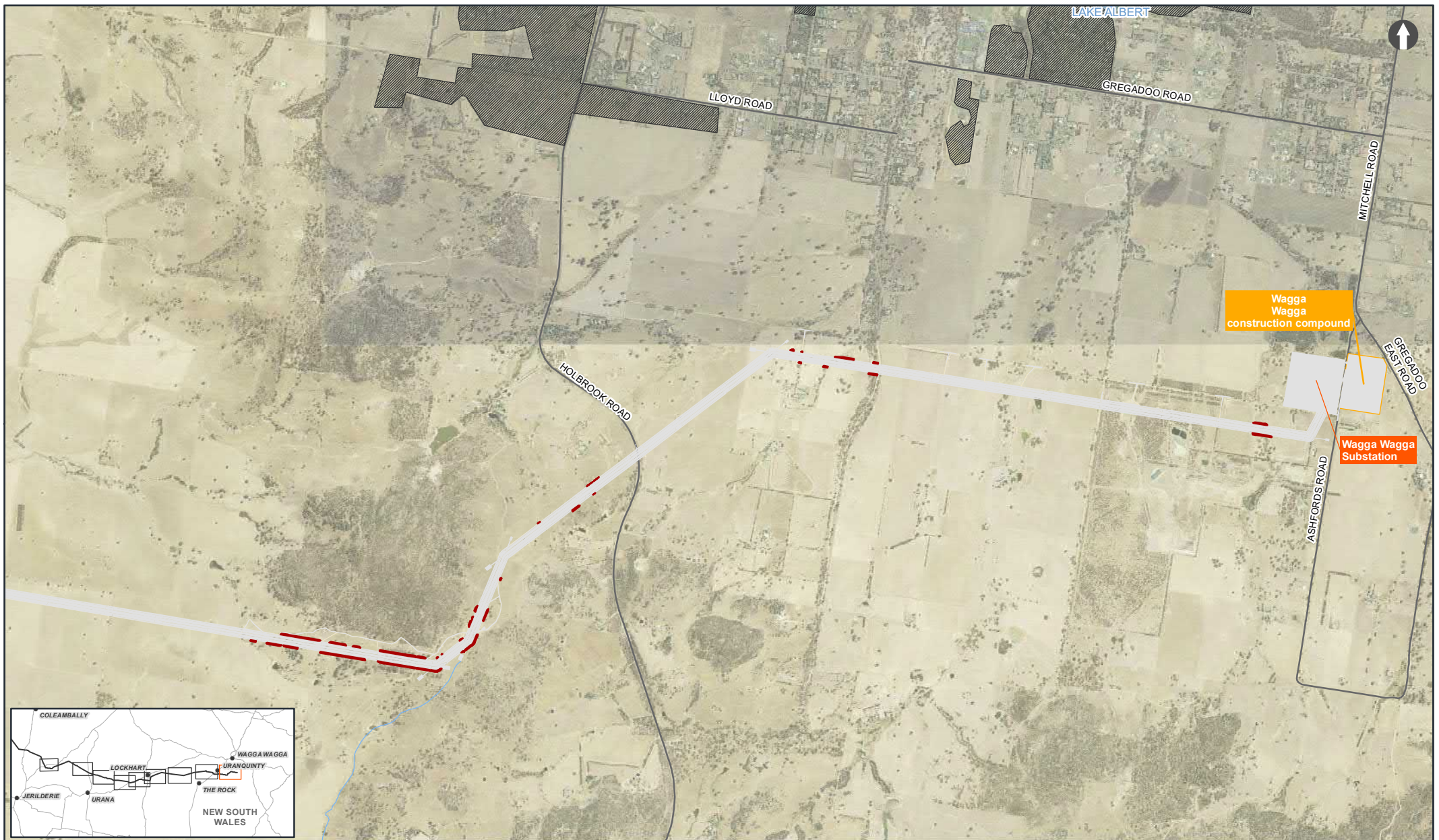
Disturbance area: hazard/high risk trees



0 2.5 5 KM

- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Waterbody
- Existing Railway
- Built Up Areas

Disturbance area: hazard/high risk trees



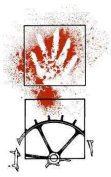
- Disturbance area: Hazard/high risk trees
- Disturbance Footprint
- Existing Substation
- Existing Railway
- Built Up Areas
- Waterbody

Disturbance area: hazard/high risk trees



Appendix 6

Test Excavation Memo Reports



Note: This appendix has been removed due to the restricted nature of the information shown