

West Nowra Recycling and Waste Facility

Addendum Aboriginal Archaeological
Survey Report

Shoalhaven Local Government Area

Report to Arcadis

January 2018



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EXECUTIVE SUMMARY

Shoalhaven City Council (SCC), as part of waste management planning for the Shoalhaven region, is proposing to extend the existing landfilling area at the West Nowra Recycling and Waste Facility (WNRWF) at Flatrock Road, Mundamia (the Proposal) (Figure 1.1).

In 2014 and 2015, GHD engaged Artefact Heritage Services Pty Ltd (Artefact Heritage) to undertake Aboriginal archaeological surveys for the West Nowra Resource Recovery Park (WNRRP). However, since that time further extensions are proposed and Arcadis has engaged Artefact Heritage to undertake further archaeological survey and prepare an addendum archaeological survey report for the Proposal.

The Proposal Site for the WNRWF is depicted in Figure 1.1 and Figure 1.2. The study area for this addendum survey is shown in Figure 1.3 and comprises the following components:

- Rising main (2,067 square metres)
- Extended area to west in existing land fill area (23, 694 square metres)
- Extended area to south and east of previous survey (49,617 square metres).

The Proposal will be assessed as State Significant Development (SSD) under Part 4 Division 4.1 of the *Environmental Planning and Assessment Act 1979*. An Environmental Impact Statement is being prepared for the Proposal and Secretary's Environmental Assessment Requirements (SEARs) SEARs were issued on 19 August 2015 (Reference SSD 15_7187) and were subsequently updated on 11 July 2017.

The objectives of this assessment are to undertake an addendum archaeological survey of those areas not covered by the 2014 survey (Artefact Heritage 2014) and to prepare an addendum report for the Aboriginal archaeological survey. The objective of this report was not to repeat all of the background information provided by Artefact Heritage (2014) but to provide a summary of that information along with details of the methodology and results of the addendum survey and consultation with the Aboriginal stakeholders. A key objective of the survey was to engage with the relevant Aboriginal stakeholders for the area which are Nowra Local Aboriginal Land Council (Nowra LALC).

A search of approximately 10 kilometres around the study area was undertaken with a total of 91 registered sites identified (Table 5.1). The predominant site types in the local area (within 2.5 km) were open artefact sites and closed shelter sites with deposits (Table 5.1; Figure 5.1).

Based on a summary of previous archaeological survey within the Proposal Site adjacent to the current study area it is predicted there is very low potential for Aboriginal objects to be present. The study area is of low archaeological potential due to the distance from freshwater sources, the broad crest landform, prior ground disturbance and its location outside the Primary and Secondary resources zones as identified by Clarke and Kuskie (2006). In support of the predictive model presented in Section 5.4 the addendum archaeological survey confirmed the study area is of low archaeological potential.

It was found that:

- No Aboriginal sites and/or places were located within the study area.
- The study area was assessed as demonstrating low archaeological potential.

It is therefore recommended that:

- The proposed construction of the WNRWF Proposal Site is able to proceed without the need for further archaeological and/or Aboriginal heritage assessment
- Should the area for the Proposal Site change further investigation may be required
- If Aboriginal objects are uncovered during works an archaeologist, the Nowra LALC and OEH must be notified. Further investigation and approvals may be required.
- If human skeletal remains are encountered during works, all work must cease immediately and the NSW Police contacted. If the skeletal remains are found to be Aboriginal, consultation with OEH and Nowra LALC will be required
- A Landfill Environmental Management Plan will be prepared for the Proposal. This would include a procedure for unexpected finds and protocols for communication with the Aboriginal community during the construction and operational phases of the Proposal.

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ABBREVIATIONS

AHC	Australian Heritage Council
AHIMS	Aboriginal Heritage Information Systems
ALR	<i>Aboriginal Land Rights Act 1983)</i>
Artefact Heritage	Artefact Heritage Services Pty Ltd
ASR	Aboriginal Archaeological Survey Report
ASRF	Aboriginal Site Recording Form
Code of Practice	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010
CHL	Commonwealth Heritage List
DP&E	Department of Planning and Environment
DECCW	Department of Environment, Climate Change and Water (now OEH)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Diversity Conservation Act 1999</i>
the Guide	Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW
ha	hectares
km	kilometres
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
m	metres
mm	millimetres
NHL	National Heritage List
NPW Act	<i>National Parks and Wildlife Act 1974</i>
OEH	Office of Environment and Heritage
the Proposal	West Nowra Recycling and Waste Facility landfill extensions
Requirements	Aboriginal cultural heritage consultation requirements for proponents 2010
RNE	Register of the National Estate
SCC	Shoalhaven City Council

SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
WNRRP	West Nowra Resource Recovery Park
WNRWF	West Nowra Recycling and Waste Facility

1.0 INTRODUCTION

1.1 Introduction

Shoalhaven City Council (SCC), as part of waste management planning for the Shoalhaven region, is proposing to extend the existing landfilling area at the West Nowra Recycling and Waste Facility (WNRWF) at Flatrock Road, Mundamia (the Proposal) (Figure 1.1).

In 2014 and 2015, GHD engaged Artefact Heritage Services Pty Ltd (Artefact Heritage) to undertake Aboriginal archaeological surveys for the West Nowra Resource Recovery Park (WNRPP). However, since that time further extensions are proposed and Arcadis has engaged Artefact Heritage to undertake further archaeological survey and prepare an addendum archaeological survey report for the Proposal.

1.2 Study area

The Proposal Site for the WNRWF is depicted in Figure 1.1 and Figure 1.2. The study area for this addendum survey is shown in Figure 1.3 and comprises the following components:

- Rising main (2,067 square metres)
- Extended area to west in existing land fill area (23, 694 square metres)
- Extended area to south and east of previous survey (49,617 square metres).

1.3 Project description

The Proposal would involve the progressive construction, operation and rehabilitation of the Stage 4 landfill extension area at the WNRWF. The landfill extension and associated areas (including access roads, sediment basins, fire trails and a conservation area) would occur on Lot 1 DP 1104402, Lot 1 DP 870268 and Lot 1 DP 847203, with the leachate management system extending into Lot 1 DP 1018193. The Proposal Site is owned by SCC and comprises in total approximately 17 hectares (ha). The Proposal Site is on land appropriately zoned SP2 Infrastructure–Waste /Resource Management Facilities.

The Proposal would commence operation from approximately 2025 and would provide capacity for a minimum of five years (i.e. to end 2030 under a worst case scenario) and up to 15 years (under a reduced waste disposal scenario). The preparatory and completion works for the landfill extension (e.g. landfill cell construction, construction of leachate barrier systems, and final rehabilitation) may commence/conclude up to two years before/after these timeframes. The filling rates and landfill capacity would be reviewed on an ongoing basis.

The key works for which approval is sought include:

- Progressive landfill cell construction, operation and rehabilitation of the Stage 4 landfill extension including:
 - Clearing of 9.94 ha of existing vegetation
 - Construction of access tracks and fire trails within the cleared area
 - Earthworks for cell formation including extraction and stockpiling of materials and the reapplication to form the leachate barrier (cell liner) as well as for daily, intermediate and final cover

- Installation of leachate management structures including the leachate barrier, collection, storage and disposal system (including construction of a rising main to transfer leachate to the existing leachate collection dam within the WNRWF)
- Installation of a surface water management system, including sediment dams, sediment erosion control measures and surface diversion bunds/swale drains
- Progressively increasing the annual waste acceptance rate at the landfill
- Signage and other ancillary works
- Rehabilitation of closed sub-cells
- Delineation and ongoing management of a conservation area along the southern and eastern boundary of the Proposal Site.

The Proposal would be developed in sub-cells.

1.4 Project framework

The Proposal will be assessed as State Significant Development (SSD) under Part 4 Division 4.1 of the *Environmental Planning and Assessment Act 1979*. An Environmental Impact Statement is being prepared for the Proposal and Secretary's Environmental Assessment Requirements (SEARs) SEARs were issued on 19 August 2015 (Reference SSD 15_7187) and were subsequently updated on 11 July 2017. With regard to Aboriginal heritage the SEARs state:

The EIS must identify and describe the tangible and intangible Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with OEH regional officers.

This Aboriginal archaeological survey and addendum report has been undertaken in accordance with the following guidelines:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (Department of Environment Climate Change & Water 2010)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage [OEH] 2010)
- SEARs for the Proposal issued by the Department of Planning and Environment (DP&E) on 10 August 2015 and amended on the 11 July 2017.

1.5 Study objectives

The objectives of this assessment are to undertake an addendum archaeological survey of those areas not covered by the 2014 and 2015 survey (Artefact Heritage 2014; 2015) and to prepare an addendum report for the Aboriginal archaeological survey. The objective of this report was not to repeat all of the background information provided by Artefact Heritage (2014; 2015) but to provide a summary of that information along with details of the methodology and results of the addendum survey and consultation with the Aboriginal stakeholders. A key objective of the survey was to engage with the relevant Aboriginal stakeholders for the area which are Nowra Local Aboriginal Land Council (Nowra LALC).

1.6 Limitations

There were no limitations to the addendum archaeological survey and report.

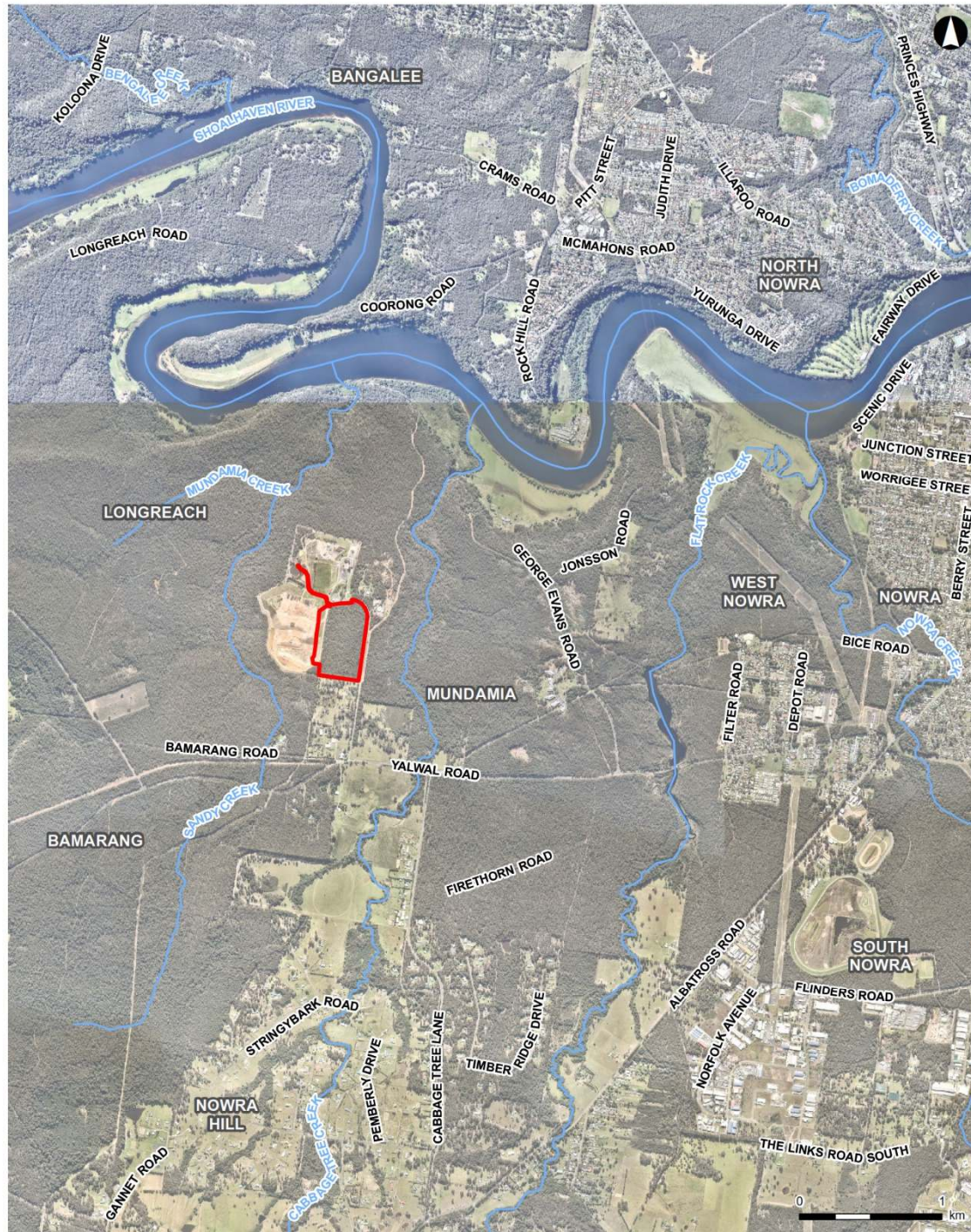
1.7 Authors and contributors

Michael Lever (Senior Heritage Consultant, Artefact Heritage) supervised the addendum archaeological survey for the WNRWF. Michael has a Bachelor of Arts with Honours in Archaeology and six years consulting experience in Victoria and NSW. The addendum report was prepared by Vanessa Edmonds (Principal, Artefact Heritage). Vanessa has a Bachelor of Arts in Australian Prehistory and a Master of Letters in Archaeology and Palaeoanthropology. Vanessa has over 30 years consulting and regulatory experience nationally.

The report was reviewed by Josh Symons (Principal, Artefact Heritage). Josh has a Bachelor of Arts with Honours in History and Prehistory and over 14 years of experience in cultural heritage management in NSW.

Figure 1.1: Location of the Proposal Site

West Nowra Landfill Extension



LEGEND

- Proposal Site
- Watercourse

ARCADIS AUSTRALIA PACIFIC PTY LTD
 ABN 76 104 455 299
 Level 5, 141 Walker St | North Sydney NSW 2060
 P: +61 (0) 2 9907 9000 | F: +61 (0) 2 9907 9001
 Coordinate System: GDA 1994 MGA Zone 56
 Date Issued: July 10, 2017
 Aerial imagery supplied by nearmap (May 2017)

1:40,000 at A4



Site location

Date: 10/07/2017 Path: \\HC-AUS-NS-FS-01\jobs\AA008737\GISVA_Current\B_Maps\AA008737_GEN_002_SiteLocality_AAP_r1.mxd
 Created by: CC
 QA by: RM

Figure 1.2: The Proposal Site

West Nowra Landfill Extension



LEGEND

- Proposal Site
- Cadastre (LPI, 2017)

ARCADIS AUSTRALIA PACIFIC PTY LTD
 ABN 76 104 405 289
 Level 5, 141 Walker St | North Sydney NSW 2060
 P: +61 (0) 2 8907 9000 | F: +61 (0) 2 8907 9001
 Coordinate System: GDA 1994 MGA Zone 56
 Date issued: July 10, 2017
 Aerial Imagery supplied by neamap (May, 2017)

1:5,000 at A4
ARCADIS



Proposal Site

Date: 10/07/2017 Path: \\HC-AUS-NS-FS-01\gpts\AA008737\GIS\A_Current\B_Maps\AA008737_GEN_001_SiteBoundary_A4P_11.mxd
 Created by: RM
 QA by: CC

Figure 1.3: Study area for addendum survey



2.0 LEGISLATIVE CONTEXT

2.1 State legislation

2.1.1 *National Parks and Wildlife Act 1974*

The *National Parks and Wildlife Act 1974* (NPW Act) provides statutory protection to all Aboriginal places and objects. An Aboriginal Place is declared by the Minister, under Section 84 of the NPW Act, in recognition of its special significance with respect to Aboriginal culture. Under section 86 of the NPW Act 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.

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

There are no gazetted Aboriginal Places in the study area. All Aboriginal objects, whether recorded or not are protected under the NPW Act.

2.1.2 *Native Title Act 1994*

The *Native Title Act 1994* was introduced to work in conjunction with the Commonwealth *Native Title Act 1993*. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. There are no Native Title claims currently registered in the study area.

2.1.3 *Aboriginal Lands Right Act 1983*

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation under the ALR Act to:

- (a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and
- (b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The study area is within the boundary of the Nowra LALC.

2.1.4 *Environmental Planning & Assessment Act 1979*

The *Environmental Planning & Assessment Act 1979* (EP&A Act) provides planning controls and requirements for environmental assessment in the development approval process. The EP&A Act consists of three main parts of direct relevance to Aboriginal cultural heritage; Part 3 which governs the preparation of planning instruments, Part 4 which relates to development assessment processes for local government (consent) authorities, and Part 5 which relates to activity approvals by governing (determining) authorities.

Planning decisions within LGAs are guided by Local Environmental Plans (LEPs). Each LGA is required to develop and maintain an LEP that includes Aboriginal and historical heritage items which are protected under the EP&A Act and the *Heritage Act 1977*. The study area is located in the boundaries of the Shoalhaven LGA, and is covered by the Shoalhaven LEP 2014.

The Proposal will be assessed as SSD under Part 4 Division 4.1 of the EP&A Act and therefore the Minister will determine consent with regard to the development application and therefore is exempt from provision of the Shoalhaven LEP 2014.

2.2 Commonwealth legislation

2.2.1 *Environment Protection and Diversity Conservation Act 1999*

The *Environment and Heritage Legislation Amendment Act (No.1) 2003* amends the *Environment Protection and Diversity Conservation Act 1999* (EPBC Act) to include 'national heritage' as a matter of National Environmental Significance and protects listed places to the fullest extent under the Constitution. It also establishes the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The *Australian Heritage Council Act 2003* (AHC Act) establishes a new heritage advisory body - the Australian Heritage Council (AHC), to the Minister for the Environment and Heritage and retains the Register of the National Estate (RNE).

The *Australian Heritage Council (Consequential and Transitional Provisions) Act 2003* repeals the *Australian Heritage Commission Act 1975*, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Indigenous and non-Indigenous heritage. The new features include:

- A new NHL of places of national heritage significance.
- A new CHL of heritage places owned or managed by the Commonwealth.
- The creation of the AHC, an independent expert body to advise the Minister on the listing and protection of heritage places.
- Continued management of the Register of the National Estate (RNE).

National Heritage List

The NHL is a list of places with outstanding heritage value to our nation, including places overseas. So important are the heritage values of these places that they are protected under the EPBC Act. This means that a person cannot take an action that has, will have, or is likely to have, a significant impact on the national heritage values of a national heritage place without the approval of the Australian Government Minister for the Environment and Heritage. It is a criminal offence not to comply with this law and there are significant penalties.

Commonwealth Heritage List

The CHL is a list of places managed or owned by the Australian Government and not of relevance to this project.

Register of the National Estate

The RNE is an evolving record of Australia's natural, cultural and Aboriginal heritage places that are worth keeping for the future. The AHC compiles and maintains the RNE under the *Australian Heritage Council Act 2003*. Places on the RNE that are in Commonwealth areas, or subject to actions by the Australian Government, are protected under the EPBC Act by the same provisions that protect Commonwealth heritage places (see above).

Following amendments to the *Australian Heritage Council Act 2003*, the RNE was frozen on 19 February 2007, meaning no new places can be added, or removed. From all references to the RNE were removed from the EPBC Act and the AHC Act. The RNE is now maintained on a non-statutory basis as a publicly available archive.

2.2.2 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

Most State Aboriginal heritage databases provide protection for those sites with physical evidence. The Commonwealth Act, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* deals with Aboriginal cultural property in a wider sense. Such cultural property includes any places, objects and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. In most cases, archaeological sites and objects registered under the State Act will also be Aboriginal places subject to the provisions of the Commonwealth Act.

There is no cut-off date and the Commonwealth Act may apply to contemporary Aboriginal cultural property as well as ancient sites. The Commonwealth Act takes precedence over State cultural heritage legislation where there is conflict. The responsible Minister may make a declaration under Section 10 of the Commonwealth Act in situations where state or territory laws do not provide adequate protection of heritage places.

3.0 CONSULTATION

In accordance with the previous consultation undertaken by Artefact Heritage (2014; 2015) all consultation for the addendum survey and report was undertaken with Nowra LALC.

Lee Ferguson (Representative, Nowra LALC) provided assistance and advice in the field. All survey methodology, results and any recommendations were discussed in the field by Michael Lever and Lee Ferguson. A copy of the draft addendum archaeological survey report (ASR) was sent to Nowra LALC for comment on the 27 September 2017. No comments were received. A final copy of the ASR was also sent to the Nowra LALC.

4.0 ENVIRONMENTAL CONTEXT

The following information is derived from Artefact Heritage (2014).

4.1 Geomorphology, geology and soils

The local region is typically comprised of prominent sandstone outcroppings, gullies, hills, prominent rises and ridgelines. The study area is underlain by the Megalong Conglomerate of the Permian Shoalhaven group consisting of Nowra Sandstone, Wandrawandian Siltstone and the Conjola Formation. The formation is predominately quartz sandstone (Rose 1966).

The Nowra soil landscape is a depositional landscape characterised by moderate to gently undulating rises to low hills on Nowra Sandstone (Mills 2009: 8). Nowra Sandstone is medium to coarse grained quartz sandstone and contains rounded pebbles scattered throughout the beds. Local relief is >40 metres (m) with slopes at >5 per cent.

Soils across the study area are moderately deep (500–1000 millimetres [mm]) and consist of sandy loam and sandy clays. The soils are layered with topsoil rich in organic matter at the surface and leached deposits below down to a sandy clay rich in iron oxide. These soils are generally associated with alluvial gently undulating and flat landforms. The soils have minor to moderate erosional activity with minor erosion in zones of vegetation stripping. With minimal natural erosion likely, the soil horizon (in undisturbed zones) is conducive for intact alluvial deposits sub surface (Kuskie 2008: 5).

4.2 Hydrology

The study area is situated along a flat landform unit approximately 1.2 kilometres (km) south of the Shoalhaven River, a major freshwater source in the region. Other watercourses in the local area include Sandy Creek more than 200 m west of the study area, and Cabbage Tree Creek, which is located approximately 200 m to the east. The study area is also located approximately 400 m south east of the confluence of Sandy Creek and Mundamia Creek. Numerous first order creek lines are located within one kilometre of the study, all flowing into larger creek lines that flow into the Shoalhaven River.

4.3 Vegetation

The study area is located within a crest landform around 1.2 km south of the Shoalhaven River. This area includes extensive gently sloping crests interspersed with low-lying creek flats and tributaries, such as Nowra Creek to the south of the Shoalhaven River and Bomaderry Creek to the north of the Shoalhaven River. In 1805, Government surveyor James Meehan recorded that the alluvial flats along the Shoalhaven were comprised of grassland and freshwater swamps and that the area was ‘...covered with rainforest, brush cedar, softwoods, coachwood, blackbutt, sassafras, flametrees, brushes, palms, ferns, vines, orchids, eucalyptus and casuarinas’ (quoted in Bayley 1975: 18).

4.4 Land use

The Shoalhaven region began to be explored by Europeans during the late 1790s and surveyed in 1805. The first European occupants of the region were cedar getters who logged trees in the area from at least 1811. The first recorded cargo of cedar was brought from the Shoalhaven River to Sydney in December 1812, and the timber industry continued to grow, with timber getters exploiting the patches of cedar along the local rivers and creeks. During this period there was conflict between

cedar getters and local Aboriginal people, and in 1815 Governor Macquarie forbade timber getters from visiting the district after a number were killed by Aboriginal people (Navin Officer 2007: 60-61).

In 1822, merchant Alexander Berry chose the Shoalhaven as the site for an estate and he and his business partner, Edward Wollstonecraft, were jointly granted 10,000 acres named Coolloomagatta. Berry established his station at the foot of Mount Coolangatta, and by 1848 had acquired more than 15,000 acres of additional land (some of which had previously been owned by his brother, John Berry) (Navin Officer 2007: 63). A number of Aboriginal people lived and worked on Berry's Coolloomagatta Estate between the time it was established and the late 1880s, when the estate began to be subdivided and the Aboriginal inhabitants were moved into the Roseby Park mission station (Kuskie 2008: 13).

In the 1850s, settlement in the district accelerated as Alexander Berry began to let farms to tenant farmers on clearing leases. In 1892, many of these tenant farmers were able to buy their portions of land when the Berry Estates were subdivided (Navin Officer 2007: 64-65).

The Proposal Site has been previously cleared for agricultural purposes and mainly consists of regrowth comprising dense scrubby vegetation. The western section forms part of the existing Nowra landfill site. The rising main is located along an existing track cut into fill.

4.5 Summary

Aboriginal people were highly mobile hunter-gatherers utilising different landform units and resource zones. Different resources may have been available seasonally, necessitating movement or trade (Attenbrow 2010: 78). Aboriginal people hunted kangaroo and wallaby and snared possums for food and skins. In marine or estuarine environments, Aboriginal people caught fish and collected shellfish. There are many accounts by Europeans of Aboriginal people in canoes on rivers and the ocean, fishing and cooking the fish on small fires within the vessels (e.g. Collins 1798). The Shoalhaven estuary and floodplain area is one of the most extensive and diverse in southeastern NSW and extends 50 km upstream from the ocean (Oceanwatch 2010). Aboriginal people in the area around the Shoalhaven River would therefore have had access to both estuarine and freshwater resources, as well as the wetland and forest systems supported by the river and nearby tributaries.

5.0 ABORIGINAL CONTEXT

5.1 Ethnohistoric context

The following is primarily derived from Artefact Heritage (2014: 8-9). Tindale (1974) described the territory of the Wodi Wodi as extending from north of the Shoalhaven River at Nowra to Wollongong and inland to Moss Vale. The Wandandian people are described as extending from the Lower Shoalhaven to Ulladulla, and inland to Braidwood. The Wodi Wodi spoke the Dharawal language, while the Wandandian people spoke the Dhurga language (Eades 1976).

The South Coast is thought to have been one of the most densely populated regions prior to colonisation; while exact population figures are not known it is likely to have been in the order of 204 people per square kilometre (Organ and Speechley 1997: 1). This may be related to the availability of many and varied food resources the coastal locality provided. Ethnographic sources suggest that faunal species available to Aboriginal people in the current study area would likely have included possum, bandicoot, kangaroo, fish and wild fowl, as well as prawns, eel and shellfish (Townsend 1848).

During the 19th century the Aboriginal population of the Shoalhaven rapidly declined due to the effects of introduced diseases such as smallpox, and the disintegration of their traditional social structure and subsistence patterns brought about by European invasion (Kuskie 2008: 13). Today a large Aboriginal population lives in the Nowra region, many of whom grew up in the Bomaderry Children's Home or at Roseby Park mission station (DEC 2004: 18).

5.2 Archaeological context

5.2.1 Previous archaeological reports

A comprehensive review of previous archaeological reports was undertaken by Artefact Heritage (2014: 13-15) and will not be reviewed again in this report. The following summarises the Artefact Heritage (2014) and Artefact Heritage (2015) report as a backdrop to the current survey.

Artefact Heritage (2014; 2015) has previously undertaken archaeological survey and prepared two ASR for the proposed West Nowra RRP. The study area for those surveys are shown in Figure 1.3. Both assessments were undertaken in consultation with the Nowra LALC. Neither assessments located any previously recorded or new Aboriginal sites and/or places.

A predictive statement for Aboriginal site types in the Proposal Site was developed by Artefact Heritage (2014: 16) as follows:

- Stone artefacts are likely to be the predominant Aboriginal site type in the local context.
- Aboriginal cultural material and / or objects, if present, will likely be representative of transitory movement across the local area.
- Modified trees may occur where suitable old growth trees remain.
- Any existing intact archaeological deposits will be located in areas of least ground disturbance.

Other Aboriginal site types such as shell middens, shelter sites and open campsites were predicted as being unlikely to occur within the previous study areas.

In accordance with the Code of Practice and based on previous studies, Aboriginal community consultation, and levels of disturbance, this assessment found that the 2014 study area had low archaeological potential.

It was concluded that the study area being situated a considerable distance from permanent freshwater sources and located on broad crest landform outside Primary and Secondary resource zones as identified by Clarke and Kuskie (2006).

In conclusion, Artefact Heritage (2014) found that:

- No Aboriginal sites and/or places were located within the 2014 study area.
- The 2014 study area was assessed as demonstrating low archaeological potential and low archaeological significance.

5.3 Aboriginal Heritage Information Management System

An Aboriginal Heritage Information Management Systems (AHIMS) search provides archaeological context for the study area and identifies whether any previously recorded Aboriginal sites are located within or near the study area.

A search of the AHIMS database was requested by Michael Lever (Senior Heritage Consultant, Artefact Heritage) on 24 August 2017 (Client ID: 297858) for the study area.

GDA 94	MGA 56	271200E	281200E
		6131900N	6141900N
Buffer (m)		50	

A search of approximately 10 km around the study area was undertaken with a total of 103 registered sites identified (Figure 5.1). The predominant site types in the local area were open camp sites comprising artefact scatters (32 per cent) along with combined rock shelter sites (32 per cent) (Table 5.1).

There are no registered sites within the Proposal Site. The closest registered site to the Proposal Site is a stone arrangement (AHIMS ID 52-5-19) located on the northwest corner of the existing WNRRP approximately 250 m north of the northern end of the proposed rising main (Figure 5.1). The stone arrangement comprises a kidney shaped line of large stones interpreted as a ceremonial ground and is located 250 'yards' southeast of 'cave paintings' (ASRF for AHIMS ID 52-5-19). On examination of the Aboriginal Site Recording Form (ASRF) the location of this stone arrangement was registered in 1963 based on a literary reference from 1941 (ASRF for AHIMS ID 52-5-19). Co-ordinates are based on latitude and longitude co-ordinates from the Wollongong 1:250,000 topographic map sheet (SI56-9) and subsequently translated into AGD co-ordinates and then GDA co-ordinates. No verification of the site location appears to have occurred since it has been registered but mention to the rapid destruction of this stone arrangement is made on the ASRF. Consequently, it is difficult to ascertain whether AHIMS ID 25-5-19 is still extant and if so what the exact location is with regard to the WNRRP.

A large number of rockshelters (32 per cent) variously with art, deposit and grinding grooves are mainly distributed to the north of the Proposal Site. These are related to the abundance of suitable sandstone outcrops for shelters, art and grinding grooves in the Nowra area. There are no such suitable outcrops in the Proposal Site. Nevertheless, the occurrence of art sites in conjunction with

the stone arrangement and axe grinding grooves would suggest that landscape to the north of the Proposal Site is of high cultural significance as well as high archaeological significance. These sites appear to be clustered along the creeks and river wherever there are suitable sandstone outcrops.

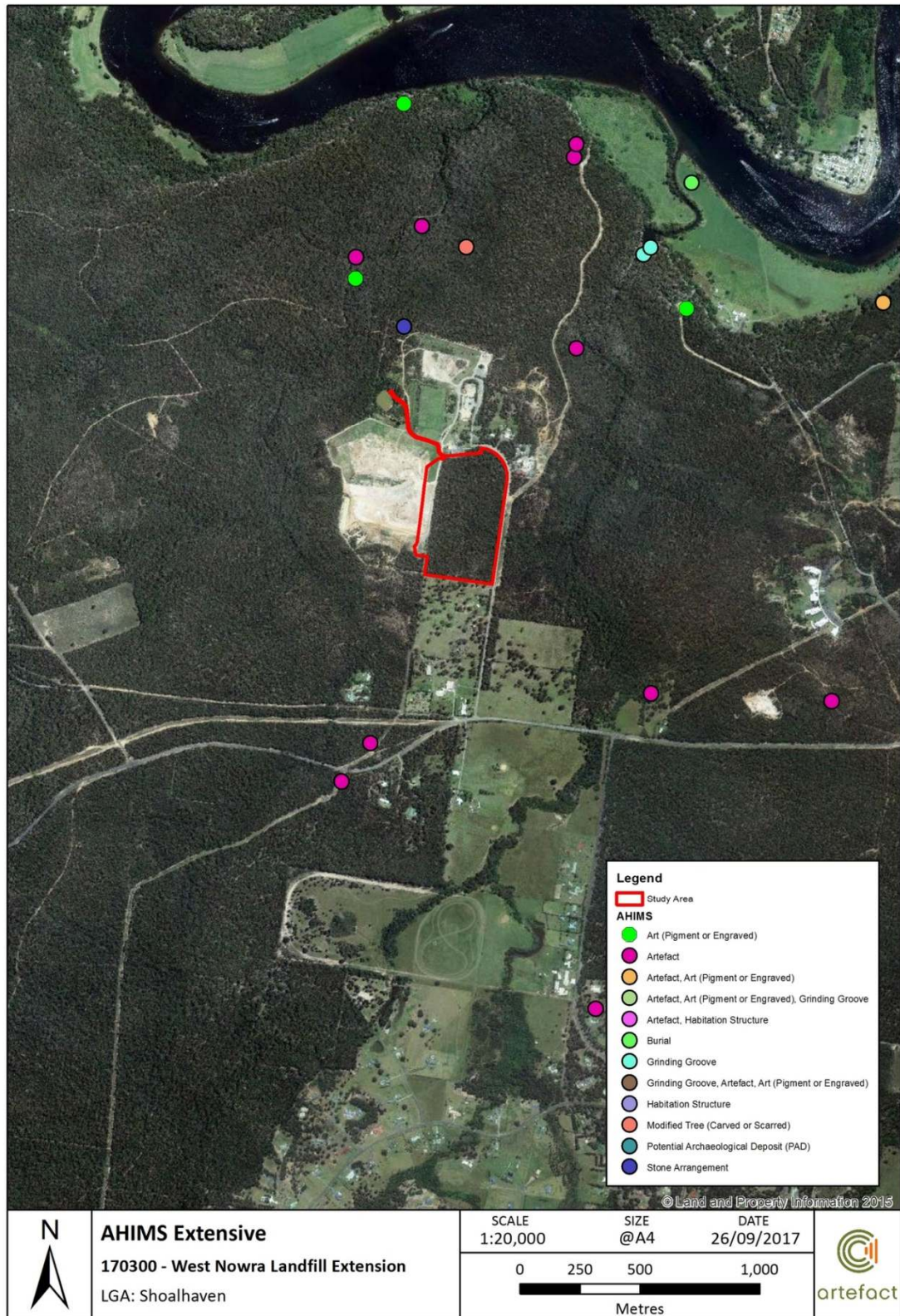
Table 5.1: AHIMS site types within 10 km of the study area

Site type	Number of sites	Percentage of total sites
Shelter with art	8	7.9
Shelter with art and deposit (stone artefacts)	4	3.9
Shelter with deposit (stone artefacts)	18	17.4
Shelter with art, deposit and grinding grooves	2	1.9
Shelter with potential archaeological deposit	1	1
Open camp site/isolated find (stone artefacts)	33	32
Open site (habitation/structure)	3	2.9
Closed site (stone artefacts)	14	13.6
Potential archaeological deposit	5	4.8
Burial	1	1
Stone arrangement	1	1
Axe grinding grooves	7	6.8
Modified Tree	4	3.9
Open art site	2	1.9
TOTAL	103	100

5.4 Predictive modelling

Based on a summary of previous archaeological survey within the Proposal Site adjacent to the current study area it is predicted there is very low potential for Aboriginal objects to be present. The study area is of low archaeological potential due to the distance from freshwater sources, the broad crest landform, prior ground disturbance and its location outside the Primary and Secondary resources zones as identified by Clarke and Kuskie (2006). In addition, sandstone outcropping suitable for art, shelters and grinding grooves does not appear to be present in the Proposal Site.

Figure 5.1: AHIMS search results within 2.5 km of the Proposal Site



6.0 ARCHAEOLOGICAL SURVEY

6.1 Aims

The aims of the survey were primarily to:

- Identify and record any Aboriginal sites or objects located in the study area
- Consult with the key Aboriginal stakeholders (Nowra LALC).

6.2 Timing and personnel

Archaeological survey for this addendum report was undertaken on the 17 August 2017. Michael Lever (Senior Heritage Consultant, Artefact Heritage) supervised the survey and Lee Ferguson (Representative, Nowra LALC) provided survey assistance.

6.3 Constraints

Vegetation cover and existing landfill restricted visibility.

6.4 Survey sampling strategy

The study area was divided into four survey units for descriptive purposes (Table 6.1; Figure 6.1). Survey unit 2 was excluded from the survey due to the unit comprising existing landfill. Landforms in survey units 3 and 4 were known to be of low archaeological potential therefore the strategy was to undertake a number of random transects across these areas targeting mature vegetation and areas of ground surface exposure.

6.5 Methodology

Survey units across transects 1, 3 and 4 were undertaken on foot. Spacing between personnel was generally five metres. A handheld Global Positioning System (GPS) device was used to track the path of the survey team and record the coordinates of survey transects, including the locations of any areas of archaeological potential identified in the field. The coordinate system projection used for all site recording was GDA94 MGA 56.

A photographic record was kept of all survey units. Photographs were taken to record aspects of survey units including surface exposures, vegetation, disturbance and areas of archaeological potential. Scales were used for photographs where appropriate.

Table 6.1: Summary of survey units

Survey unit	Size (square metres)	Location
1	2,047	Rising main-broad crest
2	23,694	Existing landfill
3	44,813	Broad crest east of existing landfill
4	4,804	Broad crest west of Flatrock Road
Total	75,358	

6.6 Survey coverage

The detection of surface sites and archaeological deposit is affected by ground surface visibility, which is in turn affected by various factors such as erosion processes and vegetative cover. Generally, ground surface exposure within the study area was extremely low except in the survey unit 2 which was excluded from survey due to extreme disturbance. Heavy vegetation cover in survey unit 3 and 4 hampered access and ground surface visibility (Figure 6.2 and Figure 6.3). Survey unit 1 was covered entirely by fill and a track.

Table 6.2 summarises the coverage details for pedestrian survey transects undertaken in the study area. The total project area comprises around 75,358 square metres. Pedestrian coverage of the study area totalled 14,047 square metres or around 18 per cent. After exposure and visibility factors are accounted for and the exclusion of survey unit 2 the total area available for site detection along the pedestrian transects was calculated to be 3,614 square metres or around five per cent of the total study area.

Table 6.2: Survey coverage summary

Survey unit	Coverage (% of total)	Visibility (%)	Exposure (%)	Effective coverage (%)	Results
1	2,047 (100)	30	0	614.1 (30)	Nil
2	0 (0)	N/A	N/A	0 (0)	Nil
3	10,000 (22.3)	5	5	2,500 (25)	Nil
4	2,000 (41.6)	5	5	500 (25)	Nil
	14,047 (28.3)			3,614.1 (7.28)	

Figure 6.1: Survey units and transects



Figure 6.2: Looking west across survey unit 3



Figure 6.3: Ground surface visibility survey unit 4



7.0 RESULTS AND DISCUSSION

The addendum archaeological survey of the Proposal Site did not detect any new Aboriginal sites. Despite very low ground surface visibility survey coverage effectively covered around five per cent of the total study area. This is considered to be adequate coverage of the study area given the following:

- Survey unit 2 was entirely excluded due to existing landfill
- Survey unit 1 was entirely modified
- Survey unit 3 and 4 were identified as having extremely low archaeological potential.

In support of the predictive model presented in Section 5.4 the addendum archaeological survey confirmed the study area is of low archaeological potential. No outcrops of sandstone were noted in the Proposal Site.

8.0 IMPACT ASSESSMENT

As discussed in Section 1.3, works associated with construction of the Proposal will include:

- Clearing of 9.94 ha of existing vegetation
- Construction of access tracks and fire trails
- Earthworks for cell formation including extraction and stockpiling of materials and the reapplication to form the leachate barrier (cell liner) as well as for daily, intermediate and final cover
- Installation of leachate management structures including the leachate barrier, collection, storage and disposal system (including construction of a rising main to transfer leachate to the existing leachate collection dam within the existing WNRWF)
- Installation of a surface water management system, including sediment dams, sediment erosion control measures and surface diversion bunds/swale drains
- Progressively increasing the annual waste acceptance rate at the landfill
- Signage and other ancillary works
- Rehabilitation of closed sub-cells
- Delineation and ongoing management of a conservation area along the southern and eastern boundary of the Proposal Site.

Construction works will impact upon the ground surface, including excavation to varying levels.

9.0 MANAGEMENT AND MITIGATION MEASURES

The addendum archaeological survey has established that the study area demonstrates very low archaeological potential and low archaeological significance. The assessment confirmed that no previously recorded Aboriginal sites and/or places and no areas of archaeological potential are located within the boundaries of the study area. No further Aboriginal archaeological investigation is required for the study area.

If Aboriginal objects are uncovered or Aboriginal cultural heritage values identified once works commence, work in the vicinity of the find must cease and an archaeologist, the OEH, and the Nowra LALC must be informed. It is an offence under the *National Parks and Wildlife Act 1974* (as amended 2010) to disturb or destroy an Aboriginal object without appropriate approvals. If human remains are found, work must cease, the site must be secured and the NSW Police and OEH notified. Further archaeological investigations may also be required.

10.0 RECOMMENDATIONS

The following recommendations were based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended
- The Code of Practice (DECCW 2010)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage [OEH] 2010)
- SEARs for the Proposal issued by the Department of Planning and Environment (DP&E) on 10 August 2015 and updated on 11 July 2017
- The results of the background research, site survey and assessment.
- The interests of Nowra LALC
- The likely impacts associated with the construction of the Proposal.

It was found that:

- No Aboriginal sites and/or places were located within the study area
- The study area was assessed as demonstrating low archaeological potential.

It is therefore recommended that:

- The proposed construction of the Proposal is able to proceed without the need for further archaeological and/or Aboriginal heritage assessment
- Should the area for the Proposal Site change further investigation may be required
- If Aboriginal objects are uncovered during works, an archaeologist, the Nowra LALC and OEH must be notified. Further investigation and approvals may be required
- If human skeletal remains are encountered during works, all work must cease immediately and the NSW Police contacted. If the skeletal remains are found to be Aboriginal, consultation with OEH and Nowra LALC will be required
- A Landfill Environmental Management Plan will be prepared for the Proposal. This would include a procedure for unexpected finds and protocols for communication with the Aboriginal community during the construction and operational phases of the Proposal.

11.0 REFERENCES

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APPENDIX 1 – AHIMS DATABASE SEARCH RESULTS

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-5-0005	Calymea Creek	AGD	56	272450	6134520	Closed site	Valid	Artefact : 4, Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	
	<u>Contact</u>							<u>Permits</u>		
52-5-0017	Wogamia;	AGD	56	275900	6138530	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0018	Wogamia;Mundamia Ck;	AGD	56	276160	6137932	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0084	Nowra;	AGD	56	279687	6139923	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2048,98511,10 2506
	<u>Contact</u>							<u>Permits</u>		
52-5-0086	Nowra;	AGD	56	280249	6139294	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0087	Nowra;	AGD	56	280161	6139109	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0088	Nowra;	AGD	56	279252	6138817	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0089	Nowra;	AGD	56	276610	6138307	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0090	Nowra;	AGD	56	280002	6137917	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0091	Wogamia;	AGD	56	275975	6138019	Closed site	Valid	Artefact : -	Shelter with Deposit	2048,102506
	<u>Contact</u>							<u>Permits</u>		
52-5-0093	Bamarong;Punt;	AGD	56	272733	6135485	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2048
	<u>Contact</u>							<u>Permits</u>		
52-5-0019	Wogamia;	AGD	56	275900	6137600	Open site	Valid	Stone Arrangement : -	Stone Arrangement	102506
	<u>Contact</u>							<u>Permits</u>		

Report generated by AHIMS Web Service on 24/08/2017 for Michael Lever for the following area at Datum :GDA, Zone : 56, Eastings : 271200 - 281200, Northings : 6131900 - 6141900 with a Buffer of 50 meters. Additional Info : Inform archaeological survey. Number of Aboriginal sites and Aboriginal objects found is 103

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-5-0020	Wogamia;Mundamia Creek;SR6;	AGD	56	275700	6137800	Closed site	Valid	Art (Pigment or Engraved) : 3	Shelter with Art	102506
	<u>Contact</u>	<u>Recorders</u>	Fred McCarthy,Mr.Edward Clarke							
52-5-0258	Cabbage Tree Flat;	AGD	56	277100	6138200	Open site	Valid	Burial : -	Burial/s	1961,102506
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon							
52-5-0262	Bomaderry Ck 5;Bomaderry Creek Nowra;	AGD	56	279420	6141260	Closed site	Valid	Artefact : 5	Shelter with Deposit	2254,98511,10 2506,103143
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer,Mr.Edward Clarke							
52-5-0263	Bomaderry Ck 4;Bomaderry Creek Nowra;	AGD	56	279350	6141400	Closed site	Valid	Artefact : -	Shelter with Deposit	2254,98511,10 2506,103143
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer							
52-5-0110	Nowra;	AGD	56	279837	6136999	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2048
	<u>Contact</u>	<u>Recorders</u>	P Brass							
52-5-0022	Nowra;	AGD	56	277080	6137676	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	102506
	<u>Contact</u>	<u>Recorders</u>	ASRSYS							
52-5-0023	Nowra;	AGD	56	276900	6137900	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102506
	<u>Contact</u>	<u>Recorders</u>	Unknown Author							
52-5-0024	Nowra;	AGD	56	276930	6137930	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102506
	<u>Contact</u>	<u>Recorders</u>	Mr.P Bindon							
52-5-0025	Nowra;	AGD	56	277900	6137700	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	102506
	<u>Contact</u>	<u>Recorders</u>	ASRSYS							
52-5-0026	Nowra;	AGD	56	278100	6137800	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	102506
	<u>Contact</u>	<u>Recorders</u>	ASRSYS							
52-5-0028	Nowra;	AGD	56	278900	6138900	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	102506
	<u>Contact</u>	<u>Recorders</u>	Mr.P Bindon							
52-5-0029	Nowra;	AGD	56	279500	6137750	Closed site	Valid	Artefact : -	Shelter with Deposit	102506
	<u>Contact</u>	<u>Recorders</u>	Mr.P Bindon							
52-5-0030	Nowra;	AGD	56	279550	6137950	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	102506
	<u>Contact</u>	<u>Recorders</u>	ASRSYS							

Report generated by AHIMS Web Service on 24/08/2017 for Michael Lever for the following area at Datum :GDA, Zone : 56, Eastings : 271200 - 281200, Northings : 6131900 - 6141900 with a Buffer of 50 meters. Additional Info : Inform archaeological survey. Number of Aboriginal sites and Aboriginal objects found is 103

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-5-0032	Nowra;	AGD	56	279600	6137300	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2092,102111,102506
	<u>Contact</u>		<u>Recorders</u>	ASRSYS				<u>Permits</u>		
52-5-0034	Nowra;Hidden Valley;	AGD	56	279700	6137200	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	102506
	<u>Contact</u>		<u>Recorders</u>	Mr.P Bindon				<u>Permits</u>		
52-5-0035	Nowra (Bomaderry)	AGD	56	280053	6139930	Closed site	Valid	Artefact : -	Shelter with Deposit	531,98511,102506
	<u>Contact</u>		<u>Recorders</u>	Leslie Maynard				<u>Permits</u>		
52-5-0036	Bomaderry;	AGD	56	279800	6139900	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -	Shelter with Art,Shelter with Deposit	98511,102506
	<u>Contact</u>		<u>Recorders</u>	Mr.P Bindon				<u>Permits</u>		
52-5-0146	Calymea Creek;Bamarang Dam;Bamarang Dam 2;	AGD	56	272025	6134281	Closed site	Valid	Artefact : -	Shelter with Deposit	
	<u>Contact</u>		<u>Recorders</u>	Val Attenbrow				<u>Permits</u>		
52-5-0158	Calymea Creek;Bamarang Dam 1;	AGD	56	272440	6134620	Closed site	Valid	Artefact : -	Shelter with Deposit	
	<u>Contact</u>		<u>Recorders</u>	Val Attenbrow				<u>Permits</u>		
52-5-0302	Tapitallee Ck 1;	AGD	56	278000	6141630	Open site	Valid	Artefact : 4	Open Camp Site	102506
	<u>Contact</u>		<u>Recorders</u>	Mr.Doug Williams,Mr.David Johnston,Mr.Sam Wickman,Mr.Matthew Barber				<u>Permits</u>		
52-5-0305	EGP 3-26;Cabbage Tree Creek;Eastern Gas Pipeline;	AGD	56	276620	6137510	Closed site	Valid	Artefact : -	Shelter with Deposit	102506
	<u>Contact</u>		<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer				<u>Permits</u>		
52-5-0306	EGP 3-27;Humbag Reach shoalhaven;Eastern Gas Pipeline;	AGD	56	276620	6138360	Open site	Valid	Artefact : -	Open Camp Site	102506
	<u>Contact</u>		<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer				<u>Permits</u>		
52-5-0307	EGP 3-28;Cram Rd Shoalhaven;Eastern Gas Pipeline;	AGD	56	277210	6140560	Open site	Valid	Artefact : -	Open Camp Site	102506
	<u>Contact</u>		<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer				<u>Permits</u>		
52-2-0889	Bengalee Creek 4;	AGD	56	275340	6140750	Closed site	Valid	Artefact : -	Shelter with Deposit	102160
	<u>Contact</u>		<u>Recorders</u>	Illawarra Prehistory Group				<u>Permits</u>		
52-2-0890	Bengalee Creek 3;	AGD	56	275030	6140700	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	
	<u>Contact</u>		<u>Recorders</u>	Illawarra Prehistory Group				<u>Permits</u>		
52-2-0891	Bengalee Creek 2;	AGD	56	275130	6140700	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	<u>Contact</u>		<u>Recorders</u>	Illawarra Prehistory Group				<u>Permits</u>		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-2-0892	Bengalee Creek 1;	AGD	56	275160	6140740	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Illawarra Prehistory Group					Permits		
52-5-0369	Duke Four (duplicat refer to 52-5-0375)	AGD	56	274590	6133420	Closed site	Valid	Artefact : 7	Shelter with PAD	
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
52-5-0094	Bamarong;	AGD	56	274104	6135512	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2048
	Contact	Recorders	Unknown Author					Permits		
52-5-0033	Nowra;Bundanon Punt;	AGD	56	280022	6136911	Closed site	Valid	Grinding Groove : -, Artefact : -, Art (Pigment or Engraved) : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	102506
	Contact	Recorders	C.C Towle					Permits	879	
52-5-0368	Duke 2	AGD	56	275640	6135700	Closed site	Valid	Artefact : 1	Shelter with Deposit	102506
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
52-5-0371	Duke 1	AGD	56	275760	6135860	Open site	Valid	Artefact : 1	Isolated Find	102506
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
52-5-0372	Duke 7	AGD	56	277800	6140630	Open site	Valid	Artefact : -	Open Camp Site	102506
	Contact	Recorders	S Huys					Permits		
52-5-0373	Duke 6	AGD	56	274430	6133270	Open site	Valid	Artefact : 1	Isolated Find	
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
52-5-0374	Duke 3	AGD	56	274680	6133620	Closed site	Valid	Artefact : 4	Shelter with Deposit	
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
52-5-0375	Duke 4	AGD	56	274590	6133420	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Cultural Heritage Management Australia - (Australian Archaeological Survey Consu					Permits		
45-6-2540	Cabbage Tree Lane 2; Duplicate of 52-2-1875	AGD	56	276950	6133650	Open site	Deleted	Artefact : -	Isolated Find	
	Contact	Recorders	Mr.Peter Kuskie					Permits		
52-2-1874	Cabbage Tree Lane 1;	AGD	56	276700	6134750	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Mr.Peter Kuskie					Permits		
52-2-1875	Cabbage Tree Lane 2;	AGD	56	276950	6133650	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Mr.Peter Kuskie					Permits		
52-2-1797	West Cambewarra Rd.;Bomaderry Creek;	AGD	56	279300	6141700	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	98511,103143
	Contact	Recorders	T Bartlett					Permits		
52-5-0528	TA1/A	AGD	56	274920	6141610	Open site	Valid	Artefact : 1		102506

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Mr.Edward Clarke					<u>Permits</u>		
52-5-0535	BIF-01	GDA	56	272312	6134030	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>		
52-5-0536	B-OS1	GDA	56	273127	6133985	Open site	Valid	Artefact : 2		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>		
52-5-0537	BIF-02	GDA	56	273207	6133966	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>		
52-5-0538	BCP 001 Mosquito Shelter	AGD	56	279793	6141045	Closed site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0539	BCRP 002 The black caves	AGD	56	279701	6141045	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0540	BCRP 003 The blue metal site	AGD	56	279952	6141083	Open site	Valid	Artefact : -		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0541	BCRP 005 Leaning Cliff-Line Site	GDA	56	279983	6140798	Closed site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0542	BCRP 006 Pipeline Shelter	AGD	56	279545	6141313	Closed site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0543	BCRP 007 Stone Circle Site	AGD	56	279551	6141181	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0544	BCRP 012 Pitt Street Narang	AGD	56	278907	6141032	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0545	BCRP 013 West Cambewarra	AGD	56	279206	6141669	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0547	BCRP 015 West Cambewarra	AGD	56	279472	6141712	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0548	BCRP 016 Scar Tree Site	AGD	56	279111	6140447	Open site	Valid	Modified Tree (Carved or Scarred) : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0549	BCRP 017 Stained Flake	AGD	56	279626	6140197	Closed site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-4-0261	BCRP 018 The largest shelter (duplicate of 52-5-0550)	AGD	56	279704	6140277	Closed site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		
52-5-0550	BCRP 018 The largest Shelter	AGD	56	279704	6140277	Open site	Valid	Artefact : 1		102506
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd					<u>Permits</u>		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Shoalhaven Tip

Client Service ID : 297858

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-5-0551	BCRP 019 Boulder Shelter	AGD	56	280000	6140599	Closed site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0552	BCRP 020 Spotted Gum	AGD	56	279868	6140699	Closed site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0553	BCRP 022-30 Metres West of Shelter Cave	AGD	56	279917	6140870	Closed site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0554	BCRP 023 Charcoal Oval Art	AGD	56	279757	6140987	Open site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0555	BCRP 024 One Silcrete Flake	AGD	56	279675	6141006	Open site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0556	BCRP 025 Trenched Drip-line	AGD	56	279496	6141091	Open site	Valid	Artefact : 1		102506
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd					Permits		
52-5-0386	Big Bend	AGD	56	279770	6140200	Open site	Valid	Art (Pigment or Engraved) : -		98511,102506, 103143
	Contact	Recorders	Terry Barratt					Permits		
52-5-0387	Big Bend 2	AGD	56	280100	6139950	Open site	Valid	Habitation Structure : -		98511,102506
	Contact	Recorders	Terry Barratt					Permits		
52-5-0388	Big Bend 3	AGD	56	280100	6139850	Open site	Valid	Habitation Structure : -		98511,102506
	Contact	Recorders	Terry Barratt					Permits		
52-5-0389	Shelter Cave	AGD	56	279900	6140800	Open site	Valid	Habitation Structure : -		98511,102506, 103143
	Contact	Recorders	Terry Barratt					Permits		
52-5-0390	Bomaderry Site	AGD	56	279350	6141300	Open site	Valid	Artefact : -		2254,98511,10 2506,103143
	Contact	Recorders	Terry Barratt					Permits		
52-5-0453	BC1/E	AGD	56	279930	6141030	Closed site	Valid	Artefact : 6		102506,10314 3
	Contact	Recorders	Mr.Edward Clarke					Permits		
52-5-0454	BC1/B	AGD	56	279450	6141160	Closed site	Valid	Artefact : 8		102506,10314 3
	Contact	Recorders	Mr.Edward Clarke					Permits		
52-5-0455	BC1/F	AGD	56	279970	6140860	Closed site	Valid	Artefact : 1		102506
	Contact	Recorders	Mr.Edward Clarke					Permits		
52-5-0456	BA5/B	AGD	56	275700	6137890	Closed site	Valid	Artefact : 2		102506
	Contact	Recorders	Mr.Edward Clarke					Permits		

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Extensive search - Site list report

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
52-5-0457	BA2/A	AGD	56	272410	6134480	Open site	Valid	Artefact : 2		
	Contact T Russell	Recorders Mr.Edward Clarke						Permits		
52-5-0459	TR3/A	AGD	56	278200	6135710	Open site	Valid	Artefact : 1		102506
	Contact T Russell	Recorders Mr.Edward Clarke						Permits		
52-5-0460	TR2/A	AGD	56	278750	6135290	Open site	Valid	Artefact : 1		102506
	Contact T Russell	Recorders Mr.Edward Clarke						Permits		
52-5-0461	TR1/A	AGD	56	278690	6135510	Open site	Valid	Artefact : 4		102506
	Contact T Russell	Recorders Mr.Edward Clarke						Permits		
52-5-0466	Bamarang Gas 1 (BG1)	AGD	56	276931	6136067	Open site	Valid	Artefact : -		99979,102506
	Contact T Russell	Recorders Navin Officer Heritage Consultants Pty Ltd						Permits		
52-5-0467	Bamarang Gas 2 (BG2)	AGD	56	277684	6136035	Open site	Valid	Artefact : -		99979,102506
	Contact T Russell	Recorders Navin Officer Heritage Consultants Pty Ltd						Permits		
52-5-0468	Bamarang Gas 3 (BG3)	AGD	56	278799	6136129	Open site	Valid	Modified Tree (Carved or Scarred) : -		99979,102506
	Contact T Russell	Recorders Navin Officer Heritage Consultants Pty Ltd						Permits		
52-5-0852	Nowra Bridge 1	GDA	56	280851	6138989	Open site	Valid	Artefact : -		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0853	Nowra Bridge 2	GDA	56	280534	6139589	Open site	Valid	Artefact : -		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0854	Nowra Bridge PAD 5	GDA	56	280728	6139800	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0855	Nowra Bridge 3	GDA	56	280493	6139587	Open site	Valid	Artefact : -		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0856	Nowra Bridge 5	GDA	56	280531	6139565	Closed site	Valid	Artefact : -, Habitation Structure :-		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0857	Nowra Bridge 4	GDA	56	280420	6139545	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders Artefact - Cultural Heritage Management ,Mr.ryan taddeucci						Permits		
52-5-0858	Nowra Bridge PAD 4	GDA	56	280436	6139775	Open site	Valid	Potential Archaeological Deposit (PAD) : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Artefact - Cultural Heritage Management ,Mr.ryan taddeucci							<u>Permits</u>
52-5-0859	Nowra Bridge PAD 1	GDA	56	280862	6138970	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Artefact - Cultural Heritage Management ,Mr.ryan taddeucci							<u>Permits</u>
52-5-0860	Nowra Bridge PAD 2	GDA	56	280763	6139073	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Artefact - Cultural Heritage Management ,Mr.ryan taddeucci							<u>Permits</u>
52-5-0861	Nowra Bridge PAD 3 Cliff & Rockshelter Complex	GDA	56	280426	6139576	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Artefact - Cultural Heritage Management ,Mr.ryan taddeucci							<u>Permits</u>
52-5-0845	Thompsons Point 01 (The Mini Wall)	GDA	56	278242	6138766	Open site	Valid	Art (Pigment or Engraved) : 1		
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson							<u>Permits</u>
52-5-0846	Thompsons Point 02 (The Pocketed Wall)	GDA	56	278242	6138614	Open site	Valid	Art (Pigment or Engraved) : 1		
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson							<u>Permits</u>

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