

Cultural Heritage Assessment (RPS, 2011)



APPENDIX 8

Cultural Heritage Assessment

Mandalong Mine Ventilation Air
Methane Abatement Demonstration Project

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Executive Summary

Centennial Mandalong Pty Ltd (Centennial Mandalong) is seeking approval for a modification to an existing Development Consent DA 97/800 under Section 75W of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Development Consent DA 97/800 was originally granted by the Minister for Urban Affairs and Planning on 14 October 1998 under Part 4 of the EP&A Act.

The Section 75W modification is being sought for the installation and ongoing operation of a single ventilation air methane regenerative afterburner (VAM-RAB) unit and associated infrastructure (herein referred to as the 'Project'). This unit will be used to demonstrate the effective capture and abatement of ventilation air methane in order to reduce greenhouse gas emissions from Mandalong by reducing the amount of methane that is ventilated into the atmosphere.

This Cultural Heritage Assessment (CHA) has been prepared to address any potential impacts from the proposed Project. A Project Application and accompanying Preliminary Environmental Assessment (PEA) was prepared by GSS Environmental (GSSE) on behalf of Centennial Mandalong in March 2011 for the Project. The PEA defined the Project Area for which the modification relates, and encompasses the area in which the VAM-RAB unit will be installed (refer Figure 1-1). Mandalong's existing mine ventilation fans and associated infrastructure are located in this area.

Proponents are required to follow the 2005 (draft) Part 3A EP&A Act *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (as amended from time to time) when seeking approvals under the Part 3A process. The guidelines were developed by DECCW and the NSW Department of Planning, and detail the assessment and consultation requirements that need to be followed for Aboriginal cultural heritage under the Part 3A process (Extract: DECCW Fact Sheet 5). Aboriginal consultation in relation to the assessment and management of Aboriginal heritage for this Project was also undertaken following the *Aboriginal Cultural Heritage Consultation Requirements (ACHCRs) for Proponents* (DECCW 2010) - Refer Appendix 1.

This Aboriginal and Non Indigenous assessment of the archaeological and cultural heritage values within the Project Area has been undertaken to ensure any potential implications for heritage are identified and mitigation measures recommended where required. This heritage assessment has been conducted in accordance with the requirements under Part 3A and includes identification of the statutory requirements relevant to the Project. A search of the relevant State and Federal registers and listings was undertaken including the DECCW Aboriginal Heritage Information Management System (AHIMS) database which is now managed by the Office of Environment and Heritage (OEH), the Native Title Register, relevant Local Government Area (LGA) Local Environment Plans (LEPs), State Heritage Register and Register of the National Estate. Consultation with the Aboriginal Community Stakeholders (ACS) was also undertaken and details of the full consultation records including a Consultation Log are provided in Appendices 2 to 5.

No Aboriginal cultural heritage sites or objects and no non Indigenous items were identified in the Project Area.

As such it is considered that there are no identified archaeological constraints to development works proceeding in the area investigated under this Cultural Heritage Assessment subject to adherence to the following management recommendations:

Recommendation 1

All relevant Centennial Mandalong staff and contractors should be made aware of their statutory obligations for heritage under NSW *National Parks and Wildlife Act 1974* (NPW Act) and the NSW *Heritage Act 1977*, which is implemented by Centennial Mandalong during their mine induction process.

Recommendation 2

If Aboriginal site/s are identified in the Project Area during works, then all works in the area should cease, the area cordoned off and contact made with OEH Enviroline 131 555, a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed.

Recommendation 3

In the unlikely event that skeletal remains are uncovered, work must cease immediately in that area and Centennial Mandalong will need to contact the NSW Police Coroner to determine if the material is of Aboriginal origin. If determined to be Aboriginal, they must then contact the OEH Enviroline 131 555 and relevant Aboriginal Community Stakeholders in order to determine an action plan for the management of the skeletal remains prior to works re-commencing.

Recommendation 4

If during the course of clearing works significant European cultural heritage material is uncovered, work in that area should cease and the NSW Heritage Branch should be notified; works should only recommence when an appropriate management strategy has been formulated.

Abbreviations

Abbreviation	Description
ACHCRs	Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010) were released by DECCW on the 12th April, 2010. These consultation requirements are triggered for assessments under Part 3A for the EP&A Act, or if an AHIP is required under part 4 or 5 of the EP&A Act, or if archaeological investigations are required in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales
ACS	Aboriginal Community Stakeholders
ADTOAC	Awabakal Descendants Traditional Owners Aboriginal Corporation
AHIA	Aboriginal Heritage Impact Assessment
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ATOAC	Awabakal Traditional Owners Aboriginal Corporation
BP	Before present (as in years before present)
cal. years BP	Calibrated years before present, indicates a radiocarbon date has been calibrated using the dendochronology curves, making the date more accurate than an uncalibrated date
Code of Practice	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales: sets out the standards for archaeological survey recording, as well as protocols for test excavation
DECCW	Department of Environment, Climate Change and Water (now the Office of Environment and Heritage)
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statements
EPRG	Environment Protection Regulation Group
GDA	Geodetic Datum Australia
GIS	Geographic Information System
GSSE	GSS Environmental
HWM	High Water Mark
ILUA	Indigenous Land Use Agreement
LGA	Local Government Area
LEP	Local Environment Plan
MGAF	Mandalong Greenhouse Abatement Facility
NPW	National Parks and Wildlife
OEH	Office of Environment and Heritage
PAD	Potential Archaeological Deposit

Abbreviation	Description
PEA	Preliminary Environmental Assessment
REP	Regional Environment Plan
REF	Review of Environmental Factors
SHR	State Heritage Register
VAM-RAB	Ventilation air methane regenerative afterburner
WAC	Westlakes Aboriginal Community

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I Introduction

RPS has been engaged by Centennial Mandalong Pty Limited (Centennial Mandalong) to prepare a Cultural Heritage Assessment (CHA) for the Ventilation Air Methane Abatement Demonstration Project at Mandalong Mine, herein referred to as the Project. A Project Area has been defined for the Project to which the development consent modification relates, and is illustrated in Figure 1-1.

This report has considered the environmental and archaeological context of the Project Area, developed a predictive model and reported on the results of an archaeological survey of the Project Area. The archaeological significance of Aboriginal and European cultural heritage has been considered and management recommendations have been formulated in accordance with the relevant legislation and with consideration to any potential impacts of the proposed works on cultural heritage sites or objects.

1.1 The Project Area

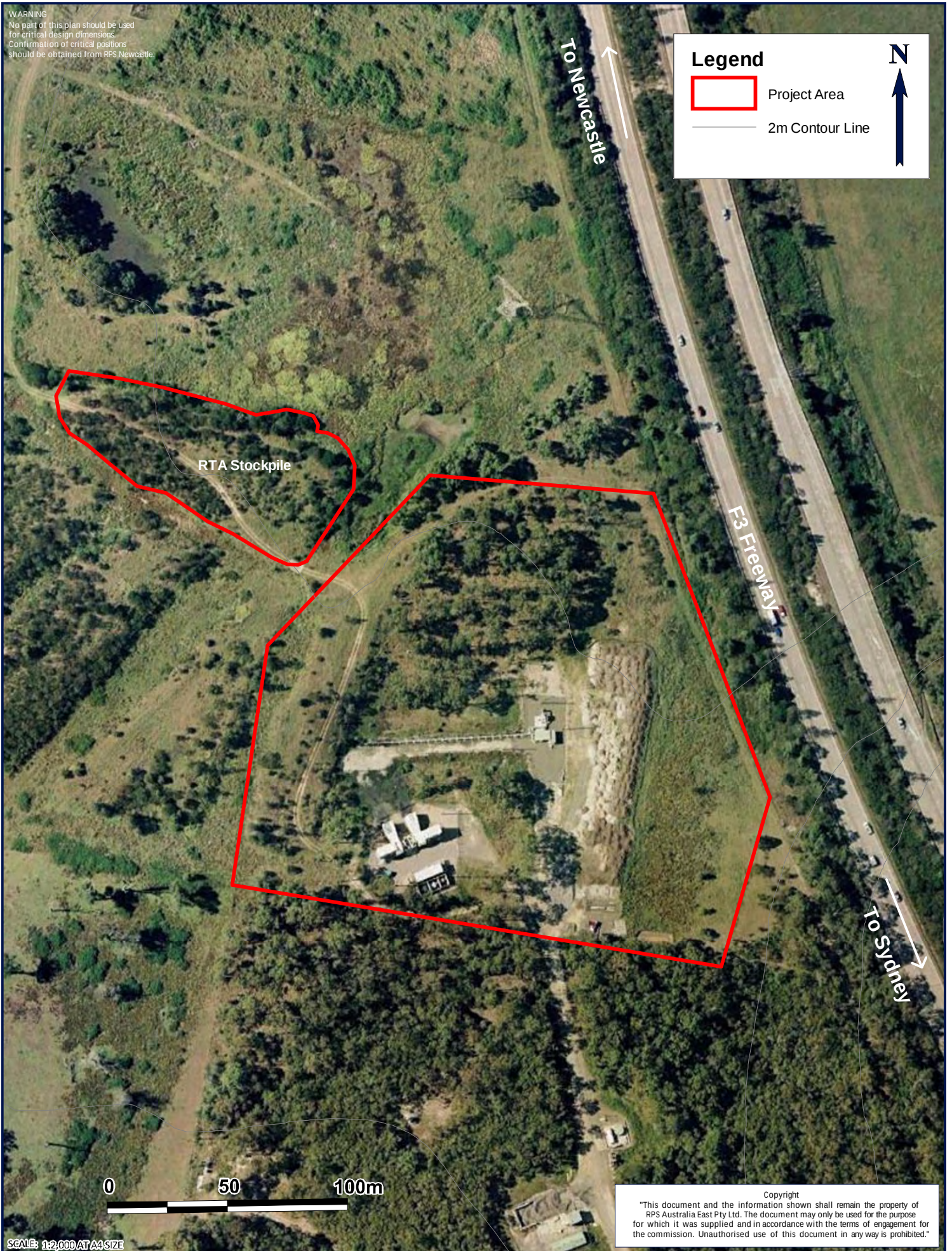
The Project Area is located near Morisset at Mandalong Mine in the Lake Macquarie Local Government Area (LGA). The overall Project Area is approximately 3.4 hectares in size although the area of likely impact is around 0.9 hectares (Refer Figure 1-1).

1.2 Background

Centennial Mandalong is seeking approval for a modification to an existing Development Consent DA 97/800 under the provisions of Part 3A, Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Development Consent DA 97/800 was originally granted by the Minister for Urban Affairs and Planning on 14 October 1998 under Part 4 of the EP&A Act. This modification is being sought for the installation and ongoing operation of a single ventilation air methane regenerative afterburner (VAM-RAB) unit and associated infrastructure, in order to reduce greenhouse gas emissions from Mandalong by reducing the amount of methane that is ventilated into the atmosphere.

A Project Application and accompanying Preliminary Environmental Assessment (PEA) was prepared by GSS Environmental (GSSE) on behalf of Centennial Mandalong in March 2011. This Cultural Heritage Assessment has been prepared to address potential impacts from the proposed installation of the single VAM-RAB unit and associated infrastructure.

WARNING
No part of this plan should be used
for critical design dimensions.
Confirmation of critical positions
should be obtained from RPS Newcastle



TITLE: FIGURE 1-1 PROJECT AREA

LOCATION: MANDALONG

DATUM: N/A

DATE: 2/06/2011

LAYOUT REF: Abatement 110 Drafting/Ae Archaeology Drafting
J:\JOBS\Centennial\All Jobs\100835 Greenhouse
MapInfo Workspaces

PROJECTION: MGA ZONE 56 (AGD 94)

PURPOSE: ABORIGINAL & EUROPEAN
ARCHAEOLOGICAL ASSESSMENT

VERSION (PLAN BY): C A4 (AN - NW)

CLIENT: CENTENNIAL COAL PTY LTD
JOB REF: 106835

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RPS

1.3 Legislative Context

The following overview of the legal framework is provided solely for information purposes for the client, it should not be interpreted as legal advice. RPS will not be liable for any actions taken by any person, body or group as a result of this general overview, and recommend that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

Aboriginal heritage (places, sites and objects) within NSW is protected by the *National Parks and Wildlife Act 1974 (as amended)* (NPW Act). In some cases, Aboriginal heritage may also be protected under the *Heritage Act 1977*. The EP&A Act, along with other environmental planning instruments, triggers the requirement for the investigation and assessment of Aboriginal heritage as part of the development approval process. For Crown Land, provisions under the *Native Title Act 1993* may also apply.

Proponents are required to follow the Department of Planning's Draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (2005) (as amended from time to time) when seeking approvals under Part 3A of the EP&A Act. These draft guidelines, and DECCW Fact Sheet 5: Landuse Planning Consultation Requirements for Proponents indicate that the *Aboriginal Cultural Heritage Consultation Requirements (ACHCRs) for Proponents* (Department of Environment, Climate Change and Water (DECCW) 2010) are more than sufficient for undertaking effective Aboriginal consultation in relation to the assessment and management of Aboriginal heritage.

The report has been prepared in accordance with the relevant legislation and regulations.

1.3.1 National Parks and Wildlife Act 1974, (as amended)

The NSW Government is working toward standalone legislation to protect Aboriginal cultural heritage which will be a significant reform for NSW. The first stage of this work has been completed and includes significant changes in relation to this commission. The primary state legislation relating to Aboriginal cultural heritage in NSW is the NPW Act (as amended). The legislation is administered by the Office of Environment and Heritage (OEH).

Changes to the NPW Act made effective on 1 October 2010 include:

- increased penalties for Aboriginal heritage offences, in some cases from \$22,000 to up to \$1.1 million in the case of companies who do not comply with the legislation;
- ensuring companies or individuals cannot claim 'no knowledge' in cases of serious harm to Aboriginal heritage places and objects by creating new strict liability offences under the Act;
- introduction of remediation provisions to ensure people who illegally harm significant Aboriginal sites are forced to repair the damage, without need for a court order; and
- unites Aboriginal heritage permits into a single, more flexible permit and strengthen offences around breaches of Aboriginal heritage permit conditions.

1.3.2 Heritage Act 1977

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the *Heritage Act 1977* (as amended 1999) and may be identified on the State Heritage Register (SHR) or by an active Interim Heritage Order. Certain types of historic Aboriginal sites may be listed on the SHR or subject to an active Interim Heritage Order; in such cases they would be protected under the *Heritage Act 1977* and may require approvals or excavation permits from the NSW Heritage Branch.

1.3.3 Environmental Planning & Assessment Act 1979 (EP&A ACT)

This Act regulates a system of environmental planning and assessment for NSW. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal heritage. Assessment documents prepared to meet the requirements of the EP&A Act including: Review of Environmental Factors (REF), Environmental Impact Statements (EIS) and Environmental Impact Assessments (EIA), should address Aboriginal heritage, and planning documents such as Local Environment Plans (LEP) and Regional Environmental Plans (REP) typically contain provisions for Aboriginal heritage where relevant.

Further details on the relevant legislative requirements are provided in Appendix 1.

1.4 Authorship and Acknowledgements

This report was prepared by Senior Archaeologist Gillian Goode with assistance from Graduate Archaeologist Ali Byrne and reviewed by Archaeology Manager Darrell Rigby.

The study team acknowledges the assistance in preparing this report of various organisations and individuals, including but not limited to:

Table 1-1: Acknowledgements

Name	Organisation
Kerrie Brauer	ATOAC
Shane Frost	ADTOAC
Richard Strong	WAC
James Wearne	Centennial Mandalong

2 Aboriginal Consultation

The purpose of Aboriginal community consultation is to provide an opportunity for the relevant Aboriginal Community Stakeholders (ACS) to have input into the heritage management process. The OEH encourages consultation with Aboriginal people for matters relating to Aboriginal heritage.

Approval for this Project is being sought under Part 3A of the EP&A Act. In the case of this project, the *ACHCRs* for Proponents (DECCW 2010) have been followed.

The ACS are expected to respond to information sent, and provide cultural heritage information as appropriate to the role specified in the *ACHCRs* (DECCW 2010:15-16). In accordance with their role under the *ACHCRs* (DECCW 2010:16-17), RPS and Centennial Mandalong have consulted with the ACS, supplied suitable project information and provided the opportunity for the ACS to have input into the heritage management process.

A search of the Native Title Register maintained by the Native Title Tribunal (NTT) showed that there were no applications, successful or otherwise relating to the Project Area. There are no Indigenous Land Use Agreements (ILUAs) over the Project Area.

The *ACHCRs* include a four stage Aboriginal consultation process. Stage 1 requires that Aboriginal people who hold cultural information are identified, notified and invited to register an expression of interest in the assessment. This identification process should draw on reasonable sources of information including: the relevant OEH Environment Protection and Regulation Group (EPRG) regional office, the relevant Local Aboriginal Land Council(s), the Registrar of Aboriginal Owners, the Native Title Tribunal, Native Title Services Corporation Limited, the relevant Local Council(s) and the relevant Catchment Management Authority, as well as the placement of an advertisement in a local newspaper circulating in the general location of the Project Area. Aboriginal organisations and/or individuals identified through these processes should be notified of the Project and invited to register an expression of interest (EOI) for Aboriginal consultation (Table 2-1). Once a list of Aboriginal stakeholders has been compiled from the EOI process (Table 2-2) they need to be consulted in accordance with stage 2, 3 and 4 of the *ACHCRs*. Stages 2 and 3 require the preparation of information about the proposed project and the gathering of information about cultural significance. These stages include the provision of a proposed assessment methodology to the registered Aboriginal stakeholders for their review (Table 2-3). Stage 4 requires that the CHA report be provided to registered ACS for review and comment.

As a result of contacting the relevant OEH EPRG regional office (Coffs Harbour), the Awabakal Local Aboriginal Land Council, the Registrar of Aboriginal Owners, the National Native Title Tribunal, Native Title Services Corporation Limited, the Lake Macquarie City Council and the Hunter-Central Rivers Catchment Management Authority, eight ACS groups were identified as potentially having an interest in the Project. These ACS were advised of the Project, and invited to express their interest in being involved (refer Table 2-1).

Table 2-1: Recipients of the Expression of Interest letters

Organisation	Name of Representative	Date EOI sent
Cacatua Culture Consultants	Donna & George Sampson	11/02/2011
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	11/02/2011
Arwarbukarl Cultural Resource Association	Darren McKenny	11/02/2011
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost	11/02/2011
Awabakal Newcastle Aboriginal Co-op	Kevin McKenny	11/02/2011
Awabakal Local Aboriginal Land Council	Cheryl Kitchener	11/02/2011
Bahtahbah Local Aboriginal Land Council	Michael Green	11/02/2011
West Lakes Aboriginal Community	Cheryl Kitchener	11/02/2011

Five ACS groups registered their interest in the Project as a result of the invitation for expression of interest letters and the advertisement in the Lakes Mail (Refer Appendix 2). These ACS are listed in Table 2-2.

Table 2-2: Aboriginal Community Stakeholders that registered their interest in the Project

Organisation	Name of Representative	Date of Registration
Awabakal LALC	David Ahoy	16/02/2011
Westlakes Aboriginal Community	David Ahoy	16/02/2011
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	17/02/2011
Cacatua Culture Consultants	Donna & George Sampson	18/02/2011
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost	23/02/2011

Information regarding the proposed heritage assessment methodology and strategy for collecting information on cultural heritage significance was provided in writing to the relevant ACS on the 2 March 2011 (Table 2-3). As part of the consultation process, RPS invited the registered ACS to provide culturally appropriate information which may or may not contain archaeological material, verbally or in writing, with regards to this Project (a feedback form was attached for use as necessary).

Table 2-3: Recipients of the assessment methodology

Organisation	Name of Representative	Date Methodology sent
Awabakal LALC	David Ahoy	02/03/2011
Westlakes Aboriginal Community	David Ahoy	02/03/2011
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	02/03/2011
Cacatua Culture Consultants	Donna & George Sampson	02/03/2011

Organisation	Name of Representative	Date Methodology sent
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost	02/03/2011

ACS who responded to the methodology are listed in Table 2-4. Figure 1-1

Table 2-4: Stakeholders who responded to the methodology

Organisation	Name of Representative	Date
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	28/03/2011
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost	28/03/2011

Feedback was received from two of the groups regarding the proposed methodology. The groups were agreed with the methodology. Copies of the comments received from these groups are included in Appendix 3.

Three stakeholders (Table 2-5) were invited to participate in the survey which was undertaken on 6 April 2011. Awabakal Traditional Owners Aboriginal Corporation (ATOAC) requested that Jodie Wilson be allowed to attend for training purposes in a volunteer capacity.

Table 2-5: Stakeholders who participated in the survey

Organisation	Name of Representative
Westlakes Aboriginal Community	Richard Strong
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer
Awabakal Traditional Owners Aboriginal Corporation	Jodie Wilson (Trainee)
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost

All registered ACS listed in Table 2-2 were provided with the draft report for comment and allowed 28 days for review as per the ACHCRs (DECCW 2010:14). The draft report was sent on 13 April 2011 for review and comment. Comments on the draft CHA were requested (either verbally or in writing) by 12 May 2011. Feedback was received from two of the groups following the survey. A record of comments received is summarised in Table 2-5 below and copies of the comments received from these groups are included in Appendix 4.

Table 2-6: Comments received on draft report

Organisation	Name of Representative	Date Received	Comments
Awabakal Descendants Traditional Owners Aboriginal Corporation	Shane Frost	1/5/2011	
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	9/5/2011	

The full consultation records including a Consultation Log are provided in Appendices 2 to 5.

3 Environmental Context

An understanding of environmental context is important for both the predictive modelling of Aboriginal sites and for their interpretation. The local environment provided natural resources for Aboriginal people, such as stone for manufacturing stone tools, food and medicines, wood and bark for implements such as shields, spears, canoes, bowls, and shelters, as well as areas for camping and other activities. The nature of Aboriginal occupation and resource procurement is related to the local environment and it therefore needs to be considered as part of the cultural heritage assessment process.

3.1 Geology

Aboriginal people often made stone tools using siliceous, metamorphic or igneous rocks and therefore understanding the local geology can provide important information regarding resources in a Project Area. The nature of stone exploitation by Aboriginal people depends on the characteristics of the source, for example, whether it outcrops on the surface (a primary source) or whether it occurs as gravels (a secondary source) (Doelman, Torrence et al. 2008).

The geology of the regional area comprises the Triassic Narrabeen Sandstones and the Munmorah Conglomerate Formation. This formation includes coal, conglomerate sandstones, siltstones, tuff and clay stones. The immediate Project Area is predominantly the Clifton Subgroup which comprises sandstone, interbedded sandstone and siltstone and claystones. Undifferentiated siltstones, claystones and residual pebbles and cobbles formed gravel beds and colluvial deposits along the creek lines.

The presence of tuff and sandstone in the Project Area is important for Aboriginal occupation of the area as silicified tuff was often used by Aboriginal people for manufacturing flaked stone tools; and sandstone was used for sharpening tools and ochre and seeds were sometimes ground in depressions in the sandstone. Overhangs and caves in sandstone cliffs and boulders were sometimes used for shelter. Rock engravings and grinding grooves may be found in areas of exposed sandstone or sandstone outcrops.

3.2 Soils

The erosional soil landscape of Gorokan and the alluvial soil landscape of Wyong occur in this part of the Mandalong area.

The Gorokan Soil landscape generally comprises of four dominant soil materials (gk1, gk2, gk3 and gk4). Topsoil in this landscape where present comprises loose dark brown loamy sand (gk1). Yellowish brown hard setting clay sand (gk2) underlies the topsoil which is between 10 and 40cm thick and pale yellow or orange in colour. The B horizon comprises yellowish brown or bright yellowish brown, strongly pedal clay (gk3) and 100cm-

150cm thick (Matthei 1995:7). The C horizon consists of light grey medium clay which occurs in deep subsoil above sandstone bedrock (gk4).

Two dominant soil materials have been identified in the Wyong soil landscape (wy1 and wy2). Topsoil is generally comprised of brownish black pedal loam (wy1) which is generally 20cm thick. The B horizon consists of mottled brownish grey plastic clay (wy1), 60->150cm thick.

The Project Area is characterised predominantly by duplex soils with clear to sharp horizon boundaries. A horizon soils are generally shallow and less than 100mm thick and therefore have low potential to contain stratified archaeological material. The clay and stony B horizon soils are generally severely eroded and have been exposed to the effects of water runoff and sheet wash erosion; the A horizon soils can be redeposited in the lower slope areas on a previously eroded B horizon (Kovac and Lawrie 1991:449). Both of these landscapes are residual and may contain soils which have formed over a long period of time by the *in situ* weathering of parent material. It would be expected that any artefacts that may occur in the area would be atop the exposed B horizon or in the shallow A horizon soils. Due to the extent of disturbances in the immediate Project Area it is unlikely that *in situ* artefacts will be found in these areas.

3.3 Topography and Hydrology

The local area is one of steep to rolling hills with occasional rock outcrops, a residual landscape characterised by gently undulating rises and low rolling hills, some areas of level to undulating alluvial and colluvial soil landscape and swampy low lying areas.

Lake Macquarie is one of the largest salt water lakes in Australia providing important food resources. The lake is an estuary with an opening to the sea at Swansea to the north east of the Project Area. The lake is the second largest estuarine fish producer in NSW (430 tonnes per year) and an important source of crustaceans and molluscs ([Department of Natural Resources](#) 2010). Channel levees, creek lines, swamps and lacustrine flood plains were suitable areas for procurement of resources including raw materials, flora and fauna.

A number of major creek lines flow into Lake Macquarie including Stockton Creek and Morans Creek, both of which lie to the west of the Project Area. The topography of the immediate Project Area is generally broad with slope gradients of less than 3% and local relief of less than 10m. There are no creek lines traversing the Project Area although the ground surface is swampy in the south western and northern parts of the Project Area.

The area would have been well resourced for a number of foods such as birds, fish, small mammals, yabbies and freshwater shellfish.

3.4 Climate

Approximately 18,000 years ago, climatic conditions began to alter which affected the movement and behaviour of past populations within their environs. During this time, notably at the start of the Holocene (more than 11,000 years ago), the melting of the ice sheets in the Northern Hemisphere and Antarctica caused the sea levels to rise, with a corresponding increase in rainfall and temperature. The change in climatic conditions reached its peak about 6,000 years ago (Short, 2000:19-21). Up until 1,500 years ago, temperatures decreased slightly and then stabilised about 1,000 years ago, which is similar to the temperatures currently experienced. Consequently, the climate of the Project Area for the past 1,000 years would probably have been much the same as present day, providing a year round habitable environment.

The Project Area is located in the Lower Hunter Region, which experiences a temperate climate. In the summer season the area will experience onshore winds that are warm to hot and humid wet weather. In the winter season, offshore winds produce cool to mild drier weather with frosts in low lying areas. Summer and autumn are the wettest seasons with an average rainfall of approximately 840mm and the temperatures can range between 6 degrees and 30 degrees Celsius.

3.5 Flora and Fauna

According to broad scale vegetation mapping for NSW (Keith 2002), the Coastal Heath Swamp vegetation community is within or in close proximity to the study area. In the past, this vegetation community could have provided a number of suitable resource plants and fauna. The broader area could have supported animals such as birds, fish, shellfish frogs, freshwater turtles, lizards, snakes, kangaroos, wallabies and other smaller, mammals (Keith 2006:206-207).

Lake Macquarie to the east of the Project Area was an important source of food with shellfish and fish abundant (Threlkeld in Gunson 1974:54-56). The Aboriginal people could have utilised these resources for the provision of food, the making of tools, clothing, the production of weapons, utensils and shelter. Evidence for consumption of such faunal species has been recovered from Aboriginal archaeological excavations in the Sydney basin region (Attenbrow 2002:72-73). The hides, bones and teeth of some of the larger mammals may have been used for Aboriginal clothing, ornamentation, or other implements.

The soils in the broader area could have supported densely treed areas, with larger trees such as eucalypt species on the upper and mid slope areas and water tolerant shrubs and trees in the low lying swampy areas.

3.6 Synthesis

Overview of the broader environmental context indicates that there were likely raw material sources such as mudstone and tuff which were important sources of stone for the production of artefacts. The flora and fauna of the broader region, of which the Project

Area is a small part, suggests a wide variety of both terrestrial and aquatic species were available as potential resources. Thus the environmental context suggests that the Project Area would have formed part of a much larger area that would have been an ideal location for Aboriginal occupation.

4 European Historic Heritage Context

4.1 Historical overview – Regional History

In 1800 Captain William Reid became the first European to make his way into Lake Macquarie. Sent from Sydney to collect coal from the mouth of the Hunter River he mistook the channel for the river estuary, ventured inside and encountered some members of the Awabakal tribe, who then occupied the area from the bank of the Lower Hunter to the southern and western shores of Lake Macquarie (Clouten 1967). After he inquired about coal deposits in the area, the Aborigines directed him to some embedded in the headland. It was only upon his return to Sydney that he realised his error regarding the waterways. The lake was known as Reid's Mistake until 1826 when it was renamed in honour of Governor Lachlan Macquarie (Clouten 1967).

Reid's discovery excited no initial interest as Newcastle was, at the time, a penal settlement which the government wished to keep isolated from Sydney. Eventually pressure from settlers wishing to move into the Hunter Valley caused the penal settlement to be removed to Port Macquarie (Clouten 1967).

Lieutenant Percy Simpson was the first European settler in the Lake Macquarie area (Mullard 2002). He received a 2000-acre grant in 1826, was assigned six convicts who cleared the land, grazed cattle, and built a homestead and stockyards near a ford over Dora Creek (Mullard 2002). He left after two years but one of his convicts, Moses Carroll, stayed on as a stockman and was made constable of the area in 1834 (Mullard 2002).

The logging of the area for cedar and other valuable timbers continued as settlers such as Simpson introduced cattle and crops such as wheat. Growth of the area continued with the opening of a trail from Wisemans Ferry via Cooranbong to Wallis Plains in 1831 (Clouten 1967).

The extraction of timber from the western lake area led to the establishment of the villages of Cooranbong, Dora Creek and Eraring. The timber, where possible, was floated down Dora Creek to the lake where it was loaded on to boats for shipment. The area became renowned as a haunt for bushrangers and cattle thieves, who preyed on people using the established tracks to access the Hunter Valley (NSW National Parks and Wildlife Service 2005:22).

The western side of Lake Macquarie remained largely undeveloped relying on fishing and recreational activities in the late nineteenth and early twentieth century. In the mid to late twentieth century the building of power stations and coal mines was paralleled by the growth in residential suburbs (Lake Macquarie City Council 1993).

The Shire of Lake Macquarie was proclaimed on 6 March 1906 (Lake Macquarie City Council 1993). It became a Municipality on 1 March 1977 and a city on 7 September 1984 (Lake Macquarie City Council 1993). Today the City of Lake Macquarie is home to

several prominent coastal suburbs and has a significant coal mining industry and smaller agriculture and manufacturing industries.

4.2 Local Area History

Henry Osborne and Thomas Walker first bought land in the Mandalong area in 1838 (Lake Macquarie City Council 1993). In 1852 Carl F. Solling purchased his first acreage although he had probably occupied the area from an earlier date. Solling is regarded as the first permanent settler in Mandalong as others such as the Osbornes and Walkers only used their land for cattle and did not settle in the area. In 1861 the families of James Charles Bonnell and John Kelly moved to the Mandalong district for timber and dairying (Lake Macquarie City Council 1993).

Joseph Frost is believed to have arrived in the area some time prior to 1935 as a convict and was assigned to Thomas Moore at that time (Pers. Comm Shane Frost, letter dated 30 April 2011). Joseph Frost married Eliza Soloman (or Selman) in 1839 and received his ticket of leave dated 1 October 1837 allowing him to stay in the Brisbane Water district. He received his Conditional Pardon on 13 August 1845 and purchased 40 acres in the area in the mid 1860s (Shane Frost pers.comm 2011). It is recorded that in 1864 Joseph and Eliza Frost ran a horse and cattle farm (Lake Macquarie City Council 1993).

Mandalong had a small population of farmers and timber-workers by 1870 (Lake Macquarie City Council 1993). Most early settlers were Roman Catholics and they had erected a church by 1876 (Lake Macquarie City Council 1993). In the 1840s a new route for the Old Maitland Road was surveyed but owing to the severe depression the project was shelved. The timber industry declined and the soil was not good enough for successful farming on a commercial scale. Mandalong became a quiet backwater which is now regaining popularity as a hobby farm area (Lake Macquarie City Council 1993).

The first Post Office in Mandalong was opened on the 16 October 1884 and closed on the 19 July 1892 (Lake Macquarie City Council 1993). The Post Office reopened on 1 September 1892. A provisional school opened from 1872 to 1873 and re-opened in November 1878 with George Taylor as the school master (Lake Macquarie City Council 1993). The school operated as a half-time school until July 1894. In 1876 a private school operated from the Catholic Church. Its status changed to that of a provisional school in 1899, to a public school in 1910, and to a provisional school in 1932. This school closed in December 1947 and the building was removed to Sunnywood (Freemans Waterhole) in 1953 (Lake Macquarie City Council 1993).

4.2.1 Simpsons Track Convict Road

Simpsons Track was developed as a branch of the convict built Great Northern Road. At one point Simpsons Track was promoted by interested parties to be developed as the main route to the Hunter Region. It was determined however, that the path to the more affluent mid and upper Hunter Region, centred on Maitland, demanded the route now known as the Great Northern Road be taken.

It is documented (Convict Trail 2006) that Aboriginal tracks dating to the pre-contact period mostly dictated the route taken by Simpsons Track. This has been reinforced via GIS predictive mapping by RPS HSO (2008) of the likely travel paths of pre-contact Aboriginal populations. Taking into account the abundance of water and resource zones for food gathering, the model clearly shows that the path now known as Simpsons Track was particularly well situated in relation to feed and watering opportunities for later European settlers. Thomas Simpson's land was a large landholding situated at the navigable head of Dora Creek and subsequently the track took its name from him.

Simpsons Track was mostly unformed, but was suitable for horse drawn transport. The only built section of the track was at the descent from Ten Mile Hollow to Mangrove Creek which is outside the Project Area. This building activity occurred concurrently with works on the Great Northern Road which was built between 1826 and 1836. There is now no remaining indicator of the actual route of Simpson's Track but it is possible that it followed approximately the current Mandalong Road, given that it would have followed valley floors and gentle slopes to accommodate horse drawn vehicles.

4.2.2 Brisbane Water to Wallis Plains Road

Work undertaken by Nexus Archaeology and Heritage (2007) identified the probable path of the original Brisbane Water to Wallis Plains Road. Maitland is now the name of the area formerly known as Wallis Plains. There has been some confusion as to whether this particular road was constructed using convict labour and it appears that this term came into use prior to the 1998 Cooranbong Colliery EIS study when it was used by a property owner in an attempt to deter approval of the Life Extension Project. A former landowner, Mr Hanlon, referred to the road on his property as being convict built (pers. comm. P. Rheinberger 17.12.2008). Despite the fact that this road has been known colloquially as the 'Convict Road', there appears to be no evidence supporting this claim.

There is a single road fragment remaining near to Stockton Creek recorded by Nexus Archaeology in 2007. The subsequent report included a management plan for this area. There is no other known archaeological material evidence on the ground to confirm the portion of the Brisbane Water to Wallis Plains Road (Nexus Archaeology and Heritage 2007).

4.3 Historic Registers

The Australian Heritage Database is managed by the Australian Government Department of Sustainability, Environment, Water, Population and Communities. It contains more than 20,000 places of natural, historic and Aboriginal significance. The Australian Heritage Database is an online database of items listed under the Commonwealth Heritage List, National Heritage List and the Register of the National Estate.

The State Heritage database is maintained by the NSW Heritage Branch and lists all items that have been identified to be of heritage value on Regional Environment Plans (REP) and Local Environment Plans (LEP) throughout NSW. The State Heritage Register lists those places which are of State and Local Significance.

4.3.1 Commonwealth Heritage List

The Commonwealth Heritage List controls the Australian Heritage Database and maintains a record of all items that have been identified as being of heritage value. The Commonwealth Heritage List records those places which are of Commonwealth Significance.

The search of the Commonwealth Heritage List identified no Commonwealth Significant items relevant to the Project Area.

4.3.2 NSW State Heritage Branch Register

The State Heritage Register lists those places which are of State Significance.

A search of the online database identified no items of statutory heritage significance in relevant to the Mandalong Project Area.

4.3.3 Lake Macquarie Local Environment Plan

Heritage schedules are listed in local government environmental plans. European and some Aboriginal items of significance having heritage value can be listed in local environmental plans. The *Lake Macquarie City Council LEP 2004* lists items of significance at the local government level of heritage significance within a local government area.

A search of the *Lake Macquarie City Council LEP 2004* identified no listed items of Heritage for the Mandalong locality.

[Schedule 4: Lake Macquarie LEP \(2004\)](#)

4.4 Discussion

A search of the Commonwealth, State and Local Government Heritage registers listed above has yielded no items of heritage significance in the Project Area.

4.5 Conclusion

As no heritage listed items are listed in the Project Area it is considered that the proposed works will not impact items of heritage significance.

5 Aboriginal Heritage Context

The Aboriginal heritage assessment process requires that the significance of Aboriginal sites within a Project Area is assessed. It is important that Aboriginal sites are contextualised within the local and regional landscape, in order for significance can be assessed. The Aboriginal heritage context is also needed in order to develop a predictive model of Aboriginal sites in the Project Area. Historical information also provides additional information for the interpretation of archaeological sites.

5.1 Historic Records of Aboriginal Occupation

It is important to acknowledge that early historical documents were produced for a number of reasons and thus may contain inaccuracies and/or bias in their reporting of events or other aspects of Aboriginal culture (L'Oste Brown 1998). Nonetheless, some historical documents provide important information and insights into local Aboriginal customs and material culture at the time of non-Indigenous settlement and occupation of region.

Attenbrow (2002) notes that historic ethnographic records exist that document languages and language groups but there is no definitive identification of groups or boundaries. There was no systematic recording of the information and many of the accounts were brief. She also states that some of the present groups use language names and boundaries are not necessarily those recorded by the early surveyors and settlers. The Aboriginal people of the Lake Macquarie region were known as the Awabakal and according to Tindale (Tindale 1974).

There is ethnographic evidence of interaction and communication between the clans, with Threlkeld reporting on the Awabakal visiting the Tuggara Beach tribe and interaction between the Worimi and the Wonnaruah (Tindale 1974). Within the Awabakal people were clan groups with the Cooranbong clan on the western shores of the lake (Tindale 1974). The Cooranbong clan area consisted of lowland plains and fresh water creek systems.

Henry Dangar (Dangar 1828:95-96), when surveying the Lake Macquarie region, commented on the abundance of wildlife including ducks, kangaroos, swans, pigeons, quails and seafood such as fish and oysters. He noted that the area would suit a gentleman fond of shooting, hunting and fishing.

Reverend Lancelot Threlkeld established a mission for Aboriginal people first at Belmont (Threlkeld in Gunson 1974) on the eastern shores of Lake Macquarie and later at Toronto on the western shore. Threlkeld recorded in detail the daily life of the Awabakal people. In detailing their resource gathering strategies he observed that the lake provided an abundance of fish and that Aboriginal people used canoes to exploit estuarine resources. Threlkeld also accompanied them on hunting expeditions and noted their adeptness in using spears (Threlkeld in Gunson 1974).

Cooksey (Cooksey 1926) surveyed the river and coastal area south from the Hunter River to the entrance of Lake Macquarie recording what he termed as sites and factories of stone tools at the areas now known as Bar Beach, Dudley, Redhead Lagoon, and Swansea Heads. In a later paper Cooksey (Cooksey 1926) describes the factories or campsites as containing:

“heaps of burnt stones, all that is left of rough fireplaces and occasionally large pieces of sandstone are met with that appeared to have been used as anvil blocks. A few highly coloured small pebbles and pieces of crystalline quartz that may have been used by the medicine men to work magic. Animal remains are represented by a few bones of birds and marsupials, the shells of many sorts of saltwater fish and one small piece of bone that formed the gorge of a native fish hook. The only other relics worth mentioning are pieces of yellow and red oxide of iron ready for grinding into colouring matter”.

The toolkit of the Awabakal included a diverse range of implements with high frequencies of flaked stone artefacts recorded by Dyal (Dyal 1972:168-175) during survey work in the Dudley - Jewells Swamp area on the north eastern side of Lake Macquarie. Stone such as chert, silcrete, mudstone, and similar, was used to fashion implements such as knives, scrapers, hatchet heads and choppers.

Turner and Blyton (1995:19) described the resources utilised. Wooden implements included a variety of spears and woomeras (spear throwers). Nullah nullahs (hard wooden clubs) were used and bark shields were also part of the armoury. Hatchet handles were fashioned from wood with the gum of *Xanthorrhoea* and fibre used to secure the stone hatchet head to the handle (Turner and Blyton 1995). Coolamon, bowls for carrying water, were made from wood or sheets of stringy bark. Bone needles were used for fashioning garments and stone and shell scrapers used for processing skins. Fishing lines using fibre and hooks fashioned from Turban shell were used to catch fish. (Turner and Blyton 1995)

5.2 Aboriginal History after European Contact

The first recorded evidence of Europeans visiting the Lake Macquarie area was in 1800, when Captain William Reid mistook the Lake's Channel for the mouth of the Hunter River (Clouten 1967). In 1801 the Lake entrance was again confused with that of the Hunter River when the vessel the Lady Nelson with Lieutenant Colonel William Paterson and his party on board was nearly wrecked while attempting to cross the bar (Clouten 1967). The surgeon John Harris went ashore and was met by a friendly party of Awabakal. These included a native who called himself Budgeree Dick and used the word whaleboat. Budgeree Dick joined the Lady Nelson on its voyage to the Hunter River then disappeared the day after disembarking there. Some days later Budgeree Dick returned with two natives, one who had met Lieutenant Colonel Paterson in Sydney (Turner and Blyton 1995).

From the discovery of coal at the Hunter River by Shortland in 1797 until the establishment of a penal colony there in 1804 the area was regularly visited by parties to extract coal and timber (Clouten 1967). While contact between the Awabakal and the

Europeans had previously occurred it was the establishment of a permanent settlement at Newcastle that drastically changed the way of life for the Awabakal people.

5.3 Regional Archaeological Heritage Context

The earliest evidence of Aboriginal occupation around coastal Lake Macquarie was obtained through the dating of occupation sites, middens, at Swansea Head north east of the Project Area. The site uncovered by Dyll in 1972 provided evidence of occupation 8,000 years ago (Turner and Blyton 1995). At Pinny Beach, south of Swansea Heads and approximately archaeological investigation revealed occupation sites dated to 1200 ± 60 years BP (Donlon 1991).

In 1986 Haglund was commissioned by Lake Macquarie City Council to produce an assessment of the prehistoric heritage of the Lake area (Lake Macquarie City Council 1993). Using a combination of interviews and desktop research the author found that the lifestyle of the inhabitants would have resulted in few records remaining within the environment. This assessment was confirmed by subsequent archaeological survey.

Tools, weapons, utensils, housing and food stuffs are organic material that are rarely preserved. The most durable remnants were stone tools and shell debris from shellfish meals (Haglund 1986). The conclusion was that the limited number of site types identified did not fully reflect the Aboriginal culture or their use of the environment. Those sites identified were shell middens, open or camp sites, rock shelters, engraving and art sites, stone arrangements, ceremonial sites, burials, axe grinding grooves or mythological sites (Haglund 1986).

The ecological diversity of the Lake Macquarie environment would have provided rich food resources. The environmental range includes dry sclerophyll forests, freshwater creeks and the wetlands and lacustrine environment of Lake Macquarie. The lake, freshwater creeks and lagoons provide a resource rich environment with a range of water birds, fish, shellfish, terrestrial animals and plant species (Haglund 1986). Extensive shell middens around the lake foreshore attest to the regular occupation of the local landscape by Aboriginal people.

Haglund (1986) concluded that the Aboriginal people exploited the resources of the open and rocky coast as well as swamp and hilly hinterland. It was also found that the preferred resource areas were likely to be the coastal strip and the swampy margins of the lake while the western rugged area was less popular.

Haglund (1986) provides a settlement model of the Aboriginal people in this region based on the resource rich areas of Lake Macquarie, the wetlands that fringe the Lake, and the hinterland including the Watagan Mountains to the west. The lake foreshore with an abundance of resources and the considerable number of sites has led most researchers to believe that this was the preferred environment of the Aboriginal people with the hinterland forest areas used for short term foraging and hunting.

5.4 Local Archaeological Heritage Context

The local Aboriginal heritage context provides a review of previous archaeological work conducted in the local landscape, identifies whether Aboriginal sites have been previously recognised (AHIMS search) in the Project Area and informs the predictive model of Aboriginal sites for the Project Area. The review of previous archaeological work includes relevant local research publications as well as archaeological consultancy reports. Two types of archaeological investigations are generally undertaken; excavations and surveys. Archaeological excavations can provide high resolution data regarding specific sites, such as the dates or chronology of Aboriginal occupation and information on stone tool technology (reduction sequences, raw material use, tool production, usewear and retouch). Archaeological surveys generally cover wider areas than excavations and can provide important information on the spatial distribution of sites. The detection of sites during survey can be influenced by the amount of disturbance or erosion and therefore sensitivity mapping is sometimes also required to interpret survey results. The local Aboriginal heritage context also provides a framework for assessing local significance.

5.4.1 Aboriginal Heritage Information Management System (AHIMS)

A search was undertaken of the Aboriginal Heritage Information Management System (AHIMS) on 3 December 2010 with a summary of results presented in Table 5-1 and full results in Appendix 6. The search results encompassed AGD Zone 56 Eastings 342000-362000 and Northings 6322000-6342000 and indicated that at that time there were 111 previously recorded Aboriginal sites across the regional area that also encompasses the Project Area. The AHIMS database results do not include details of sites that may have been found in recent surveys and had not been registered at the time of undertaking the AHIMS search. The search showed there were no Aboriginal sites in the immediate Project Area. A full glossary of Aboriginal site types is available in Appendix 7.

Table 5-1: Summary of AHIMS Results

Site Type	Frequency
Artefacts/ open camp site number unspecified	44
Isolated finds	20
Grinding grooves	15
Water hole /grinding groove	1
Rock shelter	3
Shelter with art	9
Shelter with deposit	1
Shelter with art/ deposit	1
Midden	6
Shell, artefact	1
PAD	4
Shell, PAD	1
Modified/scarred tree	5
TOTAL	111

The AHIMS search suggests that the most predominant site types are artefact scatters (n=44) and isolated artefact (n=20). The presence of both rock art sites and grinding grooves indicates that sandstone outcrops are likely to be present in the regional area although there are unlikely to be any in the Project Area as it is highly disturbed and is located in low lying swamp lands. The recording of shell middens are from areas in association with adjacent waterways such as Lake Macquarie to the east of the Project Area and it is unlikely that shell middens will be found in the Project Area. Modified scarred trees are rare (n=5), probably due to the extent of land clearing in the regional area.

In brief, the results indicate that artefact scatters and isolated finds (both defined by the presence of stone artefacts) are the principal site type (n=64). The next most frequently recorded site types were grinding grooves, including axe grinding grooves (n=15) plus one grinding groove site with a waterhole (n=1) and shelters (n=3), plus shelter with art (n=9), shelter with deposit (n=1) and shelter with deposit and art (n=1). Middens (n=6), shell with artefact (n=1) and shell with PAD (n=1) are located close to Lake Macquarie. Potential archaeological deposits (n=4) were also recorded. Thus sites containing stone artefacts are the predominant site type reflected in the results of this AHIMS search of the broader area.

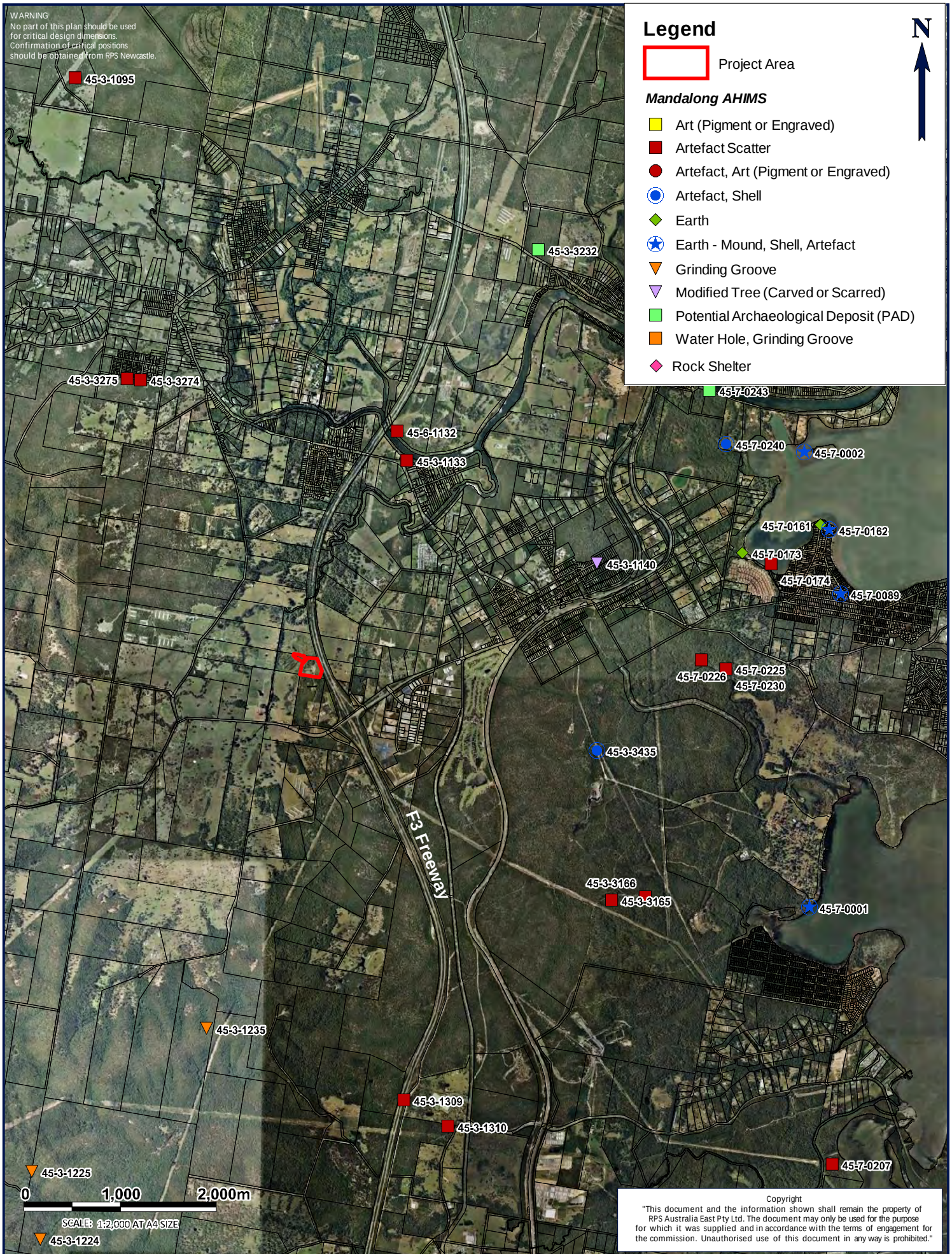
WARNING
No part of this plan should be used
for critical design dimensions.
Confirmation of critical positions
should be obtained from RPS Newcastle.

Legend

Project Area

Mandalong AHMS

- Art (Pigment or Engraved)
- Artefact Scatter
- Artefact, Art (Pigment or Engraved)
- Artefact, Shell
- Earth
- Earth - Mound, Shell, Artefact
- Grinding Groove
- Modified Tree (Carved or Scarred)
- Potential Archaeological Deposit (PAD)
- Water Hole, Grinding Groove
- Rock Shelter



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TITLE: FIGURE 5-1 PROJECT AREA
WITH AHMS

LOCATION: MANDALONG

DATUM: N/A
PROJECTION: MGA ZONE 56 (AGD 94)

DATE: 2/06/2011
PURPOSE: ABORIGINAL & EUROPEAN
ARCHAEOLOGICAL ASSESSMENT

LAYOUT REF: Abatement\10-Drafting\Archaeology Drafting
MapInfo Workspaces
VERSION (PLAN BY): C A4 (AN - NW)

CLIENT: CENTENNIAL COAL PTY LTD
JOB REF: 106835

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au

RPS

5.4.2 Regional Archaeological Studies

Dyall. 1966-1991. Lake Macquarie Sites.

This document is a compilation of personal site records compiled by Professor Len Dyall. A number of sites were identified within the Lake Macquarie area which lies to the east of the current study area. Styles Point: seven artefacts were identified along the lake shore and one observed underwater near an onshore midden. The artefacts identified included an edge ground axe, flakes and scrapers. Wangi Wangi: Area 1 comprised a shell midden with cockles and two flaked stone artefacts; Area 2 was two metres above HWM (High Water Mark) and included cockles, oysters and approximately 35 flaked stone artefacts. Area 3 was a midden located approximately 30 metres above HWM (Dyall 1961 - 1991).

Donlon, D. 1991, Archaeological survey, Eraring Power Station

Twelve hectares of land surrounding Eraring Power Station were surveyed and the investigation was conducted to the north east of the current study area. The survey area comprised east facing slopes within the Lake Macquarie hinterland which were vegetated by dry sclerophyll forest. A small creek was located at the north-eastern end of the study area. No Aboriginal sites were identified and given the highly disturbed nature of the study area, including vehicle tracks, electricity easements and clearing, it was concluded that no in-situ archaeological material was likely to remain (Donlon 1991).

Officer, K Navin, K and Saunders, P. 1996. Test Excavations, Mannering Bay

This study was commissioned by Pacific Power to carry out a subsurface investigation of a previous archaeological site, located at 'The Hole 1, Mannering Bay', to the south east of the current study area.

The investigation comprised: a surface survey; a subsurface testing and a salvage program including artefact analysis. A total of 137 artefacts were recorded, 95 of which were on the surface and a total of 42 artefacts were contained within seven of the eight test pits. It was concluded that based on surface and subsurface artefact densities that the low lying swampy ground adjacent to the elevated spurline and crest was the preferred occupation zone with density of artefacts increasing closer to the shoreline of the lake.

Artefact analysis of the 137 artefacts identified that the rhyolitic volcanic tuff (36%) was commonly used as a raw material followed by acid volcanic rhyolite, igneous rock (19.5%), chert (13%), quartzite (11.5%), quartz (1%), jasper (1%) and unidentified stone raw materials (1). While a detailed investigation of raw material procurement was not undertaken, it was noted that 12% of the artefacts had alluvial pebble cortex indicating that locally occurring conglomerate cobbles may be a potential raw material source.

Backed blades and microblades, associated with the Small Tool Tradition, were identified. Artefact types included flakes microflakes, blades, microblades, backed blades, cores, blade cores, hatchet head, flaked pieces and manuports.

The authors concluded that the key topographic feature of the site was the elevated basal and spurline slope adjacent to the shoreline of Mannering Bay and Wyee Creek. They considered that artefact manufacture and tool utilisation occurred at the site; raw material was imported probably from local sources; shellfish was not utilised; significant variation in artefact density across the site suggested spatial or temporal differentiation although the small sample precluded definitive analysis; and lithic technology indicated the site was probably occupied in the last 5,000 years.

It was considered by the author that if the area had been used as a base camp, the exploitation of shellfish would be expected. As shell was not present, the author concluded that the site was likely to have been used as a temporary camp site (Officer, Navin et al. 1996).

Roberts, L. 2001. An archaeological survey at Buttaba.

An archaeological survey was conducted over an area off Buttaba Hills Road, Buttaba, approximately thirteen kilometres from the current study area. The report did not provide enough detail to determine the exact survey location; however the survey area included a creek line, slope and ridge line with both native and exotic regrowth vegetation. No exposed rock surfaces were present. No Aboriginal cultural heritage sites were identified during the survey (Roberts 2001).

Insite Heritage. 2005 Archaeology Assessment, Dora Creek.

An archaeological investigation was carried out for a proposed re-zoning of 30 hectares off Coorumbung Road, Dora Creek. Dora Creek is approximately 5 kilometres from the current study area. The study area comprised a spur with drainage lines that lead to Dora Creek approximately 250 metres south. Surface visibility was poor and no Aboriginal cultural heritage sites were located during the survey. It was determined that there was potential for sub-surface deposits and it was recommended that sub surface testing be undertaken in the northern sector of that study area to determine if subsurface archaeological deposits existed (Insite Heritage 2005).

Lake Macquarie City Council & Umwelt. 2009. Sustainable Management of Aboriginal Cultural Heritage, Lake Macquarie Local Government Area.

The Lake Macquarie Aboriginal Heritage Management Strategy included archaeological sensitivity mapping and was developed over a period of six years. A culturally sensitive foreshore area was identified by the working group that is located within five to fifteen kilometres of the current study area. This is consistent with the recording of all foreshore areas that have not been subject to residential development being listed as sensitive and reflects the high number of foreshore middens in these rich resource areas (Umwelt 2009).

5.4.3 Local Archaeological Studies

Sinclair Knight Merz. 2004 Mandalong Mine Methane Drainage Plant and Coal Haulage: Statement of Environmental Effects.

The study area for this Statement of Environmental Effects (SEE) included a proposed methane gas drainage plant and a proposed haulage road. The study area was adjacent

and to the west of the F3 Freeway and to the north of the main access road to Mandalong Mine. Sinclair Knight Merz noted in the SEE (2004) that the area for the Mine Access Site had been previously surveyed and no Aboriginal sites had been identified. They also stated that due to the high disturbances in the area, that there was no likelihood of any sites in this area. It is noted that the Study Area for the 2004 SEE is within the Project Area for this modification.

Umwelt. 2006 Statement of Environmental Effects for Mandalong Mine: Installation and Operation of Enclosed Methane Gas Flare Units.

This (SEE) (Umwelt 2006) noted that the location for the proposed enclosed methane gas flare units had been surveyed during the Environmental Impact Assessment (EIS) process for the original development application for Mandalong Mine by Umwelt (1997). During this survey all tracks and clearings in and around the perimeter of the Mine Access Site were inspected and it was stated by Umwelt that no Aboriginal sites were detected and that as the site had been previously cleared and stripped of topsoil, no Aboriginal sites were likely to be found at this location. In addition, no European Heritage sites were likely to be identified. It is noted that the Study Area for the 2006 SEE is within the Project Area for this modification.

Indigenous Outcomes. 2008 Mandalong Mine Modification to Development Consent: Aboriginal Archaeological & Cultural Heritage Assessment.

This cultural heritage assessment was commissioned by Hanson Bailey for inclusion in the Environmental Assessment (EA). The EA was for a modification to the existing development consent for the construction of gas engines for the methane drainage plant, relocation of ballast borehole; increase the rate of Run of Mine (ROM) coal extraction and updating subsidence conditions. Indigenous Outcomes (2008) noted that the high frequency of disturbances to the study area and previous land use practices would have destroyed or damaged any Aboriginal archaeological objects or sites and that it was unlikely that there would be any *in situ* subsurface artefacts. Disturbances to the area include electricity easement, fencing, land clearing, seeding of pasture grass and cattle grazing in addition to mining infrastructure and the F3 Freeway. Site types identified in the vicinity of the survey area were six artefact sites, one scar tree and one axe grinding groove site. The study identified that the most likely site types would be open campsites in areas of low gradient associated with watercourses and artefact densities would be most likely near major creeks. The results of the survey were that as there were no Aboriginal cultural heritage sites identified within the study area that the archaeological significance of the area was low and there were no constraints to the proposed development works.

5.5 Predictive Model for Archaeology in the Study Area

A predictive model is created to provide an indication of the types of Aboriginal sites likely to occur within the Project Area. It draws on the review of the existing information from the regional and local archaeological context as well as the environmental context. The predictive model is necessary to formulate appropriate field methodologies and to provide information for the assessment of archaeological significance. .

There are a number of factors which influence Aboriginal occupation of an area. On a regional basis landscape features such as ridges, crests, flat elevated areas, terraces and creek lines may have provided suitable shelter and resources that may have influenced Aboriginal occupation of an area. Essential subsistence resources such as food (flora and fauna) and fresh water were key factors; however other resources such as stone raw materials, wood and bark, animal skins and reeds for basket weaving and string were also sought. In addition, cultural activities may have also taken place at certain locations or places in the landscape for example corroborees, mythological ceremonies, initiation sites and similar.

5.6 Site Predictions

The following site predictions for the Project Area have been made on the basis of the environmental context, available historic observations of Aboriginal people in the region, archaeological studies and analysis of the AHIMS data.

5.6.1 Site Type

As the Project Area is located on gently sloping and flat lying swampy ground, the most likely site type likely to occur in the Project Area is isolated finds and artefact scatters. Open camp sites containing artefact scatters are often considered to reflect persistent use a place with the finding of more than one artefact. These site types can occur across a range of landform types though generally there are sources of fresh water within close proximity. Areas with nil to low slope are preferred for campsites. Scarred trees are unlikely as the area has been previously disturbed by land clearing, previous farming practices and mine activities. There are no rock outcrops in the immediate area and therefore rock shelters are not likely to be present. The Project Area is in low lying swampy lands and therefore there may be grinding grooves nearby along the creek lines. However as no creek lines traverse the Project Area it is unlikely that grinding grooves will be found. Midden material is generally found in the regional area close to Lake Macquarie although fresh water shellfish may be found in the local area.

5.6.2 Site Locations

The majority of artefact scatters and isolated finds in the broader area were identified within 100m of a perennial watercourse. There are no creeks or rivers in the Project Area. No Aboriginal sites or objects have been identified in the Project Area which is highly disturbed and poorly drained.

5.6.3 Site Contents

A review of previous archaeological investigations indicates that artefact scatters and isolated finds generally comprise flaked stone artefacts made from the following stone raw materials: chert, silicified tuff, quartzite, mudstone and silcrete although it is considered unlikely that sites with artefacts will occur within the Project Area.

6 Archaeological Field Survey

6.1 Survey Methodology

The following survey methodology was followed for the Project Area.

6.1.1 Survey Aims

The purpose of the survey was to inspect ground surfaces and observe exposed areas for Aboriginal objects or sites including artefact scatters and isolated finds and or other visible features such as grinding grooves, engravings and scarred trees and assess whether potential archaeological deposits are present in the Project Area. The survey also aimed to record any cultural sites or Aboriginal landscapes, if identified by the Aboriginal stakeholders.

6.1.2 Sampling Strategy

The purpose of a sampling strategy is to provide a framework for conducting archaeological surveys in a manner which can be quantified and thus can be compared to other survey reports in the local landscape and for regional comparison. The sampling strategy used for this assessment targeted all landforms which may be impacted by the proposed development and where possible, targeted landforms which had been identified as having archaeological potential on the basis of background research.

The landform which would be impacted by the proposed development was identified as a modified landform in a previously low lying, gently sloping wetlands and swamp area. The survey was to be undertaken on foot in order to gain maximum survey coverage. The fenced compound areas were not to be inspected as they had been investigated during the course of previous survey works.

6.1.3 Field Methods

The survey was conducted on foot (pedestrian) and targeted the landforms identified in the survey strategy above. The area surveyed was recorded in survey units. Each survey unit was mapped and recorded in accordance with landforms, Project Area boundaries, impact area boundaries, changes in survey conditions (such as visibility or ground surface exposure) and/or other relevant considerations. The mapping of survey units was undertaken on the basis of GPS recorded data and with reference to aerial and topographic information. The recording of survey units was undertaken using representative digital photographs and field notes which included observations of soils, ground surface exposure and visibility, vegetation cover, rocky outcrops, levels of ground surface disturbance, erosion and similar observations. The field notes provide a basis for the reporting of survey coverage and calculating survey effectiveness as presented in the survey results section. It is required that any Aboriginal sites identified are recorded and submitted to the AHIMS database. Such recording involves the documentation of the material traces of past Aboriginal land use, including the spatial extent of sites, as well as any other obvious physical boundaries. Aboriginal cultural sites identified by Aboriginal

stakeholders may not always involve material traces and boundaries of such sites need to be mapped on the basis of information provided by the registered ACS. The position of such sites need to be recorded by GPS receivers and mapped accordingly.

6.2 Survey Units

A pedestrian survey of the Project Area was undertaken on 6 April 2011 by RPS Senior Archaeologist Gillian Goode, in participation with three of the ACS who had registered their interest in the project (Refer Table 2-4). The Project Area was divided into survey units (Figure 6-1); exposure and visibility for each survey unit was assessed according to the criteria listed in Table 6-1 and the survey coverage for the Project Area was recorded in Table 6-2. The area was highly disturbed. Disturbances included stockpiled soils, existing formed access tracks, fencing and building works.

Survey Unit 1

This survey unit comprised a densely treed, flat lying swamp area (Plate 1) adjacent and to the south of a formed dirt access track. There was some erosion evident alongside the road although leaf litter and long grass hindered visibility closer to the trees. Disturbances in this survey unit included fencing and road gravels washing from upslope. Visibility was moderate.

No Aboriginal sites or objects were identified in SU1.

Survey Unit 2

Survey Unit 2 was along the western boundary of the Project Area and comprised a modified landform with the excavation and piling of soils to form a drainage channel and disturbances from the adjacent electricity easement (Plate 2). There were sandstone cobbles on the surface of the contoured bank and erosion from water runoff was evident. Visibility was moderate.

No Aboriginal sites or objects were identified in SU2.

Survey Unit 3

Survey Unit 3 was a modified landscape which comprised completely cleared land which had been used during the construction of the VAM infrastructure. There was no original topsoil in the compound area and much of the landscape was swampy and disturbed by drainage works (Plate 3). A drainage channel had been excavated to drain water from the compound area. Visibility was high.

No Aboriginal sites or objects were identified in SU3.

Survey Unit 4

This survey unit on the north western boundary was highly disturbed and the landscape modified from the stockpiling of soils, fencing, access tracks and drainage works. There were pebbles and cobbles on the surface of the piled soil and long grass and weeds predominated in this part of the Project Area (Plate 4). Visibility was moderate.

No Aboriginal sites or objects were identified.

Survey Unit 5

Survey Unit 5 was a low lying muddy area which was lightly treed. The area had been previously disturbed by animals burrowing, fencing works and land clearance works (Plate 5). There was regrowth vegetation across the survey unit. The ground surface had a number of exposures with re-deposition of A horizon soils, evidence of water runoff and exposed B horizon soils in some areas.

No Aboriginal sites or objects were identified.

Survey Unit 6

This survey unit was in low lying swampy grounds. The area had been previously ploughed and showed effects of inundation. Fencing works and piling of soils had further disturbed the area (Plate 6).

No Aboriginal sites or objects were identified.

Survey Unit 7

This survey unit was comprised of imported soils and gravels. The stockpiled materials were used for road base and fill and contained no artefact material. It is anticipated that stockpiled soils will be used during the course of the proposed works.

No Aboriginal sites or objects were identified.

Survey Unit 8

A formed dirt track provides access to the existing mine infrastructure and is in use by mine vehicles. The track was formed from excavated fill and imported gravel. No artefacts or objects were identified along the length of the track or in the area used by vehicles for turning and for access to a fire hydrant (Plate 8).

No Aboriginal sites or objects were identified.

Survey Unit 9 – RTA Stockpile

This RTA stockpile area was highly disturbed and the landscape modified from the stockpiling of soils, access tracks and drainage works. There were pebbles and cobbles on the surface of the piled soil and long grass and weeds predominated in this part of the Project Area. It is anticipated that these soils may be used for the proposed works associated with the installation of the VAM-RAB unit and associated infrastructure (Plate 9). Visibility was moderate.

These stockpiled soils had been previously brought into the area. No Aboriginal sites or objects were identified.

Compound

These fenced compound areas were completely cleared land with buildings and infrastructure which had been enclosed by cyclone fencing. These areas had been previously approved for development and did not require assessment during the current survey works (Plate 10).

The AHIMS records showed that there were no Aboriginal sites or objects within the compound areas.

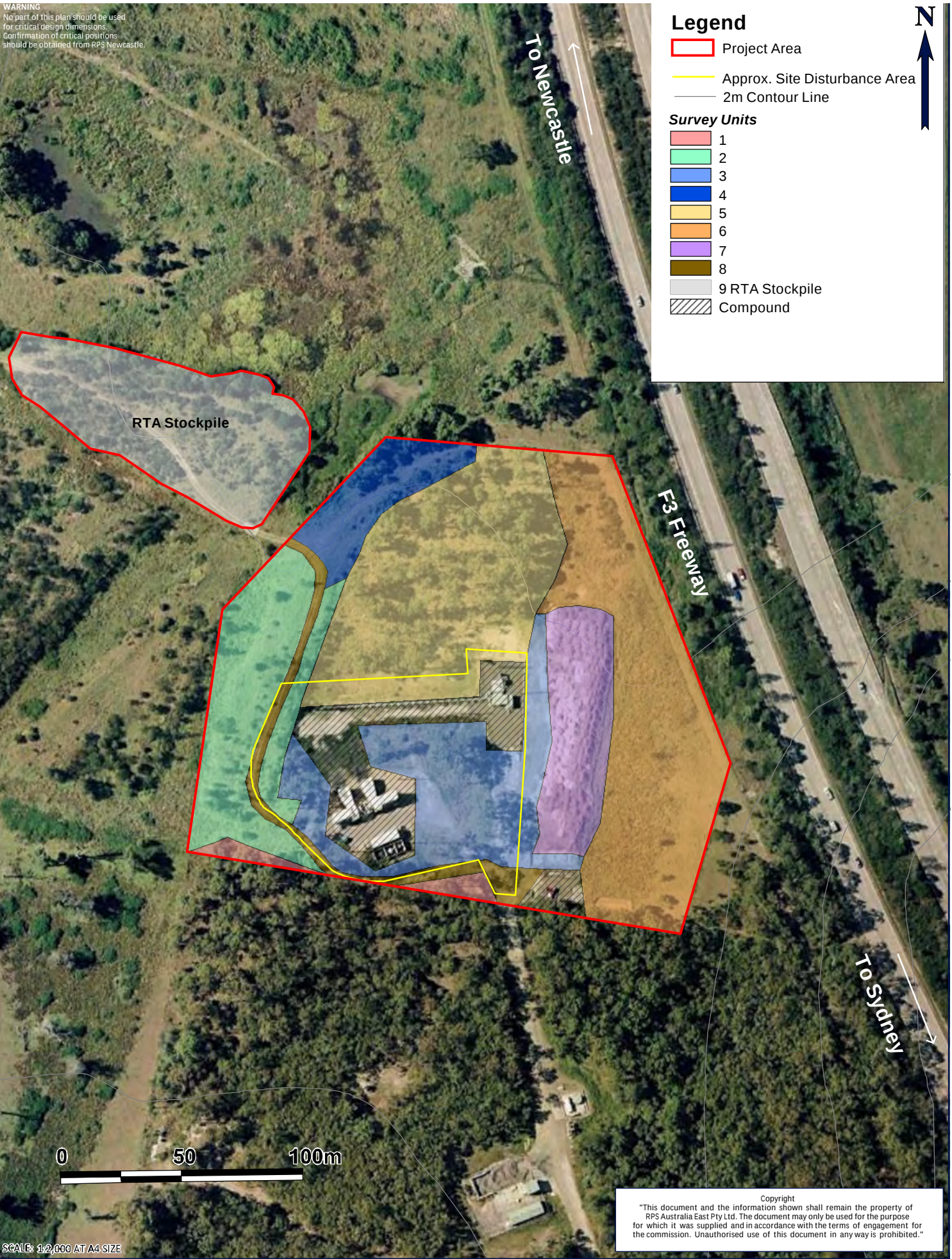
Table 6-1: Ground Surface Visibility Rating

GSV Rating	Overall Rating	Description
0 – 9%	Low	Heavy vegetation with scrub foliage, debris cover and/or dense tree cover. Ground surface not clearly visible.
10 – 29%	Low	Moderate level of vegetation, scrub or tree cover. Small patches of soil surface visible resulting from animal tracks, erosion or blowouts. Patches of ground surface visible.
30 – 49%	Moderate	Moderate levels of vegetation, scrub and/or tree cover. Moderate sized patches of soil surface visible possibly associated with animal tracks, walking tracks and erosion surfaces. Moderate to small patches across a larger section of the Project Area.
50 – 59%	Moderate	Moderate to low level of vegetation, tree and/or scrub. Greater amounts of areas of ground surface visible in the form of erosion scalds, recent ploughing, grading or clearing.
60 – 79%	High	Low levels of vegetation and scrub cover. High incidence of ground surface visible due to recent or past land-use practices such as ploughing, grading and mining. Moderate level of ground surface visibility due to sheet wash erosion, erosion scalds and erosion scours.
80 – 100%	High	Very low to nonexistent levels of vegetation and scrub cover. High incidence of ground surface visible due to past or recent land use practices, such as ploughing, grading and mining. Extensive erosion such as rill erosion, gilgai, sheet wash, erosion scours and scalds.

Table 6-2: Survey Coverage Data

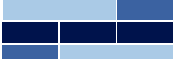
Survey Unit	Landform	Survey Unit Area (Square metres)	Exposure (%)	Visibility (%)	Effective Coverage Area (square metres)	Effective Coverage (percent)
1	Lower slope with swamp and densely treed area	1157.6	40	50	868	75
2	Modified landscape previous earthworks with piled soil	3690.43	50	60	3137	85
3	Modified landscape previous earthworks with excavated and piled soil	4622.08	95	90	4391	95
4	Modified landscape excavated drainage line and piled soil	1414.84	75	65	1132	80
5	Lower slope with swamp and sparsely treed area	7513.46	45	45	5635	75
6	Lower slope previously tilled paddock	6376.34	20	35	3188	50
7	Modified landscape previously imported and piled soil and gravels	2774.48	75	75	1387	50
8	Modified landscape formed dirt and gravel track	1193.3	98	95	955	80
9	RTA Stockpile	5494.8	75	75	4396	80

WARNING
No part of this plan should be used
for critical design dimensions.
Confirmation of critical positions
should be obtained from RPS Newcastle.



TITLE: FIGURE 6-1 SURVEY UNITS LOCATION: MANDALONG

CLIENT: CENTENNIAL COAL PTY LTD
JOB REF: 106835



DATUM: N/A
PROJECTION: MGA ZONE 56 (AGD 94)

DATE: 2/06/2011
PURPOSE: ABORIGINAL & EUROPEAN
ARCHAEOLOGICAL ASSESSMENT

LAYOUT REF: 2:\JOBS\Centennial\All Jobs\106835 Greenhouse
Abatement\10 - Drafting\Archaeology Drafting
1\MapInfo Workspaces
VERSION (PLAN BY) D A4 (GG - NW)

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
T: 02 4940 4200 F: 02 4961 6794 www.rpsgroup.com.au



6.3 Survey Results

No sites were identified during the survey and as such there are no constraints to the development works taking place.

6.4 Discussion of Survey Results

On the basis of a review of the relevant environmental and archaeological information a predictive model of the Project Area was formulated. It was predicted that the most principal types of sites would be artefact scatters, isolated find and PADs. However the Project Area was highly disturbed from previous land use practices and no Aboriginal archaeological or cultural heritage sites or objects were identified. It was considered that there it was unlikely for there to be any *in situ* deposits in the Project Area.

Response and comment on the Project Area was discussed with Aboriginal representatives during the survey and it was considered that there were no areas of Aboriginal cultural significance within the Project Area although the registered ACS present onsite stated that they believed the area would have been suitable as a resource area for fauna and flora.

There was no evidence of any European cultural heritage items.

7 Impact Assessment and Mitigation

This section provides an assessment of the proposed development footprint in relation to the Aboriginal and non Indigenous cultural heritage. Conservation of Aboriginal sites and areas of archaeological sensitivity is the preferred heritage outcome.

No Aboriginal cultural heritage sites or objects and no non Indigenous items were identified in the Project Area. As such there are no identified risks to cultural heritage sites arising from the Project.

7.1 Principles of Ecologically Sustainable Development

The principles of ecologically sustainable development need to be considered under Section 2A of the NPW Act. Inter-generational equity is part of these principles, which allows future generations to access the cultural and environmental diversity of the present generation.

Inter-generational equity has been considered as part of the assessment of significance. State significant Aboriginal sites should be considered for blanket protection for future generations, as these sites have been assessed as having highest significance within NSW. No Aboriginal sites were identified in this assessment.

8 Conclusions and Recommendations

This report has considered the environmental and archaeological context of the Project Area, developed a predictive model and reported on the results of an archaeological survey of the Project Area.

No Aboriginal cultural heritage sites or objects and no Non Indigenous items were identified in the Project Area.

The following recommendations apply to the overall management of proposed works within the Project Area. These management recommendations have been formulated with consideration of the cultural heritage, as well as potential impacts and have been prepared in accordance with the relevant legislation. The following recommendations should be adhered to for the Project Area:

Recommendation 1

All relevant Centennial Mandalong staff and contractors should be made aware of their statutory obligations for heritage under NSW NPW Act and the NSW *Heritage Act 1977*, which may is implemented by Centennial Mandalong during their mine induction process.

Recommendation 2

If Aboriginal site/s are identified in the Project Area during works, then all works in the area should cease, the area cordoned off and contact made with OEH Enviroline 131 555, a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed.

Recommendation 3

In the unlikely event that skeletal remains are uncovered, work must cease immediately in that area and Centennial Mandalong will need to contact the NSW Police Coroner to determine if the material is of Aboriginal origin. If determined to be Aboriginal, they must then contact the OEH Enviroline 131 555 and relevant Aboriginal Community Stakeholders in order to determine an action plan for the management of the skeletal remains prior to works re-commencing.

Recommendation 4

If during the course of clearing works significant European cultural heritage material is uncovered, work in that area should cease and the NSW Heritage Branch should be notified; works should only recommence when an appropriate management strategy has been formulated.

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10 Plates



Plate 1: Survey unit 1



Plate 2: Survey unit 2



Plate 3: Survey unit 3



Plate 4: Survey unit 4



Plate 5: Survey unit 5



Plate 6: Survey unit 6



Plate 7: Survey unit 7



Plate 8: Survey unit 8



Plate 9: RTA Stockpile



Plate 10: Compound

Appendix I

Legislative Requirements

SUMMARY OF STATUTORY CONTROLS

The following overview of the legal framework is provided solely for information purposes for the client, it should not be interpreted as legal advice. RPS will not be liable for any actions taken by any person, body or group as a result of this general overview and recommend that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

COMMONWEALTH

Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act), Amendment 2006

The purpose of this Act is to preserve and protect all heritage places of particular significance to Aboriginal and Torres Strait Islander people. This Act applies to all sites and objects across Australia and in Australian waters (s4).

It would appear that the intention of this Act is to provide national baseline protection for Aboriginal places and objects where State legislation is absent. It is not to exclude or limit State laws (s7(1)). Should State legislation cover a matter already covered in the Commonwealth legislation and a person contravenes that matter, that person may be prosecuted under either Act, but not both (s7(3)).

The Act provides for the preservation and protection of all Aboriginal objects and places from injury and/or desecration. A place is construed to be injured or desecrated if it is not treated consistently with the manner of Aboriginal tradition or is or likely to be adversely affected (s3).

The Australian Heritage Commission Act 1975

The Australian Heritage Commission Act (1975) established the Australian Heritage Commission which assesses places to be included in the National Estate and maintains a register of those places. Places maintained in the register are those which are significant in terms of their association with particular community or social groups and they may be included for social, cultural or spiritual reasons. The Act does not include specific protective clauses.

The Australian Heritage Council Act (2003) together with *The Environment Protection and Biodiversity Conservation Act (1999 as amended)* includes a National Heritage List of places of National heritage significance, maintains a Commonwealth Heritage List of heritage places owned or managed by the Commonwealth and ongoing management of the Register of the National Estate.

STATE

It is incumbent on any land manager to adhere to state legislative requirements that protect Aboriginal Cultural heritage. The relevant legislation in NSW includes but is not limited to:

National Parks & Wildlife Act 1974 (NPW Act)

The *NPW Act (1974)* provides statutory protection for all Aboriginal heritage, places and objects (not being a handicraft made for sale), with penalties levied for breaches of the Act. This legislation is overseen by the Department of Environment, Climate Change and Water (DECCW) and specifically the Director-General of DECCW. Part 6 of this Act is the relevant part concerned Aboriginal objects and places, with the Section 86 and Section 90 being the most pertinent. In 2010, this Act was substantially amended, particularly with respect to Aboriginal cultural heritage requirements. Relevant sections include:

Section 86

This section now lists four major offences:

- (1) A person must not harm an object that the person knows is an Aboriginal object;
- (2) A person must not harm an Aboriginal object;
- (3) For the purposes of s86, “circumstances of aggravation” include (a) the offence being committed during the course of a commercial activity; or (b) that the offence was the second or subsequent offence committed by the person.
- (4) A person must not harm or desecrate an Aboriginal place.

Offences under s86 (2) and (4) are now strict liability offences, i.e., knowledge that the object or place harmed was an Aboriginal object or place needs to be proven. Penalties for all offences under Part 6 of this Act have also been substantially increased, depending on the nature and severity of the offence.

Section 87

This section now provides defences to the offences of s86. These offences chiefly consist of having an appropriate Aboriginal Heritage Impact Permit (AHIP), not contravening the conditions of the AHIP or demonstrating that due diligence was exercised prior to the alleged offence.

Section 87A & 87B

These sections provide exemptions from the operation of s86: Section 87A for authorities such as the Rural Fire Service, State Emergency Services and offices of the National Parks & Wildlife Service in the performance of their duties and s87B for Aboriginal people performing traditional activities.

Section 89A

This section provides that a person who knows of an Aboriginal object or place and does not advise the Director-General of that object or place within a reasonable period of time, is guilty of an offence.

Section 90

This section authorises the Director-General to issue an AHIP.

Section 90A-90R

These sections govern the requirements relating to applying for an AHIP. In addition to the amendments to the Act, DECCW have issued three new policy documents clarifying DECCW's requirements with regards to Aboriginal archaeological investigations: *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* and *Code of Practice for Archaeological Investigations in NSW*. The Consultation Requirements formalise the consultation with Aboriginal community groups into four main stages and include details regarding the parties required to be consulted and the methods of establishing the necessary stakeholders to be consulted, advertisements inviting Aboriginal community groups to participate in the consultation process, requirements regarding the provision of methodologies, draft and final reports to the Aboriginal stakeholders and timetables for the four stages. The Due Diligence Code of Practice sets out the minimum requirements for investigation, with particular regard as to whether an AHIP is required. The Code of Practice for Archaeological Investigation sets out the minimum requirements for archaeological investigation of Aboriginal sites.

Aboriginal Heritage Impact Permits (AHIP)

DECCW encourages consultation with relevant Aboriginal stakeholders for all Aboriginal Heritage assessments. However, if an Aboriginal Heritage Impact Permit (AHIP) is required for an Aboriginal site, then specific DECCW guidelines are triggered for Aboriginal consultation.

Aboriginal Cultural Heritage Consultation Requirements for Proponents

In 2010, the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs) were issued by DECCW (12th of April, 2010). These consultation requirements replace the previously issued *Interim Community Consultation Requirements* (ICCR) for Applicants (DEC 2004). These guidelines apply to all AHIP applications prepared after April 12, 2010; for projects commenced prior to April 12, 2010 transitional arrangements have been stipulated in a supporting document, Questions and Answers 2: Transitional Arrangements.

The ACHCRs (DECCW 2010), include a four stage Aboriginal consultation process and stipulates specific timeframes for each stage. Stage 1 requires that Aboriginal people who hold cultural information are identified, notified and invited to register an expression of interest in the assessment. Stage 1 includes the identification of Aboriginal people who may have an interest in the project area and hold information relevant to determining the cultural significance of Aboriginal objects or places. This identification process should draw on reasonable sources of information including: the relevant DECCW EPRG regional office, the relevant Local Aboriginal Land Council(s), the registrar, Aboriginal Land Rights Act 1983, the Native Title Tribunal, Native Title Services Corporation Limited, the relevant local council(s) and the relevant catchment management authority. The identification process should also include an advertisement placed in a local newspaper circulating in the general location of the project area. Aboriginal organisations and/or individuals identified should be notified of the project and invited to register an expression of interest (EoI) for Aboriginal consultation. Once a list of Aboriginal stakeholders has been compiled

from the Eols, they need to be consulted in accordance with ACH Consultation Requirements Stages 2, 3 and 4.

For projects commenced before the 12th of April, 2010, Section 1 (Q1) of the transitional arrangements indicates that if Aboriginal consultation was commenced prior to the 12th of April 2010 (including advertising and notification of stakeholders) then consultation is to be continued under the previous ICCR guidelines.

Interim Community Consultation Requirements (ICCR) for Applicants (DEC 2004) required a three stage process of which timeframes were stipulated for specific components. Stage 1 required the notification and registration of interests. Notification included an advertisement in a local print media, as well as, as contacting the Local Aboriginal Land Council(s), the registrar of Aboriginal Owners, Native Title Services, local council(s) and the Department of Environment and Conservation. Stage 1 also required the invitation for expressions of interest (Eol) to be sent to interested Aboriginal parties and an Aboriginal stakeholder list compiled. Stage 2 required the preparation of an assessment design to be sent to the Aboriginal stakeholders for comment and review. Stage 3 required that the assessment report be provided to registered Aboriginal stakeholders for review and comment.

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 (EP&A ACT)

This Act regulates a system of environmental planning and assessment for New South Wales. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal heritage. Within the *EP&A Act (1979)*, Parts 3, 4 and 5 relate to Aboriginal heritage.

Part 3 regulates the preparation of planning policies and plans. Part 4 governs the manner in which consent authorities determine development applications and outlines those that require an environmental impact statement. Part 5 regulates government agencies that act as determining authorities for activities conducted by that agency or by authority from the agency. The National Parks & Wildlife Service is a Part 5 authority under the *EP&A Act (1979)*.

In brief, the *NPW Act (1974)* provides protection for Aboriginal objects or places, while the *EP&A Act (1979)* ensures that Aboriginal cultural heritage is properly assessed in land use planning and development.

Part 3A of the *EP&A Act (1979)* relates to major projects and if applicable, obviates the need to conform to other specific legislation. In particular, s75U of the *EP&A Act (1979)* explicitly removes the need to apply for s87 or s90 permits under the *NPW Act (1974)*. This means that although Aboriginal cultural heritage is considered during the planning process, a permit is not required to disturb or destroy an Aboriginal object or place. However, the Director-General of Planning must nonetheless consult with other government agencies, including DECCW and National Parks & Wildlife, prior to any decision being made.

Aboriginal consultation under part 3A is required under the *draft 2005 Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*. This document stipulates that the ICCR process should be adhered to.

THE HERITAGE ACT 1977

This Act protects the natural and cultural history of NSW with emphasis on non-indigenous cultural heritage through protection provisions and the establishment of a Heritage Council. Although Aboriginal heritage sites and objects are primarily protected by the *National Parks & Wildlife Act (1974, as amended 2001)*, if an Aboriginal site, object or place is of great significance, it may be protected by a heritage order issued by the Minister subject to advice by the Heritage Council.

Other legislation of relevance to Aboriginal cultural heritage in NSW includes the *NSW Local Government Act (1993)*. Local planning instruments also contain provisions relating to indigenous heritage and development conditions of consent.

Appendix 2

Aboriginal Consultation – Published Advertisement



Centennial Coal

**Public Notice
Aboriginal Stakeholder Consultation
Mandalong Mine**

Centennial Mandalong Pty Limited (Centennial Mandalong), of PO Box 1000, Toronto, NSW 2283, operates the Mandalong Mine located in Mandalong on the western side of Lake Macquarie in the Lake Macquarie Local Government Area. Centennial Mandalong is currently preparing an Environmental Assessment to support an application to modify the Mandalong Mine development consent to allow for the installation and operation of Ventilation Air Methane (VAM) abatement facilities at the Mandalong Mine surface facilities area. Centennial Mandalong is seeking to identify Aboriginal stakeholders who hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places within the area of interest who wish to be consulted with in relation to proposed Project.

Interested stakeholders are requested to register their interest in writing to:

**Anna Nardis
RPS Australia East P/L
PO Box 428
Hamilton NSW 2303
Tel: 02 4961 6500
Anna.nardis@rpsgroup.com.au**

Details of Aboriginal people who are registering their interest will be forwarded through to the NSW Department of Environment, Climate Change and Water unless they specify they do not want their details released.

Registrations of interest must include current contact details and be received by 5 pm Friday 25 February 2011.

8592-143

Thursday, February 10, 2011

Appendix 3

Aboriginal Consultation – Written Responses to Methodology



28 March 2011

RPS

Attn: Ali Byrne
Graduate Archaeologist
PO Box 428
Hamilton NSW 2303

Dear Ali,

Re: Comments for the Methodology regarding the Mandalong Mine Ventilation Air Methane Abatement Project

With regard to the Proposed Assessment Methodology for the Mandalong Mine Ventilation Air Methane Abatement Project area, we recognise the evaluation by RPS appears to be reasonably comprehensive.

The Aboriginal heritage assessment process involves both a cultural values assessment and an archaeological assessment.

"The participation of Aboriginal communities and Aboriginal owners in archaeological field assessments is based on the principle of Aboriginal partnership in all facets of Aboriginal heritage management. Such participation should not be construed as 'consultation'. It is not a substitute for an assessment of Aboriginal cultural interests or values in a particular area of land or particular sites, such assessments being separate from archaeological assessments. A 'cultural assessment' should not be thought of as a mere component of an archaeological assessment or investigation" (NPWS 1997, *Aboriginal Heritage Standards and Guidelines Kit, Partnership with Aboriginal Communities* section, p2).

Our comments to the contents of the Proposed Assessment Methodology are as follows:

We agree in principle with the proposed assessment methodology and would like RPS to also consider the value of 'place' within the Heritage and Cultural weighting, as this consideration is to insure the protection and conservation of Place & Objects which impact significantly on the spirituality, cultural, historic and general legacy needs of Aboriginal people to address inequalities in social and community well being.

However we disagree with the proposal that Centennial Mandalong Pty Limited may seek a permit for a Section 90 before an Aboriginal site assessment and recommendations are completed.

We believe that it is essential that Aboriginal Cultural and Heritage sites are located and recorded for the DECCW AHIMS Database so that appropriate mitigation and monitoring processes can be initiated to protect and manage these sites for the future.

We also understand that 100% survey is not always needed or used – but to understand whether survey sampling is appropriate (and how much of a sample is appropriate) Registered Aboriginal Stakeholders need further information on past survey & assessments, archaeological site distribution / landform potential and which landforms / areas you actually propose to survey.

We believe that the proposed assessment methodology should provide the relevant background information outlined within the Aboriginal Cultural Heritage Assessment Methodology and Gathering Information Regarding the Cultural Significance as an alternative to the dot points outlined, as this would bring a more informative context to the proposed assessment methodology process.

We believe that the Proposed Assessment Methodology may need to provide some context to the discussion, for example:

- inclusion of the background environmental and archaeological information relating to the area within and surrounding the survey site
- information on known sites should be provided, including map of site locations
- information relating to where the Study Area is in relation to other recorded sites
- estimate of total area (ha) to be inspected
- concerns that the Methodology does not include estimation for amount of day/s for the proposed survey assessment
- concerns that no modifications have been included in the event that additional investigations may be necessary
- **General comment:** survey coverage should not be set by number of days, but should instead be set by the level (ha) of survey required to adequately understand the archaeological and cultural heritage values within the project area

We as Awabakal descendants believe that it is essential to be aware of all aspects relating to the proposed assessment methodology, so that we are able to make informed decisions.

With regard to providing cultural appropriate information, we would be pleased to share verbally any relevant cultural knowledge of the study area, but we do reserve the right and reluctance to share our cultural heritage with others in respect to aspects of the cultural significance that connects us to our country. It is believed by our people that those who shouldn't be privy to this cultural knowledge have no rights or entitlements to it.

The Awabakal Traditional Owners Aboriginal Corporation members are descendants of the Awabakal People and accordingly have both a physical and spiritual connection and a primary association with our cultural boundary. Therefore, any artifacts and/or residual evidence of our people are held in high regard and are considered a cultural reminder that unites us with our land and sea country, our past and spirituality and provides us with a visual generational legacy.

The principal vision and aim of the Awabakal people is to protect the cultural heritage of our ancestors. Therefore the residual evidence of our people is held in high degree and is regarded as a cultural reminder that unites us with our land and sea country and spirituality.

The Mandalong region is culturally significant to the Awabakal People who utilised and physically cared for the environment, and with the evidence already retrieved and documented from the region is a reasonable indication that this area was highly utilised by the Awabakal people prior to European settlement.

We believe that RPS and Centennial Mandalong are committed and supportive in adequately addressing the many aspects related to the perspectives and diversity that is associated with Aboriginal Cultural Heritage.

We would like to thank RPS for the opportunity to comment and would ask for a copy of the finalised methodology demonstrating how you have addressed all the Aboriginal stakeholder comments provided as we would like a copy of this for our records prior to the field survey.

If you require any further information please do not hesitate in contacting me.

Yours sincerely,



Kerrie Brauer
Director | Administration

RPS HARPER SOMERS O'SULLIVAN

RECORD OF TELEPHONE CONVERSATION/PERSONAL INTERVIEWS

NAME: RPS DATE 28/3/2011

SPEAKING TO:

NAME Shane Frost TIME: _____

OF: ADTOLC JOB No. 106835

PHONE _____

PROJECT: Centennial VAM

Response to methodology →

satisfied with methodology, including additional info on survey method sent out.

Appendix 4

Aboriginal Consultation – Written Responses to Draft Report



PO BOX 86
CLARENCE TOWN
NSW 2321

Date: 30 April 2011

Attention: James Wearne
Centennial Coal
PO BOX 1000
TORONTO NSW 2283

Re: Comments on Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project.

ALLA James and Gillian,

This letter is in response to the correspondence we received from Centennial Coal (dated 14th April 2011) asking if we, the Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC) would like to provide comments/feedback (by the 12th May 2011) regarding the contents of the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project**.

We are satisfied with the majority of the content of the draft but would like to take up your kind offer to add some comments that we believe can only serve to protect the integrity of our Cultural Heritage. These comments are set out below;

- On page 26 of the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** under heading **5.1 Historic Records of Aboriginal Occupation** second paragraph it says that; *'The Aboriginal people of the Lake Macquarie region were known as the Awabakal. To the north of the Awabakal territory are the Worimi people, the Darkinjung people are located to the south of the Awabakal territory and the Wonnaruah people are in the north west (Tindale 1974)'*
 - a. This statement fails to include the Guringai People. They bordered the southern boundary of the Awabakal People. The Darkinjung were situated to the southwest of the Awabakal and west of the Guringai People. Therefore we would like to see this statement corrected to include the Guringai People
 - b. We, as Awabakal People along with the Guringai People are the direct descendants of the original Aboriginal inhabitants of this area and the Traditional Custodians of a place our Ancestors have lived for thousands of years this then needs to be reflected in the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project**.
- Also on page 29 of the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project Table 5-1: Summary of AHIMS Results** and **5.4.1 Aboriginal Heritage Information Management System (AHIMS)** it states that a search of the DECCW AHIMS Database on the 3rd of December 2010 resulted in producing a number of *'...111 previously recorded sites across the regional area that also encompassed the Project Area.'* This information at the time of the enquiry regarding the AHIMS Database we believe correctly states the number of sites, but fails to indicate to the reader that due to recently conducted field surveys within this vicinity, there have been the discovery of many more Cultural Heritage sites (as yet not recorded on the DECCW AHIMS) which, if included, would increase the reported number of sites dramatically.

We would like to see this information included in the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** so as to bring the reader up to date information regarding what is now known in relation to the sites that exist in the area of the proposed project.
- In section **8 Conclusion and Recommendations** page 44 of the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** Recommendation 1 brings out the point of *'All relevant Centennial Mandalong staff should be made aware of their statutory obligations for heritage... which may be implemented as a heritage induction.'* One question we would like to ask is;

- a. How are they going to recognise Cultural Material without having some idea of what it looks like and how will they know what it means to the Traditional Owners of this area??

This we believe could be implemented during inductions of workers/contractors by delivering the appropriate Cultural Awareness information and training to these workers/contractors. We would propose that this is implemented through a power point presentation (which has already been instituted in other mines in the area) outlining the Cultural Heritage that may be encountered during sub-surface excavations. Also this would include representatives of the Traditional Owners (which again has already been instituted by other mines in the area) to be included in this presentation to speak to the workers/contractors regarding the importance of our Cultural Heritage to us and the community at large. Otherwise how can recommendation 3 work when it states that *'If Aboriginal site/s are identified in the study area during works, then all works in the area should cease...'* Without the appropriate Cultural awareness training no one will be none the wiser to what is an Aboriginal site!!

This needs to be addressed in this **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** document.

- Also Recommendation 2 needs to be changed to include not just a qualified archaeologist to investigate any new locations but should also include the Aboriginal Stakeholders in this recommendation.
- It was also discussed on the day of the survey that there would be a recommendation to allow the Aboriginal stakeholders to observe any ground disturbance works that take place including tree removal for this proposed project area. It was indicated to the Aboriginal stakeholders that this could happen if the soil that was excavated from the site could be stockpiled in another area and then inspected for any Cultural material that may be included in this excavated soil. This is one recommendation that has failed to make it to the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** document. Therefore we would like to see this added as a recommendation.
- We would also object to the removal of any topsoil from this area. The reason is that if it does contain Cultural material, then it should be kept in the location that it is originally from.
- Lastly, on page 23 section **4.2 Local Area History** there is a statement in the first paragraph which wrongly describes the arrival in the area of Joseph and Eliza Frost to be 1864. Joseph was already in this area as a convict before 1835 and was assigned to John Moore at this time. He married Eliza Solomon/Selman in 1839 and received his ticket of leave dated 1st October 1837 stating he was allowed to stay in the district of Brisbane Water on the recommendation of the Brisbane Water Bench. He received his Conditional Pardon on the 13th August 1845 and took up a conditional purchase of 40 acres in the area around 1864 but had already been living in the area for nearly 30 years at this time.
Therefore this chronological discrepancy needs to be corrected in the **Draft Report-Mandalong Mine Ventilation Air Methane Abatement Demonstration Project** document.

We thank you James and Gillian for this opportunity to make some contributions to this draft report, if further information is required please don't hesitate to contact us ASAP. Our contact details are as follows.

NGI NOA

Shane Frost-Managing Director: Awabakal Descendants Traditional Owners Aboriginal Corporation
Email: shanefrost@bigpond.com Phone: 49964362 Fax: 49964325 Mobile: 0428320671



9 May 2011

Gillian Goode
RPS
PO Box 428
Hamilton NSW 2303

Dear Gillian,

Re: Comments Regarding the Cultural Heritage Assessment Draft Report for the Mandalong Mine Ventilation Air Methane Abatement Demonstration Project

With regard to the Draft Report for the Cultural Heritage Assessment Draft Report for the Mandalong Mine Ventilation Air Methane Abatement Demonstration Project, we recognise the evaluation by RPS appears to be reasonably comprehensive.

We believe that RPS and Centennial Coal are committed and supportive in adequately addressing the many aspects related to the perspectives and diversity that is associated with Aboriginal Cultural Heritage. We would like to highlight our appreciation of the informative process that the representative from RPS outlined during the Survey Assessment and the due diligence in addressing any of our concerns.

We would like to take this opportunity to reiterate our family connection to the Awabakal People, as being direct descendants of the Traditional Awabakal People (the Lake Macquarie and its surrounding region). We as Awabakal descendants are connected with the Awabakal Culture and Heritage through our ancestral families.

Our comments to the contents of the Draft Report are as follows:

Page 14, Table 2.3, We believe there may be a Typo regarding (error reference source not found) within the document.

Page 17, Table 2.6, With regard to the comments received on the draft report, we believe that it is not necessary for Jodie Wilson to be included within this Table.

Page 23, 4.2, With regard to the Local Area History we consider that the writings of the Reverend Lancelot Threlkeld are an informative overview of the Awabakal People which would broaden the context of this section of the local area within **Draft Report**.

Page 26, 5.1, We believe that the "Tindale's Tribes of Australia" used in the **Draft Report** as an indication of tribal boundaries is an incorrect and misleading document, as the Guringai People boarder the Awabakal People to the south, not the Darkinjung. The Darkinjung People are actually situated to the west of the Guringai People. Therefore we strongly suggest that this information to be appropriately referenced and corrected.

Page 29, Table 5.1, With regard to the AIHMS Database Search within this section of the **Report**, we believe that current field survey information is critical within this section for determining the 'common site types' within and surrounding project area.

Although current field survey information that has been recorded within close proximity to the project area has not been listed on the AIHMS Database at present, however we are concerned that the **Report** may reflect an incorrect determination regarding the Cultural Heritage information pertaining to the project area.

Our concerns are based on the statements within this and many other **Reports** that continually refer to Aboriginal sites as a "common feature" or 'site type' across the region including the Mandalong area, as the meaning of 'common' has the potential to demean the value and rarity that each Aboriginal Site possess.

Aboriginal Sites within the Hunter and Lake Macquarie Regions have more that halved since the colonisation of this area, as the destruction of our Cultural Heritage has been destroyed, and will continue to be damaged and/or destroyed for the reason that they are repeatedly being referred to and regarded as 'common'.

Page 44, 8, With regard to the Recommendations 1, we believe that consideration be given to undertake the development of a Cultural Heritage Awareness Training either through an Oral and/or PowerPoint presentation for staff and contractors involved in the project.

The Awabakal Traditional Owners (ATOAC & ADTOAC) have both previously been involved with Cultural Heritage Awareness Training presentations and therefore would consider that this type of approach would resolve any difficulties for the Mandalong Staff and contractors involved to be aware of and to also recognise Cultural Heritage Material for this and future projects.

We would like to mention that we would prefer that any topsoil removal to remain on site, as there may be a possibility for cultural material to be concealed below the vegetated ground surface.

We would like to bring to your attention that during the survey we discussed with the representative from Centennial Coal and RPS that there would be a recommendation for the Aboriginal Stakeholders to observe ground works pertaining to earthworks and/or tree removal at a particular area within the project area. We had discussed that as to not hold up any works that we were to observe any excavated soil in another stockpiled area so that we may examine the soil for any concealed cultural material.

In summary with regard to the Conclusion and Recommendations within the Report, our Comments and Recommendations are that:

- aspects pertaining to the Cultural Heritage perspective of the Awabakal Peoples lifestyle would have indeed broaden the Aboriginal context within the Report
- information relating to the position of the Guringai and the Darkinjung People to be appropriately corrected and referenced
- additional Cultural information that is relevant to the project area be added to the Report
- a Cultural Heritage Awareness Training Package be developed

- no soil to be removed and to remain on site
- Aboriginal Stakeholders be present during groundwork excavation to examine soil for cultural material
- if our recommendations are adopted that they be added to the Final Report

The principal vision and aim of the Awabakal people is to protect the cultural heritage of our ancestors. Therefore the residual evidence of our people is held in high degree and is regarded as a cultural reminder that unites us with our country and spirituality.

The Mandalong region is regarded as culturally significant to the Awabakal people, and in our view believe that the district is part of the land that echoes the ethos of our cultural heritage. Therefore, any artefacts and/or residual evidence of our people are held in high regard and are considered a cultural reminder that unites us with our land and sea country, our past and spirituality and provides us with a visual generational legacy.

We reserve the right and reluctance to share our cultural heritage with others with respect to aspects of the cultural significance enabling us to protect our cultural knowledge and values.

We would like to thank RPS for the opportunity to comment and request a copy of the Final Report demonstrating how you have addressed all the Aboriginal Stakeholder comments be forwarded to the Awabakal Traditional Owners Aboriginal Corporation at your earliest convenience, and If you require any further information please do not hesitate in contacting me.

Yours sincerely,



Kerrie Brauer
Director | Administration

Appendix 5

Aboriginal Consultation – Aboriginal Consultation Log

Date	Consultation Description	Method of Contact	Outcomes
12/01/11	Letter requesting identification of relevant Aboriginal Community Stakeholders posted to DECCW, NNTT, Office of the Registrar, Native Title Services, Awabakal Local Aboriginal Land Council, Lake Macquarie City Council and Hunter-Central Rivers Catchment Management Authority	Mail	Responses due back on 28/1/2011 - 02/02/11 Ali Byrne (AB) SPOKE TO Glenda Roberts of DECCW to request list of Aboriginal Groups/stakeholders, was told that letter was received on 17th, from which DECCW has 21 days to respond, and it has not yet been 21 days. She will send list when she can.
27/01/11	Native Title Services Corp responded that to notify Aboriginal individuals or groups needs a time frame of 21 days and that the response date needs to be extended to 4th February.	Mail	
01/02/11	Hunter - Central Rivers Catchment Authority responded	Mail	
11/02/11	Expression of Interest (Eol) letters posted to all relevant Aboriginal Community Stakeholders	Mail	Responses due back 25/2/11
16/02/11	Received 'RETURN TO SENDER' for Awabakarl Cultural Resource Association Eol letter	Return Mail	Address no longer correct/has left address
16/02/11	Eol received from David Ahoy Awabakal Local Aboriginal Land Council (ALALC)	Email	Eol noted
17/02/11	Kerrie Brauer of Awabakal Traditional Owners Aboriginal Corporation (ATOAC) registered interest	Email	Eol noted
18/02/11	Donna Sampson of Cacatua registered interest	Email	Eol Noted
23/02/11	Shane Frost of Awabakal Descendent Traditional Owners Aboriginal Corporation (ADTOAC) registered Expression of Interest.	Phone	Eol noted
28/02/11	DECCW & LALC sent letters advising which Aboriginal stakeholder groups registered interest in the project	Mail	No response required
02/03/11	Methodology letters explaining field methodology and procedure for sensitive information sent out to Aboriginal Groups	Mail	Responses due by the 30th March
14/03/11	Response to methodology letter received from David Ahoy of Awabakal Local Aboriginal Land Council (ALALC)	Email	Response noted - interested in participating in project
28/03/11	Response to Methodology received from Kerrie Brauer of Aboriginal Traditional Owners Aboriginal Corporation (ATOAC)	Email	Response to Methodology Noted - satisfied with methodology

Date	Consultation Description	Method of Contact	Outcomes
28/03/11	Response to Methodology received from Shane Frost Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC)	Phone	Response to Methodology Noted - satisfied with methodology
30/03/11	Methodology responses due today	NA	All responses within deadline noted
31/03/11	Invitation to attend survey sent to Kerrie Brauer of Awabakal Traditional Owners Aboriginal Corporation (ATOAC)	Email/Mail	survey to occur 6/4/11 8am to 12pm
31/03/11	Invitation to attend survey sent to Shane Frost of Awabakal Descendants Traditional Owners Aboriginal Corporation (ADTOAC)	Email/Mail	survey to occur 6/4/11 8am to 12pm
31/03/11	Invitation to attend survey sent to David Ahoy of Westlakes/ALALC	Email/Mail	Survey to occur 6/04/11, 8am to 12pm
31/03/11	Kerrie Brauer of ATOAC accepted invitation to survey	Email	Responded to confirm that she would be attending, and Jodie if possible
31/03/11	Shane Frost of ADTOAC accepted invitation to survey	Email	
06/04/11	Fieldwork undertaken by Gillian Goode at Mandalong	N/A	ACS attending were Shane Frost (ADTOAC) and Kerrie Brauer, & Jodie (ATOAC),
13/04/11	Draft report sent to registered ACS for review and comment	Mail	Response required by 12th May 2011
01/05/11	Comment on draft report received from Shane Frost of ADTOAC	Email	Comments inserted in Final Report
09/05/11	Comment on draft report received from Kerrie Brauer of ATOAC	Email	Comments inserted in Final Report

Appendix 6

AHIMS Search

Ali Byrne
241 Denison St
Broadmeadow New South Wales 2303
Attention: Ali Byrne

Date: 21 March 2011

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Datum :AGD, Zone : 56, Eastings : 342000 - 362000,
Northings : 6322000 - 6342000 with a Buffer of 0 meters. Additional Info : conducted by Ali Byrne on 21 March
2011**

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

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

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

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

Important information about your AHIMS search

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

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
45-7-0162	M2;Hungary Point Public Reserve;	AGD	56	361700	6336350	Open site	Earth Mound,Shell,Artefact	Midden	2685
	<u>Contact</u>	<u>Recorders</u>	Mary Dallas Consulting Archaeologists					<u>Permits</u>	
45-7-0089	Bonnells Bay;	AGD	56	361832	6335693	Open site	Earth Mound,Shell,Artefact	Midden	
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-7-0001	Morisset Hospital	AGD	56	361550	6332450	Open site	Earth Mound,Shell,Artefact	Midden	1263
	<u>Contact</u>	<u>Recorders</u>	A.J Barrett					<u>Permits</u>	
45-7-0002	Goat Island;Dora Creek;	AGD	56	361438	6337149	Open site	Earth Mound,Shell,Artefact	Midden	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-2449	WST 3;	AGD	56	345920	6338370	Open site	Grinding Groove	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2457	SP 1;	AGD	56	348490	6336520	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2461	GB 3;	AGD	56	347050	6338740	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2466	TD 2;	AGD	56	347380	6336190	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2475	WR 5;	AGD	56	343900	6326530	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-1309	Pourmalong Creek;	AGD	56	357361	6330396	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-1225	Wyee Creek	AGD	56	353500	6329600	Open site	Grinding Groove	Axe Grinding Groove	294,101093
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-1228	Moran's Creek;	AGD	56	351800	6328100	Closed site	Art (Pigment or Engraved)	Shelter with Art	294
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-3180	B14	AGD	56	359150	6325075	Open site	Artefact		100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-7-0243	WWSS3-2	AGD	56	360438	6337770	Open site	Potential Archaeological Deposit (PAD)		100134
	<u>Contact</u> S Scanlon	<u>Recorders</u>	AECOM Australia Pty Ltd					<u>Permits</u> 2273	
45-7-0240	Dora Creek (Stingaree Road)	AGD	56	360613	6337218	Open site	Artefact,Shell		
	<u>Contact</u> Searle	<u>Recorders</u>	Mrs.Angela Besant					<u>Permits</u> 2215	
45-3-3261	B9, Bushells Ridge	AGD	56	359601	6326537	Open site	Artefact		

Report generated by AHIMS Web Service on 21/03/2011 for Gillian Goode for Datum :AGD, Zone : 56, Eastings : 342000 - 362000, Northings : 6322000 - 6342000 with a Buffer of 0 meters. Additional Info : for due diligence report. Number of Aboriginal sites and Aboriginal objects found is 111

This information is not guaranteed to be free from error omission. The Department of Environment, Climate Change & Water (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3262	B4, Bushells Ridge	GDA	56	360008	6325262	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3275	Cooranbong 2	AGD	56	354380	6337800	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>						<u>Permits</u>	
45-3-3304	Halloran ISO 1	AGD	56	355000	6322650	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>	Mr.John Appleton					<u>Permits</u>	
45-3-3381	Scar Tree (Morrisset)	GDA	56	344129	6340361	Open site	Modified Tree (Carved or Scarred)		
	<u>Contact</u>	<u>Recorders</u>	Mr.Nathan French					<u>Permits</u>	
45-3-3437	RPS Mandalong South 02	GDA	56	353075	6329134	Closed site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Ms.Tessa Boer-Mah					<u>Permits</u>	
45-3-3435	RPS HSO MwP1	AGD	56	359424	6334225	Open site	Shell,Potential Archaeological Deposit (PAD)		
	<u>Contact</u>	<u>Recorders</u>	RPS Australia East Pty Ltd-Blacktown					<u>Permits</u>	
45-3-2452	WW 2;	AGD	56	347270	6338520	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2458	SP 2;	AGD	56	348500	6336590	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2464	WST 1;	AGD	56	345850	6338420	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-1310	Pourmalong Creek;	AGD	56	357823	6330130	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-0972	Quinlins Tower;	AGD	56	344700	6340250	Open site	Grinding Groove	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	P Vinnicombe					<u>Permits</u>	
45-7-0251	PAD 3 - Munmorah	AGD	56	361000	6326250	Open site	Potential Archaeological Deposit (PAD)		
	<u>Contact</u>	<u>Recorders</u>	Heritage Concepts					<u>Permits</u>	
45-3-3166	K 2 Koompahtoo	AGD	56	359840	6332530	Open site	Artefact	Isolated Find	99218
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-3041	Myrtle Creek/Maculata Rd #1 Wyong State Forest	AGD	56	346600	6323180	Open site	Grinding Groove	Axe Grinding Groove	101093
	<u>Contact</u>	<u>Recorders</u>	Brad Welsh					<u>Permits</u>	
45-7-0174	BB2;Freshwater Creek, Bonnell's Bay;	AGD	56	361100	6335990	Open site	Artefact	Isolated Find	2693
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-7-0230	K3 KOOMPAHTOO	AGD	56	360650	6334900	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Stephen Griffen					<u>Permits</u>	

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
45-3-3176	B;l	AGD	56	359750	6324715	Open site	Artefact		100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-2870	WR 7;	AGD	56	343920	6326250	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2455	ML 1;	AGD	56	348370	6336180	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2474	WR 6;	AGD	56	343980	6326550	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-1229	Olney;	AGD	56	351600	6326900	Closed site	Art (Pigment or Engraved)	Shelter with Art	294,101093
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-1231	Digary Creek	AGD	56	352200	6327300	Closed site	Artefact	Shelter with Deposit	294,101093
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-3263	B8, Bushells Ridge	GDA	56	359931	6325584	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3040	Myrtle Creek/Maculata Rd #3 Wyong State Forest	AGD	56	346850	6322700	Open site	Grinding Groove	Axe Grinding Groove	101093
	<u>Contact</u>	<u>Recorders</u>	Brad Welsh					<u>Permits</u>	
45-7-0225	K 3 Koompahtoo	AGD	56	360650	6334900	Open site	Artefact	Isolated Find	99218
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-3019	Null Road 1	AGD	56	343100	6335200	Open site	Grinding Groove	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	Keith Gleeson					<u>Permits</u>	
45-3-3174	MCKAY 1	AGD	56	347325	6336500	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Keith Gleeson					<u>Permits</u>	
45-3-2970	Olney 105	AGD	56	352190	6326920	Open site	Grinding Groove	Axe Grinding Groove	101093
	<u>Contact</u>	<u>Recorders</u>	Brad Welsh					<u>Permits</u>	
45-3-2881	Toepfers Road;	AGD	56	351950	6327740	Closed site	Art (Pigment or Engraved)	Shelter with Art	1333,101093
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-2889	Toepfers Road	AGD	56	351930	6327720	Closed site	Art (Pigment or Engraved)	Shelter with Art	1333,101093
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-2454	WST 2;	AGD	56	345960	6338220	Open site	Artefact	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2460	WW 3;	AGD	56	347250	6338500	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2462	GB 2;	AGD	56	347140	6338900	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	

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45-3-2472	WR 9; <u>Contact</u>	AGD <u>Recorders</u>	56	344850	6325470	Open site	Artefact	Isolated Find <u>Permits</u>	
45-3-1227	Moran's Creek <u>Contact</u>	AGD <u>Recorders</u>	56	352200	6328800	Open site	Grinding Groove	Axe Grinding Groove <u>Permits</u>	294,101093
45-3-1230	Moran's Creek <u>Contact</u>	AGD <u>Recorders</u>	56	351900	6327700	Closed site	Art (Pigment or Engraved)	Shelter with Art <u>Permits</u>	294,101093
45-3-1233	Olney <u>Contact</u>	AGD <u>Recorders</u>	56	350200	6328100	Closed site	Art (Pigment or Engraved)	Shelter with Art <u>Permits</u>	294,101093
45-3-3438	RPS Mandalong South 03 <u>Contact</u>	GDA <u>Recorders</u>	56	352856	6329404	Closed site	Artefact	<u>Permits</u>	
45-3-3186	BR10 <u>Contact</u>	AGD <u>Recorders</u>	56	359612	6326462	Open site	Artefact		100541,100863,101093 <u>Permits</u>
45-3-2868	SR 2; <u>Contact</u>	AGD <u>Recorders</u>	56	342180	6325390	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2453	WW 1; <u>Contact</u>	AGD <u>Recorders</u>	56	347500	6338650	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2467	TD 3; <u>Contact</u>	AGD <u>Recorders</u>	56	347290	6336020	Open site	Artefact	Isolated Find <u>Permits</u>	
45-3-2476	WR 3; <u>Contact</u>	AGD <u>Recorders</u>	56	343670	6326340	Open site	Artefact	Isolated Find <u>Permits</u>	
45-3-1223	Moran's Creek; <u>Contact</u>	AGD <u>Recorders</u>	56	351900	6329000	Open site	Artefact	Open Camp Site <u>Permits</u>	294,101093
45-3-1232	Wyee Creek <u>Contact</u>	AGD <u>Recorders</u>	56	352800	6329300	Closed site	Artefact,Art (Pigment or Engraved)	Shelter with Art,Shelter with Deposit <u>Permits</u>	294,101093
45-3-1234	Moran's Creek; <u>Contact</u>	AGD <u>Recorders</u>	56	350600	6330900	Open site	Grinding Groove	Axe Grinding Groove <u>Permits</u>	294
45-3-1095	Cooranbong <u>Contact</u>	AGD <u>Recorders</u>	56	353800	6340900	Open site	Artefact	Isolated Find,Open Camp Site <u>Permits</u>	494
45-3-3232	Dora Ck Pad <u>Contact</u> Searle	AGD <u>Recorders</u>	56	358640	6339200	Open site	Potential Archaeological Deposit (PAD)		100145
45-3-3259	B7 <u>Contact</u> T Russell	GDA <u>Recorders</u>	56	360227	6325388	Open site	Artefact	<u>Permits</u> 2346 <u>Permits</u>	

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
45-3-3274	Cooranbong 1 <u>Contact</u> T Russell	AGD <u>Recorders</u>	56	354520	6337790	Open site	Artefact	<u>Permits</u>	
45-3-3424	Mannering Creek 1 <u>Contact</u>	GDA <u>Recorders</u>	56	357799	6327519	Open site	Artefact	<u>Permits</u>	101909
45-7-0226	K 4 Koombahtoo <u>Contact</u>	AGD <u>Recorders</u>	56	360390	6334990	Open site	Artefact	Isolated Find <u>Permits</u>	99218
45-7-0161	M1;Hungary Point public reserve; <u>Contact</u>	AGD <u>Recorders</u>	56	361610	6336400	Open site	Earth Mound,Shell,Artefact	Midden <u>Permits</u>	2685
45-7-0173	BB1;Fullers Creek, Bonnells Bay; <u>Contact</u>	AGD <u>Recorders</u>	56	360800	6336100	Open site	Earth Mound,Shell,Artefact	Midden <u>Permits</u>	2693
45-3-3175	MCKAY 2 <u>Contact</u>	AGD <u>Recorders</u>	56	347325	6336500	Open site	Water Hole,Grinding Groove	<u>Permits</u>	
45-7-0232	B2 <u>Contact</u>	AGD <u>Recorders</u>	56	360937	6325205	Open site	Modified Tree (Carved or Scarred)	<u>Permits</u>	100541,100863,101 093
45-3-2869	SR 1; <u>Contact</u>	AGD <u>Recorders</u>	56	342840	6325280	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2871	WR 2; <u>Contact</u>	AGD <u>Recorders</u>	56	343590	6326350	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2872	WR 1; <u>Contact</u>	AGD <u>Recorders</u>	56	343410	6326390	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2873	WR 4; <u>Contact</u>	AGD <u>Recorders</u>	56	343720	6326410	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2459	SO 1; <u>Contact</u>	AGD <u>Recorders</u>	56	350890	6334650	Open site	Artefact	Open Camp Site <u>Permits</u>	
45-3-2465	TD 1; <u>Contact</u>	AGD <u>Recorders</u>	56	347150	6336830	Open site	Artefact	Isolated Find <u>Permits</u>	
45-3-2471	SR 3; <u>Contact</u>	AGD <u>Recorders</u>	56	342390	6325440	Open site	Artefact	Isolated Find <u>Permits</u>	
45-3-1312	Hue Hue Road; <u>Contact</u>	AGD <u>Recorders</u>	56	353671	6322552	Open site	Artefact	Open Camp Site <u>Permits</u>	101093
45-3-1224	Wye Creek; <u>Contact</u>	AGD <u>Recorders</u>	56	353600	6328900	Open site	Grinding Groove	Axe Grinding Groove <u>Permits</u>	294,101093
45-3-1140	Morisset; <u>Contact</u>	AGD <u>Recorders</u>	56	359290	6335970	Open site	Modified Tree (Carved or Scarred)	Scarred Tree <u>Permits</u>	116

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw					<u>Permits</u>	
45-3-1934	Abbots Falls;	AGD	56	344630	6339860	Open site	Grinding Groove	Axe Grinding Groove	1333
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-3316	WC-IF1	GDA	56	355002	6324087	Open site	Artefact		
	<u>Contact</u> Searle	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>	
45-3-3260	B3, Bushells Ridge	AGD	56	360187	6325275	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3335	PAD 4 - Munmorah (not a PAD)	AGD	56	357900	6326000	Open site	Potential Archaeological Deposit (PAD)		100751,100944
	<u>Contact</u>	<u>Recorders</u>	Heritage Concepts					<u>Permits</u> 2780,2781	
45-3-3436	RPS Mandalong South 01	GDA	56	353007	6329206	Closed site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Ms.Tessa Boer-Mah					<u>Permits</u>	
45-3-3042	Myrtle Creek/Maculata Rd #2 Wyong State Forest	AGD	56	346750	6322930	Open site	Grinding Groove	Axe Grinding Groove	101093
	<u>Contact</u>	<u>Recorders</u>	Brad Welsh					<u>Permits</u>	
45-7-0207	The Hole 1 (TH1)	AGD	56	361820	6329800	Open site	Artefact	Open Camp Site	3697,101093
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>	
45-3-3179	B11	AGD	56	359563	6325450	Open site	Artefact		100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Therin Archaeological Consulting					<u>Permits</u>	
45-3-3187	BR13	AGD	56	359375	6325050	Open site	Artefact		100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3188	BR12	AGD	56	359427	6325219	Open site	Artefact		100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-0275	The Pinnacle Dora Pinnacle 1	AGD	56	349850	6340100	Closed site	Art (Pigment or Engraved)	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>	Glen Morris					<u>Permits</u>	
45-3-2880	Toepfers road;	AGD	56	351940	6327730	Closed site	Art (Pigment or Engraved)	Shelter with Art	1333,101093
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-2450	WST 4;	AGD	56	347300	6338330	Open site	Grinding Groove	Axe Grinding Groove	
	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-2463	GB 1;	AGD	56	347680	6339030	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2468	TD 4;	AGD	56	347660	6335200	Open site	Artefact	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Tom Knight					<u>Permits</u>	
45-3-2473	WR 8;	AGD	56	344520	6325570	Open site	Artefact	Isolated Find	

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	<u>Contact</u>	<u>Recorders</u>	Heritage Solutions-Alistair Grinbergs					<u>Permits</u>	
45-3-1311	Pasadena;	AGD	56	356972	6326822	Open site	Artefact	Open Camp Site	100541,100863,101093
	<u>Contact</u>	<u>Recorders</u>	Unknown Author					<u>Permits</u>	
45-3-1226	Buttonderry Creek	AGD	56	350900	6327700	Open site	Grinding Groove	Axe Grinding Groove	294,101093
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-1235	Moran's Creek;	AGD	56	355300	6331100	Open site	Grinding Groove	Axe Grinding Groove	294
	<u>Contact</u>	<u>Recorders</u>	ASRSYS					<u>Permits</u>	
45-3-1132	Dora Creek;Dora Creek North Bank;Beauty Point;	AGD	56	357200	6337300	Open site	Artefact	Open Camp Site	305
	<u>Contact</u>	<u>Recorders</u>	L.K Dyall					<u>Permits</u>	
45-3-1133	Dora Creek;Dora Creek South Bank;Beauty Point;	AGD	56	357300	6337000	Open site	Artefact	Open Camp Site	305
	<u>Contact</u>	<u>Recorders</u>	L.K Dyall					<u>Permits</u>	
45-3-3315	WC-ST1	GDA	56	355162	6324145	Open site	Modified Tree (Carved or Scarred)		
	<u>Contact</u> Searle	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>	
45-7-0245	B5, Bushells Ridge	GDA	56	360800	6325350	Open site	Artefact		
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Therin					<u>Permits</u>	
45-3-3317	WC-OS1	GDA	56	355185	6324252	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jodie Benton					<u>Permits</u>	
45-3-3378	Scar Tree (Morisset)	GDA	56	344122	6340361	Open site	Modified Tree (Carved or Scarred)		
	<u>Contact</u>	<u>Recorders</u>	Hunter Valley Aboriginal Corporation					<u>Permits</u>	
45-3-3360	Former Aberdare Extended Colliery	GDA	56	350811	6328379	Open site	Artefact		
	<u>Contact</u>	<u>Recorders</u>	Hunter Land Pty Ltd					<u>Permits</u>	
45-3-3425	Mannering Creek 2	GDA	56	358331	6327766	Open site	Artefact		101909
	<u>Contact</u>	<u>Recorders</u>	Mrs.Angela Besant					<u>Permits</u>	
45-3-3165	K 1 Koompahtoo	AGD	56	359490	6332490	Open site	Artefact	Open Camp Site	99218
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	
45-3-1524	The Pinnacle Dora Pinnacle 2	AGD	56	349800	6340980	Closed site	Art (Pigment or Engraved)	Shelter with Art	
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>	

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Appendix 7

Glossary of Site Types

Aboriginal site types

The following is a brief description of most Aboriginal site types.

Artefact Scatters

Artefact scatters are defined by the presence of two or more stone artefacts in close association (i.e. within fifty metres of each other). An artefact scatter may consist solely of surface material exposed by erosion, or may contain sub-surface deposit of varying depth. Associated features may include hearths or stone-lined fireplaces, and heat treatment pits.

Artefact scatters may represent:

- Camp sites: involving short or long-term habitation, manufacture and maintenance of stone or wooden tools, raw material management, tool storage and food preparation and consumption;
- Hunting or gathering activities;
- Activities spatially separated from camp sites (e.g. tool manufacture or maintenance); or
- Transient movement through the landscape.

The detection of artefact scatters depends upon conditions of surface visibility, including vegetation cover, ground disturbance and recent sediment deposition. Factors such as poor light, vegetation, leaf litter may obscure artefact scatters and prevent their detection during surface surveys.

Bora Grounds

Bora grounds are a ceremonial site associated with initiations. They are usually comprise two circular depressions in the earth, and may be edged with stone. Bora grounds generally occur on soft sediments in river valleys, although they may also be located on high, rocky ground in association with stone arrangements.

Burials

Human remains were often placed in hollow trees, caves or sand deposits and may have been marked by carved or scarred trees. Burials have been identified eroding out of sand deposits or creek banks, or when disturbed by development. The probability of detecting burials during archaeological fieldwork is extremely low.

Culturally Modified Trees

Culturally modified trees include scarred and carved trees. Scarred trees are caused by the removal of bark for use in manufacturing canoes, containers, shields or shelters. Notches were also carved in trees to permit easier climbing. Scarred trees are only likely to be present on mature trees remaining from original vegetation. Carved trees, the easiest to identify, are caused by the removal of bark to create a working surface on which engravings are incised. Carved trees were used as markers for ceremonial and symbolic purposes, including burials. Although, carved trees were relatively common in NSW in the early 20th century, vegetation removal has rendered this site type extremely rare. Modified trees, where bark was removed for often domestic use are less easily identified. Criteria for identifying modified trees include: the age of the tree; type of tree (the bark of many trees is not suitable, also introduced species would be unlikely subjects); axe marks (with the need to determine the type of axe - stone or steel – though Aborigines after

settlement did use steel); shape of the scar (natural or humanly scarred); height of the scar above the ground (reasonable working height with consideration given to subsequent growth).

Fish Traps

Fish traps comprised arrangements of stone, branches and/or wickerwork placed in watercourses, estuaries and along coasts to trap or permit the easier capture of sea-life.

Grinding Grooves

Grinding grooves are elongated narrow depressions in soft rocks (particularly sedimentary), generally associated with watercourses, that are created by the shaping and sharpening of ground-edge implements. To produce a sharp edge the axe blank (or re-worked axe) was honed on a natural stone surface near a source of water. The water was required for lubricating the grinding process. Axe grinding grooves can be identified by features such as a narrow short groove, with greatest depth near the groove centre. The grooves also display a patina developed through friction between stone surfaces. Generally a series of grooves are found as a result of the repetitive process.

Isolated Finds

An Isolated find describes a site where only one artefact is visible. These finds are not found in apparent association with other evidence for prehistoric activity or occupation. Isolated finds occur anywhere and may represent loss, deliberate discard or abandonment of an artefact, or may be the remains of a dispersed artefact scatter. Numerous isolated finds have been recorded within the Project Area. An isolated find may flag the occurrence of other less visible artefacts in the vicinity or may indicate disturbance or relocation after the original discard.

Middens

Shell middens comprise deposits of shell remaining from consumption and are common in coastal regions and along watercourses. Middens vary in size, preservation and content, although they often contain artefacts made from stone, bone or shell, charcoal, and the remains of terrestrial or aquatic fauna that formed an additional component of Aboriginal diet. Middens can provide significant information on land-use patterns, diet, chronology of occupation and environmental conditions.

Mounds

Aboriginal mounds are places where people lived and reflect a record of that living space. Mounds may be places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and occasionally Aboriginal burials.

Mythological / Traditional Sites

Mythological and traditional sites of significance to Aboriginal people may occur in any location, although they are often associated with natural landscape features. They include sites associated with dreaming stories, massacre sites, traditional camp sites and contact sites. Consultation with the local Aboriginal community is essential for identifying these sites.

Ochre quarries

Ochre, iron oxide may in colours through brown, yellow to red. Ochre may have been used dry for colouring hair or skin or ground to a fine powder and mixed with mediums such as water, blood, fat, etc as a fixative. Ochre was used for decorating the body, artefacts and rock shelters. Quality deposits provided a valuable resource with evidence of wide spread trade of the substance.

Rock Shelters may contain Art and / or Occupation Deposit

Rock shelters occur where geological formations suitable for habitation or use are present, such as rock overhangs, shelters or caves. Rock shelter sites generally contain artefacts, food remains and/or rock art and may include sites with areas of potential archaeological deposit, where evidence of rock-art or human occupation is expected but not visible. The geological composition of a Project Area will indicate the likelihood for rock shelters to occur.

Stone Arrangements

Stone arrangements include lines, circles, mounds, or other patterns of stone arranged by Aboriginal people. These may be associated with bora grounds, ceremonial sites, mythological or sacred sites. Stone arrangements are more likely to occur on hill tops and ridge crests that contain stone outcrops or surface stone. Preservation of those sites is dependent on minimal impact from recent land use practices.

Stone Quarries

A stone quarry is a place at which stone resource exploitation has occurred. Quarry sites are only located where the exposed stone material is suitable for use either for ceremonial purposes (e.g. ochre) or for artefact manufacture.