

LIDDELL

GLENCORE



Aboriginal Cultural Heritage Management Plan

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1. Acknowledgment

Liddell Coal Operations (LCO) acknowledges the Wonnarua Knowledge Holders of the Upper Hunter Valley, as well as the wider Wonnarua community.

LCO pays respect to beliefs, cultural heritage and continuing connection with the land of the Wonnarua people. LCO also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal communities.

2. Commitment and policy

2.1 Background

LCO is an established open-cut mining operation located at Ravensworth, in the upper Hunter Valley of New South Wales. LCO is operated and managed by Liddell Coal Operations Pty Limited, a wholly owned subsidiary of Glencore Coal Pty Limited (Glencore), on behalf of a joint venture between Glencore (67.5%) and Mitsui Matsushima Australia (32.5%).

The most recent Development Modification (Mod 7. DA 305-11-01), was approved by the Department of Planning Industry and Environment (DPIE) on 12 February 2019.

2.2 Purpose

The objective of this Aboriginal Cultural Heritage Management Plan (ACHMP) is to ensure that Aboriginal cultural heritage within LCO is managed in accordance with all relevant legislation, in consultation with Registered Aboriginal Parties (RAPs), and to satisfy development consent requirements.

The strategies in this ACHMP address a range of management requirements that consider:

- Existing management measures;
- Possible impacts to heritage at LCO;
- Variance in site type and significance; and
- Requirements for further investigation.

2.3 Scope

This ACHMP details the management strategies for Aboriginal sites, areas of archaeological sensitivity and unassessed areas at LCO. *Figure 1* shows the ACHMP boundary and LCO managed areas.

Appendix A provides a glossary of some of the frequently used terms and concepts in this plan.

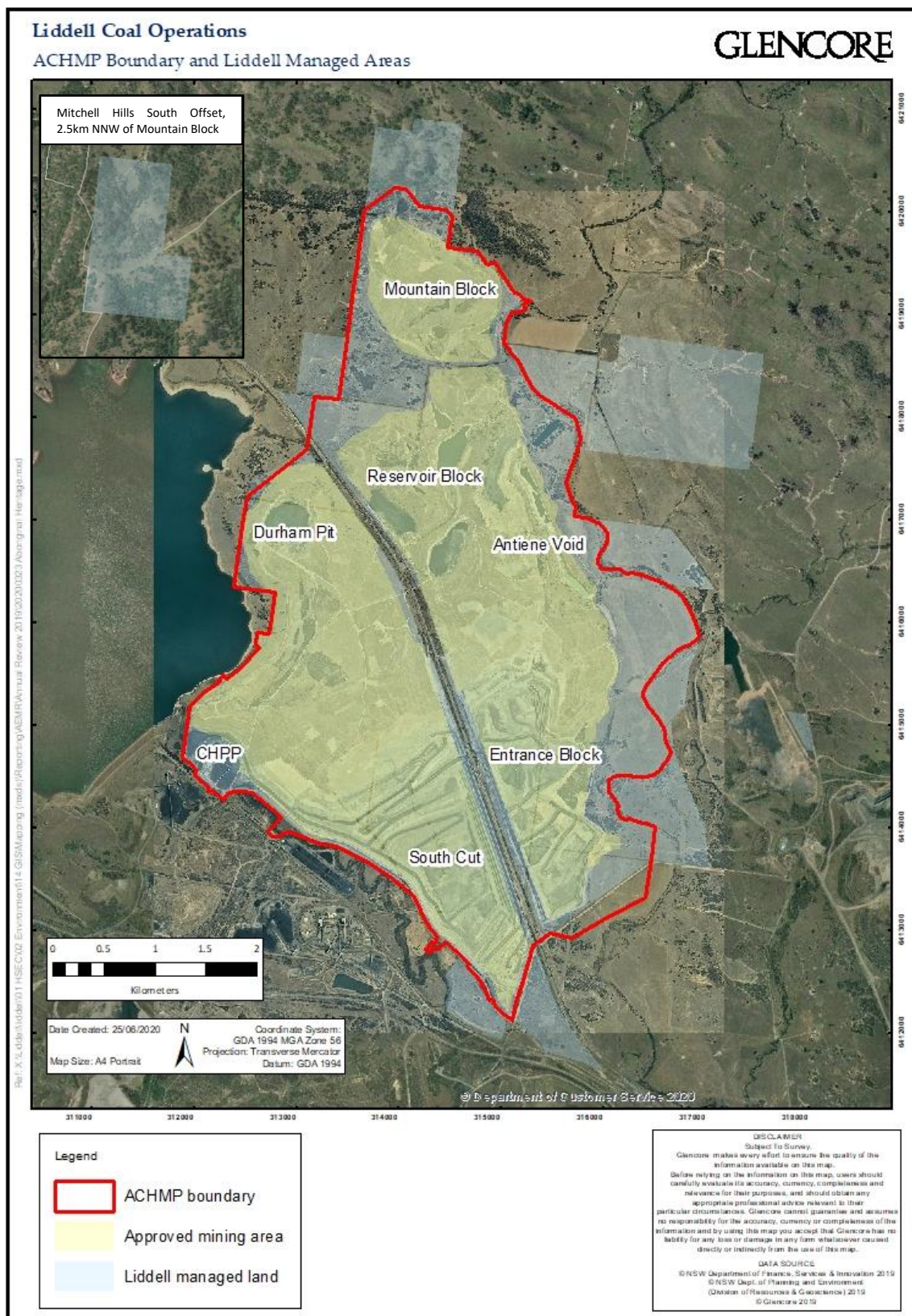


Figure 1: LCO ACHMP Boundary and LCO Managed Areas

3. Approvals to Operate

Operations at LCO are carried out in accordance with the requirements of Development Approval DA 305-11-01 Modification 7.

3.1 Development Approval

LCO operates under the provisions of DA 305-11-01 Modification 7 issued under Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). The current modification was approved on 12th February 2019. There has been no change to the approved mining area, ACHMP boundaries or associated ACHMP management processes since the approval of Modification 5 as shown in *Figure 1*.

Conditions required by modification approvals, and their compliance in this ACHMP, are detailed in Appendix B.

3.2 Mining and Exploration Leases

LCO currently works under the provisions of several mining leases, coal explorations licences and authorisations (ML1597, ML1313, CCL. 708 and ML 1552).

Conditions from these approvals relevant to the ACHMP are detailed in Appendix B.

3.3 Aboriginal Heritage Impact Permits/Consents

LCO were granted five Aboriginal Heritage Impact Permits (AHIPs; formerly known as Section 87 permits or Section 90 consents) in accordance with the *National Parks & Wildlife Act 1974* (NPW ACT).

Details concerning AHIPs issued in the past are in Appendix C.

3.4 Care and Control Permits

The LCO adheres to the requirements of AHIPs for the storage and curation of salvaged artefacts. Following receipt of any care and control permit, this ACHMP will be updated to document any required arrangements (see *Section 6.2*).

Artefacts salvaged under AHIP 2348 were transferred from LCO to Wanaruah Local Aboriginal Land Council for safe keeping in perpetuity in 2016, in accordance with *Care and Control Permit #2884*.

The temporary storage location for artefacts salvaged under AHIP 2883, 2896 and C0000623 is:

Location name	Liddell Coal Operations
Address	Site office, Old New England Highway, Ravensworth NSW 2330
Coordinates	315,090 E 6,412,508 N (GDA 1994 MGA Zone 56)

The long-term management of artefacts temporarily stored is reburial, in accordance with *Requirement 26 "Stone artefact deposition and storage"* in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. Consultation with RAPs will occur prior to any reburial.

3.5 Commitments

All commitments outlined within this management plan are detailed in *Table 3-1*.

Table 3-1 – Commitments within this management plan

Commitment No.	Management Plan Commitment	Location in Document
1	Following consultation with the RAPs, LCO will submit the revised ACHMP to Heritage NSW for comment and subsequently DPIE for approval.	4
2	One position will be offered to each of the existing RAPs for all ASRG consultation activities.	4.2
3	Possible future impacts not identified in this ACHMP to any of the extant portions of sites will require further assessment.	6.1
4	Should erosion affecting extant sites or a SAL is identified, and this is determined to have affected the condition of the site since it was recorded, then further erosion control will take place. Erosion control will not be implemented in this case if the impacts of the erosion control outweigh those of the erosion itself.	6.1.2
5	All erosion control measures that take place within an Aboriginal site are to be documented through photography and the condition of the site is to be updated in the annual review.	6.1.3
6	Any stock within the ACHMP boundary is to be excluded from Aboriginal sites. This will require LCO to either construct fencing sturdy enough to keep the stock out or for the stock to be excluded from the paddocks that contain Aboriginal sites.	6.1.4
7	Where there has been partial impact at an Aboriginal site through an authorised salvage, the remaining portion will be fenced.	6.1.7
8	Fencing at any individually fenced sites shall be maintained for both site presentation, as well as being a visible impact deterrent.	6.1.7
9	If a newly recorded site is assessed as having low scientific values it will be salvaged through a collection of all surface artefacts by qualified archaeologists and RAPs using the following methodology: • All visible artefacts at a site will be flagged in the field	6.2.1

Commitment No.	Management Plan Commitment	Location in Document
	• The site will be photographed after flagging and before recording • All artefacts will have the following artefact information entered directly into a GPS unit: • Location; • Artefact class; • Artefact type; • Size; • Reduction level; • Raw material; and • Notes. • A selection of indicative and/or unusual artefacts from each site will be photographed • A sketch plan of the site will be completed indicating zones for the surface collection of artefacts • Once all recording is complete, the artefacts will be collected according to site zones with artefacts from each zone being kept separate • If at the time of salvage there is evidence that subsurface deposits exist at a particular site then, with the agreement of the archaeologist and RAPs present, archaeological salvage will take place at that site • Should the excavations encounter a human burial, all work will cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought • The findings will be incorporated into a report held by LCO • All artefacts will be retained by LCO for safe-keeping and placed in a secure storage location • Following salvage, an <i>Aboriginal Site Impact Recording Form</i> (ASIRF) will be submitted to AHIMS.	
10	If a newly recorded site is assessed as having moderate or high scientific values, and there is a probability of intact subsurface deposits, the site will be salvaged through a program of limited archaeological excavation by qualified archaeologists and RAPs using the following methodology: • All surface artefacts will be collected and moved to a place of safe-keeping under the methodology set out in Section 6.2.2. This is to ensure that the artefacts are not harmed during the following excavation process	6.2.1

Commitment No.	Management Plan Commitment	Location in Document
	• Ten 0.5m x 0.5m excavation squares (2.5 square metres) will be excavated to culturally sterile soil levels at any one site. All investigations will be within the approved disturbance area • It will be possible to conduct up to five shovel pits (approximately 0.15m x 0.15m) at any location to help determine the placement of excavation squares • The ten excavation squares could be grouped together or spaced at no more than 5m apart. Thus a 45m transect could be investigated, or a 2.5 square metre contiguous area excavated • Spits at each area will start in 5cm increments although 10cm increments could be used once it is established it is archaeologically prudent to do so • All deposits will be dry sieved at location • All recording will be done in the field in standard context sheets and the archaeologist will ensure that all necessary photographs, section drawings and soil analysis shall take place • A maximum area of 2.5 square metres shall be excavated at any one area unless deposits and finds warranted a further expansion (see below) • The decision to expand from the mandated 2.5 square metres shall be determined by the results of the ten 0.5m x 0.5m squares and will be done in consultation between the archaeologists and RAPs present. It will be possible, if agreement is reached between the archaeologist and RAPs present, to expand beyond the 2.5 square metres should deposits or finds indicate that it would be desirable. The grounds for expansion will include: ○ The complete excavation of a feature (such as a hearth) that may have been intersected by an excavation square ○ The complete excavation of a concentration of artefacts such as a knapping floor that may have been intersected by an excavation square. • Any expansion beyond the 2.5 square metres will include areas totalling no more than an additional four 0.5m x 0.5m squares [one square metre] • Should the excavations encounter a human burial, all work will cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought • All excavated material (stone tools, bone, shell etc.) will be fully analysed and a report of the findings prepared	

Commitment No.	Management Plan Commitment	Location in Document
	Following salvage, an ASIRF will be submitted to AHIMS.	
11	In the event that human/possible human skeletal material is exposed within the LCO or in association with works being done on behalf of the LCO, it will be managed in accordance with legal requirements, the wishes of the relevant Aboriginal parties and Heritage NSW requirements. Should human/possible human skeletal material (single bones or an intact burial) be located within any area, it will be managed in accordance with the procedure outlined below. • Works in the immediate vicinity of the skeletal material will cease to allow assessment and management • The skeletal material will be inspected to determine if it is human or animal. If necessary, advice will be sought from a forensic specialist • If the skeletal material is human or thought to be human, NSW Police will be contacted • A physical or forensic anthropologist will be engaged to inspect the remains <i>in situ</i>, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic) • If the remains are identified as forensic the area is deemed as crime scene • If the remains are identified as Aboriginal, the site is to be secured and Heritage NSW and all RAPs will be advised • If the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Office is to be contacted. The above process functions only to appropriately identify the remains and secure the site. From this time, if the remains are Aboriginal, the management of the remains is to be determined through liaison with Heritage NSW and RAPs.	6.2.3
12	For the remainder of artefacts previously salvaged at LCO, the following will be completed as per the outcomes of previous consultation with the RAPs: • Artefacts transferred to LCO storage temporarily while a Care and Control Permit is developed; • Selected artefacts to be in care of WLALC but will be available to RAP groups. Remaining artefacts (not selected for educational uses) are to remain in the care of LCO; • Artefacts will be reburied at LCO post-operation.	6.3
13	Should any Aboriginal cultural heritage site or area be impacted by works not authorised as described in this plan, LCO will report	7.2.2

Commitment No.	Management Plan Commitment	Location in Document
	the non-compliance or potential non-compliance to the DPIE as soon as practicable after identifying the incident. This report will include a description of the incident, its circumstances and the corrective measures undertaken.	
14	This ACHMP will be subject to review every five years at a maximum. It may be reviewed sooner than this under the following circumstances: - According to the conditions listed in Schedule 5 Condition 10 of DA-305-11-01 (the Consent) within 3 months of: - The submission of an Annual Review as per Schedule 5 Condition 3 of the Consent - The submission of an incident report as per Schedule 5 Condition 11 of the Consent - The submission of an audit as per Schedule 5 Condition 4 of the Consent; or any modification to the conditions of the Consent. The Applicant shall review, and if necessary revise, the strategies, plans and programs required under the Consent to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 2 months of the review the revised document must be submitted to the Secretary for approval, unless the conditions in Schedule 3 provide for an alternative timing and/or the Secretary agrees otherwise. - Change in legislation occurs; - Modification is made to development approval containing conditions relevant to Aboriginal cultural heritage; or - At the request of LCO.	8
15	Any updates to cultural heritage management will be included in the Annual Review so that relevant stakeholders have access to current information. Such information could include, but not limited to, the following: - Updates of community consultation - Salvage measures that have been executed - Remaining management measures to be enacted.	8.1

4. External Consultation

All consultation occurs in accordance with *CAA HSEC STD 0010 Community and Stakeholder Engagement* and *CAA HSEC PCL 0013 11.21 Aboriginal Cultural Heritage NSW*. The consultation mechanisms are also consistent with *GCAA Community and Stakeholder Engagement* standard outlines GCAA's protocol for community engagement.

Since 2008, consultation on ACHMPs has occurred with:

- Registered Aboriginal Parties (RAPs)
- Department of Planning, Industry and Environment (DPIE)
- Office of Environment and Heritage (pre-July 2019)
- Heritage NSW, DPIE (post-July 2019)

The process for ACHMP review/updates is to first consult with RAPs, Heritage NSW and then submit to DPIE for consultation and approval. For historical consultation, refer back to previous versions of the ACHMP. The RAPs involved in the development of the first ACHMP for Liddell are in *Table 4-1*, including a current status.

An “*active*” status means the RAP remains a part of the regular consultation group with LCO. An “*inactive*” status means the RAP has not engaged with LCO within the last 3 years and are not part of the regular consultation group. New RAPs in the local Aboriginal community can be added by sending a request to LCO. As per the relevant guidelines, the RAP list will be renewed for the project if Aboriginal objects are likely to be harmed and an AHIP required.

Table 4-1 – Registered Aboriginal Parties (RAPs) for Liddell

Registered Aboriginal Party	Status	Registered Aboriginal Party	Status
Cacatua Culture Consultant	Active	Yinarr Cultural Services	Active
Hunter Traditional Owners	Active	Wonnarua Nation Aboriginal Corporation	Active
Hunter Valley Aboriginal Corp	Active	Myland Cultural & Heritage Group	Active
Ungooroo Cultural and Community Services	Active	Ungooroo Aboriginal Corporation	Active
Wattaka Wonnarua Cultural C. Service	Active	Wanaruah LALC	Active
Kauwul T/A Wonn1	Active	Tocomwall Pty Ltd	Active
Amanda Hickey Cultural Services	Active	Kayaway Eco Cultural & Heritage Services	Inactive
Ngarramang-Kuri Aboriginal Culture & Heritage	Inactive	T&G Cultural Consultants	Inactive
Hunter Valley Cultural Surveying	Inactive	Wonnarua Culture Heritage	Inactive
KL KG Saunders Trading Services	Inactive	-	-

Table 4-2 shows a summary of ACHMP consultation with external stakeholders since 2018. Responses to consultation events from 2020 onwards are in Appendix D. Further detail for each event is stored on site databases, and available upon request.

Table 4-2 – Summary of External Consultation for ACHMP

Date	Type	Subject	Stakeholder
26 June 2018	Meeting	- Minor amendments to the DA Boundary to allow remediation works at the interface of Mountain Block Offset area and historical rehabilitation - Minor amendments to improve the efficiency of the operation and flexibility required for the development of the final landform - Extension of the DA boundary within the Mt Block Offset Area involved a specific Aboriginal and Historic Due Diligence assessment	All RAPs
16 July 2018	Meeting	Discuss the proposed modification and provide the outcomes of the due diligence assessment. Minutes sent out 24 July 2018. Modification 7 was approved on 12 February 2019.	All RAPs
4th July 2019	Annual document review	- No change to the approved mining area, ACHMP boundaries or associated ACHMP management processes since last RAPs Modification 7 consultation. - Invitation to review draft version of ACHMP sent to RAPs	DPIE, OEH, all RAPs
30 June 2020	Annual document review	- Document update - No change to the approved mining area, ACHMP boundaries or associated ACHMP management processes - New sites added from due diligence surveys - Invitation to review draft version of ACHMP sent to RAPs (June 2020) - Submitted for review to Heritage NSW (Aug 2020) - Submitted for review to DPIE (Nov 2020)	DPIE, Heritage NSW, all RAPs

Avenues for ongoing consultation are to be maintained during operations at LCO. This will be achieved through the reformation of an Aboriginal Stakeholder Reference Group (ASRG) ¹. One position is offered to each of the existing RAPs for all ASRG consultation activities. Any management of Aboriginal heritage not discussed in this ACHMP (i.e. possible future impacts to sites not currently planned) will require a revision of this ACHMP.

The details and minutes of the Annual Stakeholder inspections and other meetings held at LCO are in Appendix D.

¹ The formation of an ASRG was a feature of the 2008 LCO ACHMP.

5. Archaeological Investigation at LCO

5.1 Background

The ACHMP Boundary has been subject to extensive Aboriginal archaeological investigations since mining was initiated and early archaeological surveys include Haglund (1982), Brayshaw (1982 and 1983) and Davies (1991). More recently, archaeological investigations have been completed by Umwelt (2001b, 2008, 2009, 2010, 2011 and 2013) and OzArk (2012, 2013a, 2013b, 2014a, 2014b, 2015, 2016, 2017a and 2017b).

Past archaeological investigations discuss the distribution of Aboriginal archaeological sites throughout LCO. Sites have been recorded over all landforms, the majority, however, being located along the watercourses of Bayswater, Chain of Ponds and Bowmans Creeks as well as their tributaries. A lower number of sites have been recorded on crests somewhat more distant from water.

A Geographical Information System (GIS) database of Aboriginal archaeological sites previously identified within the LCO has been developed to assist in the management of Aboriginal cultural heritage (**Section 6.4**).

5.2 Aboriginal Sites

Aboriginal sites can include a number of site types. Within the ACHMP Boundary, the only site types present include artefact scatters (including those with associated potential archaeological deposit (PAD)) and isolated artefacts.

There are 24 extant or partially extant sites remaining in the landscape that are registered on the Heritage NSW *Aboriginal Heritage Information Management System* (AHIMS) database. Three sites have been subject to partial salvage and are listed as ‘partially destroyed’. The 47 sites subject to complete salvage works in the past, now listed as ‘destroyed’, are shown in *Figure 2*.

The Heritage NSW AHIMS database can be accessed at the web address:

<https://www.environment.nsw.gov.au/awssapp/Login.aspx?ReturnUrl=%2fawssapp>

Two archaeologically sensitive topsoil stockpiles have been created as a recommendation from the Oz Ark Environment and Heritage. 2013. *Aboriginal and Historic Heritage Assessment: Liddell Coal Operations: Modification 5 to Development Consent* report. The location of the Rav 24 East and LID 3 topsoil stockpiles are contained in *Figure 9*.

5.3 Areas of Archaeological Sensitivity

Previous assessments have identified five sensitive archaeological landforms (SALs), shown in Figure 3 and Figure 4:

1. Bowmans Coalhole Ck SAL
2. Hebden Bowmans Ck SAL
3. LID-BC-SAL
4. Bowmans Ck SAL 1
5. Bowmans Ck SAL 2

Where previously recorded sites are within a SAL, the management of the SALs is partly covered by the management of their constituent sites (*Figure 5 to Figure 8*). SALs beyond the extent of the identified sites do not have statutory protection. LCO follows a duty of care for these areas as the potential for subsurface Aboriginal deposits and/or objects has been identified.

The archaeological potential of a portion of LID-BC-SAL has been tested through sub-surface investigations in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b) (OzArk 2012) and has now been removed from the SAL extent.

5.4 Unassessed Areas

There are limited areas within the ACHMP Boundary that have not been subject to an archaeological assessment, shown in *Figure 8*. These areas in the west of the ACHMP Boundary, near Lake Liddell, are within the DA boundary but outside of areas of current operations or impacts. Unassessed areas also exist within LCO's buffer properties, outside of operations and impacts.

The management of unassessed areas is conditional upon the nature of any future works and as such cannot be specified in this ACHMP. General recommendations are made to guide future management of such areas in section 6.

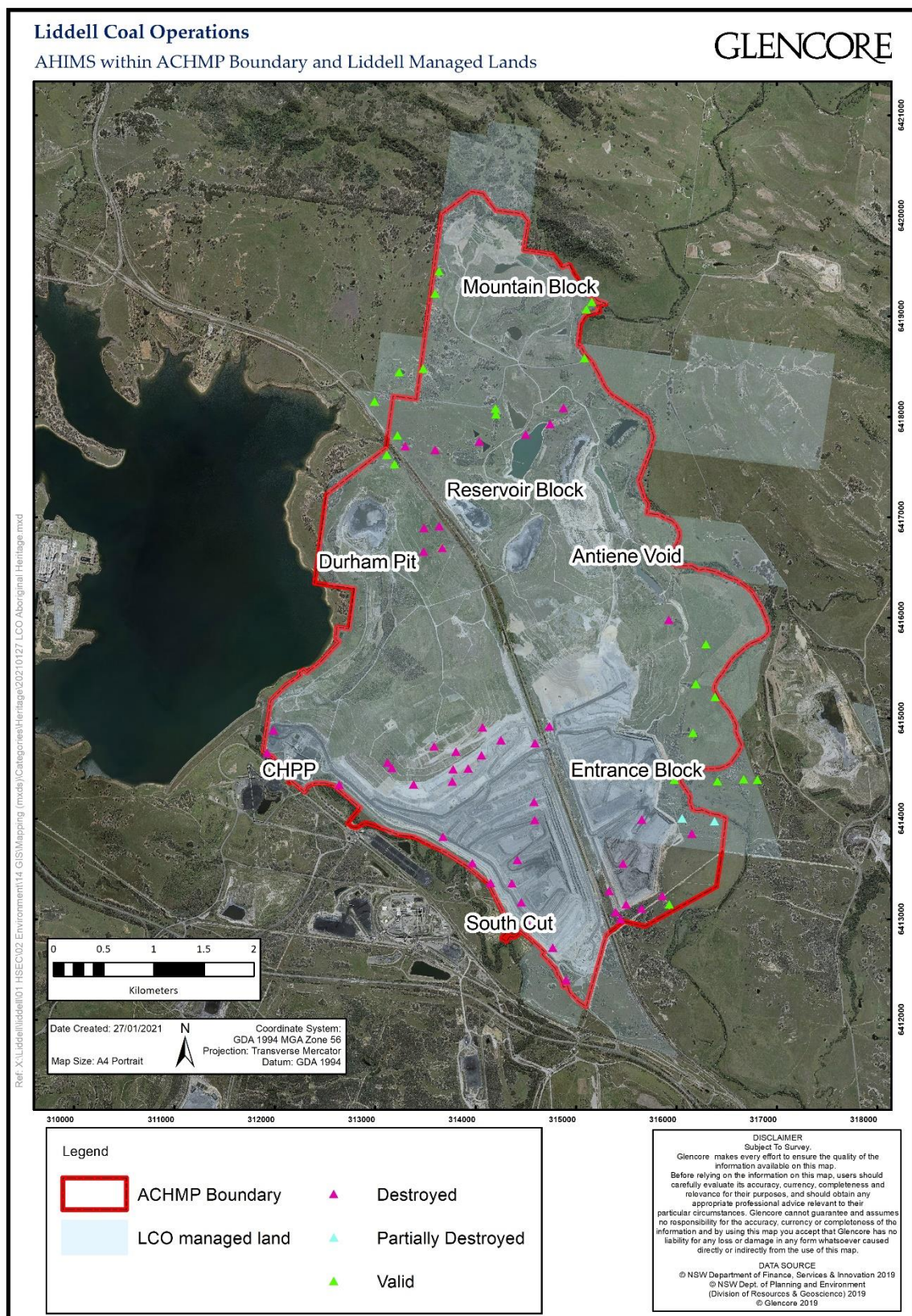


Figure 2– Status of Aboriginal Heritage Information Management Sites at Liddell.

Table 2 – Extant or partially extant sites within the ACHMP Boundary

AHIMS ID	Site Name	Site Type	GDA Zone 56 East	GDA Zone 56 North
37-3-0452	LID3	Artefact scatter	315673	6414490
37-3-0453	LID2	Artefact scatter	315979	6414389
37-3-0709	AN1 (Liddle Mine)	Isolated find	312992	6418154
37-3-0710	AN2 (Liddle Mine)	Artefact scatter	313221	6417814
37-3-0711 ²	SP2 (Liddle Mine)	Artefact scatter	313298	6417719
37-3-1136	LID ES1	Artefact scatter	316056	6414005
37-3-1150	LID34	Artefact scatter	316378	6413974
37-3-1154	HAZ-OS1 with PAD	Artefact scatter with PAD	316164	6414853
37-3-1166	Lidee – IF3	Isolated find	315929	6413148
37-3-1407	Liddell Bowmans Ck OS-1	Artefact scatter	316386	6415213
37-3-1404	Liddell Bowmans Ck OS-2	Artefact scatter	316193	6415344
37-3-1412	Liddell Bowmans Ck IF-1	Isolated Find	316295	6415737
37-3-1405	Hebden Bowmans Ck IF-1	Isolated Find	315085	6418585
37-3-1406	Bowman Coalhole Ck IF-1	Isolated Find	315104	6419071
37-3-1403	Bowman Coalhole Ck IF-2	Isolated Find	315156	6419144
37-3-1402	Mountain Block OS-1	Artefact scatter	313477	6418480
37-3-1401	Mountain Block OS-2	Artefact scatter	313240	6418444
37-3-1408	Liddell Muddle OS-1	Artefact scatter	313636	6419449
37-3-1409	Liddell Muddle IF-1	Isolated Find	313598	6419226
37-3-1598	LTM-IF1	Isolated Find	316810	6414388
37-3-1592	LID34 ³	Isolated find	314202	6418024
37-3-1593	LID35 ³	Isolated find	314197	6418086

² 37-3-0711 is a later recording at the same location of 37-3-0456 which had been formerly salvaged.³ 37-3-1592 and 37-3-1593 recorded in 2020. Duplicate *Site Name* undergoing update in AHIMS.

AHIMS ID	Site Name	Site Type	GDA Zone 56 East	GDA Zone 56 North
37-3-1599	LTM-IF2	Isolated Find	316687	6414403
37-3-0769	Bowmans Creek 14	Artefact scatter	316413	6414370



Figure 3—SALs within the northern ACHMP Boundary



Figure 4– SALs within the eastern ACHMP Boundary

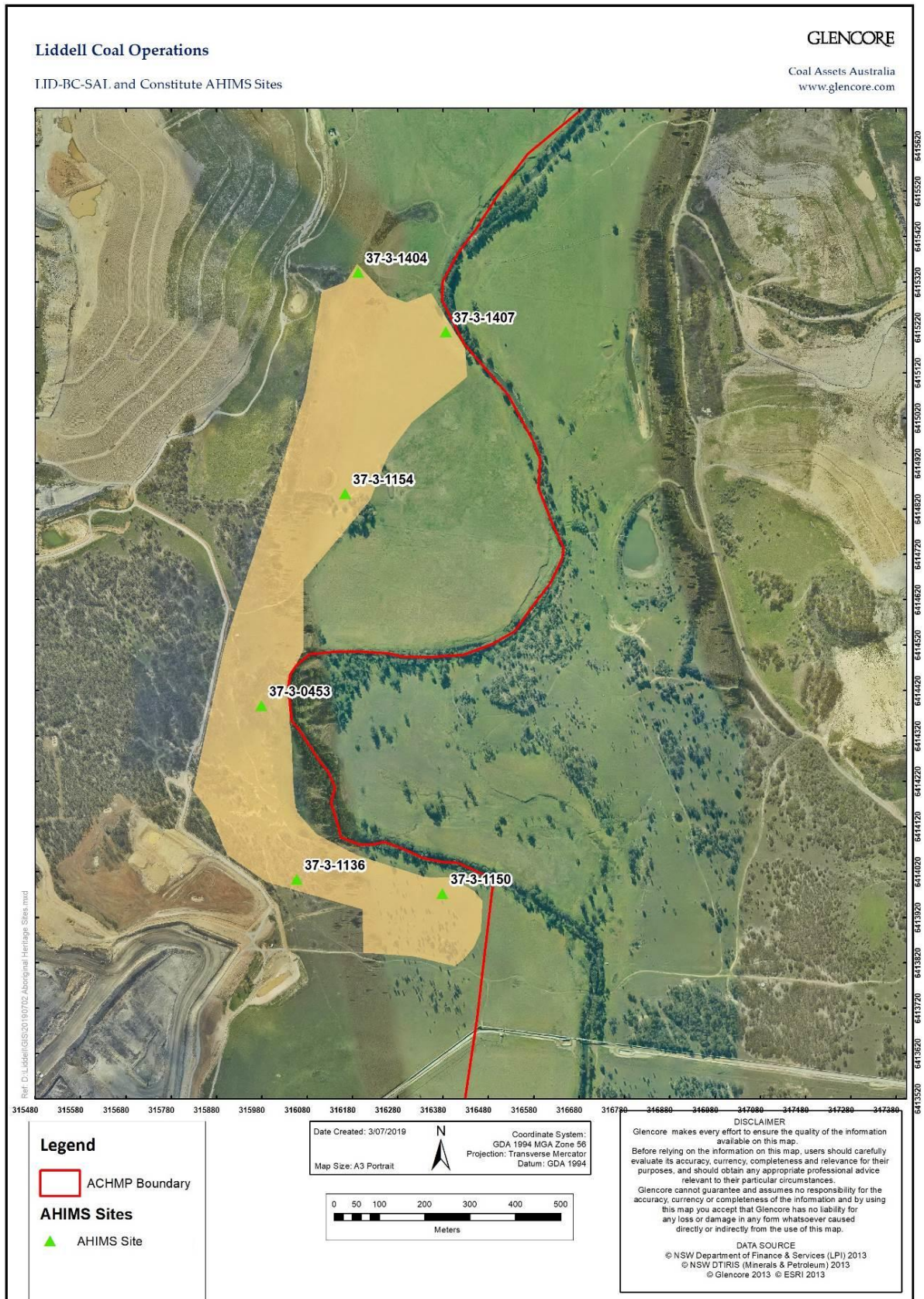


Figure 5– LID-BC-SAT and constitute AHIMS sites



Figure 6– Hebden Bowmans Ck SAL and constitute AHIMS site

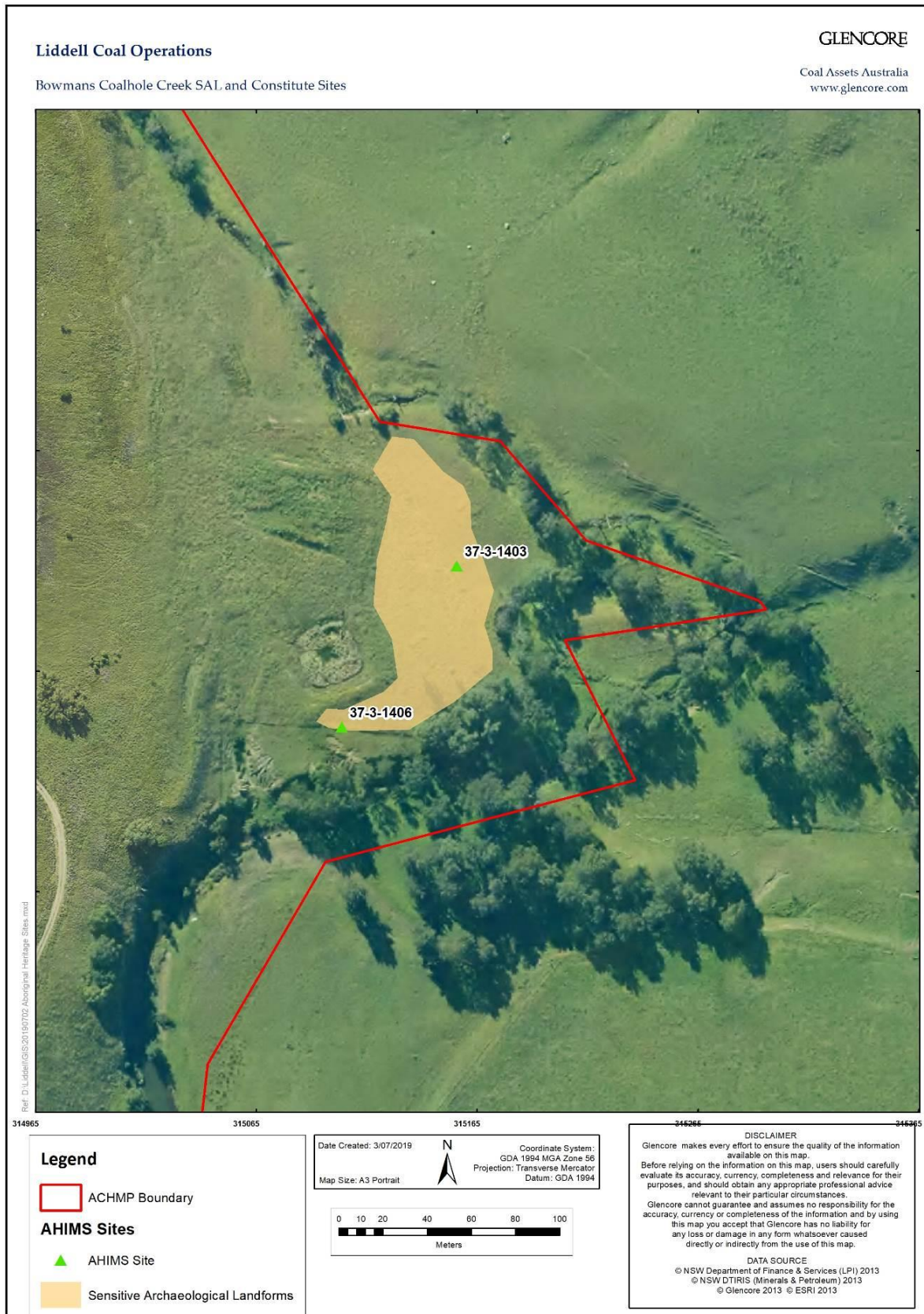


Figure 7–Bowman Coalhole Ck SAL and constitute AHIMS sites



Figure 8– Unassessed areas within the ACHMP Boundary



Figure 9 - Archaeologically Sensitive Topsoil Locations

6. Aboriginal Cultural Heritage Management

6.1 Internal Protocols

Internal protocols are in place for heritage that include the following features:

- LCO maintains a register of all known sites that are extant including plans, coordinates, and descriptions of the sites;
- LCO have systems in place that alert the environmental management staff to any possible impacts to sites arising from potential future works that are outside of the normal operation of the mine
- Possible future impacts not identified in this ACHMP to any of the extant portions of sites will require further assessment. Such further assessment may include:
 - A re-evaluation of significance in light of possible changes in the conditions to the site and cumulative impact
 - Possible site inspection(s) to establish current site condition if not already known
 - Consultation with a suitably qualified heritage professional to determine the level of assessment appropriate (i.e. desktop, field inspection, RAP involvement).

6.1.1 Ground Disturbance Permit

LCO has a Ground Disturbance Permit (GDP; *CAA HSEC PER 0004*) which includes due diligence to determine whether a proposed activity will harm an Aboriginal object under the *NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects* (NSW Minerals Council 2010). The GDP process has triggers in place that require the Environment and Community department to consider potential impacts prior to any ground disturbance. This involves using the LCO GIS database (refer to section 6.4) to determine whether the:

1. Disturbance will occur in the vicinity of a recorded site
2. Area proposed for disturbance has been surveyed
3. Disturbance is within a SAL.

The outcomes of this process will then inform whether the work is approved and controls are required to be implemented prior to or during proposed works to prevent impacts to Aboriginal heritage sites.

6.1.2 Erosion Control

Erosion and sediment control is generally managed via the process documented in *LIDOC-90533967-3694 - Water Management Plan*. Any general erosion control undertaken within an Aboriginal site, as part of a broader scheme of land management, is to be assessed under the Due Diligence process (NSW Minerals Council 2010).

Erosion control measures may be implemented at known protected Aboriginal sites under erosion threat if identified as an issue through consultation with the RAPs. Erosion control actions may be undertaken in a manner that avoids disturbance to Aboriginal objects where possible.

Should erosion control measures be required within an extant site boundary then an AHIP will be required. The AHIP could allow for the temporary movement of artefacts and relocation following erosion control measures.

All erosion control measures that take place within an Aboriginal site are to be documented through photography. The condition of the site is to be updated in the annual review (section 8.1).

6.1.3 Bushfire Hazard Reduction

The principles set out in the NSW Rural Fire Service's *'The Conditions for Hazard Reduction and Aboriginal Heritage'* will generally be followed when assessing appropriate measures to curtail bushfire hazard within an Aboriginal site (RFS 2006). The preferred method of clearing excessive fuels is manual clearance, with hand-held mechanical trimming allowed. Vegetation is not to be cut shorter than 100mm. No such restrictions apply to the portions of SALs that do not contain Aboriginal sites.

6.1.4 Exclusion of Stock

Any stock within the ACHMP Boundary is to be excluded from Aboriginal sites. This will require LCO to either construct fencing sturdy enough to keep the stock out or for the stock to be excluded from the paddocks that contain Aboriginal sites.

Stock grazing is permitted to take place across PADs or SALs provided that they are not associated with an Aboriginal site.

6.1.5 Vegetation Removal and Weed Control

Noxious weed control may occur within management areas provided that their physical weed removal is necessary, weeds are cut above ground level and/or poisoned and not uprooted or ripped from the ground so as to avoid ground disturbance. Where root balls have been inadvertently pulled from the surface, the soil shall be promptly returned to its original location and methods amended to avoid reoccurrence.

6.1.6 Revegetation in Offset Areas

Improving the biodiversity values of offset areas over the LCO DA boundary and LCO owned offset areas is an action required of LCO under existing mining approvals, documented in *LIDOC-90533967-3755 - Biodiversity Offset Management Plan (BOMP)*.

As discussed with LCO RAPs, where revegetation is required within SALs, LCO will offer labour positions in accordance with the *GCAA Umbrella Agreements* to complete hand planting of native vegetation or other revegetation measures as agreed to achieve the required outcomes. In preparation for hand planting of native vegetation, consultation with LCO RAPs concluded that slashing within a SAL away from Aboriginal sites is permissible to promote planting success.

No ground surface disturbance is permissible within an Aboriginal site. As such, no revegetation activities can take place within an Aboriginal site without an AHIP. Hand-planting of tube stock is however permissible within SALs, away from Aboriginal sites. In order to access SALs for revegetation activities, only light, rubber-tyred vehicles will be used. No tracked equipment are permitted to traverse any SALs or in-situ Aboriginal sites. Access to SALs or Aboriginal sites will be restricted during wet weather.

Subsequent maintenance for revegetation activities such as weed spraying or watering of tubestock will be conducted using only light, rubber-tyred vehicles, outside of periods of wet weather.

6.1.7 Fencing of Aboriginal Sites and SALs

Individual fencing at extant sites and SALs in *Figure 2* and *Figure 3* will be considered on a case by case basis, with the desired outcome being the long-term preservation of the site. Fencing may be considered as unnecessary in locations of low risk. At LCO these areas of low risk are sites identified within Biodiversity Offset Areas. Personnel accessing these offset areas is minimal with artefacts located away from access tracks. Any personnel working near Aboriginal artefacts are made aware of their location prior to commencement. At sites where fencing has been deemed unnecessary, signage identifying the area as having Aboriginal artefacts will be placed along tracks/boundaries of the site.

Where ground disturbance work is proposed in close proximity to an Aboriginal site or SAL, temporary or permanent fencing will be erected around the site extent with a 10 meter buffer. Works associated with DA 305-11-01 Modification 6 employed the described temporary fencing and signage measures successfully mitigating any impacts to surrounding sites. Whilst the majority of the works located near Bowmans Ck SAL 1 and Bowmans Ck SAL 2 have been completed, LCO are maintaining the temporary fencing until all pipelines associated with Modification 6 have been installed and commissioned.

Fencing at these sites, if required, shall constitute at a minimum star pickets placed at a 10 meter buffer of observable Aboriginal objects and connected by a strand of high visibility cord. Where there is doubt over the extent of surface artefacts a competent person will be involved in an inspection to identify the extent of visible Aboriginal objects (usually stone artefacts) on the surface. Where grazing by stock poses a risk to a site, more substantial, stock proof fencing may be required (see section 6.1.4).

Where there has been partial impact at an Aboriginal site through an authorised salvage, the remaining portion will be fenced.

Fencing at any individual sites shall be maintained for both site presentation, as well as being a visible impact deterrent.

Fencing may be omitted or removed if it brings undesired attention to the site from vandals or otherwise increases risk of damage to the site.

6.2 Previously Unrecorded Finds

6.2.1 Protocol for Previously Unrecorded Finds within the Approved Disturbance Area

There may be recorded further Aboriginal sites or objects within approved disturbance areas (*Figure 1*). Such a scenario will probably only refer to very low density artefact scatters or isolated finds.

Should items that are believed to be of Aboriginal origin be noted, all work in the immediate vicinity of the find will cease and advice will be sought from a qualified archaeologist as to the significance and possible management of the find. No works will re-commence in the area until the find is appropriately assessed.

If harm to a newly recorded site is likely, it will be appropriately salvaged under the terms of this ACHMP, without an AHIP being applied for.

Items or sites assessed as having low scientific values will be managed by undertaking a collection of surface artefacts (section 6.2.1.1). Sites assessed as having moderate or high scientific values will be managed through limited archaeological excavation (section 6.2.1.2).

A site card registration for any new site will be submitted to AHIMS.

6.2.1.1 Surface Artefact Collection

If a newly recorded site is assessed as having low scientific values it will be salvaged through a collection of all surface artefacts by qualified archaeologists and RAPs using the following methodology:

- All visible artefacts at a site will be flagged in the field
- The site will be photographed after flagging and before recording
- All artefacts will have the following artefact information entered directly into a GPS unit:
 - Location;
 - Artefact class;
 - Artefact type;
 - Size;
 - Reduction level;
 - Raw material; and
 - Notes.
- A selection of indicative and/or unusual artefacts from each site will be photographed
- A sketch plan of the site will be completed indicating zones for the surface collection of artefacts
- Once all recording is complete, the artefacts will be collected according to site zones with artefacts from each zone being kept separate
- If at the time of salvage there is evidence that subsurface deposits exist at a particular site then, with the agreement of the archaeologist and RAPs present, archaeological salvage will take place at that site
- Should the excavations encounter a human burial, all work will cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought
- The findings will be incorporated into a report held by LCO
- All artefacts will be retained by LCO for safe-keeping and placed in a secure storage location
- Following salvage, an *Aboriginal Site Impact Recording Form* (ASIRF) will be submitted to AHIMS.

6.2.1.2 Limited Archaeological Excavation

If a newly recorded site is assessed as having moderate or high scientific values, and there is a probability of intact subsurface deposits, the site will be salvaged through a program of limited archaeological excavation by qualified archaeologists and RAPs using the following methodology:

- All surface artefacts will be collected and moved to a place of safe-keeping under the methodology set out in section 6.2.1.2. This is to ensure that the artefacts are not harmed during the following excavation process
- Ten 0.5m x 0.5m excavation squares (2.5 square metres) will be excavated to culturally sterile soil levels at any one site. All investigations will be within the approved disturbance area
- It will be possible to conduct up to five shovel pits (approximately 0.15m x 0.15m) at any location to help determine the placement of excavation squares

- The ten excavation squares could be grouped together or spaced at no more than 5m apart. Thus a 45m transect could be investigated, or a 2.5 square metre contiguous area excavated
- Spits at each area will start in 5cm increments although 10cm increments could be used once it is established it is archaeologically prudent to do so
- All deposits will be dry sieved at location
- All recording will be done in the field in standard context sheets and the archaeologist will ensure that all necessary photographs, section drawings and soil analysis shall take place
- A maximum area of 2.5 square metres shall be excavated at any one area unless deposits and finds warranted a further expansion (see below)
- The decision to expand from the mandated 2.5 square metres shall be determined by the results of the ten 0.5m x 0.5m squares and will be done in consultation between the archaeologists and RAPs present. It will be possible, if agreement is reached between the archaeologist and RAPs present, to expand beyond the 2.5 square metres should deposits or finds indicate that it would be desirable. The grounds for expansion will include:
 - The complete excavation of a feature (such as a hearth) that may have been intersected by an excavation square
 - The complete excavation of a concentration of artefacts such as a knapping floor that may have been intersected by an excavation square.
- Any expansion beyond the 2.5 square metres will include areas totalling no more than an additional four 0.5m x 0.5m squares [one square metre]
- Should the excavations encounter a human burial, all work will cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought
- All excavated material (stone tools, bone, shell etc.) will be fully analysed and a report of the findings prepared
- Following salvage, an ASIRF will be submitted to AHIMS.

6.2.2 Sites Recorded Outside the Approved Disturbance Area

New sites recorded outside of approved disturbance areas, but within the ACHMP Boundary, will be managed under this ACHMP. Should impacts to these sites be proposed, an AHIP application will be made to OEH; they cannot be salvaged under the terms of this ACHMP.

A site card registration for any new site will be submitted to AHIMS.

6.2.3 Management of Potential Human Skeletal Remains

In the event that human/possible human skeletal material is exposed within the LCO or in association with works being done on behalf of the LCO, it will be managed in accordance with legal requirements, the wishes of the relevant Aboriginal parties and Heritage NSW requirements. Should human/possible human skeletal material (single bones or an intact burial) be located within any area, it will be managed in accordance with the procedure outlined below.

1. Works in the immediate vicinity of the skeletal material will cease to allow assessment and management
2. The skeletal material will be inspected to determine if it is human or animal. If necessary, advice will be sought from a forensic specialist

3. If the skeletal material is human or thought to be human, NSW Police will be contacted
4. A physical or forensic anthropologist will be engaged to inspect the remains *in situ*, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic)
5. If the remains are identified as forensic the area is deemed as crime scene
6. If the remains are identified as Aboriginal, the site is to be secured and Heritage NSW and all RAPs will be advised
7. If the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Office is to be contacted.

The above process functions only to appropriately identify the remains and secure the site. From this time, if the remains are Aboriginal, the management of the remains is to be determined through liaison with Heritage NSW and RAPs.

6.3 Care and Control of Artefacts Recovered

A Section 85 Care and Control Permit (NPW Act) Agreement has been entered into by LCO and Wanaruah Local Aboriginal Land Council (WLALC) for a number of artefacts previously salvaged at LCO. This Care and Control Agreement has been approved by Heritage NSW and the artefacts have been transferred.

For the remainder of artefacts previously salvaged at LCO, the following will be completed as per the outcomes of previous consultation with the RAPs:

- Artefacts transferred to LCO storage temporarily while a Care and Control Permit is developed;
- Selected artefacts to be in care of WLALC but will be available to RAP groups. Remaining artefacts (not selected for educational uses) are to remain in the care of LCO;
- Artefacts will be reburied at LCO post-operation.

6.4 GIS and Mapping of Sites

A GIS database of all recorded Aboriginal sites, PADs and SALs is maintained by LCO. This database also records the location of salvaged archaeologically sensitive topsoil as required by the *DA 305-11-01 Modification 5 Aboriginal and Historic Heritage Assessment* report prepared by OzArk Environmental & Heritage Management. The database is actively updated with new sites from recent surveys, changes in accordance with an AHIP, or salvage within approved disturbance areas. This database assists in the determination of potential and/or existing heritage constraints through the GDP process.

6.5 Management Process

In order to prevent any harm to Aboriginal objects, LCO has developed an environmental awareness training program that includes an Aboriginal heritage component. Staff, employees and contractors are informed of system controls pertaining to Aboriginal heritage prior to commencing any work on site. Visitors to site are also informed but are not authorised to complete any works.

6.5.1 Training and Awareness

All visitors, employee and contractors complete a site familiarisation induction prior to accessing the LCO. This induction includes information on Aboriginal cultural heritage management within the LCO and is designed to ensure that all employees and contractors are aware of the controls in place in regards to Aboriginal cultural heritage management and their obligations under the NPW Act.

An additional brief induction package (*LIDOC 90533967-4865 – Aboriginal Cultural Heritage Induction Job Specific Package*) has been prepared for delivery to those who are undertaking works which are in close proximity to extant Aboriginal sites. This induction has been developed through consultation with the RAPs and includes the following features:

- Accurate plans and coordinates identifying areas of exclusion for construction projects
- An overview of various Aboriginal site types including images
- An Unanticipated Finds Protocol (section 6.2)
- An overview of relevant legislation

6.5.2 Obligation to Avoid Harm

All employees, contractors, sub-contractors and visitors to the ACHMP Boundary and offset areas have an obligation to avoid harming Aboriginal heritage unless engaged in approved development activity in an area where Aboriginal salvage obligations have been met as described in this plan.

The definition of harm used in this plan stems from the definition in Section 5 of the *NPW Act*. The examples used below are for illustrative purposes and are not exhaustive.

Harm to an Aboriginal object or Aboriginal site means:

- moving or collecting stone artefacts (although picking up artefacts and inspecting them is acceptable as long as they are immediately returned to their original location)
- disturbing the earth where stone artefacts are located, e.g. by earthworks for drains, roads, etc
- breaking stone artefacts, e.g. by running over them in a vehicle
- causing damage to a grinding groove sandstone platform
- cutting down, disturbing or otherwise marking scarred trees

Trivial or negligible impacts to Aboriginal objects are not regarded as harm.

6.5.3 Obligation to Protect

Mine personnel, contractors and subcontractors having responsibility for land management or construction have an obligation to protect Aboriginal heritage within their area of work responsibility.

Protection means active recognition of known Aboriginal heritage and active measures to avoid Aboriginal heritage. This may include fencing, mitigation of erosion effects, and modification of work plans to avoid Aboriginal heritage such as changing vehicular access routes.

7. Statutory Reporting Requirements

7.1 Discovery of Aboriginal Objects

Under s89A of the NPW Act, it is a requirement that Heritage NSW is notified of the existence of Aboriginal objects as soon as practicable after they are first identified. This is usually done through the completion of an Heritage NSW Aboriginal Site Card which is submitted to the Registrar of the AHIMS for inclusion on the Aboriginal sites database. Information regarding AHIMS and site recording forms can be downloaded from the Heritage NSW website³.

7.2 Care and Control Permit Application

Under s85A of the NPW Act Aboriginal objects remain the property, and under the protection of, the Crown until formal transfer to an Aboriginal owner or Aboriginal owners occurs. An application for a Care and Control Agreement will be made to Heritage NSW. Care and Control Agreement Application forms can be downloaded from the Heritage NSW website⁴.

7.2.1 Reporting Impact to Aboriginal sites

Although not strictly required by the NPW Act, Heritage NSW expects that information on authorised impacts to Aboriginal objects be reported to them on ASIRF, which can be downloaded from the Heritage NSW website⁵.

7.2.2 Reporting of ACHMP Non-compliance Incident

Should any Aboriginal cultural heritage object be impacted by works not authorised as described in this plan, LCO will report the non-compliance or potential non-compliance to the DPIE as soon as practicable after identifying the incident. This report will include a description of the incident, its circumstances and the corrective measures undertaken.

8. Review

This ACHMP will be subject to review every five years at a maximum. It may be reviewed sooner than this under the following circumstances:

1. According to the conditions listed in Schedule 5 Condition 10 of DA-305-11-01 (the Consent) within 3 months of:
 - the submission of an Annual Review as per Schedule 5 Condition 3 of the Consent
 - the submission of an incident report as per Schedule 5 Condition 11 of the Consent
 - the submission of an audit as per Schedule 5 Condition 4 of the Consent; or

³ <https://www.environment.nsw.gov.au/resources/cultureheritage/aboriginal-site-impact-recording-form-120558.pdf>

⁴ <https://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf>

⁵ <https://www.environment.nsw.gov.au/resources/cultureheritage/aboriginal-site-impact-recording-form-120558.pdf>

- any modification to the conditions of the Consent.

The Applicant shall review, and if necessary revise, the strategies, plans, and programs required under the Consent to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 2 months of the review the revised document must be submitted to the Secretary for approval, unless the conditions in Schedule 3 provide for an alternative timing and/or the Secretary agrees otherwise.

1. A change in legislation occurs
2. Modification is made to development approval containing conditions relevant to Aboriginal cultural heritage; or
3. At the request of LCO.

Any review is to be undertaken with full Aboriginal stakeholder consultation and is to be submitted to the relevant determining authority. This consultation will include provision of the updated document to all RAPs for comment.

8.1 Annual Review

Any updates to cultural heritage management will be included in the Annual Review so that relevant stakeholders have access to current information. Such information could include, but is not limited to, the following:

- Updates of community consultation
- Salvage measures that have been executed
- Remaining management measures to be enacted.

8.2 ACHMP Background

This ACHMP follows a long history of archaeological assessment for LCO. A summary of the revisions is provided in this section.

8.2.1 Past Revisions

8.2.1.1 Umwelt 2003

In 2001 Umwelt prepared an Environmental Impact Statement (EIS) for LCO including an archaeological assessment completed for the continuation of operations. Umwelt subsequently prepared an ACHMP in 2003 to manage the sites identified in the 2001 assessment.

8.2.1.2 Umwelt 2008

The ACHMP was updated in 2008 by Umwelt to reflect the management that had occurred since the 2006 salvage program completed by Umwelt (2013) under AHIP #1443.

8.2.1.3 OzArk 2014

During 2014, Version 3 of this ACHMP was developed by OzArk Environmental & Heritage Management. In accordance Development Consent Condition 31, this version of the ACHMP was designed to update the previous version based on the results of the 2013 survey (OzArk 2013a).

Primarily the 2014 ACHMP focussed on the Development Modification 5 salvage program that included investigations at 15 sites ranging from artefact scatters and isolated finds and one SAL. During the LCO salvage program 12 archaeological sites were completely salvaged and three were partially salvaged.

This salvage took place in 2015 and a total of 46 artefacts were collected (OzArk 2015). All salvage investigations at sites listed in the salvage program in the 2015 ACHMP have been completed.

8.2.1.4 LCO 2016

This ACHMP was developed to satisfy development consent requirements under DA 305-11-01 following the completion of the 2015 salvage program undertaken under AHIP#C0000623 in February 2015. The ACHMP was also completed to ensure that Aboriginal cultural heritage within the LCO is managed in accordance with all relevant legislation and in consultation with relevant Aboriginal parties.

8.2.1.5 LCO/OzArk 2018

The ACHMP was updated in 2018 by LCO and OzArk to reflect the outcomes of the offset due diligence inspection (and new sites identified) and the additional of the offset revegetation section following consultation with the RAPs.

8.2.1.6 LCO 2019

ACHMP updated mid-2017 following DA Modification 7 approval (consisting of minor amendments to the DA boundary to allow landform remediation works within the Mountain Block Offset area and the efficient delivery of the final landform to the established rehabilitation objectives) and included archaeologically sensitive topsoil locations.

8.2.1.7 LCO 2020 onwards

See See Section 10.3.

9. Accountabilities

This section summarises the responsibilities of any personnel involved in the implementation of this ACHMP.

Role	Accountabilities for this Role
Operations Manager	Approve the ACHMP. Provide adequate resources for the implementation of this ACHMP.
Environment & Community Manager and Officer	Coordinate the implementation of this ACHMP. Ensure that the review of Aboriginal heritage is completed as specified in Section 8.1.1. Ensure that all RAPs are provided with the opportunity to represent themselves at Aboriginal Focus Group Meetings (AFGMs) and fieldwork associated with the management outlined in this ACHMP.

Role	Accountabilities for this Role
	Responsible for advising RAPs of any events or alterations that are relevant to this ACHMP. Ensure the any workforce conducting works that may deliberately or inadvertently impact on Aboriginal heritage are aware of the heritage constraints in place.
All Supervisors	Ensure that any workforce conducting works that may deliberately or inadvertently impact on Aboriginal heritage are aware of the heritage constraints in place.
Construction Supervisor(s)	Ensure that any workforce conducting works that may deliberately or inadvertently impact on Aboriginal heritage are aware of the heritage constraints in place.
RAPs	Provide a representative to attend AFGMs and fieldwork where arranged. Provide appropriate and timely feedback regarding cultural heritage management where requested.
Archaeologist	Provide cultural heritage management advice (as required) to LCO and RAPs.

10. Document Information

10.1 Related Documents

Related documents, listed in *Table 10-1*, are *documents* directly related to or referenced from within this document.

Table 10-1 - Related documents

Number	Title
<u>LIDOC-90533967-3694</u>	Water Management Plan
<u>LIDOC-90533967-166</u>	Stakeholder Engagement Strategy
<u>GCAA-625378177-9977</u>	Community and Stakeholder Engagement
<u>GCAA-625378177-10266</u>	Aboriginal Cultural Heritage NSW
<u>LIDOC-90533967-4865</u>	Aboriginal Cultural Heritage Induction Job Specific Package

10.2 Reference Information

Reference information, listed in *Table 10-2* below, is *information* that is directly referred to for the development of this document.

Table 10-2 - Reference information

Reference	Title
Brayshaw 1982	Brayshaw, H. Archaeological Survey of Hunter Valley Extended Open Cut Coal Mine near Liddell. Report to Croft and Associates Pty Ltd.
Brayshaw 1983	Brayshaw, H. Archaeological Investigations at Hunter Valley Extended Open Cut Coal Mine near Liddell. Report to Croft and Associates Pty Ltd.
Davies 1991	Davies, S. An Archaeological Assessment of the Proposed Optic Fibre Cable Route between Cessnock and Scone. Report to Telecom Australia.
DECCW 2010a	NSW Department of Environment, Climate Change & Water 2010. Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.
DECCW 2010b	NSW Department of Environment, Climate Change & Water 2010. Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.
Haglund 1982	Haglund, L. Archaeological survey of Pike Gully Colliery Area, Liddell, NSW. Report to Longworth and Mackenzie P/L.
LCO 2016	Liddell Coal Operations Pty Limited (Glencore). Liddell (Glencore) Aboriginal Cultural Heritage Management Plan.
NPW Act 1974	<i>National Parks and Wildlife Act 1974 (NSW)</i> . Retrieved from: http://www.legislation.nsw.gov.au/viewtop/inforce/act+80+1974+FIRST+0+N
NSW Minerals Council 2010	NSW Minerals Council 2010. <i>Office of Environment and Heritage Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i> .
OzArk 2012	OzArk Environmental and Heritage Management. 2012. <i>Archaeological Test Excavations at LID 3 (#37-3-0452) and LID 34 (#37-3-1150)</i> . Report to GSS Environmental on behalf of Liddell Coal Operations Pty Limited (Glencore).
OzArk 2013a	OzArk Environmental and Heritage Management. 2013. <i>Aboriginal and Historic Heritage Assessment, Liddell Coal Operations, Modification 5 to Development Consent DA 305-11-01</i> . Report to GSS Environmental on behalf of Liddell Coal Operations Pty Limited (Glencore).
OzArk 2013b	OzArk Environmental and Heritage Management. 2013. <i>Artefact Collection of LID 30 and LID 32, Liddell Coal Operations, Ravensworth</i> . Report for GSS Environmental on behalf of Liddell Coal Operations Pty Limited (Glencore).
OzArk 2014a	OzArk Environmental & Heritage Management. 2014. <i>Aboriginal Archaeological Assessment: Liddell Coal Operations, Premier Dump External Drainage</i> . Report to Liddell Coal Operations Pty Limited (Glencore).

Reference	Title
OzArk 2014b	OzArk Environmental & Heritage Management. 2014. <i>Liddell Coal Operations Electricity Transmission Line Realignment</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
OzArk 2014c	OzArk Environmental & Heritage Management. 2014. <i>Liddell (Glencore) Aboriginal Cultural Heritage Management Plan</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
OzArk 2015	OzArk Environmental & Heritage Management. 2015. <i>Archaeological Salvage: Liddell Coal Operations Development Modification 5, Singleton LGA, NSW</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
OzArk 2016	OzArk Environmental & Heritage Management. 2015. <i>Aboriginal Due Diligence Archaeological Assessment: Installation Of Wind Guys at Pole 11/009</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
OzArk 2017a	OzArk Environmental & Heritage Management. 2017. <i>Aboriginal Due Diligence Archaeological Assessment: Liddell Coal Offset Areas for Revegetation, Muswellbrook LGA</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
OzArk 2017b	OzArk Environmental & Heritage Management. 2017. <i>Aboriginal Due Diligence Archaeological Assessment: Proposed Alluvial Bore 10, Singleton LGA</i> . Report to Liddell Coal Operations Pty Limited (Glencore).
RFS 2006	NSW Rural Fire Service 2006. Environmental Assessment Code Bushfire Environmental Assessment Code for NSW.
SLR Consulting 2013	SLR Consulting. 2013. Liddell Coal Operations Proposed Modification to DA 305-11-01 Environmental Assessment. Report to Liddell Coal Operations Pty Ltd.
Umwelt 2001a	Umwelt (Australia) Pty Limited. 2001. <i>Liddell Colliery Continued Operations Environmental Impact Statement</i> . Report to Liddell Coal Operations Pty Ltd.
Umwelt 2001b	Umwelt (Australia) Pty Limited. 2001. <i>Aboriginal Archaeological Assessment Liddell Colliery Continued operations</i> . In <i>Liddell Colliery Continued Operations Environmental Impact Statement</i> . Volume 3. Appendix 11. Report to Liddell Coal Operations Pty Ltd.
Umwelt 2003	Umwelt (Australia) Pty Ltd. 2003. <i>Liddell Colliery Aboriginal Cultural Heritage Management Plan</i> . Report to Liddell Coal Operations Limited.
Umwelt 2008	Umwelt (Australia) Pty Ltd. 2008. <i>Liddell Colliery Aboriginal Cultural Heritage Management Plan</i> . Report to Liddell Coal Operations Limited.
Umwelt 2009	Umwelt (Australia) Pty Ltd. 2009. <i>Liddell Colliery M49 Bore Electricity Supply Aboriginal Cultural Heritage Assessment</i> . Report to Liddell Coal Operations Limited.
Umwelt 2010	Umwelt (Australia) Pty Ltd. 2010. <i>Summary Note – Auger investigations on the flats adjacent to Bowmans Creek</i> . Report to Liddell Coal Operations Limited.

Reference	Title
Umwelt 2011	Umwelt (Australia) Pty Ltd. 2011. Due Diligence Inspection of proposed exploration works, Bayswater Creek Area, Liddell Colliery. Report to Liddell Coal Operations Limited.
Umwelt 2013	Umwelt (Australia) Pty Ltd. 2013. <i>Summary of Works Undertaken Under Aboriginal Heritage Impact Permit #2348</i> . Report to Liddell Coal Operations Limited.
OzArk 2018	OzArk Environmental & Heritage Management. 2018. Aboriginal and Historic Due Diligence Archaeological Assessment: Liddell Coal Operations DA305-11-01 Modification 7. Report to Liddell Coal Operations Limited.
-	Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW. 2010. <i>Stone artefact deposition and storage</i> . Requirement 26. www.environment.nsw.gov.au/licences/archinvestigations.htm

10.3 Change Information

Table 10-3 – Change information

Version	Date	Review team (consultation)	Change Summary
1.0	28.4.17	OzArk (BC)	Full edit/review
	4.5.14	OzArk (NH)	Re work ACHMP
	22.5.14	OzArk (JB)	Full edit/review
	31.7.14	OzArk (NH)	ARGM edit
	11.11.14	OzArk (NH)	Various updates
	21.11.14	OzArk (NH)	Various updates
	11.12.14	OzArk (NH)	Updated with project approval conditions
	13.01.15	OzArk (NH), LCO (LB)	Response to Department of Planning and Environment comments
	19.01.15	LCO (LB)	Finalisation of document
2.0	30.03.16	L Barben B de Somer	Update of ACHMP following 2015 Salvage program, 2015 AFGM and review period by Registered Aboriginal Parties. Append DP&E Approval letter.
3.0	October 2016		Document migration to new SharePoint.

Version	Date	Review team (consultation)	Change Summary
4.0	15.05.2018	OzArk (SR) M Henderson B de Somer	Full update of ACHMP following offset due diligence inspections, 2017 AFGM and review period by Registered Aboriginal Parties. Added Offset Revegetation section following consultation with RAPs in 2018. Plan approved by DP&E 1 August 2018.
5.0	4.7.2019	H Frazer M Henderson B de Somer	Update of ACHMP following Modification 7 approval. Update of Figures to reflect change to DA boundary Update of Section 3.2 Approvals to Operate – Development Approval Update to Section 4.2 Consultation for this ACHMP Update to Section 5.2 to include emplacement of archaeologically sensitive topsoil as per recommendations in Oz Ark Environment and Heritage. 2013. Aboriginal and Historic Heritage Assessment: Liddell Coal Operations: Modification 5 to Development Consent report; includes addition of Figure 9 illustrating location of stockpiles (section 5.4). Update to Section 6.1.8 to update on completion of works in DA305-11-01 Modification 5. Addition of Section 8.2.2.5 to reflect due diligence inspection prior to application of Modification 7.
6.0	25.06.2020	L Depczynski, B de Somer	Full review. Update of Figures to include findings of due diligence assessments. Update to Section 4.2 Consultation for this ACHMP. General wording and document structure changes. Inclusions from consultation with RAPs and Heritage NSW (see Appendix D).
7.0	06.07.2021	L Depczynski, B de Somer	Update revision descriptions and minor administrative document changes. Add detail on RAP status in Section 4. Site status updates in section 5.
8.0	09.11.2021	L Depczynski, B de Somer	Partial. Add additional information to Appendix C on previous AHIPS & Section 90 permits.
9.0			

Appendix A - Glossary

Term	Definition
Aboriginal Cultural Heritage Management Plan (ACHMP)	Aboriginal Cultural Heritage Management Plan. Describes this document which is a requirement of State Significant Developments (SSDs). An ACHMP both manages impacts to Aboriginal cultural heritage within approved disturbance areas (AHIPs are not required), as well as management of Aboriginal cultural heritage sites and values outside of approved impact areas but within land able to be managed by the LCO.
Aboriginal Cultural Heritage Consultation Requirements (ACHCRs)	A system of requirements developed by the Department of Environment, Climate Change, and Water (DECCW 2010a) and enforced by the Department of Environment and Heritage (OEH) that ensures the registration and consultation of aboriginal parties for a project.
Archaeological deposit	Aboriginal objects occurring within one or more soil strata. The most common form of archaeological deposit relates to the presence of a single conflated layer of Aboriginal stone artefacts worked into the topsoil through bioturbation.
Aboriginal Focus Group Meeting (AFGM)	A formal meeting conducted with the relevant Aboriginal stakeholders, usually to consult over the management of Aboriginal heritage. Forms part of the ACHCRs process (see above).
Aboriginal heritage	Those aspects of Aboriginal culture that are inherited from the past may be referred to as Aboriginal heritage. For the purpose of this plan the term is used to collectively refer to Aboriginal sites and archaeologically sensitive areas.
Aboriginal Heritage Information Management System (AHIMS)	A computer software system employed by Heritage NSW (formerly OEH) to manage many aspects of Aboriginal site recording and permitting. AHIMS includes an Aboriginal sites database which can be accessed via an internet portal.
Aboriginal Heritage Impact Permit (AHIP)	The statutory instrument that the Director General of DECCW issues under s.87 and/or s.90 of the NPW Act to disturb, destroy, damage or deface an Aboriginal object or Aboriginal place.
Aboriginal Object	Defined in the <i>National Parks and Wildlife Act 1974</i> (NPW Act) as 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.
Aboriginal Site	The location where a person in the present day can observe one or more Aboriginal objects. The boundaries of a site are limited

Term	Definition
	to the extent of the observed evidence. A 'site' does not include the inferred extent of unobserved Aboriginal objects (such as archaeological deposit). Different archaeologists can have varying definitions of a 'site' and may use the term to reflect the assumed extent of past Aboriginal activity beyond visible Aboriginal objects. Such use of the term risks defining all of Australia as a single 'site'.
Aboriginal Site Impact Recording Form (ASIRF)	A standardised Heritage NSW form for recording authorised impacts to Aboriginal sites. Only with a completed ASIRF can a site be listed as 'destroyed' on the AHIMS.
Artefact	See 'Aboriginal Object' above.
Deposit	In archaeology a deposit refers to a discrete unit or layer of soil where artefacts within the one deposit have a high chance of being associated with each other.
DPIE	Department of Planning Industry and Environment. DPIE is the NSW government department responsible for project approval and the administration of this ACHMP.
Isolated Find	An Aboriginal site containing a single Aboriginal object, usually a stone artefact.
The NSW Office of the Environment and Heritage (OEH)	OEH is the government department tasked with managing regulation and compliance associated with the NPW Act prior to Heritage NSW.
Open (Artefact) Site	Any Aboriginal site containing multiple Aboriginal Objects that does not have a physical constraint on the site's size (e.g. rock shelter).
Potential Archaeological Deposit (PAD)	Used to describe a suitable landform for the retention of archaeological deposits where artefacts are not visible on the surface due to low ground surface visibility or other factors. Generally PADs are test excavated to determine their validity as a site.
Registered Aboriginal Party (RAP)	Aboriginal stakeholders that have officially registered interest in a project during Stage 1 of the ACHCRs (see above).
Salvage	In the face of an impact an appropriate mitigation strategy for archaeological sites is to salvage the site in order to protect individual artefacts from harm but, more importantly, to record as much information about the site before it is impacted and the information lost. Salvage can take many forms. In this ACHMP salvage is limited to the collection and recording of surface artefacts and the archaeological excavation of sites to determine the nature and extent of subsurface deposits.

Appendix B - Compliance and Consents

B.1 Legislation

Aboriginal cultural heritage within New South Wales is protected by several pieces of legislation. The establishment and maintenance of mining operations are also regulated by several pieces of legislation and planning instruments. The legislation directly relevant to this ACHMP is briefly discussed below.

B.1.1 National Parks and Wildlife Act 1974

Heritage NSW is primarily responsible for regulating the management of Aboriginal cultural heritage in New South Wales under the NPW Act (as amended October 2010). The NPW Act is accompanied by the National Parks and Wildlife Regulation 2009 (the Regulation), the Heritage NSW Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (NSW Minerals Council 2010) and other industry-specific codes.

The objectives of the NPW Act include:

“The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to: (i) places, objects and features of significance to Aboriginal people.”

The NPW Act defines an Aboriginal object as:

“...any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales.”

Under Section 84 of the NPW Act, an Aboriginal Place must be declared by the Minister as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.

In accordance with Section 86(1) of the NPW Act, it is an offence to harm or desecrate a known Aboriginal object, whilst it is also an offence to harm an Aboriginal object under Section 86(2). Similarly, Section 86(4) states that a person must not harm or desecrate an Aboriginal place. Harm to an object or place is defined any act or omission that:

- a) destroys, defaces or damages an object or place, or
- b) in relation to an object – moves the object from the land on which it had been situated, or
- c) is specified by the regulations, or
- d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

but does not include any act or omission that:

- e) desecrates the object or place, or
- f) is trivial or negligible, or
- g) is excluded from this definition by the regulations.

Section 87(1) of the NPW Act specifies that it is a defence to prosecution under Section 86(1) and Section 86(2) if the harm or desecration of an Aboriginal object was authorised by an AHIP and the activities were carried out in accordance with that AHIP. Furthermore, Section 87(2,4) establishes that it a defence to prosecution under Section 86(2) (the strict liability offence) if due diligence was exercised to reasonably determine that the activity or omission would not result in harm to an Aboriginal object or if the activity or omission constituting the offence is a low impact act or omission (in accordance with Section 80B of the Regulation).

The Regulation identifies that compliance with an industry specific code, in this case, the NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (Minerals Council 2010 – hereafter referred to as the Due Diligence Code) is taken to constitute due diligence in determining whether a proposed activity will harm an Aboriginal object. In addition, Section 3A of the Regulation specifies that an act carried out in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b) ‘is excluded from the definition of harm’ as provided in the NPW Act. This may include (but is not limited to) test excavations carried out in accordance with this code.

Consultation with Aboriginal parties is an integral part of identifying and assessing the significance of Aboriginal objects and/or places and determining and carrying out appropriate strategies to mitigate impacts upon Aboriginal heritage. Section 80C(1) of the Regulation establishes that, prior to making an application for an Aboriginal heritage impact permit, the applicant must undertake Aboriginal community consultation in accordance with Section 80C(2-11). Furthermore, under Section 80D of the Regulation any application for an Aboriginal heritage impact permit must be accompanied by a cultural heritage assessment report that deals with specified matters.

B.1.2 Mining Act 1992

The Mining Act regulates exploration and mining for minerals, including coal, in New South Wales. All mining and exploration must be done in accordance with the terms of an authority granted under the Act. The Act also regulates the environmental management of exploration activities and complements the environmental regulation contained in other environmental legislation, particularly in regards to rehabilitation. There are close ties between the EP&A Act approval processes and the granting of a mining lease.

B.1.3 Environment Planning & Assessment Act 1979

The EP&A Act regulates development activity within New South Wales and also provides protection for cultural heritage. DA 305-11-01 was originally issued under Part 4 of the EP&A Act. Part 3A of the EP&A Act applies to projects that are considered by the Minister for Planning and Infrastructure to be of state significance (‘Major Projects’). Section 75W of the EP&A Act allows for the modification of development consents granted under Part3A and Part 4 of the EP&A Act provided the proposed modification meets relevant criteria.

B.2 LCO Consents

Operations at LCO are carried out in accordance with the requirements of Development Consent DA305-11-01 Modification 7 and associated environmental assessments. These are summarised in Table 10-4.

Table 10-4 - Relevant Development Consent Conditions

No.	Condition	Compliance
31	By the end of May 2015, the Applicant shall revise and subsequently implement its Aboriginal Cultural Heritage Management Plan to include management measures as identified in Table 7.16 of the EIS, in consultation with relevant Aboriginal stakeholders and OEHS and to the satisfaction of the Secretary.	Met by the 2015 ACHMP

In addition, LCO outlined a number of commitments as part of the Environmental Assessment (EA) for the Development Modification 5 (Table 10-5) and Development Modification 6. No additional commitments were identified during the Modification 7 EA. These commitments are outlined in the table below and the section of the report where these items are addressed are noted.

Table 10-5 - Aboriginal Cultural Heritage Management Commitments

	Commitment	Relevant Section of Plan
LCO on-site management measures – Modification 5		
	The LCO Aboriginal Cultural Heritage Management Plan will be updated within six months of approval to reflect the commitments and outcomes of this EA.	Met by the 2014 ACHMP
	All identified heritage sites and artefacts in the Proposed Modification Areas will be managed in accordance with the management options presented in Table 7.16 of the EA.	Met by the 2014 ACHMP
	An AHIP will be applied for those sites identified in the <i>Aboriginal and Historic Heritage Assessment</i> (OzArk, 2013), and summarised in Table 7.16, as requiring surface collection and/or artefact relocation.	Met by the 2014 ACHMP
	The portions of the Bowmans Creek SAL not within the Entrance Pit Extension and associated ancillary disturbance will be fenced, and employees and contractors working in the area will be inducted on the location of these preserved portions.	Met by the 2016 ACHMP and Section 6.5
LCO on-site management measures – Modification 6		
	No impacts from the Modification should occur within Sensitive Areas 1 and 2. To ensure that there are no inadvertent impacts to these areas, temporary fencing should be erected during construction.	Section 6.1.8

B.3 Mining and Exploration Leases

Conditions from mining and exploration leases related to the ACHMP are presented in Table 10-6.

Table 10-6 - Relevant conditions relating to the ACHMP from Mining and Exploration Leases

Approval/ Schedule/ Condition	Condition Detail	Compliance Action/ Section of ACHMP Applicable
ML1313	No conditions relevant.	
ML1597	No conditions relevant.	
- ML 1552 / Condition (b) (i to ii)	The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the consturcture, operation or rehabilitation of any activities under this leave. For the purpose of this condition: (i) environment means components of the earth including: - land, air and water; - any layer of the atmosphere; - any organic or inorganic matter and any living organism; and - human-made or modified structures and areas. (ii) harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generability of the above, includes any act or omission that results in....impacts to places, objects and features of significance to Aboriginal people.	Section 6
CCL. 708	No conditions relevant.	

Appendix C - Aboriginal Heritage Impacts & S90 Permits

AHIPs and Section 90 permits issued to the LCO are set out in Table 10 7. Salvage reports are available on the Liddell public website under the heading “Aboriginal Heritage Impact Permits & Licenses”, found at <https://www.glencore.com.au/operations-and-projects/coal/current-operations/liddell-coal-operations/approvals-documents>.

Table 10-7 - AHIPs issued for sites within the LCO

AHIP / Permit	Currency	Expiry Date	Salvage Date	Salvage Report Submission Date		ASIRF Lodgement Date	Sites to which AHIP applies
				Gov. Dept.	RAPS.		
#1301	Expired	-	2002	Unable to verify	Unable to verify	N/A**	37-3-0435, 37-3-0442, 37-3-0444, 37-3-0445, 37-3-0446, 37-3-0447
#1443	Expired	-	2002	2006	Unable to verify	N/A**	37-3-0454
#1577	Expired	March 2006	May 2003	May 2004	May 2004	N/A**	37-3-0431, 37-3-0432, 37-3-0433, 37-3-0434, 37-3-0435, 37-3-0436, 37-3-0437, 37-3-0438, 37-3-0439, 37-3-0440, 37-3-0441, 37-3-0443

AHIP / Permit	Currency	Expiry Date	Salvage Date	Salvage Report Submission Date		ASIRF Lodgement Date	Sites to which AHIP applies
				Gov. Dept.	RAPS.		
#2198	Expired	30/5/2007	2006	March 2009	Not required by conditions of approval	N/A**	37-3-0642
#2213	Expired	23/11/05	2005	March 2009	Not required by conditions of approval	N/A**	
#2348	Expired	3/10/16	2006	Report #1: 4/12/13 Report #2: 8 July 2016	Not required by conditions of approval	11/12/15	37-3-0426, 37-3-0427, 37-3-0428, 37-3-0464
#2741	Expired		2007	18/03/09	18/03/09	2/3/15	37-3-0463
#2883	Expired	18/2/10	2008	4/12/13	4/12/13	11/12/15	37-3-0052 and 37-3-0460

AHIP / Permit	Currency	Expiry Date	Salvage Date	Salvage Report Submission Date		ASIRF Lodgement Date	Sites to which AHIP applies
				Gov. Dept.	RAPS.		
#2896	Expired	18/3/10	2008	4/12/13	4/12/13	11/12/15	37-3-0052, 37-3-0450, 37-3-0455, 37-3-0456, 37-3-0457, 37-3-0460, 37-3-0465, 37-3-0466, 37-3-0467, 37-3-0738, 37-3-0739
#C0000 623	Open. Salvage works complete d.	3/12/24	2015	Not required by conditions of approval.	Not required by conditions of approval.	2/3/15	37-3-1137, 37-3-1136, 37-3-0452, 37-3-1150, 37-3-1159, 37-3-1168, 37-3-1160, 37-3-0419, 37-3-1152, 37-3-1169, 37-3-1151, 37-3-1167, 37-3-0430, 37-3-0463, 37-3-0037

Notes to Table:

* Salvage report submitted to relevant government authority, i.e. National Parks & Wildlife Service, DECC, Office of Environment & Heritage or Heritage NSW.

** Pre-2015 salvage, site record forms were lodged with salvage reports to relevant government department

Appendix D - External Consultation

A log of consultation for the ACHMP is maintained in Consultation Manager. Meeting minutes are also contained in this Appendix.

Responses to 2020 Management Plan Review

Noel Downs CEO Wanaruah Local Aboriginal Land Council (WLALC)	17747 (02) 6543 1288 ceo@wanaruahlandcouncil.com.au
Phone Call - made or received 23/07/2020, 03:11 PM <i>Team Members</i> Lori Depczynski	Summary 2020 Liddell ACHMP consultation - feedback received Stakeholder Comments RAP Wanaruah Local Aboriginal Land Council (Noel) called Liddell (Lori) to discuss draft 2020 ACHMP. ACHMP section: 6.1.1 - Requested RAPS be involved in due diligence process. 6.1.2 - ground disturbance for erosion controls (and therefore potential damage to aboriginal artefacts) to be avoided at all costs. 6.1.3 - when hazard reduction burns used for bushfire land management, provide opportunity for cultural burn groups to be involved 6.1.6 - ok if "native plants" (not local to this area, but local to Australia) established during revegetation activities if it provides bush tucker. 6.2.1 - RAPS to be notified of new unrecorded finds 6.3 - intent that all salvaged artefacts are available to the local community if requested. Storage with the LALC acceptable. Team Response Updated Liddell 2020 ACHMP draft, incorporating feedback received in sections 6.1.2, 6.1.3, 6.2.1, 6.3 (tracked changes in document submitted to the department for review). LCO considered the following feedback and responses for sections: 6.1.1 - reference to the "NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects, NSW Minerals Council 2010" still up to date. As per code of practice, formal consultation with RAPS not required when conducting due diligence. Current process to inform RAPS at the annual meeting considered adequate. 6.1.6 - where revegetation activities are required in offset areas, its a requirement of Biodiversity Conservation Trust (DPIE) & Department of Agriculture, Water and Environment to establish specific plant community types (PCTs). Species chosen for revegetation align with those PCTs. Issues Stakeholder Engagement Indigenous Heritage



Our ref: DOC20/699953
Senders ref: SSD DA305-11-01-PA-22

Lori Depczynski
Environment and Community Officer
Liddell Coal Operations
Glencore

By email: lori.depczynski@glencore.com.au

Dear Ms Depczynski

Re: Post Approval Referral (SSD DA305-11-01-PA-22) – Revision of Liddell Glencore, Aboriginal Cultural Heritage Management Plan Version 6 - Heritage NSW Review

I refer to your correspondence to Heritage NSW (HNSW) dated 12 August 2020 requesting HNSW review the updated *Liddell Glencore, Aboriginal Cultural Heritage Management Plan* (ACHMP) Version 6 (dated August 2020) relating to Development Consent DA 305-11-01-PA-22. HNSW understands that the ACHMP (V6) provides management measures for the Liddell Coal Operations (LCO) open-cut coal mining operation located at Ravensworth. The ACHMP relates to the approved mining disturbance area and includes management of unassessed areas within the ACHMP boundary as shown on Figure 1 and Figure 2 of the ACHMP.

HNSW has reviewed the ACHMP Version 6 (also labelled version 5 draft 2) showing proposed changes, including:

- Appendix D Minutes of meetings with registered Aboriginal parties (RAPs) and RAP comments
- Appendix F AHIMS site cards.

Following our review of the ACHMP (V6) HNSW has the following recommendations:

Aboriginal Heritage Impact Permits (AHIPs) (Section 3.3 and Appendix C)

Details regarding five previously issued AHIPs of the ACHMP were not supplied. Details regarding the status of each of the AHIPs should be appended to the ACHMP in Appendix C and must include AHIP number, currency, expiry date and a copy of notification to HNSW of completion of salvage report and accompanying ASIR forms salvaged under each AHIP.

Salvage Reports

The ACHMP refers to proposed salvage and test excavation program for Aboriginal sites within the approved mining disturbance boundary. Copies of the salvage and test excavation reports documenting works relating to harm of Aboriginal objects for the project managed under the ACHMP should be submitted to HNSW. A copy of the relevant Aboriginal site impact recording form should be appended to the report.

Temporary Keeping Place (Section 3.4)

The ACHMP should be updated to clearly identify the location and site coordinates of the secure, lockable facility used as a Temporary Keeping Place. Appropriate care and control

Level 6, 10 Valentine Ave Parramatta NSW 2150 ■ Locked Bag 5020 Parramatta NSW 2124
P: 02 9673 8500 ■ E: heritagemailbox@environment.nsw.gov.au

provisions for the storage of any Aboriginal objects must be included in the ACHMP and identifying details should be provided to HNSW. All Aboriginal objects collected must be transferred to the Temporary Keeping Place and an inventory of the Aboriginal objects must be maintained by LCO. Any access to the locked storage facility is the responsibility of the LCO Management. A register of any Aboriginal objects removed or transferred from the Temporary Keeping Place must be maintained.

Long Term Care (Section 3.4)

Consultation with the RAPs will be required regarding the long-term care of the Aboriginal objects salvaged. The ACHMP should be updated with these details in Section 3.4.

Consultation (Appendix D)

The record of previous consultation with the RAPs has been deleted from Appendix D of the current version (V6) of the ACHMP. All relevant supporting consultation documentation necessary to demonstrate that the consultation requirements have been satisfied and any comments from the RAPs have been addressed must be maintained by LCO.

Future AHIPs

It is noted that LCO may wish to utilize the ACHMP in support of future AHIP applications, or AHIP variation applications that may be required for the project over that life of the mine. Please note that HNSW will consider any future applications on their merits at the time of submission.

If Aboriginal objects will be impacted by the proposed development outside of the approved open-cut mining disturbance area then an AHIP will likely be required and an AHIP application may be submitted by completing the form: *Applying for an Aboriginal Heritage Impact Permit guide for applicants*, OEH (2011). Available online at:

<https://www.heritage.nsw.gov.au/assets/Uploads/files/Applying-for-an-Aboriginal-Heritage-Impact-Permit-Guide-for-applicants..pdf>

If you have any questions about this advice, please do not hesitate to contact Gillian Goode, Archaeologist at Heritage NSW on 0499 588 790 or gillian.goode@environment.nsw.gov.au.

Yours sincerely



Dr Samantha Higgs

Senior Team Leader

Aboriginal Cultural Heritage Regulation - North

Heritage NSW

30 September 2020

Gillian Goode Heritage NSW Level 6 10 Valentine Ave Parramatta 2150	19236 Archaeologist Aboriginal Cultural Heritage Regulation - North Heritage NSW 0499 588 790 gillian.goode@environment.nsw.gov.au								
Letter/email via NSW Major Projects Portal – 2020 ACHMP submitted for consultation 30/09/2020	<table> <tr> <th>Heritage NSW Recommendations</th><th>Proposed LCO Response</th></tr> <tr> <td> Aboriginal Heritage Impact Permits (AHIPs) (Section 3.3 and Appendix C) Details regarding five previously issued AHIPs of the ACHMP were not supplied. Details regarding the status of each of the AHIPs should be appended to the ACHMP in Appendix C and must include AHIP number, currency, expiry date and a copy of notification to HNSW of completion of salvage report and accompanying ASIR forms salvaged under each AHIP. </td><td> <i>ACHMP Appendix C</i> - table has been updated with AHIP number, currency, expiry date and notification date (of completed salvage reports and ASIR lodgement). LCO proposes not to add copies of notifications of completion of salvage reports and ASIR forms to keep the document manageable and relevant to current Aboriginal cultural heritage management status. As per the response below, copies can be provided if HNSW cannot locate in their records. </td></tr> <tr> <td> Salvage Reports The ACHMP refers to proposed salvage and test excavation program for Aboriginal sites within the approved mining disturbance boundary. Copies of the salvage and test excavation reports documenting works relating to harm of Aboriginal objects for the project managed under the ACHMP should be submitted to HNSW. A copy of the relevant Aboriginal site impact recording form should be appended to the report. </td><td> Salvage Reports and ASIR forms have previously been lodged in and 2013 and 2016. Successful lodgement of ASIRS was indicated in return email and AHIMS should be current with this information. Note that this has been previously verified via independent audit of DA 305-11-01 conditions and associated approvals and management plans. If the records cannot be located by HNSW please advise and bulk file transfer can be organised. </td></tr> <tr> <td> Temporary Keeping Place (Section 3.4) </td><td> <i>ACHMP Section 3.4 Care & Control Permits</i> - ACHMP updated with required details. </td></tr> </table>	Heritage NSW Recommendations	Proposed LCO Response	Aboriginal Heritage Impact Permits (AHIPs) (Section 3.3 and Appendix C) Details regarding five previously issued AHIPs of the ACHMP were not supplied. Details regarding the status of each of the AHIPs should be appended to the ACHMP in Appendix C and must include AHIP number, currency, expiry date and a copy of notification to HNSW of completion of salvage report and accompanying ASIR forms salvaged under each AHIP.	<i>ACHMP Appendix C</i> - table has been updated with AHIP number, currency, expiry date and notification date (of completed salvage reports and ASIR lodgement). LCO proposes not to add copies of notifications of completion of salvage reports and ASIR forms to keep the document manageable and relevant to current Aboriginal cultural heritage management status. As per the response below, copies can be provided if HNSW cannot locate in their records.	Salvage Reports The ACHMP refers to proposed salvage and test excavation program for Aboriginal sites within the approved mining disturbance boundary. Copies of the salvage and test excavation reports documenting works relating to harm of Aboriginal objects for the project managed under the ACHMP should be submitted to HNSW. A copy of the relevant Aboriginal site impact recording form should be appended to the report.	Salvage Reports and ASIR forms have previously been lodged in and 2013 and 2016. Successful lodgement of ASIRS was indicated in return email and AHIMS should be current with this information. Note that this has been previously verified via independent audit of DA 305-11-01 conditions and associated approvals and management plans. If the records cannot be located by HNSW please advise and bulk file transfer can be organised.	Temporary Keeping Place (Section 3.4)	<i>ACHMP Section 3.4 Care & Control Permits</i> - ACHMP updated with required details.
Heritage NSW Recommendations	Proposed LCO Response								
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Temporary Keeping Place (Section 3.4)	<i>ACHMP Section 3.4 Care & Control Permits</i> - ACHMP updated with required details.								

	The ACHMP should be updated to clearly identify the location and site coordinates of the secure, lockable facility used as a Temporary Keeping Place. Appropriate care and control provisions for the storage of any Aboriginal objects must be included in the ACHMP and identifying details should be provided to HNSW. All Aboriginal objects collected must be transferred to the Temporary Keeping Place and an inventory of the Aboriginal objects must be maintained by LCO. Any access to the locked storage facility is the responsibility of the LCO Management. A register of any Aboriginal objects removed or transferred from the Temporary Keeping Place must be maintained.	
	Long Term Care (Section 3.4) Consultation with the RAPs will be required regarding the long-term care of the Aboriginal objects salvaged. The ACHMP should be updated with these details in Section 3.4.	Noted. This will be discussed in planned future consultation meetings (as per ACHMP timetable) and the ACHMP updated as required.
	Consultation (Appendix D) The record of previous consultation with the RAPs has been deleted from Appendix D of the current version (V6) of the ACHMP. All relevant supporting consultation documentation necessary to demonstrate that the consultation requirements have been satisfied and any comments from the RAPs have been addressed must be maintained by LCO.	Noted. Information maintained in site consultation database.
	Future AHIPs It is noted that LCO may wish to utilize the ACHMP in support of future AHIP applications, or AHIP variation applications that may be required for the project over that life of the mine. Please note that HNSW will consider any future applications on their merits at the time of submission.	Noted.

Depczynski, Lori (Liddell - AU)

From: Depczynski, Lori (Liddell - AU)
Sent: Wednesday, 10 February 2021 8:33 AM
To: Depczynski, Lori (Liddell - AU)
Subject: FW: DA 305-11-01 Liddell Coal Operations ACHMP Version 6

From: Gillian Goode <Gillian.Goode@environment.nsw.gov.au>
Sent: Friday, 16 October 2020 8:48 AM
To: Depczynski, Lori (Liddell - AU) <Lori.Depczynski@glencore.com.au>
Subject: FW: DA 305-11-01 Liddell Coal Operations ACHMP Version 6

External sender

I will touch base with you mid to end of next week as I am unavailable this week and the early part of next week.
Hoping this suits?

Kind regards

Gillian

Gillian Goode | Archaeologist, ACH Regulation
Heritage NSW, Community Engagement, Department of Premier and Cabinet
Level 2, 26 Honeysuckle Drive, Newcastle NSW 2300
T: 02 4927 3114 M: 0499 588 790 | gillian.goode@environment.nsw.gov.au



**Premier
& Cabinet**

I acknowledge and respect the traditional custodians and ancestors of the lands I work across.

Heritage NSW and coronavirus (COVID-19)

Heritage NSW has taken steps to protect the safety, health and wellbeing of our staff, communities and customers. Whilst our offices remain open, we have put in place flexible working arrangements for our teams across NSW and continue to adapt our working arrangements as necessary. Face-to-face meetings and field work/site visits with our customers are subject to rules on gatherings and social distancing measures. We thank you for your patience and understanding at this time.

From: Gillian Goode
Sent: Friday, 16 October 2020 8:47 AM
To: Ben.Desomer@glencore.com.au
Subject: RE: DA 305-11-01 Liddell Coal Operations ACHMP Version 6

Thank you for your email. I will touch base with you mid to end of next week as I am unavailable this week and the early part of next week. Hoping this suits?

Kind regards

Gillian

Gillian Goode | Archaeologist, ACH Regulation
Heritage NSW, Community Engagement, Department of Premier and Cabinet
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Premier
& Cabinet

I acknowledge and respect the traditional custodians and ancestors of the lands I work across.

Heritage NSW and coronavirus (COVID-19)

Heritage NSW has taken steps to protect the safety, health and wellbeing of our staff, communities and customers. Whilst our offices remain open, we have put in place flexible working arrangements for our teams across NSW and continue to adapt our working arrangements as necessary. Face-to-face meetings and field work/site visits with our customers are subject to rules on gatherings and social distancing measures. We thank you for your patience and understanding at this time.

From: Ben.Desomer@glencore.com.au <Ben.Desomer@glencore.com.au>

Sent: Thursday, 15 October 2020 3:28 PM

To: Gillian Goode <Gillian.Goode@environment.nsw.gov.au>

Cc: Lori.Depczynski@glencore.com.au

Subject: DA 305-11-01 Liddell Coal Operations ACHMP Version 6

Good afternoon Gillian,

Thank you for providing your comments on our draft Aboriginal Cultural Heritage Management Plan (as attached).

I was hoping you could please contact me to discuss/clarify some aspects of your comments and our proposed response before we finalise the ACHMP?

The following table outlines our current proposed response

Heritage NSW recommendations	Proposed LCO Response
Aboriginal Heritage Impact Permits (AHIPs) (Section 3.3 and Appendix C) Details regarding five previously issued AHIPs of the ACHMP were not supplied. Details regarding the status of each of the AHIPs should be appended to the ACHMP in Appendix C and must include AHIP number, currency, expiry date and a copy of notification to HNSW of completion of salvage report and accompanying ASIR forms salvaged under each AHIP.	ACHMP Appendix C table has been updated with AHIP number, currency, expiry date and notification date (of completed salvage reports and ASIR lodgement). LCO proposes <u>not</u> to add copies of notifications of completion of salvage reports and ASIR forms to keep the document manageable and relevant to current Aboriginal cultural heritage management status. As per the response below, copies can be provided if HNSW cannot locate in their records.
Salvage Reports The ACHMP refers to proposed salvage and test excavation program for Aboriginal sites within the	Salvage Reports and ASIR forms have previously been lodged in and 2013 and 2016. Successful lodgement of

approved mining disturbance boundary. Copies of the salvage and test excavation reports documenting works relating to harm of Aboriginal objects for the project managed under the ACHMP should be submitted to HNSW. A copy of the relevant Aboriginal site impact recording form should be appended to the report.	ASIRS was indicated in return email and AHIMS should be current with this information. Note that this has been previously verified via independent audit of DA 305-11-01 conditions and associated approvals and management plans. If the records cannot be located by HNSW please advise and bulk file transfer can be organised.
Temporary Keeping Place (Section 3.4) The ACHMP should be updated to clearly identify the location and site coordinates of the secure, lockable facility used as a Temporary Keeping Place. Appropriate care and control provisions for the storage of any Aboriginal objects must be included in the ACHMP and identifying details should be provided to HNSW. All Aboriginal objects collected must be transferred to the Temporary Keeping Place and an inventory of the Aboriginal objects must be maintained by LCO. Any access to the locked storage facility is the responsibility of the LCO Management. A register of any Aboriginal objects removed or transferred from the Temporary Keeping Place must be maintained.	Noted. ACHMP updated with required details.
Long Term Care (Section 3.4) Consultation with the RAPs will be required regarding the long-term care of the Aboriginal objects salvaged. The ACHMP should be updated with these details in Section 3.4.	Noted. This will be discussed in planned future consultation meetings (as per ACHMP timetable) and the ACHMP updated as required.
Consultation (Appendix D) The record of previous consultation with the RAPs has been deleted from Appendix D of the current version (V6) of the ACHMP. All relevant supporting consultation documentation necessary to demonstrate that the consultation requirements have been satisfied and any comments from the RAPs have been addressed must be maintained by LCO.	Noted. Information maintained in site consultation database.
Future AHIPs It is noted that LCO may wish to utilize the ACHMP in support of future AHIP applications, or AHIP variation applications that may be required for the project over that life of the mine. Please note that HNSW will consider any future applications on their merits at the time of submission.	Noted.

Please contact me at your earliest convenience to discuss or alternatively respond to this email.

Regards,

Ben de Somer
Environment & Community Manager
Glencore | Liddell Coal Operations Pty Ltd
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Email: ben.desomer@glencore.com.au

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Site Meeting Minutes

- Annual Site Inspection 2020 - 10 November 2020
- Annual Site Inspection 2019 - 8 October 2019
- Annual Site Inspection 2018 - 4 December 2018
- MOD 7 & LID-BC-SAL Blast heave consultation - 16 July 2018
- Due diligence site inspection - 4 April 2018
- Annual Site Inspection 2017 - 22 November 2017

Annual Cultural Heritage Meeting			
Date:	Tuesday 10 th November 2020		
Location:	Liddell Coal Operations – site office and field		
Commenced:	9:30 AM	Close:	1:30 PM
Attendees:	Arthur Fletcher George Sampson David Horton Allen Paget Lori Depczynski Mikayla Henderson	AF GS DH AP LD MH	Kauwul T/A Wonn1 Cacatua Culture Consultant Wanaruah LALC Ungooroo Aboriginal Corporation LCO LCO
Guests:	-		
Apologies:	Kathie Steward Kinchela - Yinarr Cultural Services Warren Schillings - Myland Cultural & Heritage Group		

Item of Discussion	Actions
Correspondence (LD) 2019 Annual Site Inspection Meeting Minutes - sent out to RAPs Feb 2020 2019 Annual Site Inspection Additional Letter - sent out to RAPs Feb 2020 2020 ACHMP– opportunity to consult on 2020 update sent to RAPs in July 2020 - Archaeologist report on Post-blast Site inspection of LID-ES1 – hard copies distributed at meeting. Copy to be sent out with 2020 meeting minutes.	-
Overview of operational activities (LD) - Continuation of mining in South, Entrance and Bayswater Pits 50 ha of mining rehabilitation this year - Final clearing for Liddell occurred Jan/Feb in Bayswater Pit. This included stripping and separate stockpiling of topsoil within approved disturbance boundary of LID3 site. Topsoil to be returned to same location during rehab activities post mining. Remaining portion of LID3 protected within LID-BC-SAL. AF confirmed the planned return of topsoil to same location a good outcome. - The tubestock planting completed June 2018 in the northern extent of LID-BC-SAL has had very limited success. Revegetation activities occurring in paddock just north of the SAL using a direct seeding method this year (tree seeder). Success of that seeding will be assessed and used to inform the methodology for revegetation of failed areas, with the potential of using that method within the SAL. Consultation to occur with RAPs prior to any different revegetation methodologies to be used within SAL. All RAPs in attendance concurred interest in success of revegetation activities within SALs.	-
Blasting activities near LID-BC-SAL - Mining has continued throughout the year within disturbance boundary adjacent to LID-BC-SAL. - On 8th January 2020 a blast incident occurred, sending a scatter of flyrock into the SAL. The investigation found that an error had occurred during loading of the blast pattern, causing one hole to produce more flyrock than expected. Inspection by	Inspection report for blast incident distributed with 2020 minutes.

Ozark archaeologist and LCO representative concluded no damage to known archaeological sites within SAL (LID ES1) or to potential subsurface deposits. AF expressed RAPs to be involved in future incident investigations; seconded by other RAPs. This has been noted by LCO.	
Due diligence surveys 2020 (LD) - Due diligence surveys conducted in April and June 2020. - April 2020 inspection - Organised through 3rd party, with Liddell facilitating access. - Two new sites identified and now registered in AHIMS: 37-3-1592-LID34 and 37-3-1593-LID35 (mudstone, silcrete and tuff artefacts). - Sites located within erosion scalds next to remnant tree lines and Hebden Road - Sites within paddock with restricted access. Extent recommended during due diligence pegged out, to be confirmed with RAPs during site inspection - June 2020 inspection - Organised prior to maintenance of existing farm track - Two new isolated finds identified: LTM-IF1 and LTM-IF2 (pending registration on AHIMS database) - Additional artefacts found for existing site 37-3-0769 Bowmans Creek 14 - Sites located on existing track in areas of minor erosion - Extent recommended during due diligence fenced off with archaeological bunting to prevent access. Extent to be confirmed with RAPs during site inspection - AF expressed RAPs to be involved in future due diligence surveys. Current due diligence processes followed (included within LCO Ground Disturbance Permits) are in line with <i>NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects</i> (NSW Minerals Council 2010), described in the ACHMP section 6.1.1.	-
Inspection route - LID ES1 - blast flyrock incident area - LID3 – general site and erosion gully - HAZ2-OS1 – localised erosion - New sites - LTM-IF1 & LTM-IF2 - Bowmans Creek 14 - LID34 & LID 35	-
General Business	
LID ES1 – during inspection of blast incident flyrock area, it was noted that minimal observed impact to SAL from flyrock pieces. No additional erosion or impacts from existing blast heave. LID3 – observed some further erosion and localised sedimentation within gully. AF brought up the wire and steel within gully and its potential removal. Discussion during 2018 inspection concluded that leaving the materials in place would help stabilise	Assess removal of old fencing material in gully, if required, at 2021 inspection.

erosion in the area. AF & MH agreed to inspect again in 2021 and assess whether it continues to function as an erosion control, and if not, options for removal. HAZ2-OS1 – since significant increase in annual rainfall in 2020, the erosion in one small gully within bull oak forest had increased at the lower end. Some filling of the gully with sediment had occurred at the higher end, allowing some natural revegetation. LCO has previously installed hay bales to manage the erosion in the gully in an attempt to slow the water down. Hay bales were insitu during the inspection. Upon review of the current erosion control measures, LD suggested introducing some additional controls higher up the catchment to reduce the concentrated flow within the gully on the lower (and steeper) slope. The aim would be to reduce concentrated flow within the gully, and thus a lower rate of erosion. It was agreed by all parties that LCO introduce temporary measures to redirect some of the runoff from within the old track away from the gully, and across an adjacent vegetated area with less slope. Continue monitoring area and if successful, discussion to follow re: convert to permanent measure. LTMF1, LTMF2 and Bowmans Creek 14 – inspected new sites and areas in proximity. Located artefacts identified during due diligence process. Additional artefacts found by RAPs on track in areas of recent erosion. All parties agreed that LCO extend bunting around additional sites for protection. LD explained the track was currently used a couple times a week for access to monitoring locations and equipment. LID34 and LID35 - inspected new sites and areas in proximity. Located some of the artefacts identified during due diligence process. Additional artefacts found by RAPs in nearby erosion scald. The site extents were reviewed by all parties and it was agreed that the extent should include the larger erosion scald area where additional artefact was identified. The sites are located in a paddock consistent with the fencing required in ACHMP section 6.1.7. Stock are excluded from this paddock. LCO acknowledged that if cattle grazing to occur in that paddock, a stock-proof fence would be installed to protect the sites as per ACHMP section 6.1.4.	LCO to install additional temporary erosion control measures within gully at HAZ-OS1 to improve management of area. Site cards to be updated, including new site extents. LCO to extend bunting to revised extents.
Next meeting	
The Annual Cultural Heritage Inspection for 2021 to occur at similar time of year. A date will be confirmed in Q3 of 2021.	

Site inspection route and photos.

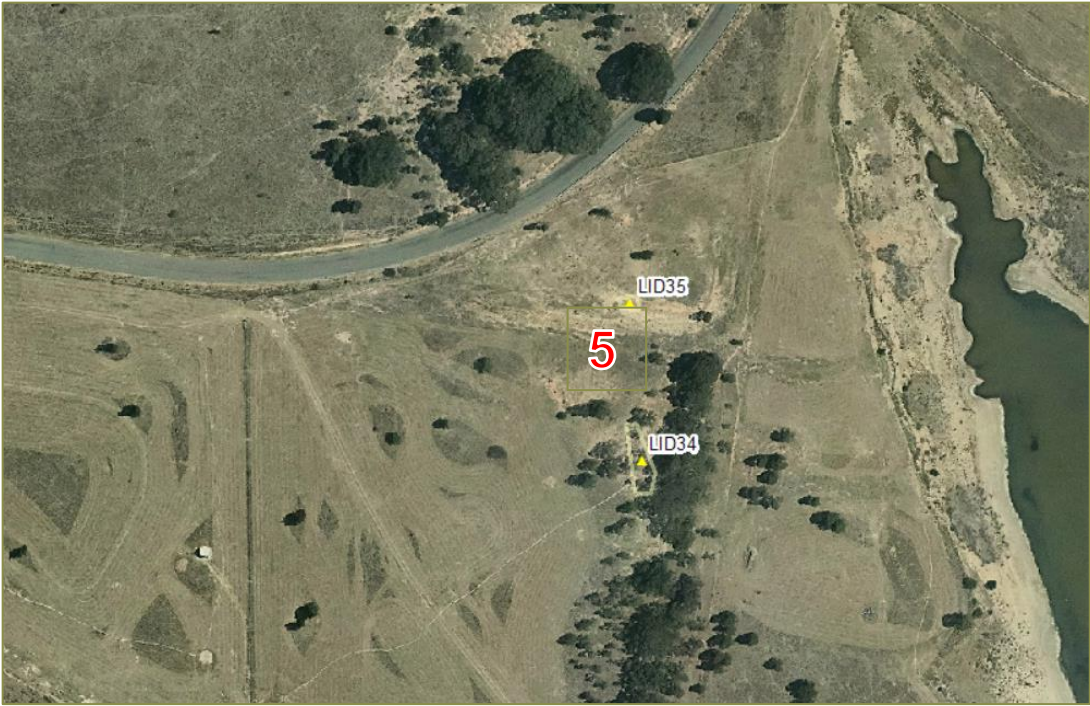




Photo 1 – LID-BC-SAL. Blast heave from 2018 and some flyrock from January 2020 blast incident



Photo 2 - LID-BC-SAL. Some flyrock from January 2020 blast incident



Photo 3 - LID-BC-SAL. Some flyrock from January 2020 blast incident



Photo 4 – LID3 erosion monitoring



Photo 5 – LID3 erosion monitoring



Photo 6 – LID3 erosion & old fencing materials in gully



Photo 7 – artefact at site LTM-IF1



Photo 8 – artefact at site LTM-IF1



Photo 8 – artefact at site LTM-IF1



Photo 9 – artefact at site LTM-IF1



Photo 10 – track adjacent LTM-IF1



Photo 11 – track adjacent Bowmans Creek 14



Photo 8 – artefact at site Bowmans Creek 14



Photo 9 – erosion gully at HAZ2-OS1



Photo 10 – erosion gully at HAZ2-OS1, location of additional erosion controls to be installed



Photo 11 – erosion scald adjacent LID34



Photo 12 – artefact adjacent LID34

LIDDELL

GLENCORE

MINUTES OF THE ANNUAL SITE INSPECTION HELD AT LIDDELL COAL OPERATIONS (LCO)

Tuesday 8th October 2019

PRESENT:

Hayley Frazer (Liddell Coal Operations) (HF)
Rhonda Griffiths (Hunter Valley Aboriginal Corporation) (RG)
Suzie Worth (Wanaruah LALC) (SW)
George Sampson (Cacatua Culture Consultants) (GS)
Kathie Steward Kinchela (Yinarr Cultural Services) (KSK)

APOLOGIES:

Ben de Somer (Liddell Coal Operations) (BDS)

1 INTRODUCTION

- 1.1 The meeting opened at 10:30am.

2 CORRESPONDENCE

Incoming

- 2.1 Nil

Outgoing

- 2.2 Nil

3 MINUTES

- 3.1 HF presented the inspection route and noted that the group would inspect areas within the SAL then proceed to the Mountain Block heritage sites which included a hydromulch application trial on an eroded area in Mountain Block (Mountain Block OS1) to show the RAPs the applied product.
- 3.2 All agreed on inspection areas
- 3.3 RG wanted to discuss the future of Liddell archaeological assets and what was going to be done with the artefacts that remained insitu and the ones that were salvaged. The concern was that

when the mine finished, the surrounding acreage would be sold with artefacts without being able to salvage them. Another concern was that some of the artefact salvaged would go to the proposed Bulga Keeping Place.

- 3.4 The Group discussed options for a “Cultural Hub” where artefacts of local indigenous heritage could go to be showcased to the general public and not lost or destroyed. The consensus was that a keeping place should be developed like *Dreamtime Cultural Centre* in Rockhampton QLD.
- 3.5 HF suggested that she would consolidate the ACHMP and discuss with BDS and report back to the group on whether Liddell Coal would be contributing to the Bulga Keeping Place (see attached letter for additional information).

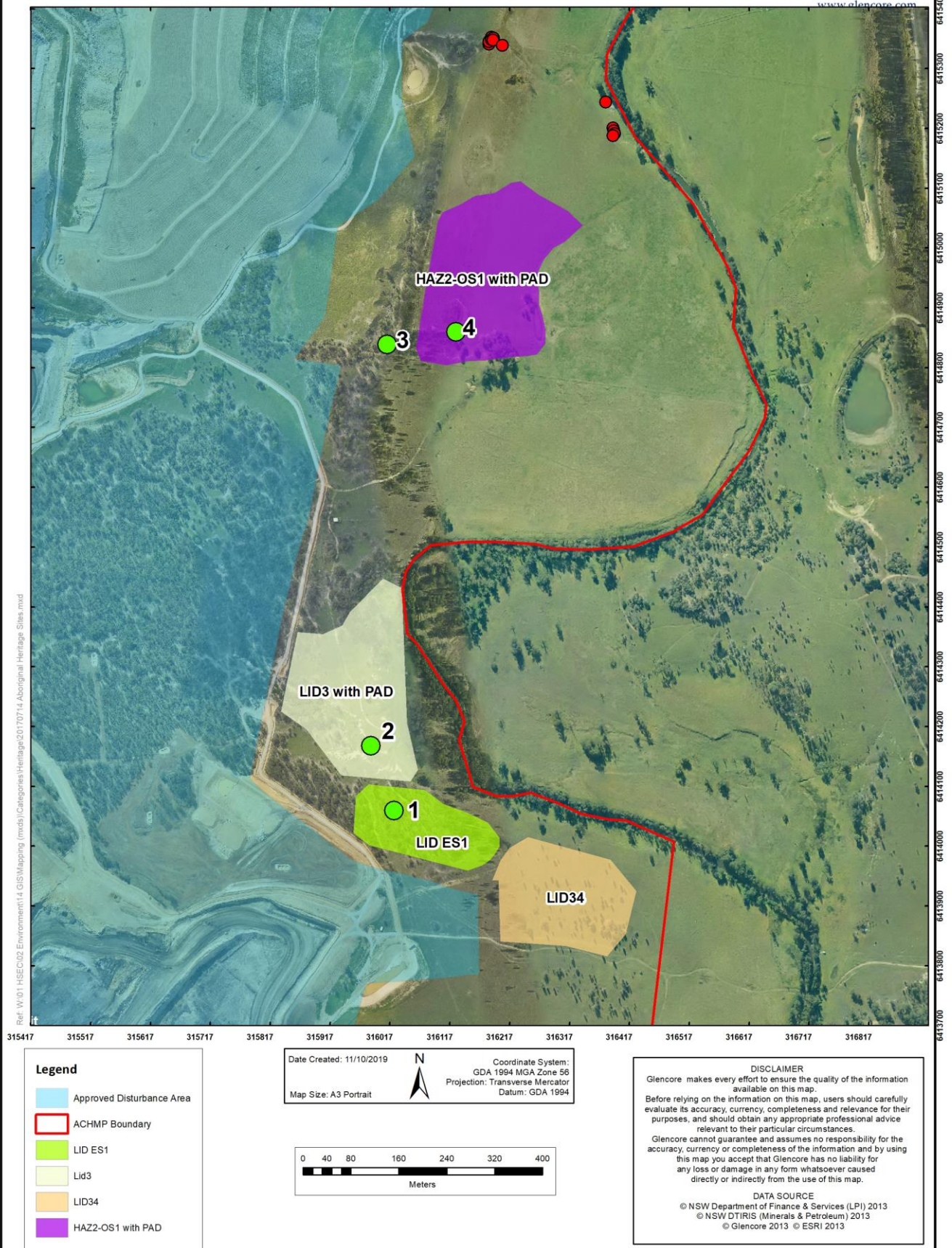
The annual inspection commenced at approximately 11am.

- 3.6 All visited 37-3-1136 AHIMS Site (LID ES1). The group indicated that the eroded area had continued to weather, although not significantly worse, it seems to have uncovered some artefacts that were once buried.
- 3.7 All visited the location where blast heave entered the LID-BC-SAL and LID3 with PAD. The group reiterated that the use of straw was sufficient in controlling erosion for this site.
- 3.8 GS indicated that the area was doing okay and he didn’t think any further intervention/remediation on top of what was already being done was necessary.
- 3.9 Group visited redundant road west of HAZ2-OS1 where erosion had been occurring and determined that hay bales were again an effective measure to control erosion.
- 3.10 The group discussed in the field a potential “New site” at visitation point 4 within the SAL however was found to be existing site *HAZ2-OS1 with PAD* already accounted for in Table 2 of the ACHMP (purple section in the map of this document)
- 3.11 Inspections were undertaken on the cluster sites at the northern extent of the SAL.
- 3.12 The group visited the site where hydromulch product was applied to the erosion at Liddell Muddle OS1. The group was happy with how the product was holding up, particularly after recent rain and wind conditions. HF reiterated that if successful, a similar trial within the LID3 site could be completed consultation with the RAPs. The group agreed that this was a good idea.
- 3.13 SW indicated that a letter would be written from Wanaruah LALC to advise that a new cultural survey by archaeologist might be necessary to determine newly uncovered artefacts from erosion.
- 3.14 HF indicated that although the sites observed were included in the area demarcated and protected as a Sensitive Archaeological Landscape (SAL), she would review LCO commitments in this regard within the ACHMP and previous ACH assessments. HF indicated that the whole site included known surface and assumed subsurface deposits of artefacts of varying types and was excluded from the operations because of this (see attached letter for additional information).
- 3.15 The inspection and meeting was concluded at 3pm.

4 BUSINESS FOR NEXT MEETING

Actions to be addressed before the next meeting:

- 4.1 LCO to provide a map of extant sites and extents to attendees with the meeting minutes and as part of the next meeting
- 4.2 LCO to organise next annual meeting (2020) at a similar time of the year and day.
- 4.3 HF to provide a map of the areas visited and GPS coordinates to members.



The inspection points are labelled in order in which they were visited 1-4.

LIDDELL

GLENCORE

MINUTES OF THE ANNUAL SITE INSPECTION HELD AT LIDDELL COAL OPERATIONS (LCO)

Tuesday 4th December 2018

PRESENT:

Jarith Young (Liddell Coal Operations) (JY)
Mikayla Henderson (Liddell Coal Operations) (MH)
Rhonda Griffiths (Hunter Valley Aboriginal Corporation) (RG)
Suzie Worth (Wanaruah LALC) (SW)
Arthur Fletcher (Kauwul T/A Wonn1) (AF)
Adam Sampson (Cacatua Culture Consultants) (AS)
Dylan Kimber (Yinarr Cultural Services) (DK)

APOLOGIES:

1 INTRODUCTION

- 1.1 The meeting opened at 10:30am.

2 CORRESPONDENCE

Incoming

- 2.1 Nil

Outgoing

- 2.2 Nil

3 MINUTES

- 3.1 MH presented a review of the LID-BC-SAL blast heave presentation sent to LCO RAPs on the 24 July 2018. Discussion was held on the nature of the blast that occurred and the result of heave entering the LID-BC-SAL.
- 3.2 AF questioned why a member of one of the LCO RAPs was not invited to attend the inspection of the blast area. MH explained that when the incident occurred LCO engaged a suitably qualified

archaeologist to determine if harm had occurred to any aboriginal object as a result of the heave. Once this investigation was completed and report compiled, LCO provided a copy of this report and a letter detailing the incident on the 28 June 2018. Within this letter LCO provided the opportunity to visit the area or alternatively the area would be visited during the annual meeting and inspection in December.

The annual inspection commenced at approximately 11am.

- 3.3 All visited the location where blast heave entered the LID-BC-SAL and within the site extent of LID-ES1. MH noted that LCO have been monitoring the heave for any erosion impacts and after recent rainfall the heave has shown no evidence of erosion and the heaved surface has commenced settling.
- 3.4 All discussed options for potential remediation if deemed necessary of the site. All agreed that it was best to leave the area as is and continue to monitor as accessing the area with equipment is likely to cause more damage to existing vegetation.
- 3.5 AF asked about the potential to complete a cultural burn within this area. Discussion was held by all around the potential value of a cultural burn for hazard reduction and ecological purposes. JY explained that due to the nature of the vegetation in the area a burn for ecological purposes may not be beneficial due to the species present. JY additionally noted that this had recently been looked at by LCO as a component of the site Bushfire Management Plan. All agreed that this could be discussed at the next annual meeting.
- 3.6 All inspected LID3 and discussed the wire and steel that had been placed within the erosion gully by previous landholder. It was agreed as previously discussed at the annual meeting in 2017 to continue to leave the material in place as it was preventing further erosion.
- 3.7 All discussed the erosion within the LID-BC-SAL particularly in LID3. SW enquired how LCO would traditionally fix an issue like this. MH explained that typically equipment would be used to reshape the gully and allow for better water flow by avoiding surface flow concentration. MH explained that if LCO were to do this the site would have to be destroyed under an AHIP. JY noted that with mining progression the catchment upstream from LID3 within the LCO approved mining area of the next two years will be significantly reduced, hence, will reduce the water flowing through this area and reduce potential for further erosion.
- 3.8 RG asked if the spraying of hydromulch or similar product as suggested to be trialled within the erosion at Liddell Muddle OS1 could be used. MH explained that if the trial that is planned to commence in 2019 on this area within the Mountain Block offset is successful LCO could investigate completing a similar trial within the LID3 site in consultation with the RAPs.
- 3.9 Discussed use of straw bales for scour protection at HAZ2 OS1 as actioned from previous site inspection and that the erosion had improved. It was raised that whilst the straw bales were working, continued erosion control was required. MH noted that LCO will place more straw bales at this location and look at including some grass seeds to assist in providing cover over the scours. Discussion around the prolonged dry drought conditions likely to have impacted the revegetation.
- 3.10 SW asked if at the next meeting a map could be provided of all the sites and extents to assist with the inspection. MH agreed that LCO would do this for the next inspection.
- 3.11 AF asked if future meetings could commence at an earlier time to avoid midday heat. MH agreed that LCO would organise the next annual inspection at an earlier time.
- 3.12 Group discussion held around a need to visit any other locations. Since most had attended an inspection earlier in the year as part of the Offset Study, the group decided they were satisfied with what they had seen.
- 3.13 The inspection and meeting was concluded at 1pm.

4 BUSINESS FOR NEXT MEETING

Actions to be addressed before the next meeting:

- 4.1 LCO to place straw bales and include grass seed at HAZ2 OS1 for scour protection
- 4.2 LCO to provide a map of extant sites and extents at the next annual meeting
- 4.3 LCO to include discussion of cultural burns in the agenda for the 2019 Annual meeting.
- 4.4 LCO to organise next annual meeting in approximately November 2019 and coordinate the meeting for earlier in the day.

LIDDELL

GLENCORE

MINUTES OF THE MODIFICATION 7 AND LID-BC-SAL BLAST HEAVE CONSULTATION HELD AT LIDDELL COAL OPERATIONS (LCO)

Monday 16th July 2018

PRESENT:

Mikayla Henderson (Liddell Coal Operations) (MH)
Ben DeSomer (Liddell Coal Operations) (BdS)
Rhonda Griffiths (Hunter Valley Aboriginal Corporation) (RG)
Allen Paget (Ungooroo Aboriginal Corporation) (AP)

APOLOGIES:

Arthur Fletcher (Kauwul T/A Wonn1) (AF)

1 INTRODUCTION

- 1.1 The meeting opened at 10:15am.

2 CORRESPONDENCE

Incoming

- 2.1 Liddell Coal Operations Modification 7 Presentation
2.2 Liddell Coal Operations LID-BC-SAL Blast Heave Presentation

Outgoing

- 2.3 Nil

3 MINUTES

- 3.1 BdS presented the Modification 7 PowerPoint presentation. BdS explained that the modification was generally administrative in nature to allow LCO to provide the necessary flexibility final landform outcomes and an extension to the DA boundary to facilitate the remediation of Mountain Block.
- 3.2 BdS explained that the remediation works to be undertaken include but are not limited to minor vegetation clearing, earthworks to establish drainage paths, reshaping and stabilisation of steep

slopes, establishment of erosion and sediment control structures and revegetation consistent with surrounding bushland.

- 3.3 AP asked where water is currently directed. BdS explained that the face currently drains into storage below the face noting that the remediation works will involve directing as much water away as possible from the slope to assist in stabilisation.
- 3.4 BdS showed maps of the project area including the current DA boundary and its proposed extension. BdS explained that there would be no additional coal mining activity and that the extension of the DA boundary is only required to facilitate remediation works to amend areas of instability and meet offset/site rehabilitation commitments..
- 3.5 AP asked if heavy gauge wire would be used to stabilise the slope. BdS explained that this would not be used, instead varying methods will be utilised in the remediation including compost blankets, hydromulch and utilising exposed rock features.
- 3.6 AP asked what the degree of the slope was and if it would pose an issue to access to complete the remediation. BdS explained that in places it is 2:1 slope and specialised equipment will be used to complete the remediation..
- 3.7 BdS noted that approximately 3.5ha of disturbance is required to complete the project and approximately 2.2ha of this area has been disturbed by historical activities.
- 3.8 BdS explained that two diligence surveys have been completed for this proposed disturbance area. One was completed for the offset due diligence program as communicated to the RAPs late 2017 and a second assessment completed to re-check the area specifically for Modification 7. BdS explained that a desktop and visual inspection was completed following the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (Due Diligence; DECCW 2010), consistent with processes outlined in Section 6 of the approved ACHMP. Furthermore the field inspection followed the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011).
- 3.9 BdS displayed the AHIMS records in relation to the modification area. MH noted that the sites to the east within the current LCO DA boundary are those that were inspected in April 2018 to discuss remediation options. BdS also presented tracks for the OzArk due diligence assessment of the modification area.
- 3.10 BdS noted that whilst some areas have had good establishment of mid and upper storey vegetation, the areas which have not established vegetation have been impacted by erosion.
- 3.11 BdS explained that remediation within Photo 5 would involve cutting back and removing the trees above the erosion as a matter of safety for those working below but also to regrade the slope.
- 3.12 BdS explained the geological challenges surrounding this slope and the poor quality soil which is highly erodible. BdS noted that the remediation will focus on ameliorating the erodible sedimentary materials and adding organic material to the soil to result in better vegetation establishment and stabilisation of the slope.
- 3.13 BdS noted that no Aboriginal sites were recorded during the due diligence inspection and no areas of potential intact subsurface archaeological deposits were identified. BdS discussed management recommendation the due diligence assessment noting that that all personnel conducting the work will undergo cultural heritage induction as per Section 6.5.1 of the LCO ACHMP.
- 3.14 AP asked if tube stock would be used in the rehabilitation and noted RAP interested in completing this work. BdS explained that because of the steep slopes and the requirement for rapid stabilisation, the revegetation planned to use seed incorporated in hydromulch or compost blanket. RG asked how the material would hold up with rainfall. MH explained that additives are included in the solution to bind the soil and the applied material to allow it to withstand rainfall events.
- 3.15 BdS noted that submission of the environmental assessment and associated applications is scheduled for August 2018. AP questioned if there had been any community concerns regarding

impacts such as dust and noise. BdS explained that due to the small earthmoving equipment planned to be used and need for operating during daylight hours as a matter of safety we do not expect any community concerns.

- 3.16 BdS presented the LID-BC-SAL blast heave presentation explaining the event description and investigation that had occurred. BdS noted that an OzArk Environmental & Heritage Management Pty Ltd Archaeologist was engaged to determine whether harm to the environment as defined by DA305-11-01 or to Aboriginal objects as defined under s.86 of the National Parks and Wildlife Act 1974 had occurred.
- 3.17 BdS noted the conclusions from the OzArk investigation noting that as the NPW Act protects objects rather than their context, it is unlikely that harm as defined by the Act has occurred.
- 3.18 AP queried whether LCO had reported the incident. BdS confirmed that LCO had reported it to the Department of Planning and Environment and Office of Environmental Heritage.
- 3.19 BdS explained the technical aspects of why these impacts occurred noting that the cracking appears to align with the outcropping of the Lemington H coal and the natural surface topography. It is assumed that the oxidised coal has acted as a plane of weakness and the blast energy has shifted a wedge of weak and weathered clay at the surface resulting in the observable impacts.
- 3.20 RG asked if the event will happen again. BdS explained that further blasts in this area were re-designed to use the free face to dissipate energy and alter blasting direction so as to mitigate future re-occurrence.
- 3.21 BdS discussed potential remediation options for the blast heave impacts. MH noted that recent inspections after rainfall have identified no increase in impacts (i.e. erosion) and the lifted sections of the blast heave are settling. AP and RG agreed that the proposed path forward of regular monitoring for further impacts and inspecting the impact area at the next annual meeting to discuss if passive remediation options such as the installation of hay bales or applying compost blankets are required.
- 3.22 The meeting was concluded at 11:50am

4 BUSINESS FOR NEXT MEETING

Actions to be addressed before the next meeting:

- 4.1 Nil

LIDDELL

GLENCORE

MINUTES OF THE OFFSET DUE DILLIGENCE SITE INSPECTION HELD AT LIDDELL COAL OPERATIONS (LCO)

Wednesday 4th April 2018

PRESENT:

Jarith Young (Liddell Coal Operations) (JY)
Mikayla Henderson (Liddell Coal Operations) (MH)
Stuart Fredericks (Liddell Coal Operations) (SF)
Rhonda Griffiths (Hunter Valley Aboriginal Corporation) (RG)
Natasha Kellett (Wanaruah LALC) (SW)
Glen Collins (Wanaruah LALC) (GC)
George Sampson (Cacatua Culture Consultants) (GS)
Kathie Kinchela (Yinarr Cultural Services) (KK)
Jodie Benton (OzArk) (JB)

APOLOGIES:

Arthur Fletcher (Kauwul T/A Wonn1) (AF)

1 INTRODUCTION

- 1.1 The meeting opened at 11:15am.

2 CORRESPONDENCE

Incoming

- 2.1 Liddell Offset Area Powerpoint Presentation – OzArk

Outgoing

- 2.2 Nil

3 MINUTES

- 3.1 MH discussed the offset areas and Liddell's (LCO) requirements for active regeneration works to be completed. To assist in planning for these works a due diligence program that was completed 2016/2017 to understand where areas of significance were. MH explained that the reasoning for

today's meeting/site visit was to introduce and visit the new sites and discuss options for revegetation.

- 3.2 JB presented the offset area due diligence PowerPoint presentation. JB explained the due diligence process completed by OzArk highlighting the study area and the heavy historical disturbance (i.e. mining and agricultural activities) of the land which was utilised in assessing the areas for cultural significance.
- 3.3 JB presented the previously recorded sites in the LCO area and the newly recorded sites as identified during the due diligence assessment explaining each site individually.
- 3.4 MH and JB discussed the proposed methodology for active regeneration in SALs consistent with current mitigation measures contained in the ACHMP. This would be hand planting and use of rubber tyred equipment only in areas of sensitivity with no active works on known sites. . No ground surface disturbance works would occur within recorded site boundaries. MH highlighted there was some areas of significant erosion that methods of control and revegetation would need to be discussed and agreed on in the field.
- 3.5 MH provided a sample of a product which could be used in areas of erosion to assist in stabilising the area, providing a medium for regeneration whilst being sensitive to artefacts. The product is applied through spraying/pumping onto select areas with the desired seed mix incorporated to assist in revegetation goals whilst stabilising the landscape. General discussion on erosion control measures throughout the group occurred.

The inspection of the offset areas commenced at approximately 12:15pm.

- 3.6 All visited Liddell Bowmans Ck OS1 and Liddell Bowmans Ck OS2 and the extension of the LID-BC-SAL to include these site within the landform. All discussed potential revegetation options for the portion of the SAL which is included within the Bowmans Creek Offset Area. All agreed that hand planting within the LID-BC-SAL away from known sites would be appropriate utilising only rubber tyred equipment outside of wet weather/conditions. Hand planting using different means (mechanical auger, mattock, etc.) was discussed with the group agreeing that any means not involving tracked machinery for ground preparation was acceptable.
- 3.7 All visited Hebden Bowmans Ck-IF 1 SAL and discussed revegetation options for the area. It was decided that if required to assist in planting success SALs could be slashed on a high cutting height to assist in managing aggressive grass species (Rhodes, Coolatai and African Love grass). The same revegetation method was decided to be appropriate for the LID-BC-SAL, Hebden Bowmans Ck IF-1 SAL and Bowman Coalhole Ck SAL where hand planting away from known sites would be appropriate.
- 3.8 All visited Liddell Muddle OS1 in the Mountain Block Southern Paddock and discussed the significant eroded areas. RG and NK discussed the use of methods such as placing straw bales or logs within the eroded gullies to assist in slowing down water through the gullies and to allow it to stabilise. Further, use of fallen material in the area would benefit the protection and enhancement of the area. Active stabilisation through natural recruitment was noted occurring already in the silted proportions of the area. MH suggested that whilst bales and logs would be a good idea to bring logs large enough into the area would require tracked equipment which is not permitted within sites, and there was not an abundance of suitable material within the area.
- 3.9 MH suggested that a variety of methods may be able to be used throughout the offset suitable to the mechanisms and severity of erosion in each discreet areas as it varies significantly, methods such as logs and bales may be better suited (Mountain Block OS1 and Mountain Block OS2). All discussed the use of a spray on stabiliser/mulch product to be used on areas of significant erosion and agreed this approach would be acceptable and appropriate. JY suggested that on areas where access is not restricted due to erosion that mulch could be brought in on rubber tyred equipment. All agreed to be acceptable.
- 3.10 All reviewed the discussions around methodologies deemed appropriate for the active revegetation of culturally significant areas in question. Full agreement from stakeholders present

around protection measures of the areas proposed. Opportunity to continue inspection of other sites was offered by LCO however full consensus deemed inspections not required; on the basis that the management strategies agreed to were consistent with the existing ACHMP and an adequate sample of the sites had be inspected.

3.11 The inspection and meeting was concluded at 3pm.

4 BUSINESS FOR NEXT MEETING

Actions to be addressed before the next meeting:

- 4.1 LCO to send out request for interest in providing assistance in planting of tube stock in SALs to develop a roster.

LIDDELL

GLENCORE

MINUTES OF THE ANNUAL SITE INSPECTION HELD AT LIDDELL COAL OPERATIONS (LCO)

Wednesday 22nd November 2017

PRESENT:

Jarith Young (Liddell Coal Operations) (JY)
Mikayla Henderson (Liddell Coal Operations) (MH)
Paulette Ryan (Hunter Traditional Owners) (PR)
Rhonda Griffiths (Hunter Valley Aboriginal Corporation) (RG)
Allen Paget (Ungooroo Aboriginal Corporation) (AP)
Suzie Worth (Wanaruah LALC) (SW)
Arthur Fletcher (Kauwul T/A Wonn1) (AF)
Luke Hickey (Hunter Valley Cultural Surveying) (LK)

APOLOGIES:

George Sampson (Cacatua Culture Consultants) (GS)

1 INTRODUCTION

- 1.1 The meeting opened at 10am.

2 CORRESPONDENCE

Incoming

- 2.1 Draft Liddell Coal Operations Aboriginal Heritage Cultural Management Plan

Outgoing

- 2.2 Nil

3 MINUTES

- 3.1 MH discussed the revised Aboriginal Cultural Heritage Management Plan (ACHMP) noting changes to the document including updating the document with salvage results, addition of new sites identified in due diligence process and proposed remediation measures for offsets. MH provided an overview of the new sites.

- 3.2 Discussion occurred between all regarding the due diligence process for the offset areas. JY noted that this was the first step in LCO planning the offset works to identify where further assessment needed to occur. No works had occurred in any area identified to have cultural heritage significance and the ACHMP was updated and sent out prior to the annual inspection meeting to allow for discussion. MH commented that the due diligence process was completed in accordance with the current ACHMP.
- 3.3 AF and LH raised concerns regarding the due diligence inspection and noted that cultural view has not been taken into account during this inspection. JY noted that it is not a requirement as per the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales to have RAP attendance during due diligence inspections and that the meeting today was intended to consult with the RAPs on the findings and discuss. JY noted that the due diligence inspection was completed to gain a better understanding of the offsets and aimed to identify heritage constraints across the study area that will help to determine what impacts would be appropriate. JY additionally noted that the intention of the offsets is to remediate the land. All agreed that this was of great benefit to the area.
- 3.4 MH suggested that a separate inspection be organised in 2018 to review findings of Offset Due Diligence, inspect the new sites and discuss methods for revegetation. All noted this would be preferred.
- 3.5 LH raised a concern that he or the others in attendance had not been given the opportunity to review the findings of the due diligence inspection prior to this meeting. MH noted that the findings of the due diligence inspection were all included in the ACHMP sent out for review prior to the meeting to allow for consultation.
- 3.6 LH questioned what LCO's process was for due diligence. MH noted this is contained in Section 6.1 of the ACHMP noting that consultation is required with a suitably qualified heritage professional to determine the level of assessment appropriate.

The annual inspection commenced at approximately 11am.

- 3.7 Discussed use of straw bales for scour protection at HAZ2 OS1 as actioned from previous site inspection and that the erosion had improved. RG noted the erosion appeared to be natural due to water. It was raised that continued erosion control was required. MH noted that LCO will place more straw bales at this location and look at including some grass seeds to assist in providing cover over the scours.
- 3.8 All discussed the removed of old internal fencing within the SAL near HAZ2 OS1. All agreed that wood posts were appropriate to leave but any wire and steel pickets to be removed. An additional gate noted to be placed near HAZ2 OS1 to provide better access to site.
- 3.9 JY raised issue around power pole near LID 3 which was on a lean and potentially unsafe. Discussed moving the pole by 2m to realign or put a stay in place. All agreed that on the matters of safety the pole needed to be realigned. Discussed that LCO would utilise due diligence processes for identifying site extents of LID 3.
- 3.10 Discussed wire and pre-mining steel rubbish near LID 3. All decided that rubbish was preventing further erosion and were happy for it to remain no risk posed to fauna.
- 3.11 Discussed adding site cards to the appendix of the ACHMP and including small signs in the field identifying the site name, particularly within the SAL.
- 3.12 The inspection and meeting was concluded at 2:30pm.

Actions to be addressed before the next meeting:

- 4.1 LCO to organise follow up inspection in early 2018 of the sites identified during Offset Due Diligence program.
- 4.2 LCO to place straw bales and include grass seed at HAZ2 OS1 for scour protection
- 4.3 LCO to install a gate near HAZ2 OS1 to allow for better access into HAZ2 OS1
- 4.4 LCO to organise removal of waste internal fencing near HAZ2 OS1
- 4.5 LCO to investigate putting site cards in the appendix of the ACHMP. Due to size LCO to consolidate in separate document.
- 4.6 LCO to investigate the placement of small signs in the field to identify site name

Appendix E - Site cards of extant or partially extant sites within ACHMP boundary



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220
Standard Site Recording Form



37-3-0452

New Recording ☐ Additional

information ☐

KIM WILSON

SITE IDENTIFICATION

Site name	LID3	NPWS Site Number	37-3-0452
Owner/manager	Liddell Coal Operations Pty Ltd		
Owner Address	PO Box 7 Singleton NSW 2330		

LOCATION

Location	The site is located approximately 25 kilometres northwest of Singleton, 7 kilometres northwest of Ravensworth, and 13 kilometres southeast of Muswellbrook.		
How to get to the site	The site is on land managed by Liddell Coal Operations Pty Ltd and access must be made with the company's knowledge. From Singleton, travel north west on the New England Highway for 22 kilometres. Turn right onto the Old New England Highway and travel 5 kilometres to the Liddell Colliery Open Cut Office. Travel to the eastern side of the Main Northern Railway. Site LID3 is on a small tributary of Bowmans Creek (see attached map).		
1:250,000 map name			NPWS map code
AMG Zone	56	AMG Easting	315568
		AMG Northing	6414300
Method for grid reference	Topographic map	Map scale (if method = map)	1:25,000
		Map name	Camberwell 9133-III-S
NPWS District Name (see map)	Upper Hunter		NPWS Zone (see map)
			Sydney Zone
Portion no.			Parish
			Liddell

SITE DESCRIPTION

Site type(s)	open artefact scatter	Site type code (NPWS use only)
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types. ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination. BURIALS: number & condition of bone, position, age, sex, associated artefacts. TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth. QUARRIES: rock type, debris, recognisable artefacts, percentage quarried	LID3 is located along a tributary of Bowmans Creek in the south eastern section of the Liddell Colliery lease area. Fifty three artefacts have been exposed by moderate gully erosion extending 150 metres along the tributary. Artefact concentration is relatively dispersed along the exposure, although some concentrations do occur. A loamy A horizon overlies the clay B horizon in this area, with erosion causing exposure of the A horizon and the surface of the B horizon. Approximately 60% of the drainage line has been affected by erosion and visibility is generally around 90% in these areas. The steep eroded banks of the drainage channel vary between 1 to 2 metres high. Artefacts are generally located on the top of the B horizon or eroding out of the A horizon. Many artefacts are eroding out of the A horizon and spilling down into the drainage channel. The artefact scatter was recorded discontinuously along a 150 metre length of the drainage depression. The assemblage mainly consists of flakes and flaked pieces, predominantly of mudstone. A number of silcrete artefacts were also noted including three cores. A small number of quartz artefacts are present, along with one flake composed of volcanic rock, possibly basalt. One mudstone retouched flake was recorded. See attached table for Artefact Assemblage.	

Version: June 1998

Data entered by:

Date entered:



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Drainage depression	Aspect	south	Slope	level
Mark position of the site					
Local rock type	sandstone	Land use/effect	grazing, vegetation clearance/erosion		
Distance from drinking water	20m	Source	Bowmans Creek		
Resource zone (eg. estuarine, river, forest)	open woodland, creek	Vegetation	Narrow-leaved Ironbark, Spotted Gum, Swamp Oak (dominates)		
Edible plants	water lilies, reeds, grasses?	Faunal resources (include shellfish)	macropods, reptiles, fish		
Other exploitable resources (eg. ochre)	river bed pebbles?				
Are there other sites in the locality	Yes	Are they in the Sites Register	Yes	Other site types include	open artefact scatters
SITE MANAGEMENT					
Site condition	Disturbed	Site has been disturbed moderate gully erosion.			
Management recommendations	Apply for Consent to Destroy subject to a detailed salvage program..				
Have artefacts been removed from site	No	When			
By whom		Deposited at			
Consent applied for	☐	Consent issued	☐		
Date of issue		Consent number			
SITE INSPECTION AND RECORDING					
Reason for investigation	Archaeological survey to assess impact of proposed extended open cut mining operation.				
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	Names and addresses	Wonnarua Tribal Council PO Box Singleton NSW		
Is the site important to local Aborigines	yes				
Verbal/written reference sources	Umwelt (Australia) Pty Ltd 2001. Aboriginal Heritage Assessment (Appendix 11) in Liddell Colliery Continued Operations Environmental Impact Statement. Report to Liddell Coal Operations Pty Ltd.		ASR report number(s) (or title)	C-C-	
Photographs taken	Yes		No. of Photos attached	0	



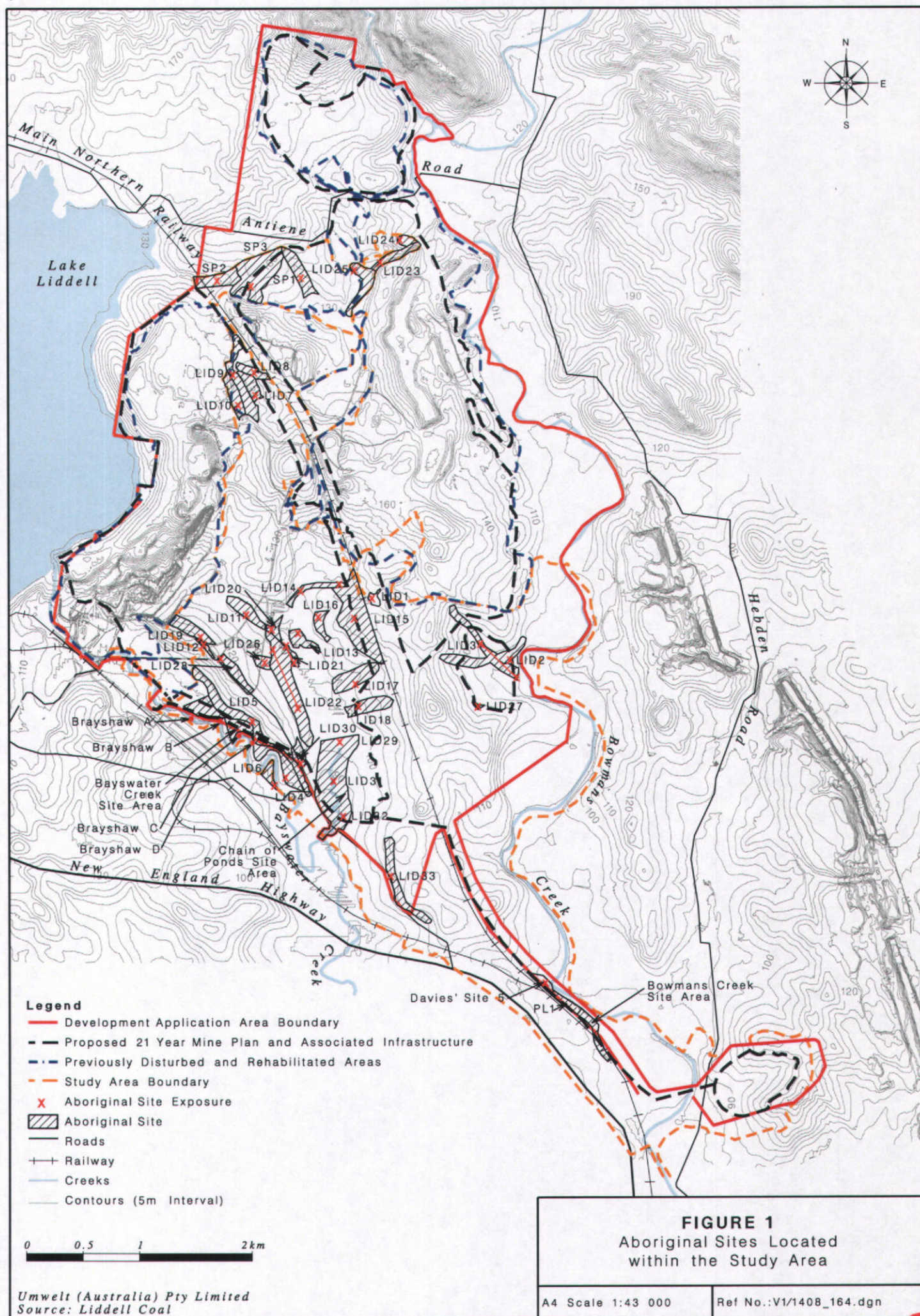


Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Site recorded by	Umwelt (Australia) Pty Ltd	Date of recording	9 November, 2000
Address/Institution	PO Box 838 Toronto NSW 2283		





Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form



4

37-3-0453

New Recording ☐ Additional ☐

information ☐

KIM WILSON

SITE IDENTIFICATION																																																											
Site name	LID2			NPWS Site Number	37-3-0453																																																						
Owner/manager	Liddell Coal Operations Pty Ltd																																																										
Owner Address	PO Box 7 Singleton NSW 2330																																																										
LOCATION																																																											
Location	The site is located approximately 25 kilometres northwest of Singleton, 7 kilometres northwest of Ravensworth, and 13 kilometres southeast of Muswellbrook.																																																										
How to get to the site	The site is on land managed by Liddell Coal Operations Pty Ltd and access must be made with the company's knowledge. From Singleton, travel north west on the New England Highway for 22 kilometres. Turn right onto the Old New England Highway and travel 5 kilometres to the Liddell Colliery Open Cut Office. Travel to the eastern side of the Main Northern Railway. Site LID2 is on a lower slope above Bowmans Creek (see attached map).																																																										
1:250,000 map name				NPWS map code																																																							
AMG Zone	56	AMG Easting	315874	AMG Northing	6414199																																																						
Method for grid reference	Topographic map	Map scale (if method = map)	1:25,000	Map name	Camberwell 9133-III-S																																																						
NPWS District Name (see map)	Upper Hunter			NPWS Zone (see map)	Sydney Zone																																																						
Portion no.				Parish	Liddell																																																						
SITE DESCRIPTION																																																											
Site type(s)	open artefact scatter			Site type code (NPWS use only)																																																							
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types. ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination. BURIALS: number & condition of bone, position, age, sex, associated artefacts. TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth. QUARRIES: rock type, debris, recognisable artefacts, percentage quarried.	LID2 is located on a lower slope in the south eastern section of the Liddell Colliery lease area. Part of the site has been exposed by core sampling activity which has disturbed an area of approximately 20 x 20 metres. The majority of artefacts occur within a 2 x 2 metre area on this disturbed section. Approximately 15 metres to the east, two stone artefacts are located beneath a stand of casuarinas in an area of minimal ground cover. The site consists of eight artefacts, all composed of red or yellow mudstone. LID 2 Artefact Assemblage: <table border="1"> <thead> <tr> <th>Artefact type</th> <th>Raw material</th> <th>Colour</th> <th>Size class</th> <th>Count</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>Flake</td> <td>Mudstone</td> <td>Red</td> <td>3-4cm</td> <td>1</td> <td>Usewear on both lateral margins</td> </tr> <tr> <td>Core</td> <td>Mudstone</td> <td>Red</td> <td>5-6cm</td> <td>1</td> <td>3 -ve scars</td> </tr> <tr> <td>Flake</td> <td>Mudstone</td> <td>Yellow</td> <td>4-5cm</td> <td>1</td> <td>Edge damage</td> </tr> <tr> <td>Flaked piece</td> <td>Mudstone</td> <td>Red</td> <td>1-2cm</td> <td>1</td> <td></td> </tr> <tr> <td>Flake</td> <td>Mudstone</td> <td>Red</td> <td>3-4cm</td> <td>1</td> <td></td> </tr> <tr> <td>Flake</td> <td>Mudstone</td> <td>Red</td> <td>2-3cm</td> <td>1</td> <td>Blade flake</td> </tr> <tr> <td>Flake</td> <td>Mudstone</td> <td>Red</td> <td>1-2cm</td> <td>1</td> <td>Blade-like flake</td> </tr> <tr> <td>Flaked piece</td> <td>Mudstone</td> <td>Red</td> <td>0-1cm</td> <td>1</td> <td></td> </tr> </tbody> </table>					Artefact type	Raw material	Colour	Size class	Count	Comments	Flake	Mudstone	Red	3-4cm	1	Usewear on both lateral margins	Core	Mudstone	Red	5-6cm	1	3 -ve scars	Flake	Mudstone	Yellow	4-5cm	1	Edge damage	Flaked piece	Mudstone	Red	1-2cm	1		Flake	Mudstone	Red	3-4cm	1		Flake	Mudstone	Red	2-3cm	1	Blade flake	Flake	Mudstone	Red	1-2cm	1	Blade-like flake	Flaked piece	Mudstone	Red	0-1cm	1	
Artefact type	Raw material	Colour	Size class	Count	Comments																																																						
Flake	Mudstone	Red	3-4cm	1	Usewear on both lateral margins																																																						
Core	Mudstone	Red	5-6cm	1	3 -ve scars																																																						
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Flake	Mudstone	Red	2-3cm	1	Blade flake																																																						
Flake	Mudstone	Red	1-2cm	1	Blade-like flake																																																						
Flaked piece	Mudstone	Red	0-1cm	1																																																							





Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Lower slope	Aspect	south	Slope	gentle
Mark position of the site					
Local rock type	sandstone	Land use/effect	grazing, vegetation clearance/erosion		
Distance from drinking water	50-100m	Source	Bowmans Creek		
Resource zone (eg. estuarine, river, forest)	open woodland, creek	Vegetation	Narrow-leaved Ironbark, Yellow Box, Spotted Gum, Swamp Oak		
Edible plants	water lillies, reeds, grasses?	Faunal resources (include shellfish)	macropods, reptiles, fish		
Other exploitable resources (eg. ochre)	river bed pebbles?				
Are there other sites in the locality	Yes	Are they in the Sites Register	Yes	Other site types include	open artefact scatters
SITE MANAGEMENT					
Site condition	Disturbed	Site has been disturbed by core sampling activity			
Management recommendations	Apply for Consent to Destroy with salvage (bulk collection).				
Have artefacts been removed from site	No	When			
By whom		Deposited at			
Consent applied for	☐	Consent issued	☐		
Date of issue		Consent number			
SITE INSPECTION AND RECORDING					
Reason for investigation	Archaeological survey to assess impact of proposed extended open cut mining operation.				
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present	Names and addresses	Wonnarua Tribal Council PO Box Singleton NSW		
Is the site important to local Aborigines	yes				
Verbal/written reference sources	Umwelt (Australia) Pty Ltd 2001. Aboriginal Heritage Assessment (Appendix 11) in Liddell Colliery Continued Operations Environmental Impact Statement. Report to Liddell Coal Operations Pty Ltd.		ASR report number(s) (or title)	C- C-	
Photographs taken	Yes		No. of Photos attached	0	

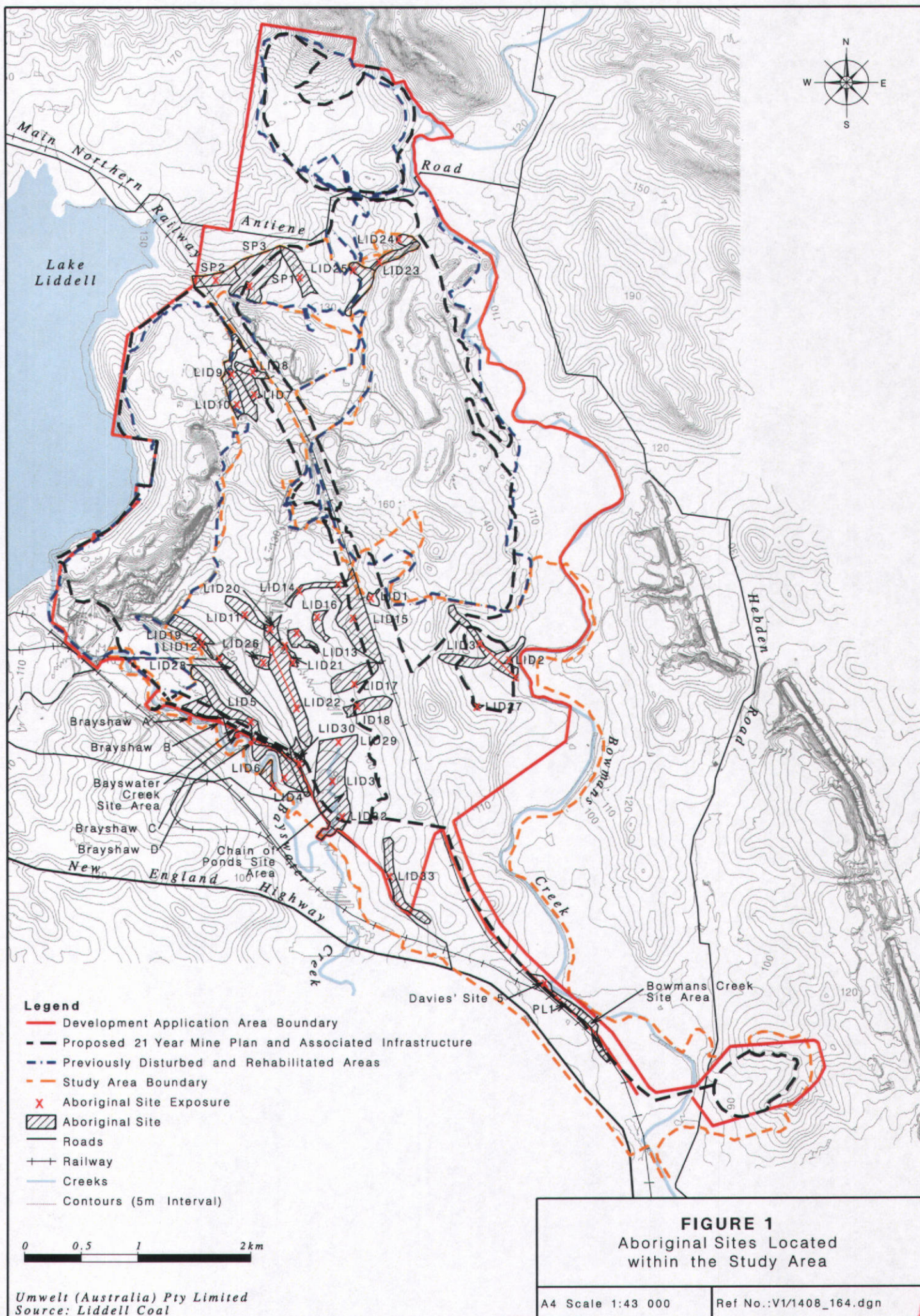


Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Site recorded by	Umwelt (Australia) Pty Ltd	Date of recording	9 November, 2000
Address/Institution	PO Box 838 Toronto NSW 2283		





Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional Information ☐

SITE IDENTIFICATION					
Site name	AN2			NPWS Site Number	37-3-0710
Owner/manager	Liddell Mine Lease				
Owner address	Liddell/ Antlene				
LOCATION					
Location	The site is located on the property of the Liddell mine lease within the EnergyAustralia 132kV feeder easement.				
How to get to the site	South from Muswellbrook along the New England Highway Left at Liddell Rd for approximately 6km. Approximately 120m south west of Liddell/Hebden Rd at Hebden. The site is on the northern border of the existing 132kV feeder.				
1:250,000 map name				NPWS map code	
AMG Zone	56	AMG Easting	313116	AMG Northing	6417624
Method for grid reference	Handheld GPS	Map scale (if method = map)	1: 25 000	Map name	Dawsons Hill 9133-III-N
NPWS District Name (see map)				NPWS Zone (see map)	
Portion no.				Parish	Liddell
SITE DESCRIPTION					
Site type(s)	Artefact Scatter			Site type code (NPWS use only)	



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Description of site and contents

CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried

- 4 x Broken flakes (Red Silcrete)
- 2 x Flaked Piece (Red Silcrete)
- 1 x Broken flake (Yellow Silcrete)
- 1 x Flake (Red Silcrete)



Site: 4m x 2m

Located on a midslope on an erosion scar approximately 4 metres x 2 metres in area. The site has a northwest aspect to Lake Liddell and is surrounded by pasture grasses.

Attach photographs and sketches, eg. plan & section of shelter.
Do NOT dig, disturb or damage site or contents.



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Midslope		Aspect	North-west	Slope 20°
Mark position of the site					
Local rock type	Sandstone/ Ironstone		Land use/effect	Areas of erosion due to vegetation clearing and cattle treading.	
Distance from drinking water	300m		Source	Lake Liddell. This water source would have originally been Bayswater Ck before the creation of Lake Liddell.	
Resource zone (eg. estuarine, river, forest)	Midslope		Vegetation	Pasture Grasses	
Edible plants	None observed		Faunal resources (include shellfish)	None observed	
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	Yes	Are they in the Sites Register	No	Other site types include	Artefact scatter, Isolated find.
SITE MANAGEMENT					
Site condition	Poor				
Management recommendations	Site not impacted by 132kV feeder. Leave as is.				
Have artefacts been removed from site	No		When		
By whom			Deposited at		
Consent applied for			Consent issued		
Date of issue			Consent number		
SITE INSPECTION AND RECORDING					
Reason for investigation	Archaeological survey for a proposed 132kV Feeder				
Were local Aborigines contacted or present for the recording	Representatives from: Upper Hunter Heritage Consultants; Ungooroo Aboriginal Corporation; and Valley Culture.		Names and addresses	Allen Paget - Ungooroo Aboriginal Corporation 172 John St, Singleton NSW 2330 Melissa Matthews - Upper Hunter Heritage Consultants 160 Sydney St. Muswellbrook NSW 2333 James Baker - Valley Culture 140 Sydney St, Muswellbrook NSW 2333	
Is the site important to local Aborigines	Yes				
Verbal/written reference sources				ASR report number(s) (or title)	
Photographs taken	Umwelt (Australia) Pty Limited			No. of Photos attached	



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☐ Additional information ☒

SITE IDENTIFICATION					
Site name	SP2			NPWS Site Number	37-3-0741
Owner/manager	Liddell Mine Lease				
Owner address	Liddell/ Antlene				
LOCATION					
Location	The site is located on the property of the Liddell mine lease within the EnergyAustralia 132kV feeder easement.				
How to get to the site	South from Muswellbrock along the New England Highway Left at Liddell Rd for approximately 6km. Approximately 120m south west of Liddell/Hebden Rd at Hebden. The site is 20m south of the existing 132kV feeder and 50m north of the Main Northern Railway.				
1:250,000 map name				NPWS map code	
AMG Zone	56	AMG Easting	313193	AMG Northing	6417520
Method for grid reference	Handheld GPS	Map scale (if method = map)	1: 25 000	Map name	Dawsons Hill 9133-III-N
NPWS District Name (see map)				NPWS Zone (see map)	
Portion no.				Parish	Liddell
SITE DESCRIPTION					
Site type(s)	Artefact Scatter			Site type code (NPWS use only)	





Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Description of site and contents

CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock.

DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types.

ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination.

BURIALS: number & condition of bone, position, age, sex, associated artefacts.

TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth.

QUARRIES: rock type, debris, recognisable artefacts, percentage quarried



SP2

The site is located in a drainage line exhibiting high levels of erosion caused by ground clearing, wash and livestock trampling. Pasture grasses surround the site which has a westerly outlook to Lake Liddell. The visible artefact distribution is approximately 20 metres x 40 metres and nineteen artefacts were located within this area.

- 1 x core (cream mudstone)
- 1 x core (yellow mudstone)
- 5 x broken flake (yellow mudstone)
- 5 x broken flake (red mudstone)
- 2 x broken flake (grey silcrete)
- 1 x broken flake (red silcrete)
- 2 x broken flake (white silcrete)
- 1 x broken flake (yellow silcrete)
- 1 x broken flake (white/clear chalcedony)

Attach photographs and sketches, eg. plan & section of shelter.
Do NOT dig, disturb or damage site or contents.



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

SITE ENVIRONMENT					
Land form	Lowerslope		Aspect	West	Slope 10°
Mark position of the site					
Local rock type	Sandstone/ Ironstone		Land use/effect	Gully erosion from wash and cattle treadage.	
Distance from drinking water	300m		Source	Lake Liddell. This water source would have originally been Bayswater Ck before the creation of Lake Liddell.	
Resource zone (eg. estuarine, river, forest)			Vegetation	Pasture grasses and a grove of eucalypts to the south of the site.	
Edible plants	None observed		Faunal resources (include shellfish)	None observed	
Other exploitable resources (eg. ochre)	None observed				
Are there other sites in the locality	Yes	Are they in the Sites Register	No	Other site types include	Artefact scatter/ Isolated find
SITE MANAGEMENT					
Site condition	Poor				
Management recommendations	Site not impacted by 132kV feeder. Leave as is.				
Have artefacts been removed from site	No		When		
By whom			Deposited at		
Consent applied for			Consent issued		
Date of issue			Consent number		
SITE INSPECTION AND RECORDING					
Reason for investigation	Archaeological survey for a proposed 132kV Feeder				
Were local Aborigines contacted or present for the recording	Representatives from: Upper Hunter Heritage Consultants; Ungooroo Aboriginal Corporation; and Valley Culture.	Names and addresses	Allen Paget - Ungooroo Aboriginal Corporation 172 John St, Singleton NSW 2330 Melissa Matthews - Upper Hunter Heritage Consultants 160 Sydney St, Muswellbrook NSW 2333 James Baker - Valley Culture 140 Sydney St, Muswellbrook NSW 2333		
Is the site important to local Aborigines	Yes				
Verbal/written reference sources				ASR report number(s) (or title)	
Photographs taken	Umwelt (Australia) Pty Limited			No. of Photos attached	
Site recorded by	Umwelt (Australia) Pty Limited			Date of recording	07/06/06

Open Site

A 10x10 grid map with compass directions (N, NE, E, SE, S, SW, W, NW) and a north arrow pointing to the right.

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Open Site

Site Orientation

- ☒ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

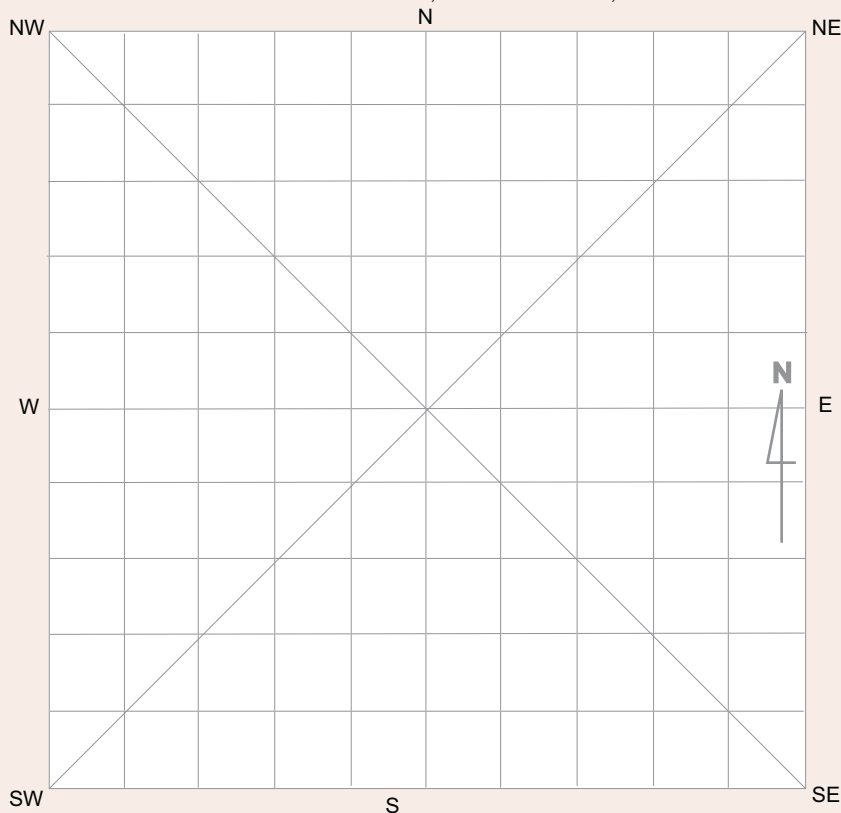
Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☒ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
- Average width of visible site
- 160m sq Estimated area of visible site
- 80 Length of assessed site area

[illegible]

LID ES1 is an artefact scatter located on a spur crest and adjoining upper slope. The spur crest is very gently inclined (near to level), with the adjoining slope also being of low gradient. There is no immediate access to water resources at the site. The site contains three loci within an area of moderate sheetwash that extends for approximately 80 metres along the width of the surveyed transect. Visibility within the exposure was good at approximately 20%. Sheetwash erosion had impacted the site, leaving a very thin layer of A2 horizon that in some areas had eroded down to the underlying sandstone bedrock. Erosion remains the main disturbance factor at the site, with previous vegetation clearance having no doubt enhanced this process. Based on the predictive model, the depth of soil remaining in the area and to small number of artefacts present in the exposed area with good visibility, it is likely that any additional deposits that may be present within the site boundaries will consist of a small number of sparsely distributed artefacts. Site boundaries were determined on landform and survey area. LID ES1 was assessed as having low significance on a local and regional basis.

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title	Surname	First Name	Initials													
Organisation																
Address																
Phone number											Fax					

☐	A4 location map
☐	B/W photographs
☐	Colour photographs
☐	Slides
☐	Aerial photographs
☐	Site plans, drawings
☐	Recording tables
☐	Other
☐	Feature inserts-No.

[illegible]

NPWS FEATURE RECORDING FORM - ARTEFACT

page 1

Site I.D. Site Name First recorded date Importance No. of instances Recorded by

Yes No

Stone artefacts only Artefacts collected Permit issued

Percentage of Non-stone Artefacts to Percentage of Stone Artefacts

0-9% 10-19% 20-29% 30-39% 40-49% 50-59% 60-69% 70-79% 80-89% 90-100%

Feature Context & Condition

Scatter No. Easting Northing

Density

Dimensions

Yes No

(Artefact count per square metre) Length (m) Width (m) Depth (m) In situ Stratified

Feature Condition

General Condition

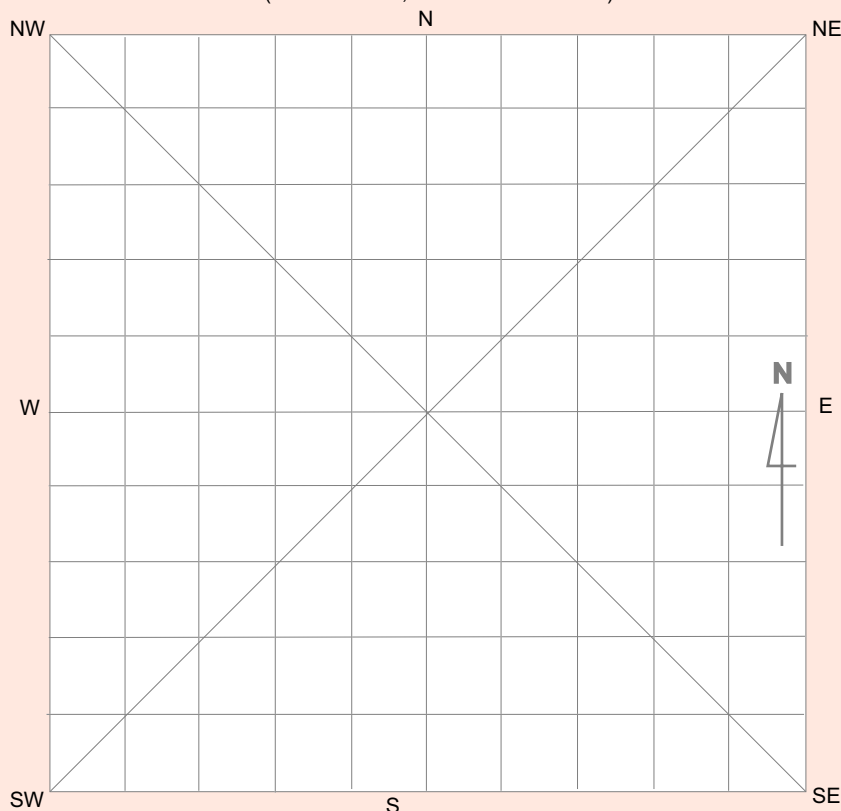
Recommended Action

- ☐ Very good
- ☐ Good
- ☒ Poor

- ☐ Weathered
- ☐ Vehicle damage
- ☒ Surface water wash
- ☐ Fire damage
- ☒ Erosion
- ☐ Stock damage
- ☒ Exposed archaeological material

- ☐ Boardwalk
- ☐ Fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Fire hazard reduction
- ☐ Expert assessment
- ☐ Meeting with land manager
- ☐ Revegetation
- ☐ Signage
- ☐ Soil erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan (Indicate scale, location of instances)



Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

NPWS FEATURE RECORDING TABLE - ARTEFACT

page 2

Stone Artefact

[illegible]

Other Artefact Type

[illegible]

Material

Basalt	Clear glass
Chert	Ceramic
Fine grained siliceous	Porcelain
Granite	Tin can
Quartz	Wire
Quartzite	Nail
Sandstone	Button
Silcrete	Shell
Green glass	Bone
Amber glass	Wood
Amethyst glass	Resin

Artefact Description

Adze	Flake tool
Anvil	Flaked piece
Axe	Hammerstone
Backed blade	Manuport
Blade	Milling slab
Core	Mortar
Core tool	Muller
Cyclon	Nuclear tool
Distal fragment	Pirri
Eloura	Proximal fragment
Flake	Tula
	Other diagnostic type
	Modified
	Unworked

Platform Surface

- Cortex
- Flake scar
- More than one flake scar
- Faceted
- Ground
- Indeterminate
- Bipolar

Platform Type

- Wide
- Focal
- Shattered
- Indeterminate
- Bipolar

Termination

- Feather
- Hinge
- Step
- Outrepasse
- Bipolar

Cross Section

High/strong
High/weak
Low/weak
Irregular

Comments:

The site consists of three loci. Locus 1 (MGA 316057 6414006) contains 1 mudstone core, locus 2 (MGA 315999 6414015) contains 1 mudstone retouched flake and locus 3 (MGA 316010 6414030) contains 2 silcrete cores, 2 silcrete flaked pieces and 9 silcrete broken flakes.

Site I.D.

Site Name

First recorded date

Importance

Aboriginal Information Recorded?

No. of instances

Recorded by

Feature description

No. of scars

No. of carved panels

Feature Condition

☐ Very good

☐ Good

☐ Poor

Condition

☐ Weathered

☐ Ringbarked

☐ Fire damage

☐ Vehicle damage

☐ Insects/termites

☐ Rot

☐ Limb fall

☐ Stock damage

Easting

Northing

Recommended Action

☐ Fencing

☐ Closure to public

☐ Continued inspection

☐ Expert assessment

☐ Fire hazard reduction

☐ Insect removal

☐ Meeting with land manager

☐ Rubbish removal

☐ Signage

☐ Tree health assessment

☐ Track closure/re-routing

☐ Additional recording

Feature environment (Complete when feature environment differs to site environment, use attributes from cover card, page 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

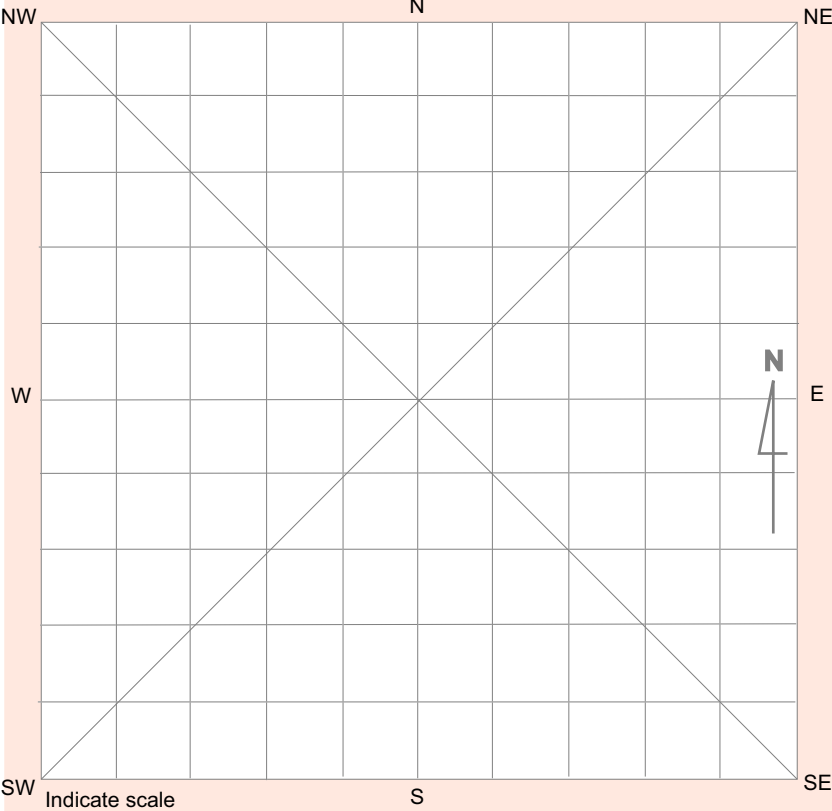
Distance to permanent water source metres

Distance to temporary water source metres

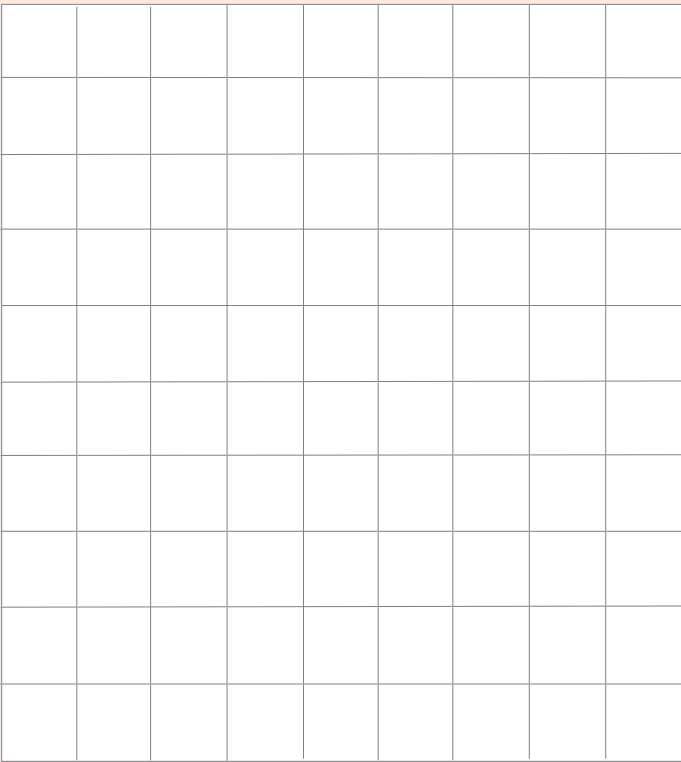
Name of nearest permanent water source

Name of nearest temporary water

Feature Location Plan



Scar/Carved Panel Drawing



Site I.D. Site Name First recorded date / / Importance

Aboriginal Information Recorded?

No. of instances Recorded by **Feature Description****Type of Grinding Feature**

- ☐ Broad
- ☐ Narrow/point
- ☐ Hollow
- ☐ Flat

Profile Shape

- ☐ 'U' shaped
- ☐ 'V' shaped
- ☐ Flat

Seed Species PresentRecording date / / **Groove Function****Dimensions****Smallest**Length (mm) Width (mm) Depth (mm) **Largest**Length (mm) Width (mm) Depth (mm) Groove count Cluster count **Feature Context & Condition**Easting Northing Dimensions of Whole Feature Length (m) Width (m)**Feature Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

General Condition

- ☐ Weathered
- ☐ Vandalised

General Condition ctd

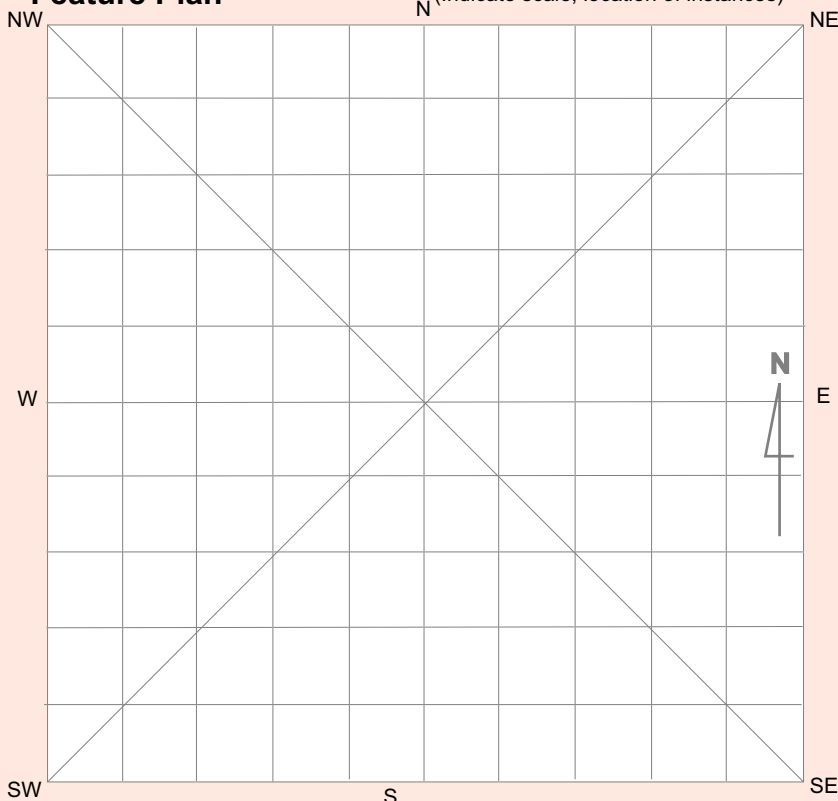
- ☐ Fire damage
- ☐ Surface water wash
- ☐ Graffiti
- ☐ Vehicle damage
- ☐ Erosion
- ☐ Stock damage

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Expert assessment
- ☐ Graffiti removal
- ☐ Meeting with land manager
- ☐ Revegetation
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan

(Indicate scale, location of instances)

**Feature Environment**(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

WaterDistance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

Site I.D. Site Name First recorded date / / Importance Aboriginal Information Recorded? No. of instances Recorded by **Feature Context & Condition**Easting Northing Pigment ☐ Engraved ☐ Super-impositioning ☐**Artwork Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

General Condition

- ☐ Weathered
- ☐ Vandalised
- ☐ Surface water wash
- ☐ Mineralisation
- ☐ Graffiti
- ☐ Fire damage
- ☐ Insects/termites
- ☐ Erosion
- ☐ Stock
- ☐ Unstable structure

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Dripline
- ☐ Expert assessment
- ☐ Fire hazard removal
- ☐ Graffiti removal
- ☐ Insect/bird nest removal
- ☐ Meeting with land manager
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Environment(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2) Land form Land form unit Slope Vegetation Land use**Water**Distance to permanent water source metresDistance to temporary water source metresName of nearest permanent water source Name of nearest temporary water **Art Sketch Plan**

Sketch and number motif groups



NPWS FEATURE RECORDING TABLE - ART MOTIF

page 2

[illegible]

Motif	Application	Main	Technique	Colour	Art Location	Condition
Anthropomorphic	Female	Marine-Other	Abraded	Black	All over shelter surfaces	Faded
Bird	Fish	Other	Drawn	Mauve *	ceiling	Stained
Bird Track	Foot	Pattern	Other	N/A	Floor	Mineralisation Evident
Canoe	Hand	Quadruped	Painted	Orange *	Mostly near largest sheltered space	V brant Colours
Circle	Jellyfish	Reptile	Pecked	Other	Mostly on out of the way surfaces	Unweathered
Contact material culture	Kangaroo	Rifle	Pigment & Engraved	Red *	Other	Weathered
Duck	Line	Shield	Stencilled	White *	Wall	
Eel	Lizard	Ship		Yellow *		
Emu	Macropod	Snake	Form			
Emu track	Macropod Track	Spear	Fill			
European figure	Male	Wallaby	Line			
			Line+ Fill			
			Other			
			Pattern			

Comments:

Site I.D. Site Name First recorded date Importance

Aboriginal Information

Recorded? No. of instances Recorded by **Feature Context
& Condition**Easting Northing **Dimensions of Whole Feature** Length (m) Width (m) Depth (m)**Shell Distribution**

- ☐ Surface scatter
- ☐ Stratified deposit
- ☐ Mounded

 Distance to high water mark (m)**Feature Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

General Condition

- ☐ Weathered
- ☐ Vandalised
- ☐ Surface water wash
- ☐ Mineralisation
- ☐ Graffiti

General Condition ctd

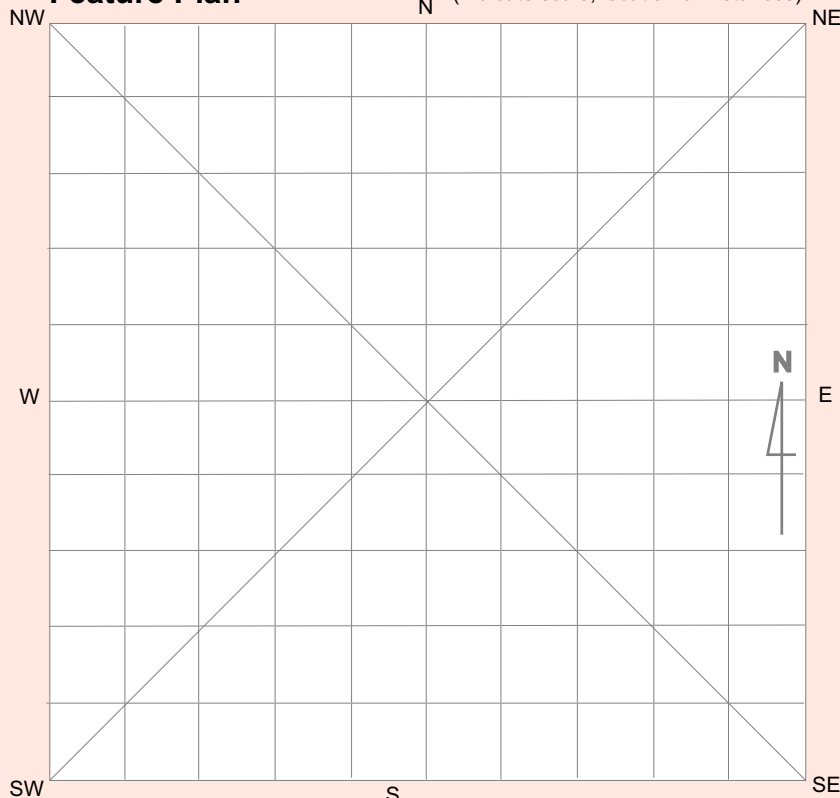
- ☐ Fire damage
- ☐ Vehicle damage
- ☐ Insects/termites
- ☐ Erosion
- ☐ Stock damage
- ☐ Unstable structure
- ☐ Exposed bone material
- ☐ Exposed archaeological material

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Expert assessment
- ☐ Fire hazard removal
- ☐ Graffiti removal
- ☐ Meeting with land manager
- ☐ Insect/bird nest removal
- ☐ Revegetation
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan

(Indicate scale, location of instances)

**Feature Environment**(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

- Land form
- Land form unit
- Slope
- Vegetation
- Land use

WaterDistance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

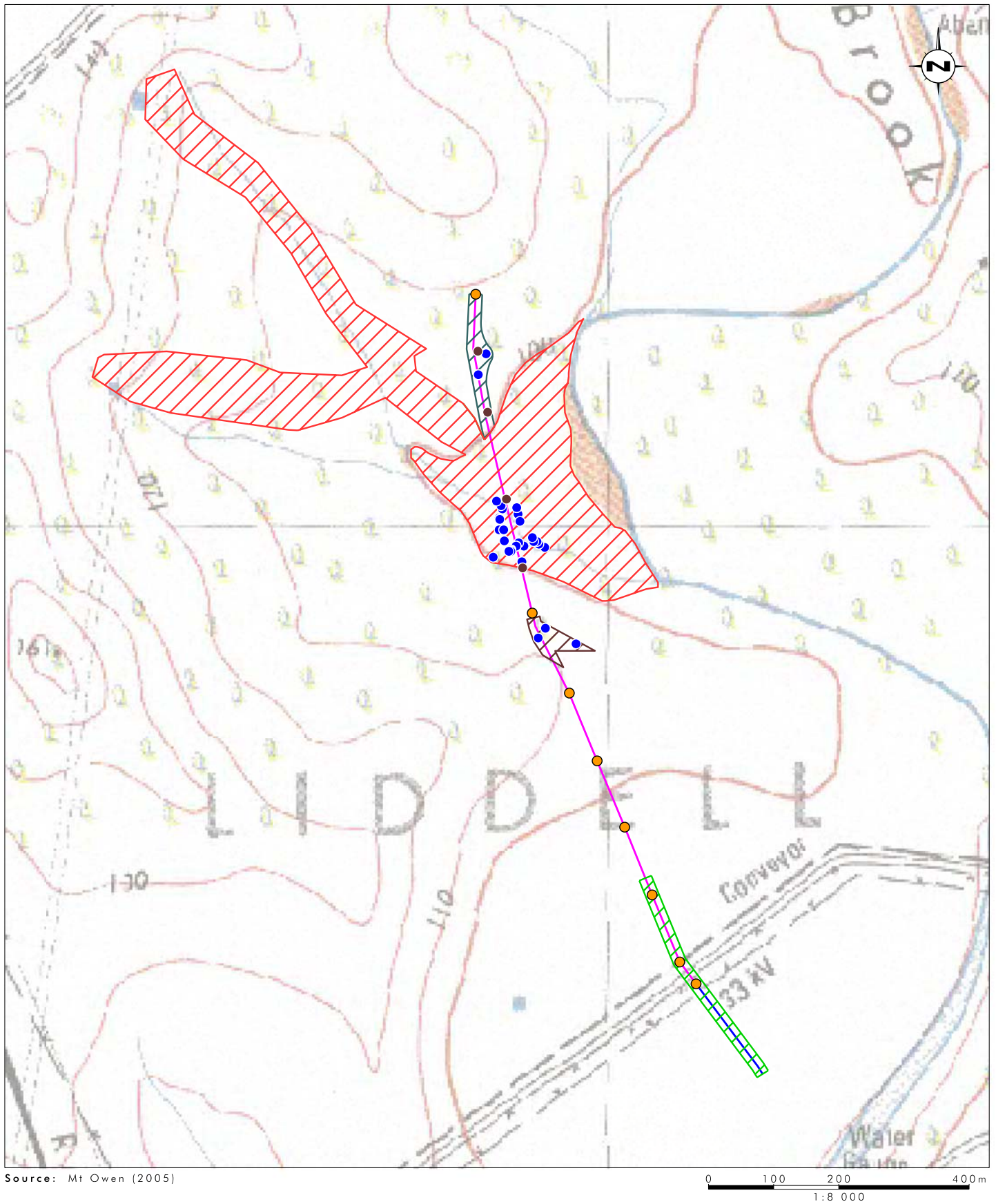
Name of nearest temporary water

% of this
species shell to
% total of other
shell

Species

Percentage of this Species Shell to Percentage Total of other Shell

[illegible]



Legend

- Proposed Distribution Line Route
- Proposed Above Ground Cable Tray Route
- LID ES1
- LID 2
- LID 3 Newly Recorded Extent
- Bowmans Creek Terrace
- Loc
- Pole Location
- Pole Location with Geotechnical Pit

File Name (A4): V1/2725_007.dgn

FIGURE 1

Location of LID ES1
and Associated Sites

Aboriginal Site Impact Recording Form

AHIMS Registrar

PO Box 1967, Hurstville 2220 NSW

April 2012 OEH 2012/0558

- 1 This form must be completed following impacts to AHIMS sites that are:
 - a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
 - b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)
 - c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:
 - State Significant Development (SSD - Part 4),
 - State Significant Infrastructure (SSI - Part 5.1), or
 - A Major Project (Part 3A - now repealed) under the *Environmental Planning and Assessment Act 1979 (EP&A Act)*, or
 - d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.
- 2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).
- 3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.
- 4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval)
This form must be submitted in addition to any reports.

AHIMS site ID: 37-3-1136

Site impact authorisation (select one)	Reference numbers, dates
☐ Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> .)	Date OEH was notified (under requirement 15c of the Code): OEH Regional office notified:
☐ AHIP (The impacts to this site were authorised by an AHIP.)	AHIP number: C0000623 Date issued/signed: 03/12/2014 AHIMS permit ID/number: 3765
☐ SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I)	Project number:
☐ SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)	Date Director General's Requirements issued: or Date of project approval:

Site status following impacts:

- ☐ Not a site (The investigations concluded that this is not a site.)
☐ Valid site (The investigations confirmed that this is an Aboriginal site.)
☐ Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)
☐ Destroyed (The site was completely destroyed following authorised impacts.)

Geographic location

Site name: LID ES1
 Easting: 3160057 Northing: 6414006 Coordinates must be in GDA (MGA)
 Map sheet:
 Zone: 56 Location method: Hand Held/Non Differential GPS

Primary recorder

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Harrop	Nicholas
Organisation:	OzArk Environmental & Heritage Management	
Address:	145 Wingewarra Street, Dubbo, NSW 2830	
Phone:	268820118	E-mail: nick@ozarkehm.com.au
Date recorded:	25/02/2015	Fax: 268820630

Site information

Open/closed site:

Features:

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|---|
| ☐ | 1. Aboriginal ceremony and dreaming | ☐ | 11. Habitation structure |
| ☐ | 2. Aboriginal resource and gathering | ☐ | 12. Hearth |
| ☐ | 3. Art | ☐ | 13. Non-human bone and organic material |
| ☒ | 4. Artefact | ☐ | 14. Ochre quarry |
| ☐ | 5. Burial | ☐ | 15. Potential archaeological deposit |
| ☐ | 6. Ceremonial ring | ☐ | 16. Stone quarry |
| ☐ | 7. Conflict | ☐ | 17. Shell |
| ☐ | 8. Earth mound | ☐ | 18. Stone arrangement |
| ☐ | 9. Fish trap | ☐ | 19. Modified tree |
| ☐ | 10. Grinding groove | ☐ | 20. Water hole |

Site condition

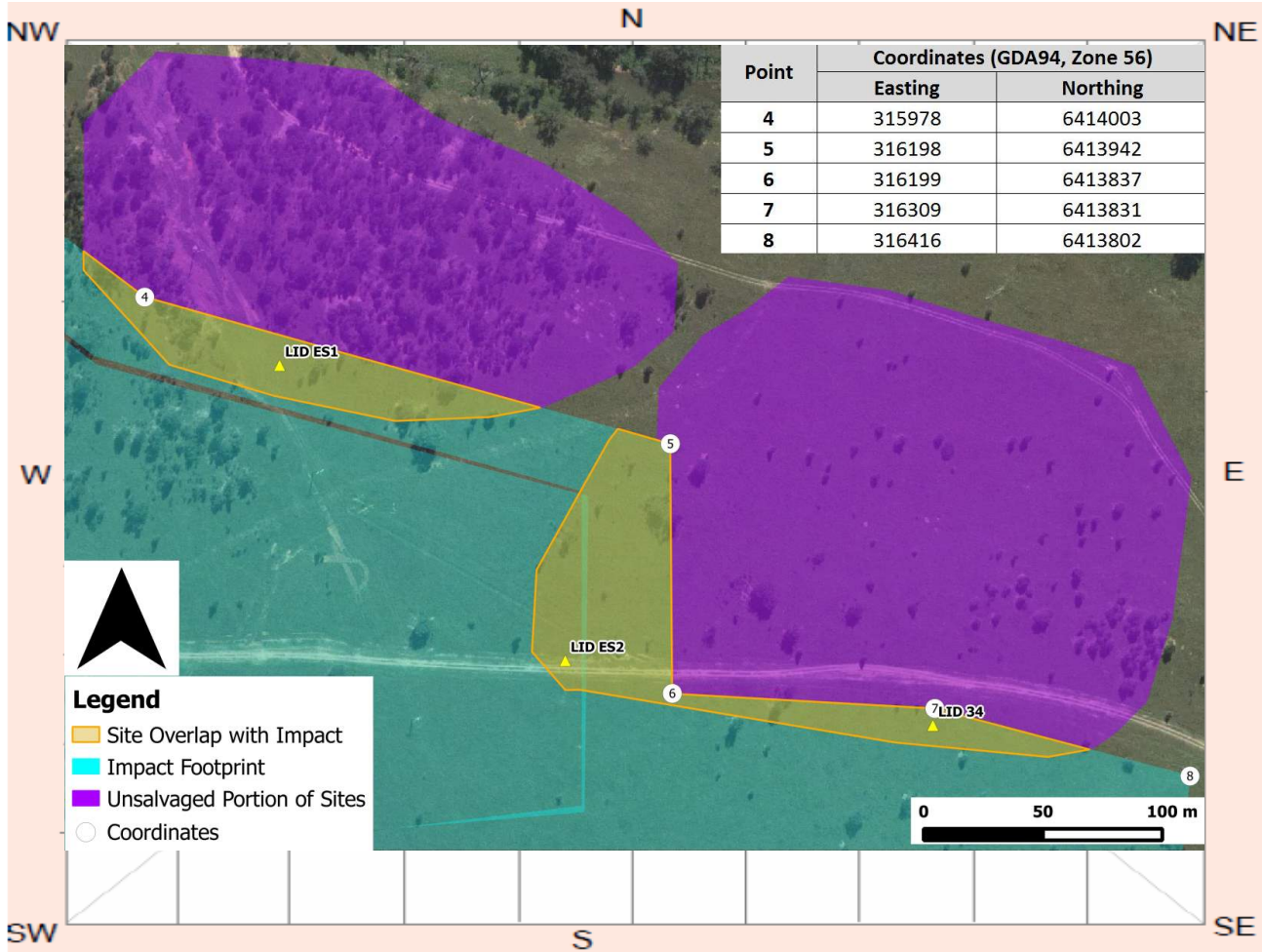
Written description of the condition of the AHIMS site (including relevant features) following the authorised impact of the site

The salvage of LID ES1 was attempted within the proposed impact footprint of the Liddell Coal Operations Development Modification 5 project (see map below). No artefacts were recorded and the site was not assessed as having subsurface deposits (OzArk 2012). As such, this portion of the site is considered to be destroyed.

The portion of the site outside of the proposed impact footprint is no longer being used for agricultural purposes and as such vegetation is increasing and the rate of erosion appears to be lessening over time. This portion of the site was not closely inspected during the salvage.

Site map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

Salvage of the portion of LID ES1 within the proposed impact footprint was attempted by pedestrian surface collection. An archaeologist and three representatives from the Registered Aboriginal Parties (RAPs) were present. Vegetation had been previously cleared from the site by brush cutting. No artefacts were recorded in this portion of the site. It is likely that the previously-recorded artefacts are within the portion of the site not salvaged. The representatives of the RAPs were satisfied that an adequate effort had been made to salvage the artefacts.

Management recommendations

Summary of any management recommendations for the AHIMS site

LID ES1 is now considered to be partially destroyed. The proposed works may proceed according to the recommendations set out in OzArk 2015. The following recommendations are reiterated: 1) Should any unexpected remains be encountered during the proposed works within the site that are suspected to be of Aboriginal cultural heritage, then the Unanticipated Finds Protocol should be followed; 2) Should the footprint of the project change so that it includes any part of the unsalvaged portion of the LID ES1, then further approval will be required; and 3) The unsalvaged portion of LID ES1 should be fenced where it meets the salvaged portion for the duration of the construction and operation of the project.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

LID ES1 was assessed as having moderate scientific/archaeological significance and high cultural significance in 2012 prior to a test excavation program. Significance is unchanged within the unsalvaged portion of the site.

Additional comments

The management of LID ES1 is set out in the following documents:

OzArk 2012, Aboriginal and Historic Heritage Assessment: Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01.

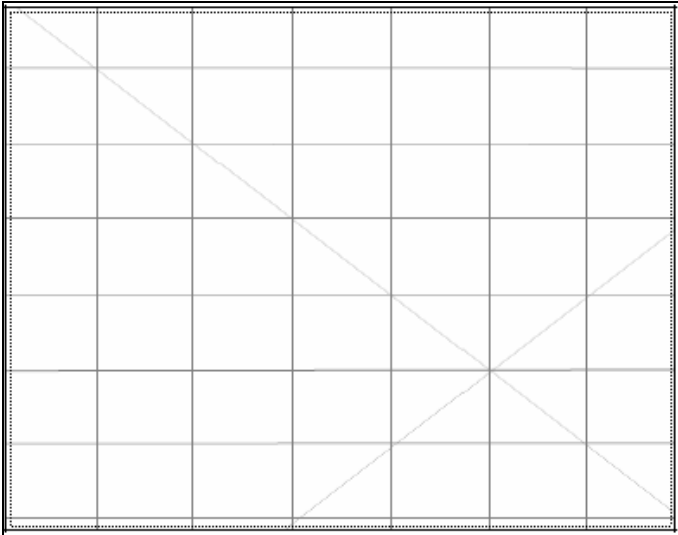
OzArk 2015, Liddell Coal Operations: Aboriginal Cultural Heritage Management Plan.

Site photographs

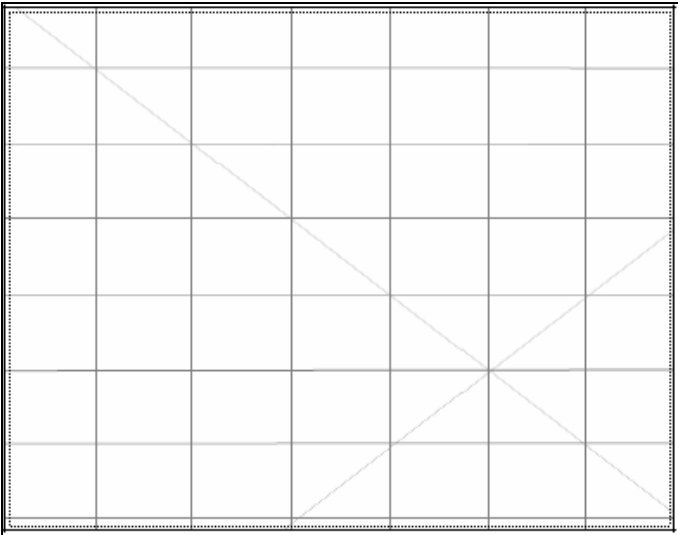
Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



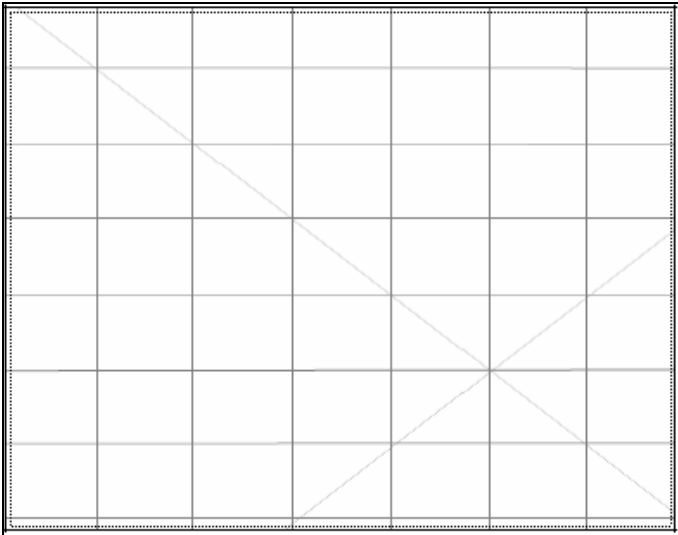
Description: Typical view of LID ES1.



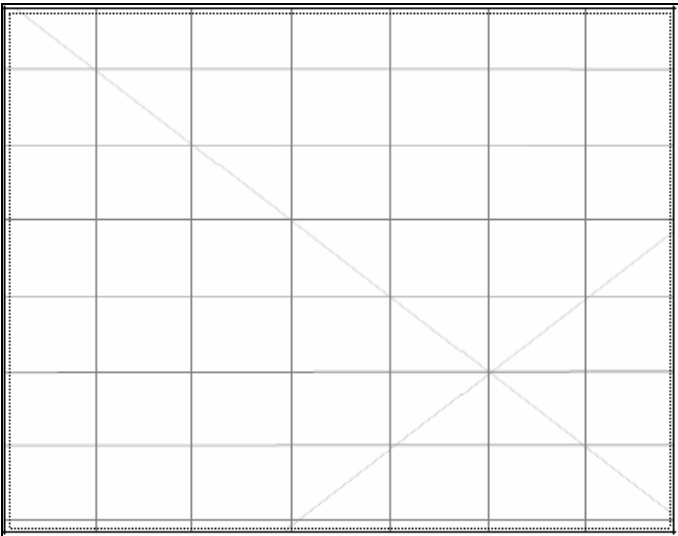
Description:



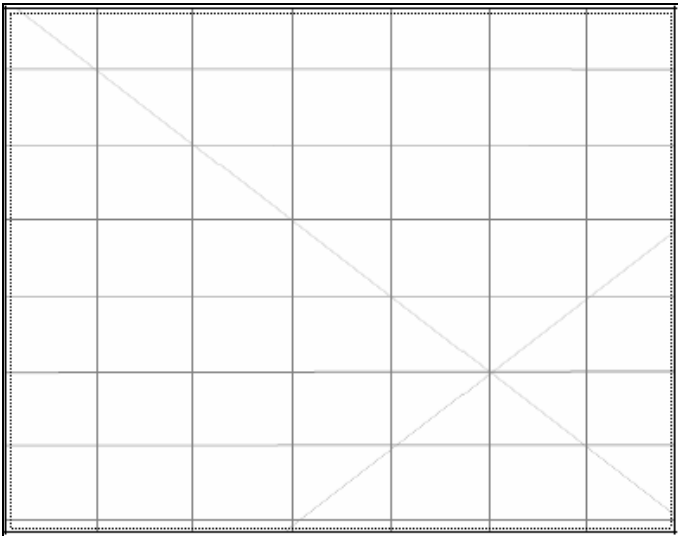
Description:



Description:



Description:



Description:

Open Site

General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
- ☐ Wind erosion
- ☐ Water erosion
- ☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

Open Site

Site Orientation

- ☐ N-S
- ☐ NE-SW
- ☐ E-W
- ☐ SE-NW
- ☐ N/A

Condition of Ceiling

- ☐ Boulder
- ☐ Sandstone platform
- ☐ Silica gloss
- ☐ Tessellated
- ☐ Weathered
- ☐ Other platform

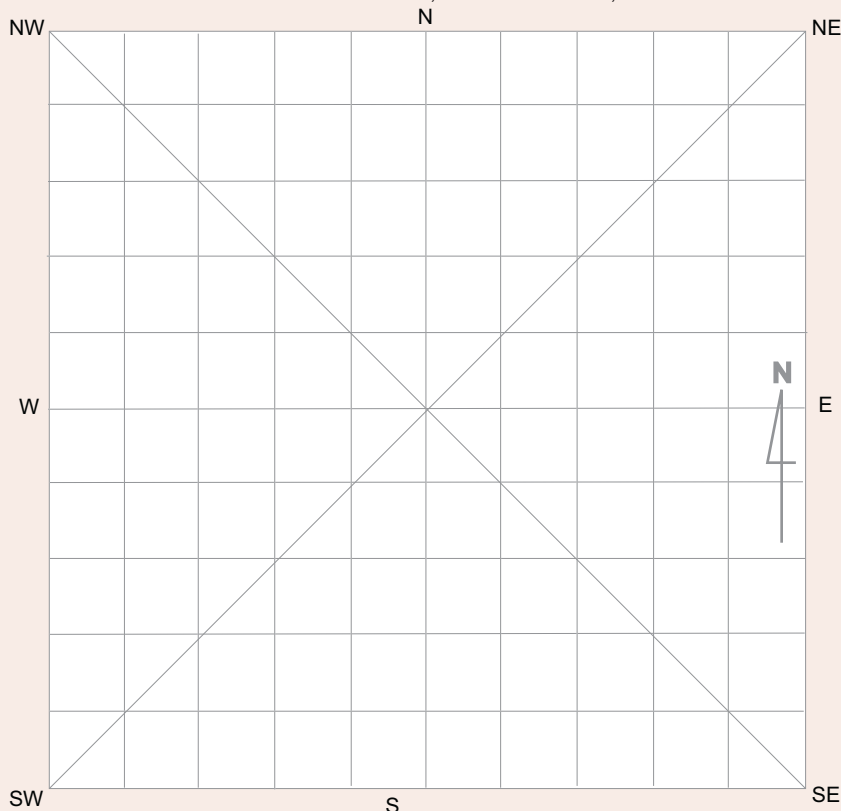
Shelter Aspect

- ☐ North
- ☐ North East
- ☐ East
- ☐ South East
- ☐ South
- ☐ South West
- ☐ West
- ☐ North West

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
- ☐ 2. Aboriginal Resource & Gathering
- ☐ 3. Art
- ☒ 4. Artefact
- ☐ 5. Burial
- ☐ 6. Ceremonial Ring
- ☐ 7. Conflict
- ☐ 8. Earth Mound
- ☐ 9. Fish Trap
- ☐ 10. Grinding Groove
- ☐ 11. Habitation Structure
- ☐ 12. Hearth
- ☐ 13. Non Human Bone & Organic Material
- ☐ 14. Ochre quarry
- ☐ 15. Potential Archaeological Deposit
- ☐ 16. Stone Quarry
- ☐ 17. Shell
- ☐ 18. Stone Arrangement
- ☐ 19. Modified Tree
- ☐ 20. Water Hole

Site Plan Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- Internal length
- Internal width
- Shelter height
- Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
- Average width of visible site
- Estimated area of visible site
- Length of assessed site area

[illegible]

LID34 consists of seven artefacts (three mudstone broken flakes, two silcrete broken flakes, one mudstone flake and one silcrete broken retouched flake) located on a vehicle track on a level spur crest adjacent to Bowmans Creek. The site is approximately 50 metres from the current channel of Bowmans Creek however the presence of alluvial deposits immediately below the spur crest indicates that the main creek channel may once have been within 30 metres of the site. The portion of the vehicle track exposure inspected was approximately 20 metres long by five metres wide with 60% ground surface visibility. Soils within the exposure consist of thin layer of light brown-grey clay loam (A2 horizon) with relatively high amounts of gravel lag in areas. The site has been disturbed as a result of use of the access track however it is highly likely that the site will continue into the adjoining (less disturbed) portion of the same landform outside the vehicle access track.

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title	Surname	First Name	Initials													
Organisation																
Address																
Phone number											Fax					

☒ A4 location map

☐ B/W photographs

☒ Colour photographs

☐ Slides

☐ Aerial photographs

☐ Site plans, drawings

☐ Recording tables

☐ Other

☐ Feature inserts-No.

[illegible]

NPWS FEATURE RECORDING FORM - ARTEFACT

page 1

Site I.D. Site Name First recorded date Importance No. of instances Recorded by

Yes No

Stone artefacts only Artefacts collected Permit issued

Percentage of Non-stone Artefacts to Percentage of Stone Artefacts

0-9% 10-19% 20-29% 30-39% 40-49% 50-59% 60-69% 70-79% 80-89% 90-100%

Feature Context & Condition

Scatter No. Easting Northing

Density

Dimensions

Yes No

(Artefact count per square metre) Length (m) Width (m) Depth (m)In situ Stratified

Feature Condition

General Condition

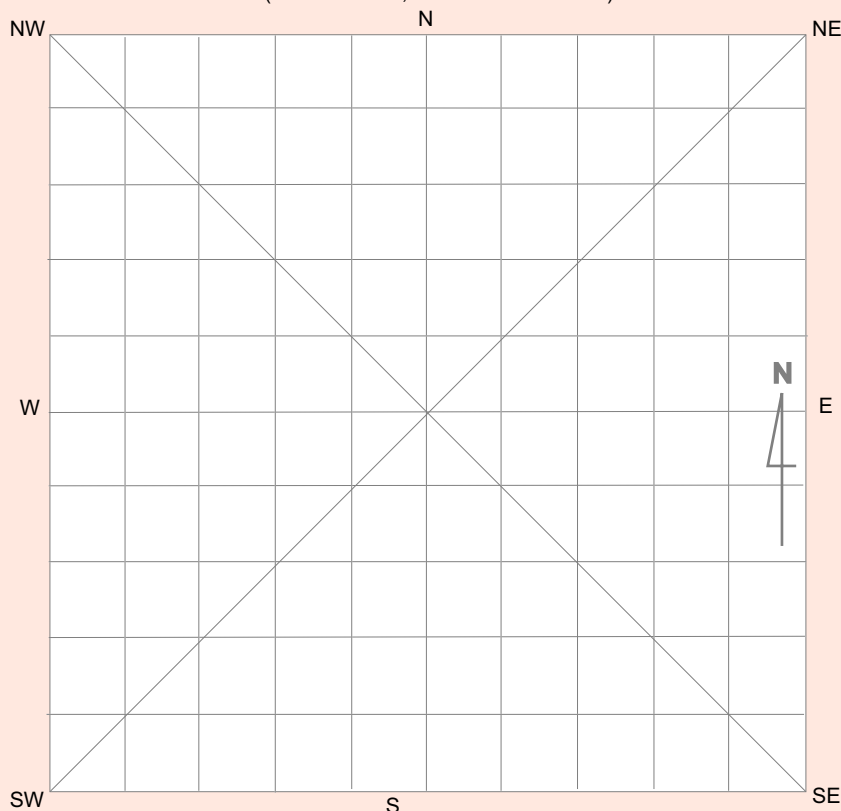
Recommended Action

- ☐ Very good
- ☐ Good
- ☒ Poor

- ☐ Weathered
- ☒ Vehicle damage
- ☒ Surface water wash
- ☐ Fire damage
- ☒ Erosion
- ☐ Stock damage
- ☒ Exposed archaeological material

- ☐ Boardwalk
- ☐ Fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Fire hazard reduction
- ☐ Expert assessment
- ☐ Meeting with land manager
- ☐ Revegetation
- ☐ Signage
- ☐ Soil erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan (Indicate scale, location of instances)



Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

NPWS FEATURE RECORDING TABLE - ARTEFACT

page 2

Stone Artefact

[illegible]

Other Artefact Type

Other Artefact Type					Length (mm)	Width (mm)	Thickness (mm)
Instance No.	Recording Date	Artefact Material	Artefact Type	Description			
3	10/12/2010	Mudstone	Broken flakes				
2	10/12/2010	Silcrete	Broken flakes				
1	10/12/2010	Mudstone	Flake				
1	10/01/2011	Silcrete	Broken flake	With retouch			

Material

Basalt	Clear glass
Chert	Ceramic
Fine grained siliceous	Porcelain
Granite	Tin can
Quartz	Wire
Quartzite	Nail
Sandstone	Button
Silcrete	Shell
Green glass	Bone
Amber glass	Wood
Amethyst glass	Resin

Artefact Description

Adze	Flake tool
Anvil	Flaked piece
Axe	Hammerstone
Backed blade	Manuport
Blade	Milling slab
Core	Mortar
Core tool	Muller
Cyclon	Nuclear tool
Distal fragment	Pirri
Eloura	Proximal fragment
Flake	Tula
	Other diagnostic type
	Modified
	Unworked

Platform Surface

- Cortex
- Flake scar
- More than one flake scar
- Faceted
- Ground
- Indeterminate
- Bipolar

Platform Type

- Wide
- Focal
- Shattered
- Indeterminate
- Bipolar

Termination

- Feather
- Hinge
- Step
- Outrepasse
- Bipolar

Cross Section

High/strong
High/weak
Low/weak
Irregular

Comments:

Site I.D.

First recorded date

No. of instances

Recorded by

Site Name

Importance

Aboriginal Information Recorded?

Feature description

No. of scars

No. of carved panels

Feature Condition

☐ Very good

☐ Good

☐ Poor

Easting

Condition

☐ Weathered

☐ Ringbarked

☐ Fire damage

☐ Vehicle damage

☐ Insects/termites

☐ Rot

☐ Limb fall

☐ Stock damage

Northing

Recommended Action

☐ Fencing

☐ Closure to public

☐ Continued inspection

☐ Expert assessment

☐ Fire hazard reduction

☐ Insect removal

☐ Meeting with land manager

☐ Rubbish removal

☐ Signage

☐ Tree health assessment

☐ Track closure/re-routing

☐ Additional recording

Feature environment (Complete when feature environment differs to site environment, use attributes from cover card, page 2)

Land form

Land form unit

Slope

Vegetation

Land use

Water

Distance to permanent water source

metres

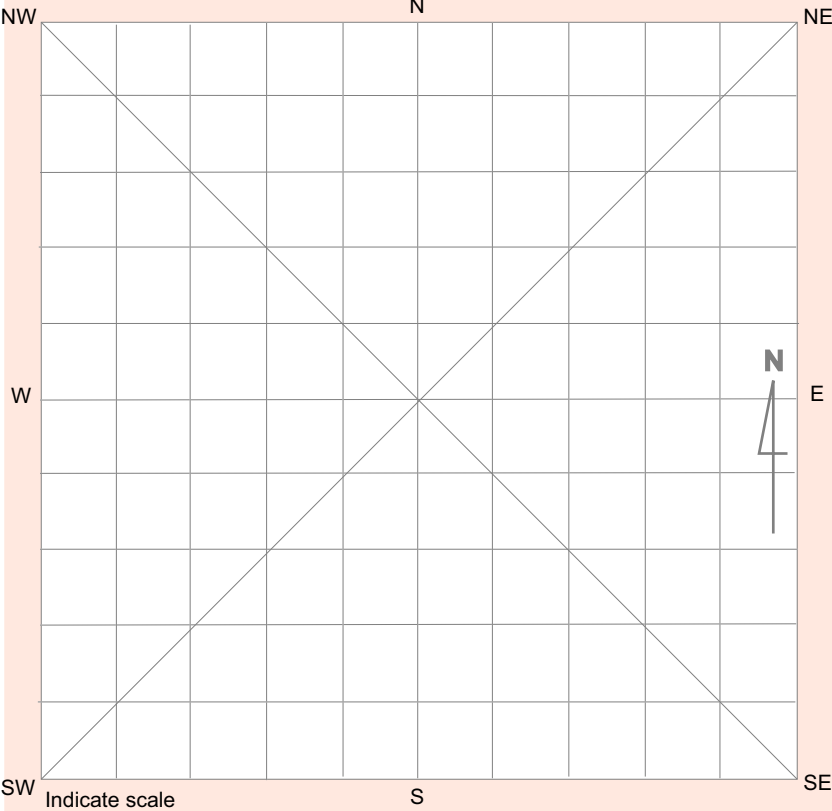
Distance to temporary water source

metres

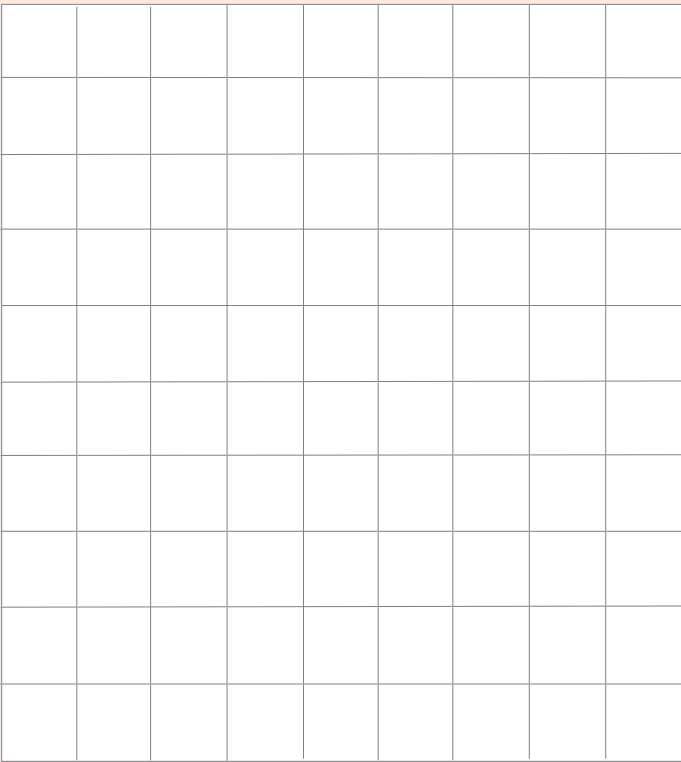
Name of nearest permanent water source

Name of nearest temporary water

Feature Location Plan



Scar/Carved Panel Drawing



Attach additional drawings

Site I.D. Site Name First recorded date / / Importance

Aboriginal Information Recorded?

No. of instances Recorded by **Feature Description****Type of Grinding Feature**

- ☐ Broad
- ☐ Narrow/point
- ☐ Hollow
- ☐ Flat

Profile Shape

- ☐ 'U' shaped
- ☐ 'V' shaped
- ☐ Flat

Seed Species PresentRecording date / / **Groove Function****Dimensions****Smallest**Length (mm) Width (mm) Depth (mm) **Largest**Length (mm) Width (mm) Depth (mm) Groove count Cluster count **Feature Context & Condition**Easting Northing **Dimensions of Whole Feature** Length (m) Width (m)**Feature Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

General Condition

- ☐ Weathered
- ☐ Vandalised

General Condition ctd

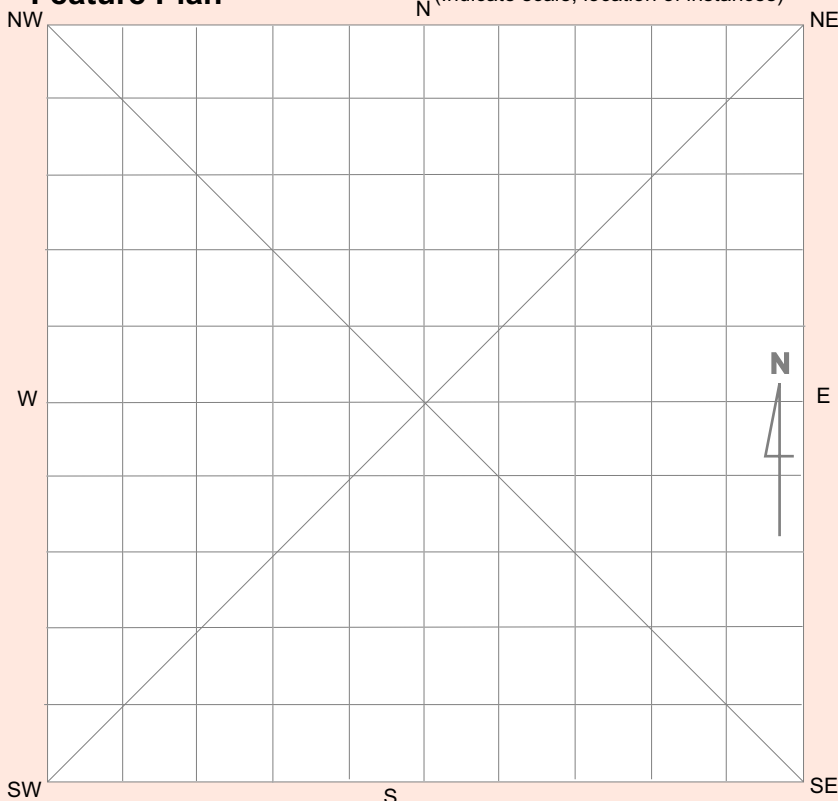
- ☐ Fire damage
- ☐ Surface water wash
- ☐ Graffiti
- ☐ Vehicle damage
- ☐ Erosion
- ☐ Stock damage

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Expert assessment
- ☐ Graffiti removal
- ☐ Meeting with land manager
- ☐ Revegetation
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Plan

N (Indicate scale, location of instances)

**Feature Environment**(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

WaterDistance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

Site I.D. Site Name First recorded date / / Importance Aboriginal Information Recorded? No. of instances Recorded by **Feature Context & Condition**Easting Northing Pigment ☐ Engraved ☐ Super-impositioning ☐**Artwork Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

General Condition

- ☐ Weathered
- ☐ Vandalised
- ☐ Surface water wash
- ☐ Mineralisation
- ☐ Graffiti
- ☐ Fire damage
- ☐ Insects/termites
- ☐ Erosion
- ☐ Stock
- ☐ Unstable structure

Recommended Action

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Dripline
- ☐ Expert assessment
- ☐ Fire hazard removal
- ☐ Graffiti removal
- ☐ Insect/bird nest removal
- ☐ Meeting with land manager
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

Feature Environment(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2) Land form Land form unit Slope Vegetation Land use**Water**Distance to permanent water source metresDistance to temporary water source metresName of nearest permanent water source Name of nearest temporary water **Art Sketch Plan**

Sketch and number motif groups



NPWS FEATURE RECORDING TABLE - ART MOTIF

page 2

[illegible]

Motif			Application Technique	Main Colour	Art Location	Condition
Anthropomorphic	Female	Marine-Other	Abraded	Black	All over shelter surfaces	Faded
Bird	Fish	Other	Drawn	Mauve *	ceiling	Stained
Bird Track	Foot	Pattern	Other	N/A	Floor	Mineralisation Evident
Canoe	Hand	Quadruped	Painted	Orange *	Mostly near largest sheltered space	V brant Colours
Circle	Jellyfish	Reptile	Pecked	Other	Mostly on out of the way surfaces	Unweathered
Contact material culture	Kangaroo	Rifle	Pigment & Engraved	Red *	Other	Weathered
Duck	Line	Shield	Stencilled	White *	Wall	
Eel	Lizard	Ship		Yellow *		
Emu	Macropod	Snake	Form			
Emu track	Macropod Track	Spear	Fill			
European figure	Male	Wallaby	Line			
			Line+ Fill			
			Other			
			Pattern			

Comments:

[illegible]

Site I.D. Site Name First recorded date / / Importance

Aboriginal Information

Recorded? No. of instances Recorded by **Feature Context
& Condition**Easting Northing **Dimensions of Whole Feature**

Length (m)

Width (m)

Depth (m)

Shell Distribution☐

Surface scatter

Distance to high water mark (m)

☐

Stratified deposit

☐

Mounded

Feature Condition☐

Very good

☐

Good

☐

Poor

General Condition☐

Weathered

☐

Vandalised

☐

Surface water wash

☐

Mineralisation

☐

Graffiti

General Condition ctd☐

Fire damage

☐

Vehicle damage

☐

Insects/termites

☐

Erosion

☐

Stock damage

☐

Unstable structure

☐

Exposed bone material

☐

Exposed archaeological material

Recommended Action☐

Boardwalk

☐

Cage/barrier/fencing

☐

Closure to public

☐

Continued inspection

☐

Expert assessment

☐

Fire hazard removal

☐

Graffiti removal

☐

Meeting with land manager

☐

Insect/bird nest removal

☐

Revegetation

☐

Rubbish removal

☐

Signage

☐

Erosion control

☐

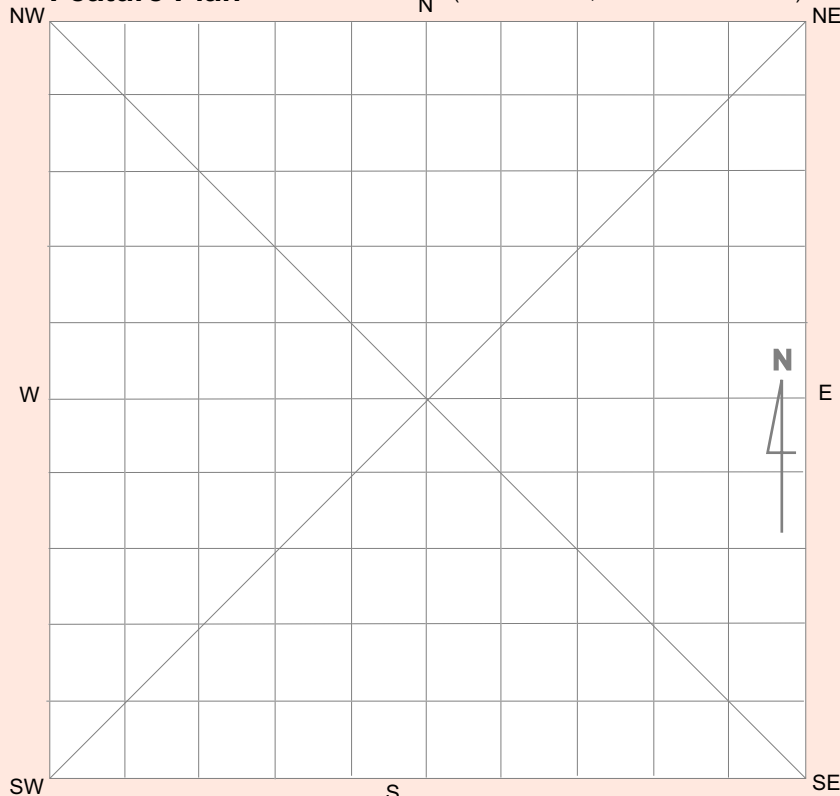
Track closure/re-routing

☐

Additional recording

Feature Plan

(Indicate scale, location of instances)

**Feature Environment**(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

Land form

Land form unit

Slope

Vegetation

Land use

WaterDistance to permanent water source metresDistance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

Instance No.	Recording Date	Shell Species	species shell to % total of other shell
--------------	----------------	---------------	---

Species		Percentage of this Species Shell to Percentage Total of other Shell
Anadara	Nerita	0 – 9%
Bimbala	Ocean Snail	10 – 19%
Chiton	Periwinkle	20 – 29%
Cowrie	Pippi	30 – 39%
Dog Cockle	Ribbed Cockle	40 – 49%
Duck Bill	Rock Oyster	50 – 59%
Limpit	Thiad	60 – 69%
Mud oyster	Triton	70 – 79%
Mutton Fish	Turban (large)	80 – 89%
		90 – 100%

[illegible]



Source: Mt Owen (2005)

0 100 250 500 m
1:10 000

Legend

- Inspected Site Area
- Existing 11kV Electricity Supply Route
- Site
- Loci

FIGURE 1

Location of Newly
located Aboriginal Sites



PLATE 1
View of site (facing east)



PLATE 2
LID34 - silcrete broken retouched flake (scraper)



PLATE 1
View of site (facing south-south-east)



PLATE 2
LID35 - mudstone broken flake within LID35



PLATE 1
View of site (facing north-east)



PLATE 2
LID36 - mudstone flake

Aboriginal Site Impact Recording Form

AHIMS Registrar

PO Box 1967, Hurstville 2220 NSW

April 2012 OEH 2012/0558

- 1 This form must be completed following impacts to AHIMS sites that are:
 - a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
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AHIMS site ID:

Site impact authorisation (select one)	Reference numbers, dates
☐ Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> .)	Date OEH was notified (under requirement 15c of the Code): OEH Regional office notified:
☐ AHIP (The impacts to this site were authorised by an AHIP.)	AHIP number: C0000623 Date issued/signed: 03/12/2014 AHIMS permit ID/number: 3765
☐ SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I)	Project number:
☐ SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)	Date Director General's Requirements issued: or Date of project approval:

Site status following impacts:

- ☐ Not a site (The investigations concluded that this is not a site.)
☐ Valid site (The investigations confirmed that this is an Aboriginal site.)
☐ Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)
☐ Destroyed (The site was completely destroyed following authorised impacts.)

Geographic location

Site name:

Easting:

Northing:

Coordinates must be in GDA (MGA)

Map sheet:

Zone:

Location method:

Primary recorder

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Harrop	Nicholas
Organisation:	OzArk Environmental & Heritage Management	
Address:	145 Wingewarra Street, Dubbo, NSW 2830	
Phone:	268820118	E-mail: nick@ozarkehm.com.au
Date recorded:	25/02/2015	Fax: 268820630

Site information

Open/closed site:

Features:

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|---|
| ☐ | 1. Aboriginal ceremony and dreaming | ☐ | 11. Habitation structure |
| ☐ | 2. Aboriginal resource and gathering | ☐ | 12. Hearth |
| ☐ | 3. Art | ☐ | 13. Non-human bone and organic material |
| ☒ | 4. Artefact | ☐ | 14. Ochre quarry |
| ☐ | 5. Burial | ☐ | 15. Potential archaeological deposit |
| ☐ | 6. Ceremonial ring | ☐ | 16. Stone quarry |
| ☐ | 7. Conflict | ☐ | 17. Shell |
| ☐ | 8. Earth mound | ☐ | 18. Stone arrangement |
| ☐ | 9. Fish trap | ☐ | 19. Modified tree |
| ☐ | 10. Grinding groove | ☐ | 20. Water hole |

Site condition

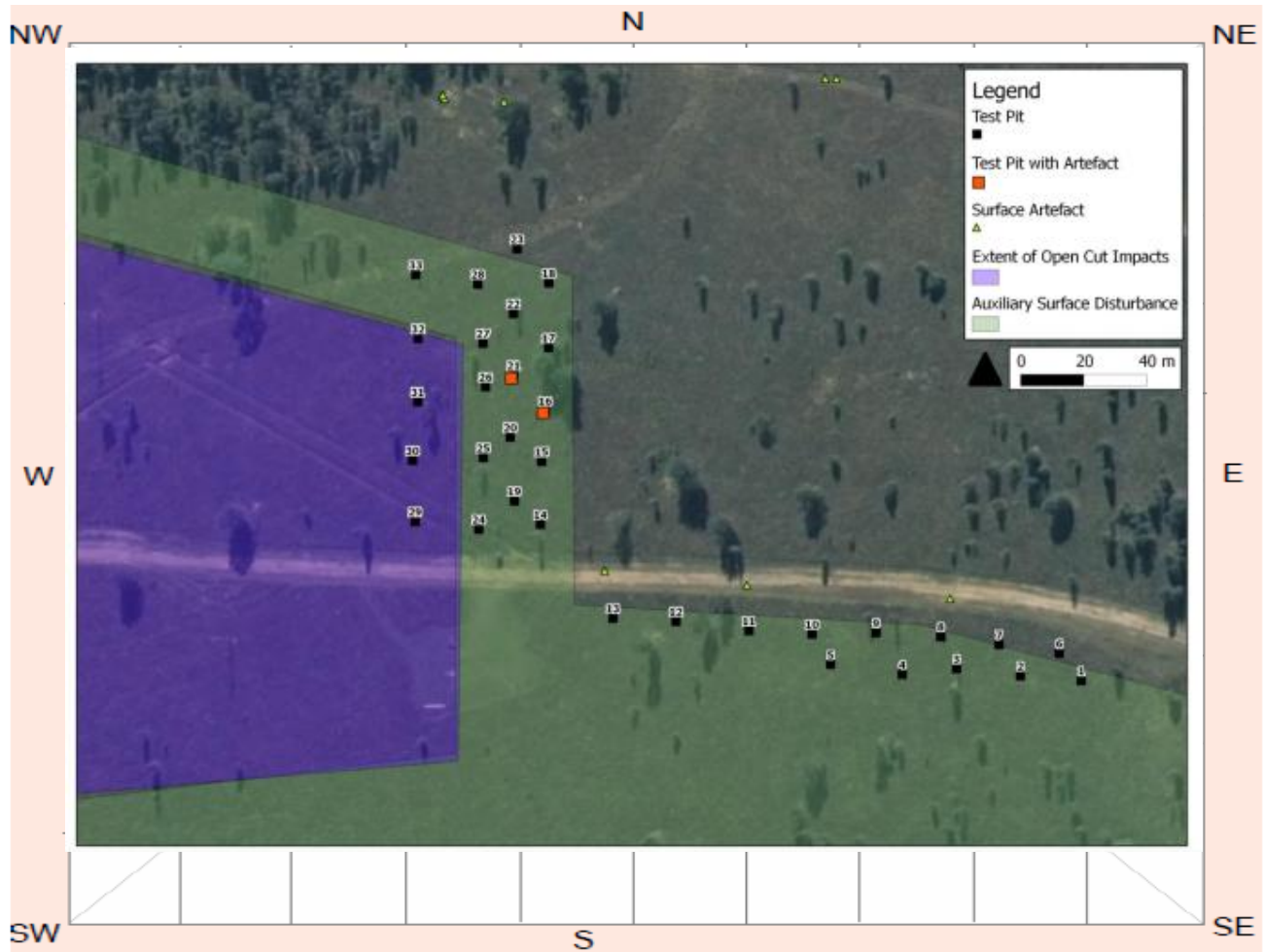
Written description of the condition of the AHIMS site (including relevant features) following the authorised impact of the site

The salvage of LID ES1 was attempted within the proposed impact footprint of the Liddell Coal Operations Development Modification 5 project (see map below). No artefacts were recorded and the site was not assessed as having subsurface deposits (OzArk 2012). As such, this portion of the site is considered to be destroyed.

The portion of the site outside of the proposed impact footprint is no longer being used for agricultural purposes and as such vegetation is increasing and the rate of erosion appears to be lessening over time. This portion of the site was not closely inspected during the salvage.

Site map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

Salvage of the portion of LID ES1 within the proposed impact footprint was attempted by pedestrian surface collection. An archaeologist and three representatives from the Registered Aboriginal Parties (RAPs) were present. Vegetation had been previously cleared from the site by brush cutting.

No artefacts were recorded in this portion of the site. It is likely that the previously-recorded artefacts are within the portion of the site not salvaged.

The representatives of the RAPs were satisfied that an adequate effort had been made to salvage the artefacts.

Management recommendations

Summary of any management recommendations for the AHIMS site

LID ES1 is now considered to be partially destroyed. The proposed works may proceed according to the recommendations set out in OzArk 2015. The following recommendations are reiterated: 1) Should any unexpected remains be encountered during the proposed works within the site that are suspected to be of Aboriginal cultural heritage, then the Unanticipated Finds Protocol should be followed; 2) Should the footprint of the project change so that it includes any part of the unsalvaged portion of the LID ES1, then further approval will be required; and 3) The unsalvaged portion of LID ES1 should be fenced where it meets the salvaged portion for the duration of the construction and operation of the project.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

LID ES1 was assessed as having moderate scientific/archaeological significance and high cultural significance in 2012 prior to a test excavation program. Significance is unchanged within the unsalvaged portion of the site.

Additional comments

The management of LID ES1 is set out in the following documents:

OzArk 2012, Aboriginal and Historic Heritage Assessment: Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01.

OzArk 2015, Liddell Coal Operations: Aboriginal Cultural Heritage Management Plan.

Site photographs

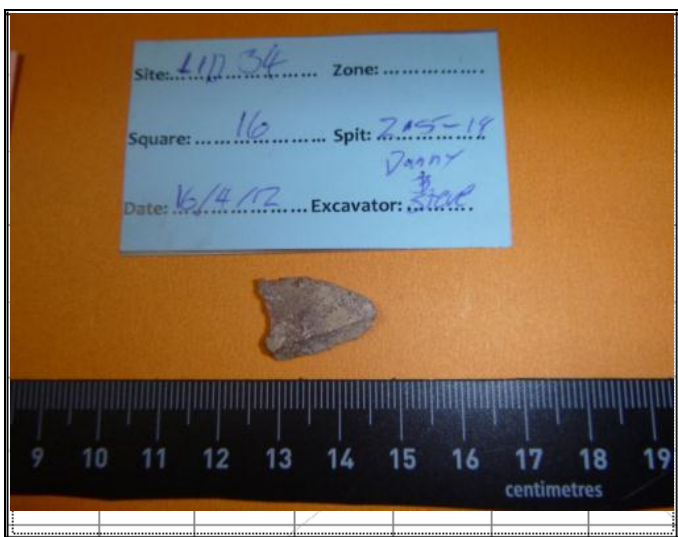
Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



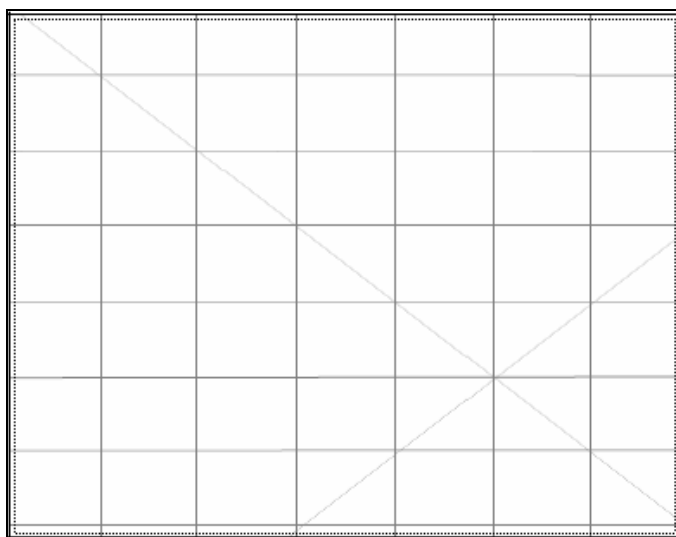
Description: Typical view of LID ES1.



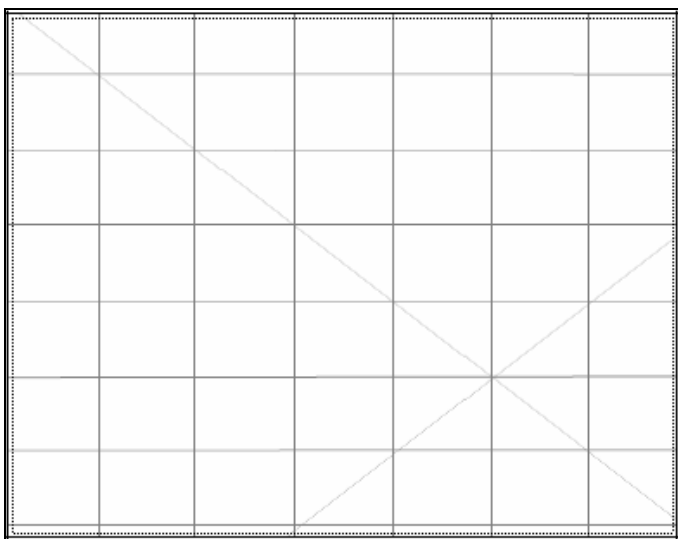
Description:



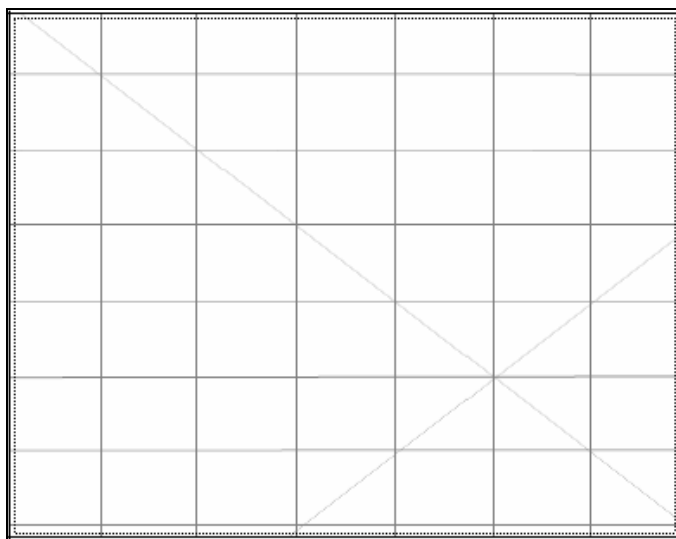
Description:



Description:



Description:



Description:

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April 2012 OEH 2012/0558

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Geographic location

Site name:

Easting:

Northing:

Coordinates must be in GDA (MGA)

Map sheet:

Zone:

Location method:

Primary recorder

(The person responsible for the completion and submission of this form)

Title	Surname	First name
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Organisation:	OzArk Environmental & Heritage Management	
Address:	145 Wingewarra Street, Dubbo, NSW 2830	
Phone:	268820118	E-mail: nick@ozarkehm.com.au
Date recorded:	25/02/2015	Fax: 268820630

Site information

Open/closed site:

Features:

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|---|
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| ☐ | 2. Aboriginal resource and gathering | ☐ | 12. Hearth |
| ☐ | 3. Art | ☐ | 13. Non-human bone and organic material |
| ☒ | 4. Artefact | ☐ | 14. Ochre quarry |
| ☐ | 5. Burial | ☐ | 15. Potential archaeological deposit |
| ☐ | 6. Ceremonial ring | ☐ | 16. Stone quarry |
| ☐ | 7. Conflict | ☐ | 17. Shell |
| ☐ | 8. Earth mound | ☐ | 18. Stone arrangement |
| ☐ | 9. Fish trap | ☐ | 19. Modified tree |
| ☐ | 10. Grinding groove | ☐ | 20. Water hole |

Site condition

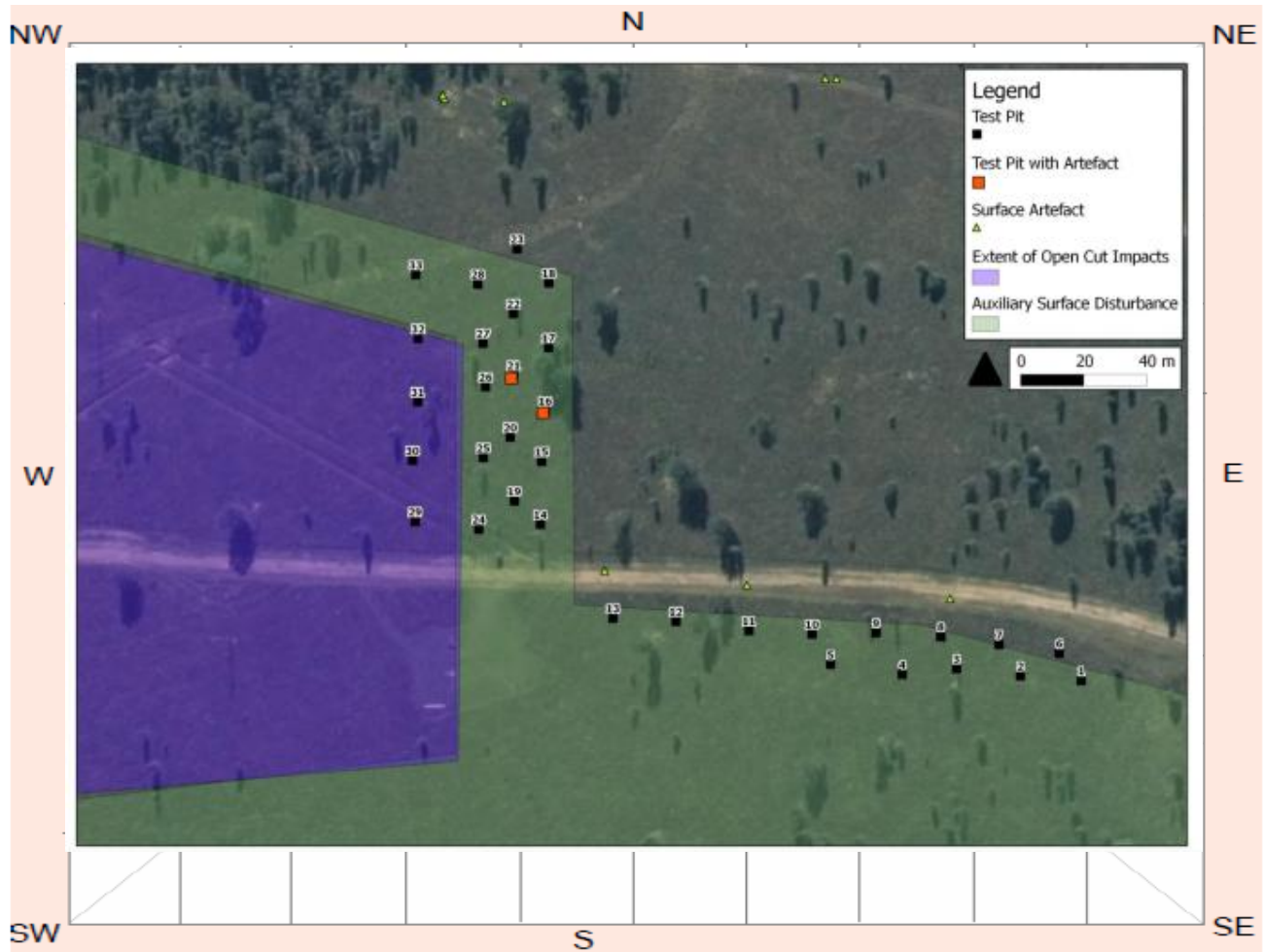
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Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

Salvage of the portion of LID ES1 within the proposed impact footprint was attempted by pedestrian surface collection. An archaeologist and three representatives from the Registered Aboriginal Parties (RAPs) were present. Vegetation had been previously cleared from the site by brush cutting.

No artefacts were recorded in this portion of the site. It is likely that the previously-recorded artefacts are within the portion of the site not salvaged.

The representatives of the RAPs were satisfied that an adequate effort had been made to salvage the artefacts.

Management recommendations

Summary of any management recommendations for the AHIMS site

LID ES1 is now considered to be partially destroyed. The proposed works may proceed according to the recommendations set out in OzArk 2015. The following recommendations are reiterated: 1) Should any unexpected remains be encountered during the proposed works within the site that are suspected to be of Aboriginal cultural heritage, then the Unanticipated Finds Protocol should be followed; 2) Should the footprint of the project change so that it includes any part of the unsalvaged portion of the LID ES1, then further approval will be required; and 3) The unsalvaged portion of LID ES1 should be fenced where it meets the salvaged portion for the duration of the construction and operation of the project.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

LID ES1 was assessed as having moderate scientific/archaeological significance and high cultural significance in 2012 prior to a test excavation program. Significance is unchanged within the unsalvaged portion of the site.

Additional comments

The management of LID ES1 is set out in the following documents:

OzArk 2012, Aboriginal and Historic Heritage Assessment: Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01.

OzArk 2015, Liddell Coal Operations: Aboriginal Cultural Heritage Management Plan.

Site photographs

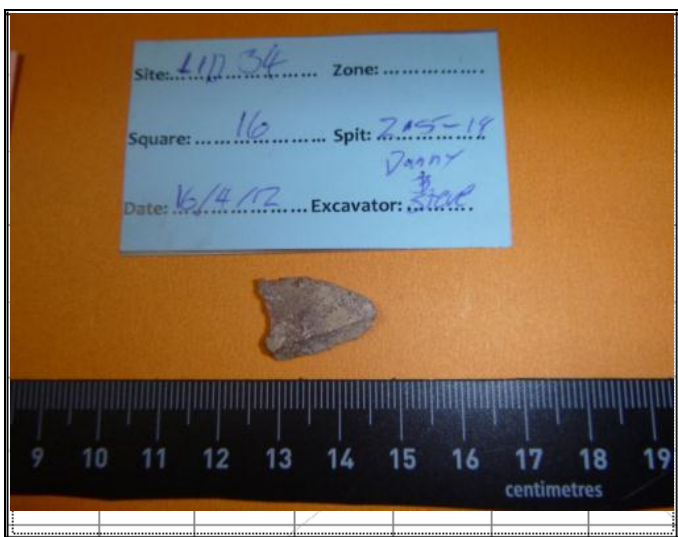
Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



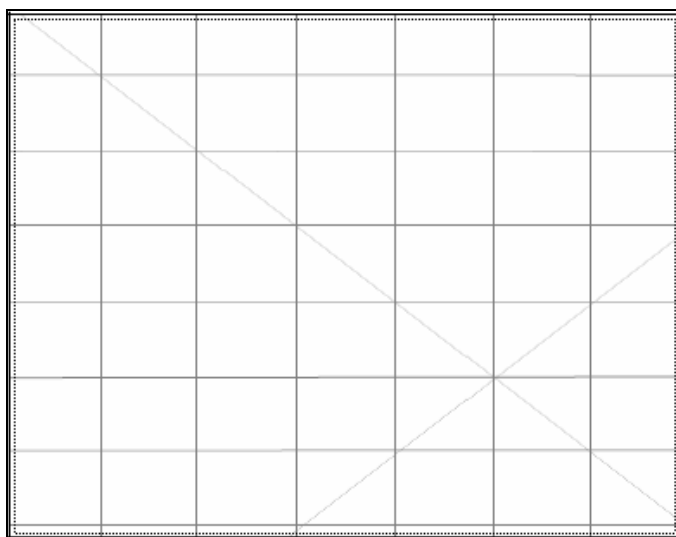
Description: Typical view of LID ES1.



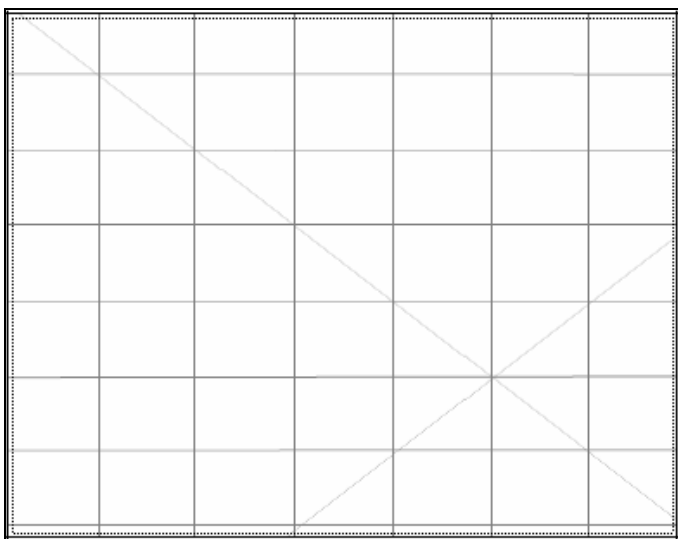
Description:



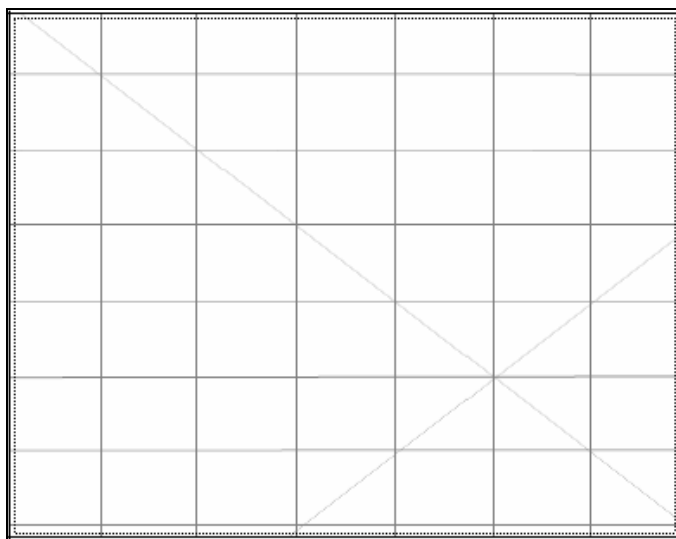
Description:



Description:



Description:



Description:

Aboriginal Site Impact Recording Form

AHIMS Registrar

PO Box 1967, Hurstville 2220 NSW

April 2012 OEH 2012/0558

- 1 This form must be completed following impacts to AHIMS sites that are:
 - a) a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
 - b) authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by the Office of Environment and Heritage (OEH)
 - c) undertaken for the purpose of complying with Director General's Requirements issued by the Department of Planning and Infrastructure (DP&I) for:
 - State Significant Development (SSD - Part 4),
 - State Significant Infrastructure (SSI - Part 5.1), or
 - A Major Project (Part 3A - now repealed) under the *Environmental Planning and Assessment Act 1979 (EP&A Act)*, or
 - d) authorised by a SSD/SSI/Part 3A consent/approval under the EP&A Act.
- 2 Completed forms must be submitted to the AHIMS Registrar (www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm).
- 3 This form is intended to complement (not replace) the AHIMS Site Recording Form. Where there is a need to provide detailed information about the nature of a site, use the AHIMS Site Recording Form.
- 4 This form does not replace the need to submit reports to OEH (as a condition of an AHIP or SSD/SSI/Part 3A consent/approval)
This form must be submitted in addition to any reports.

AHIMS site ID:

Site impact authorisation (select one)	Reference numbers, dates
☐ Archaeological Code (The impacts to this site were the result of test excavation carried out in accordance with the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> .)	Date OEH was notified (under requirement 15c of the Code): OEH Regional office notified:
☐ AHIP (The impacts to this site were authorised by an AHIP.)	AHIP number: C0000623 Date issued/signed: 03/12/2014 AHIMS permit ID/number: 3765
☐ SSD/SSI/Part 3A application (The impacts to this site were undertaken for the purposes of complying with Director General's Requirements issued by the DP&I)	Project number: Date Director General's Requirements issued:
☐ SSD/SSI/Part 3A approved project (The impacts to this site were authorised by a consent/approval under Parts 4/5.1/3A of the EP&A Act.)	or Date of project approval:

Site status following impacts:

- ☐ Not a site (The investigations concluded that this is not a site.)
☐ Valid site (The investigations confirmed that this is an Aboriginal site.)
☐ Partially destroyed (The site was partially destroyed following authorised impacts; a portion of the site remains in situ.)
☐ Destroyed (The site was completely destroyed following authorised impacts.)

Geographic location

Site name:

Easting:

Northing:

Coordinates must be in GDA (MGA)

Map sheet:

Zone:

Location method:

Primary recorder

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr	Harrop	Nicholas
Organisation:	OzArk Environmental & Heritage Management	
Address:	145 Wingewarra Street, Dubbo, NSW 2830	
Phone:	268820118	E-mail: nick@ozarkehm.com.au
Date recorded:	25/02/2015	Fax: 268820630

Site information

Open/closed site:

Features:

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|---|
| ☐ | 1. Aboriginal ceremony and dreaming | ☐ | 11. Habitation structure |
| ☐ | 2. Aboriginal resource and gathering | ☐ | 12. Hearth |
| ☐ | 3. Art | ☐ | 13. Non-human bone and organic material |
| ☒ | 4. Artefact | ☐ | 14. Ochre quarry |
| ☐ | 5. Burial | ☐ | 15. Potential archaeological deposit |
| ☐ | 6. Ceremonial ring | ☐ | 16. Stone quarry |
| ☐ | 7. Conflict | ☐ | 17. Shell |
| ☐ | 8. Earth mound | ☐ | 18. Stone arrangement |
| ☐ | 9. Fish trap | ☐ | 19. Modified tree |
| ☐ | 10. Grinding groove | ☐ | 20. Water hole |

Site condition

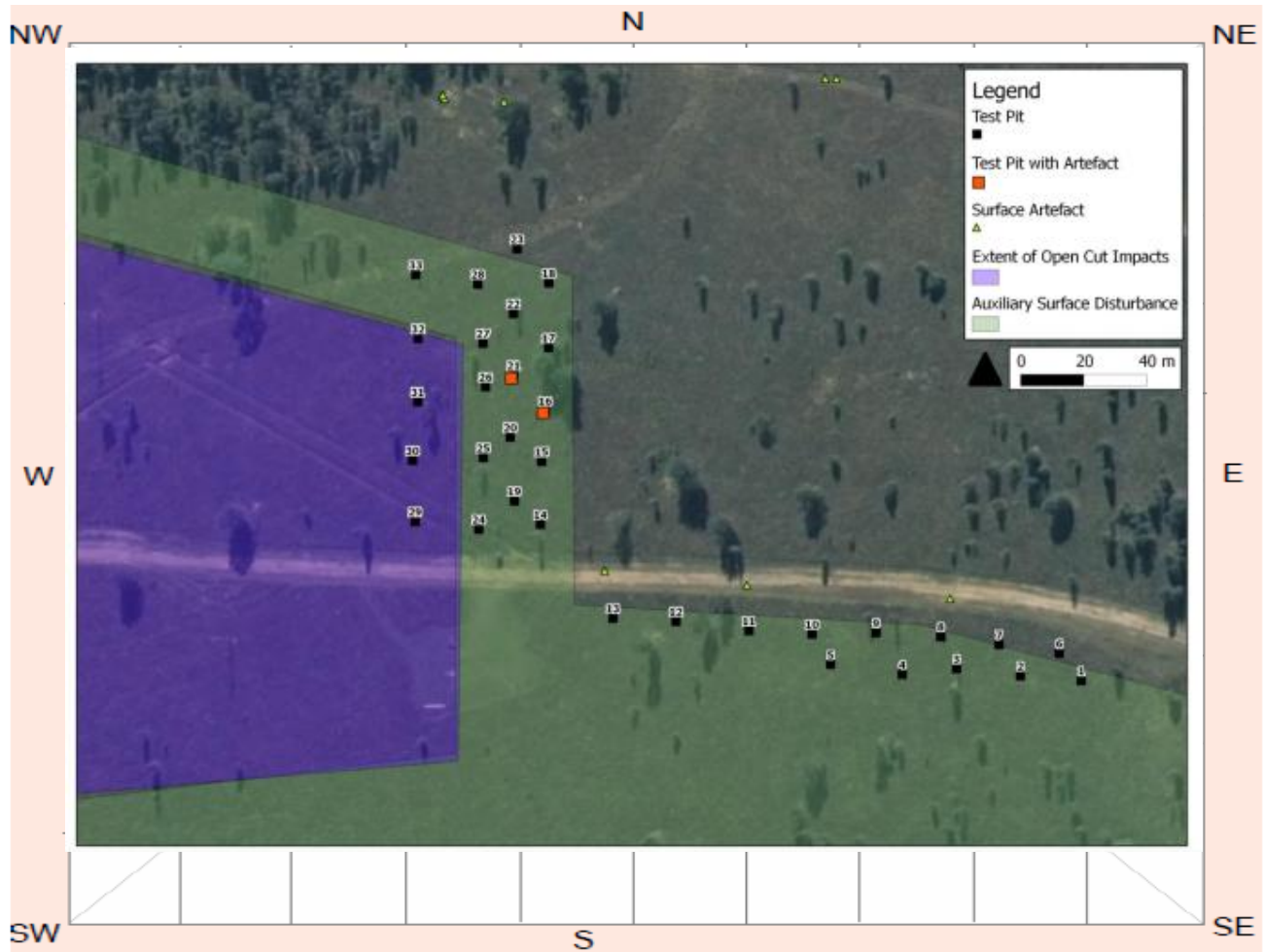
Written description of the condition of the AHIMS site (including relevant features) following the authorised impact of the site

The salvage of LID ES1 was attempted within the proposed impact footprint of the Liddell Coal Operations Development Modification 5 project (see map below). No artefacts were recorded and the site was not assessed as having subsurface deposits (OzArk 2012). As such, this portion of the site is considered to be destroyed.

The portion of the site outside of the proposed impact footprint is no longer being used for agricultural purposes and as such vegetation is increasing and the rate of erosion appears to be lessening over time. This portion of the site was not closely inspected during the salvage.

Site map

Clearly demarcate the original AHIMS site boundary, show the boundaries of impacted areas and the areas where the site remains in situ. Display map coordinates.



Methodology and results

Summary of the methodology and results of the activity or works undertaken through the authorised impacts, as relevant to the AHIMS site

Salvage of the portion of LID ES1 within the proposed impact footprint was attempted by pedestrian surface collection. An archaeologist and three representatives from the Registered Aboriginal Parties (RAPs) were present. Vegetation had been previously cleared from the site by brush cutting.

No artefacts were recorded in this portion of the site. It is likely that the previously-recorded artefacts are within the portion of the site not salvaged.

The representatives of the RAPs were satisfied that an adequate effort had been made to salvage the artefacts.

Management recommendations

Summary of any management recommendations for the AHIMS site

LID ES1 is now considered to be partially destroyed. The proposed works may proceed according to the recommendations set out in OzArk 2015. The following recommendations are reiterated: 1) Should any unexpected remains be encountered during the proposed works within the site that are suspected to be of Aboriginal cultural heritage, then the Unanticipated Finds Protocol should be followed; 2) Should the footprint of the project change so that it includes any part of the unsalvaged portion of the LID ES1, then further approval will be required; and 3) The unsalvaged portion of LID ES1 should be fenced where it meets the salvaged portion for the duration of the construction and operation of the project.

Post-investigation significance

Discuss if the scientific/archaeological or cultural significance of the site has changed in light of the results of the investigations or works conducted at the site.

LID ES1 was assessed as having moderate scientific/archaeological significance and high cultural significance in 2012 prior to a test excavation program. Significance is unchanged within the unsalvaged portion of the site.

Additional comments

The management of LID ES1 is set out in the following documents:

OzArk 2012, Aboriginal and Historic Heritage Assessment: Liddell Coal Operations Modification 5 to Development Consent DA 305-11-01.

OzArk 2015, Liddell Coal Operations: Aboriginal Cultural Heritage Management Plan.

Site photographs

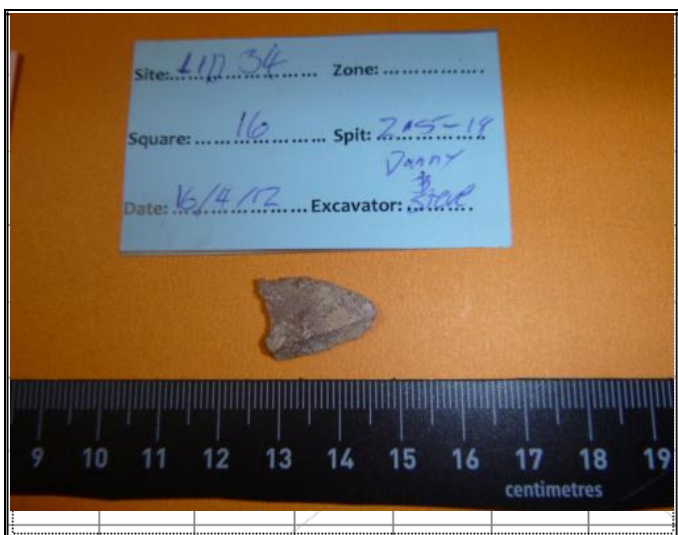
Include photographs of the authorised impacts activity, as relevant to the AHIMS site. Please keep photo size to a maximum of 200 kb.



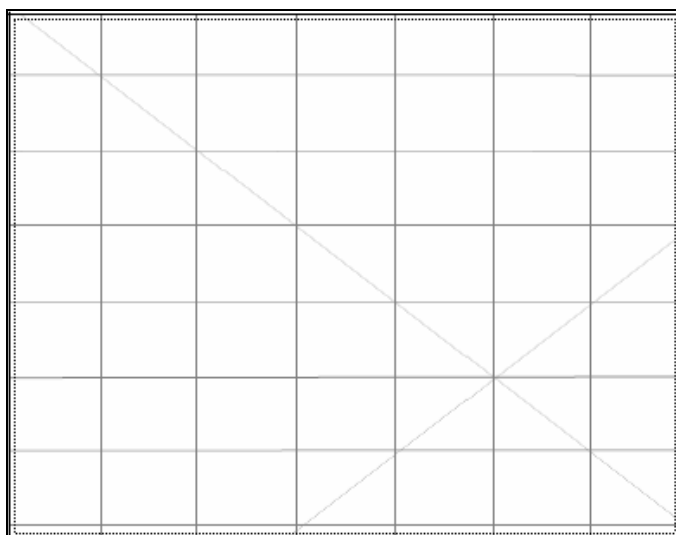
Description: Typical view of LID ES1.



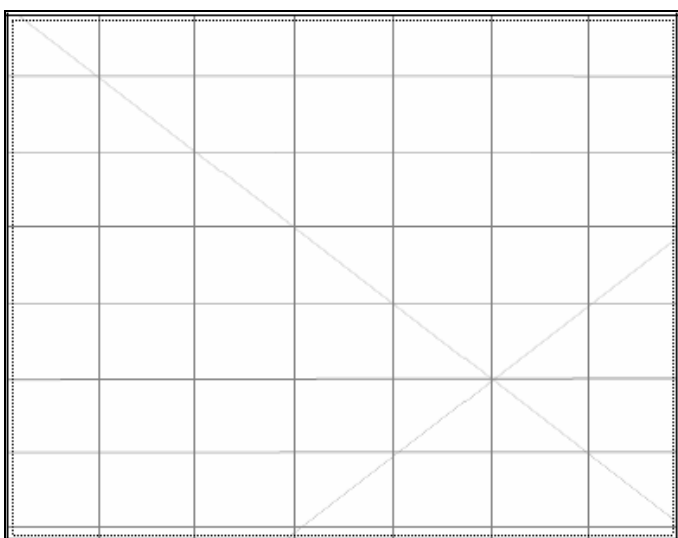
Description:



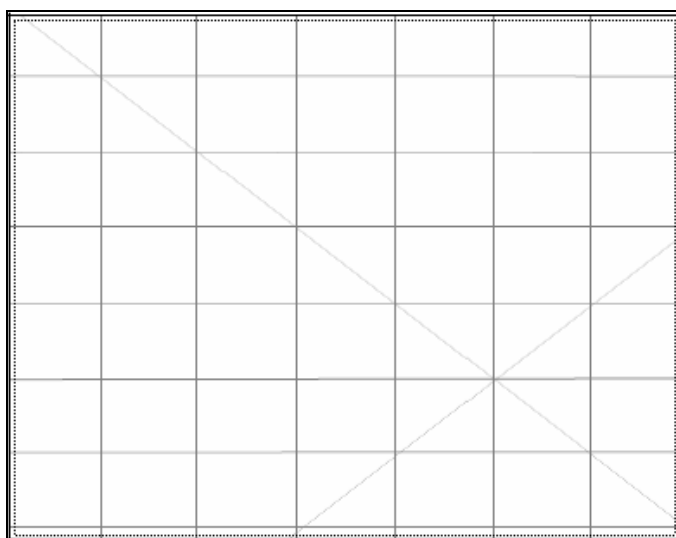
Description:



Description:



Description:



Description:



Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220



Office of
Environment
& Heritage

Office Use Only

Site Number 3 7 - 3 - 1 1 6 6

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For Further Information Contact:

☐ Nominated Trustee

Title Surname First Name Initials

Organisation

Address

Phone number Fax

☐ Knowledge Holder

Title Surname First Name Initials

Organisation

Address

Phone number Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name L I D E E - I F 3

Easting 3 1 5 9 3 0 Northing 6 4 1 3 1 4 9 AGD/GDA GDA

Mapsheet C A M B E R W E L L 9 1 3 3 3 S

Zone 56 Location Method Non-Differential GPS

Other Registration

Primary Recorder

Title Surname First Name Initials

Organisation

Address

Phone number Fax

Date recorded 21/09/2011

Office Use
Only

Client on
system

☐

Client on
system

☐

Client on
system

☐

NPWS Aboriginal Site Recording Form - Site Information

page 2

OPEN/CLOSE SITE

Site Context

Landform

- ☐ Mountainous
☐ Plain
☐ Rolling hills
☐ Steep hills
☐ Undulating plain

Landform Unit

- ☐ Beach
☐ Coastal rock platform
☐ Dune
☐ Intertidal flat
☐ Lagoon
☐ Tidal Creek

☐ Tidal Flat

☐ Cliff

☒ Crest

☐ Flat

☐ Lower slope

☐ Mid slope

☐ Upper slope

☐ Plain

☒ Ridge

☐ Tor

☐ Valley flat

☐ Levy

☐ Stream bank

☐ Stream channel

☐ Swamp

☐ Terrace

☐ Terrace flat

Slope

degrees

Vegetation

- ☐ Closed forest
☐ Grasslands
☐ Isolated clumps of trees
☐ Open forest
☒ Open woodland
☐ Scrub
☐ Woodland
☒ Cleared
☐ Revegetated
☐ N/A

Land use

- ☐ Conservation
☐ Established urban
☐ Farming-intensive
☒ Farming-low intensity
☐ Forestry
☐ Industrial
☐ Mining
☐ Pastoral/grazing
☐ Recreation
☐ Semi-rural
☐ Service corridor
☒ Transport corridor
☐ Urban expansion
☐ N/A

Water

Distance to permanent water source

metres

Distance to temporary water source

metres

Name of nearest permanent water source

Name of nearest temporary water

Directions for Relocation

90 m south of the coal conveyor on the same landform as site
 37-3-0419

Current Land Tenure

- ☐ Public National Park / other Government Dept.
☐ Private

Primary report

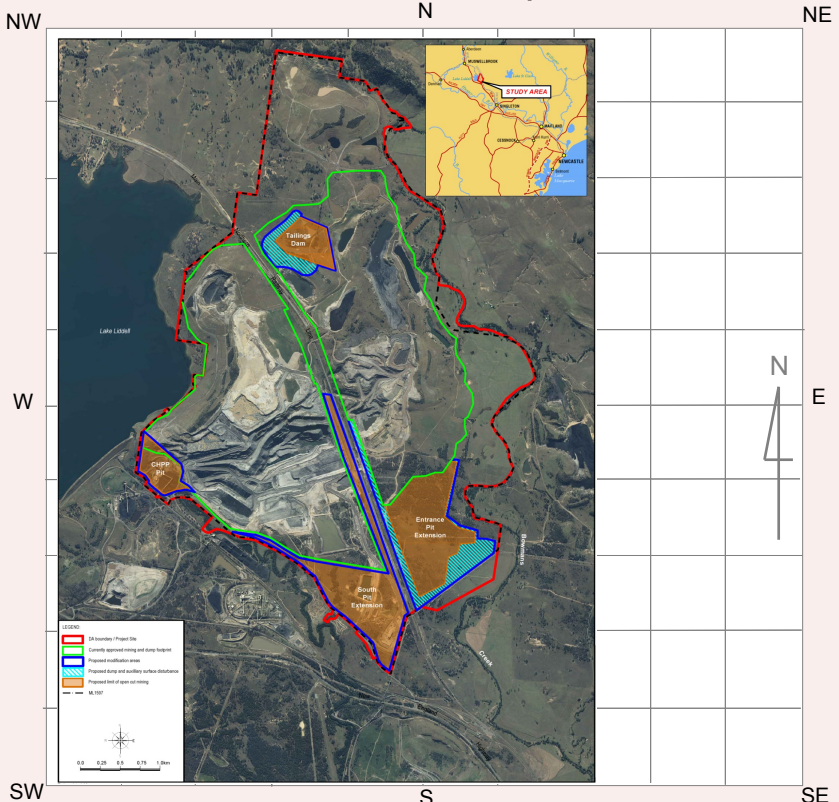
I.D. (I.D. Office Use only)

ABORIGINAL AND HISTORIC HERITAGE

ASSESSMENT: Liddell Coal Operations Extension

Project February 2012

Site Location Map



- | | |
|--|--------------------------------|
| | Total length of visible site |
| | Average width of visible site |
| | Estimated area of visible site |
| | Length of assessed site area |

Aboriginal Community Interpretation and Management Recommendations

All of the recommendations concerning Aboriginal heritage identified in this report were formed on the basis of the proposed impact zones illustrated and according to the Aboriginal site locations identified in the field (site locations). It is important to note that avoidance is the preferred option for all extant Aboriginal sites identified in this assessment. In the case of the Bowmans Creek Sensitive Archaeological Landscape (LID-BC-SAL), the client (LCO) has engaged in consultation with OzArk EHM and the Aboriginal community stakeholders to alter / modify the proposed Entrance Pit Extension impact zone to allow for partial or total avoidance of all but one site (LID 27; 37-3-0430) in this management area. During the AFGM held in December 2011, it was clear from all present that all sites over the LCO Project Site were considered to be of significance to the Aboriginal community. In particular, however, the complex of sites along Bowmans Creek was noted as being of greater

significance due to the sheer quantity of sites and the evidence this provides of the intensive use by Aboriginal peoples of the resources of this waterway within the Liddell Project Site.

Preliminary Site Assessment**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

The three open campsites and three isolated artefacts sites identified during the survey have all been assessed as having low scientific significance. There is a preponderance of stone artefact sites throughout the region that reduces the overall rarity (hence significance) of the sites identified during the current survey. None of the stone artefact sites displayed noteworthy / unusually recorded features; however more detailed investigation such as sub-surface investigation has potential to provide additional scientific information about the regions prehistory. All the sites identified as part of the current heritage assessment are open sites or isolated finds, and such sites present evidence that would be challenging for the lay person to interpret. All the sites discussed as part of the current assessment were assessed as having low public significance. Significance of site recorded- Representativeness: Low, Rarity: Low, Research potential: Low, Integrity: Low, Complexity: Low, Connectedness: Low.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title

Surname

First Name

Initials

Organisation

OzArk Environmental & Heritage Management

Address

145 Wingewarra Street, Dubbo, NSW 2830

Phone number

Fax

Attachments (No.)

- ☐ A4 location map
☐ B/W photographs
☐ Colour photographs
☐ Slides
☐ Aerial photographs
☐ Site plans, drawings
☐ Recording tables
☐ Other
☐ Feature inserts-No.

Comments

Site consists of a single orange indurated mudstone flake (dimensions: 27x13x10 mm) positioned on a slope 5 m above the Bowmans Creek floodplain. Site was observed in a sheetwash erosion exposure below the ridge crest. Additional artefacts can be expected up slope on the ridge crest; however, dense vegetation cover resulted in poor surface visibility making identification of additional artefacts difficult.

PLATES



Plate 1: Bowmans Creek floodplain



Plate 2: Undulating hills near Bowmans Creek



Plate 3: LIDEE-OS1



Plate 4: LIDEE-OS2.



Plate 5: LIDEE-IF1



Plate 6: LIDEE-IF2



Plate 7: LIDEE-IF2



Plate 8: LIDEE-IF3



Plate 9: LIDEE-IF3

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 37-3-1401

Date recorded: 01-05-2017

Site Location Information

Site name: Liddell Mountain Block OS2

Easting: 313240 Northing: 6418444 Coordinates must be in GDA (MGA)

Horizontal Accuracy (m): 5

Zone: 56 Location method: Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name
Ms. Sokol Philippa

Organisation: OzArk Environmental and Heritage Management

Address: PO Box 2069 Dubbo NSW 2830

Phone: 0268820118 E-mail: philippa@ozarkehm.com.au

Site Context Information

Land Form Pattern: Undulating Plain Land Use: Mining

Land Form Unit: Slope Vegetation: Open Woodland

Distance to Water (m): 600 Primary Report: Due Diligence: Liddell Coal Operations Offset Areas Revegetation

How to get to the site: The site 230 metres north of Hebden Road, 570 northeast of Lake Liddell, and 16 kilometres southeast of Muswellbrook.

Other site information: Soils consisted of a brown dry silty clay loam. Vegetation comprised paddock grass and clusters of casuarinas. Disturbances include previous clearing, gully and rill erosion, and stock grazing.

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	4	180	100

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of at least sixteen artefacts manufactured from predominantly mudstone with some silcrete, siltstone and quartzite pieces. It extends approximately 300 metres by 200 metres, and artefacts were seen in many erosion scars on the gentle slopes leading down to the creek lines.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
3.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
-----------------	---------------	------------	--------------

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Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
4.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
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Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
5.			

Description:

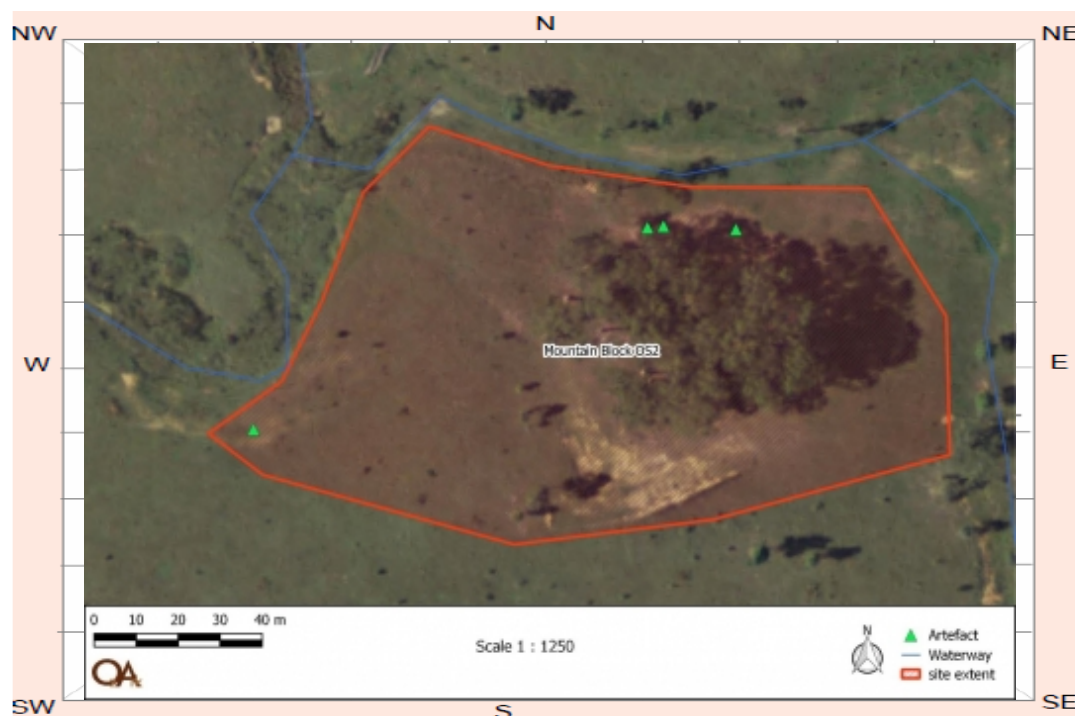
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
-----------------	---------------	------------	--------------

----------------------	----------------------	----------------------	----------------------

Other Site Info:

Soils consisted of a brown dry silty clay loam. Vegetation comprised paddock grass and clusters of casuarinas. Disturbances include previous clearing, gully and rill erosion, and stock grazing.

Site plan

Site photographs



Description:	View of Mountain Block OS2 site location.
--------------	---

A 6x6 grid with a diagonal line from the top-left to the bottom-right and a dashed diagonal line from the bottom-left to the top-right.

Description:



Description:	An artefact from Mountain Block OS2.
--------------	--------------------------------------

A blank 6x6 grid with a dotted border and two diagonal lines intersecting at the center. The grid is composed of 6 columns and 6 rows of squares. A dotted line runs diagonally from the top-left corner to the bottom-right corner, and another dotted line runs diagonally from the bottom-left corner to the top-right corner. The two lines intersect at the center of the grid, specifically at the intersection of the third and fourth columns and the third and fourth rows.

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type:

Gender	General	Location
--------	---------	----------

11

General

7

Location

7

Why is this site restricted?:

--

Further information contact

Title

11

Surname

First name

Organisation:

--

Address:

Phone:

E-mail:

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 37-3-1402

Date recorded: 01-05-2017

Site Location Information

Site name: Liddell Mountain Block OS1

Easting: 313477 Northing: 6418480 Coordinates must be in GDA (MGA)

Horizontal Accuracy (m): 5

Zone: 56 Location method: Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name
Ms. Sokol Philippa

Organisation: OzArk Environmental and Heritage Management

Address: PO Box 2069 Dubbo NSW 2830

Phone: 0268820118 E-mail: philippa@ozarkehm.com.au

Site Context Information

Land Form Pattern: Undulating Plain Land Use: Mining

Land Form Unit: Slope Vegetation: Open Woodland

Distance to Water (m): 50 Primary Report: Due Diligence: Liddell Coal Operations Offset Areas Revegetation

How to get to the site: The site is approximately 250 metres north of Hebden Road, 900 northeast of Lake Liddell, and 16 kilometres south east of Muswellbrook.

Other site information: Soils consisted of a brown dry silty clay loam. Vegetation comprised paddock grass and clusters of casuarinas. Disturbances include previous clearing, gully and rill erosion, and stock grazing.

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	16	300	200

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of at least sixteen artefacts manufactured from predominantly mudstone with some silcrete, siltstone and quartzite pieces. It extends approximately 300 metres by 200 metres, and artefacts were seen in many erosion scars on the gentle slopes leading down to the creek lines.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

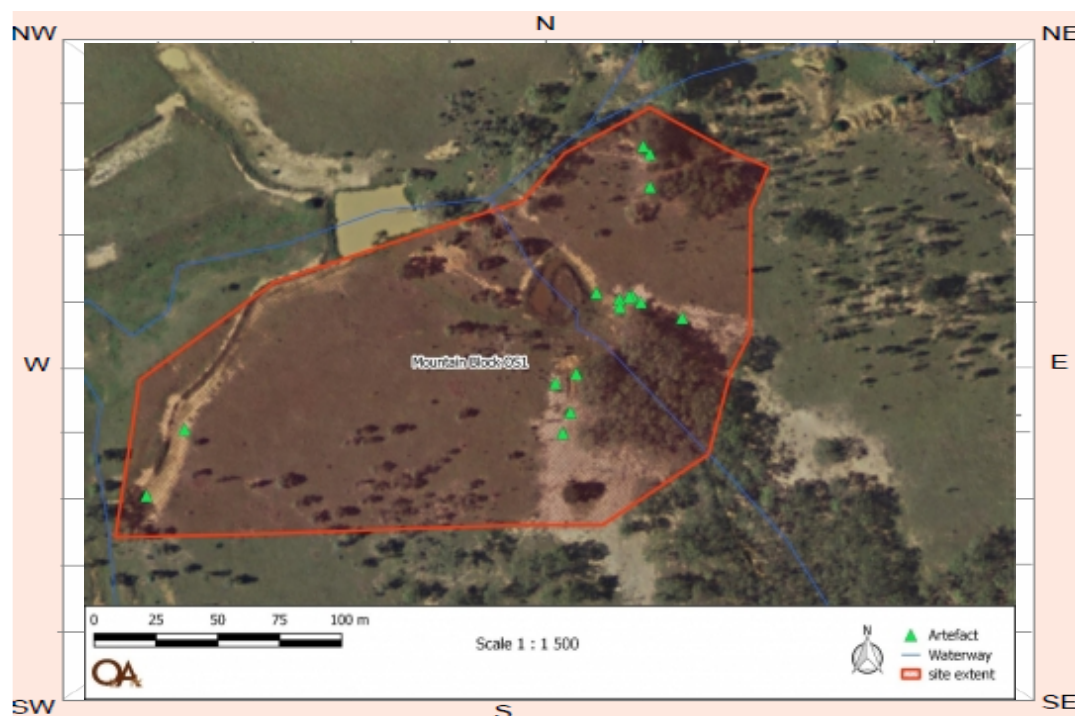
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a brown dry silty clay loam. Vegetation comprised paddock grass and clusters of casuarinas. Disturbances include previous clearing, gully and rill erosion, and stock grazing.

Site plan



Site photographs



Description: View of Mountain Block OS1 site location.



Description: View of Mountain Block OS1 site location.



Description: Selection of artefacts from Mountain Block OS1.



Description: Selection of artefacts from Mountain Block OS1.

Site restrictions

Do you want to Restrict this site?: ☐

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title

Surname

First name

Organisation:

Address:

Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	5	5

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of a single artefact manufactured from silcrete. The site is situated within a small exposure near a fence line on a terrace overlooking the floodplain of Bowmans Creek. The area had had a GSE of 5% and GSV within that exposure of 50%.

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

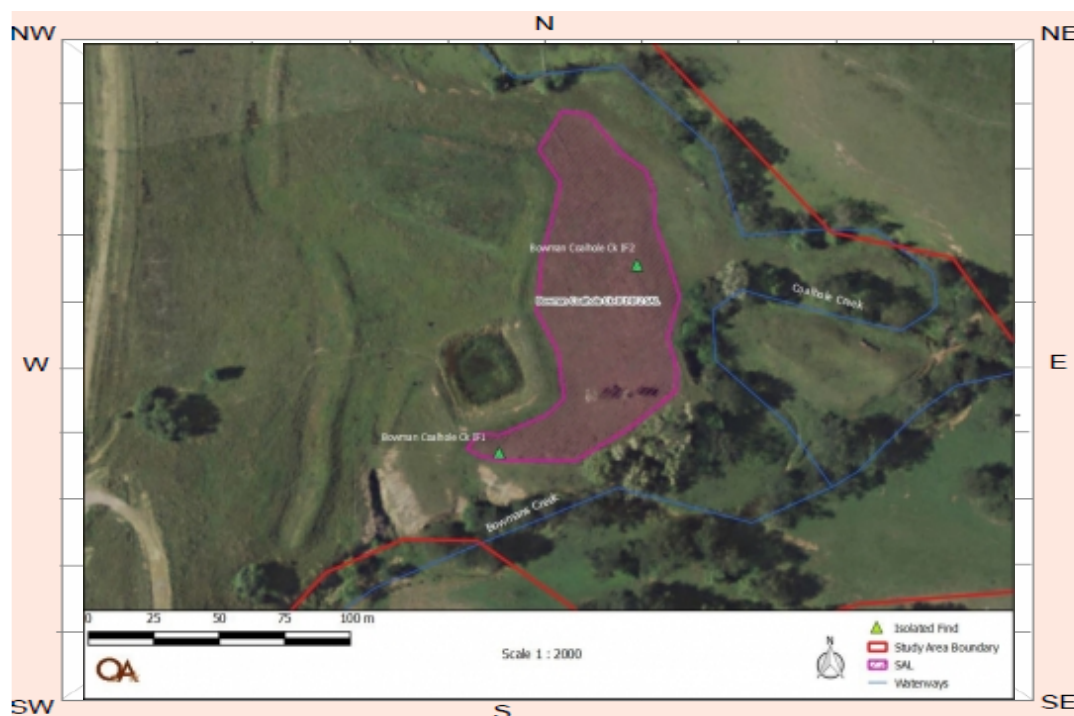
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a brown dry silty clay loam. Vegetation comprised thick paddock grass and weeds. Disturbances include previous clearing, erosion, fencing, stock grazing and two large dams nearby as well as mounds of dumped overburden.

Site plan



Site photographs



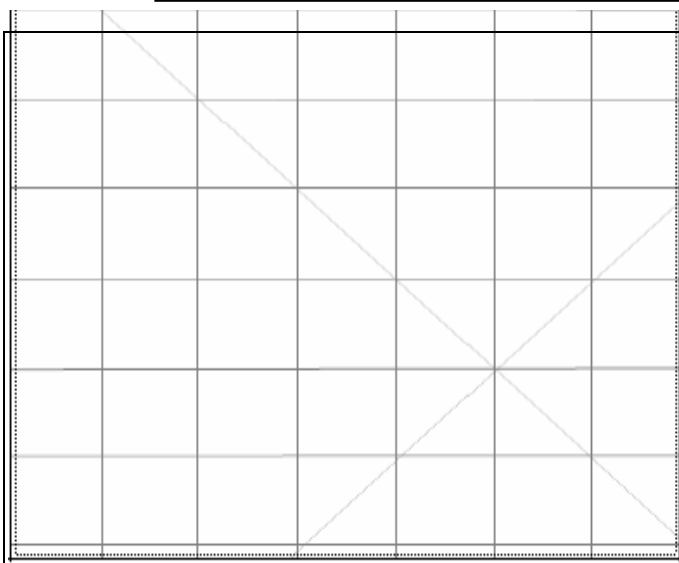
Description:

View north to Bowman Coalhole Creek IF2 site location.

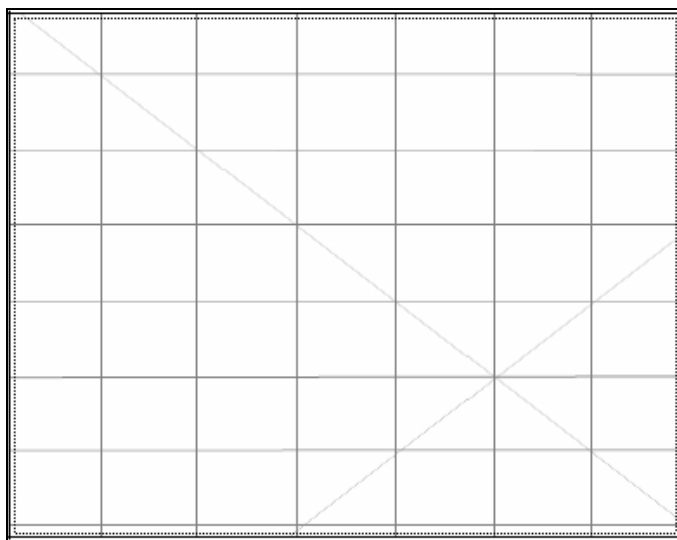


Description:

Artefact found at Bowman Coalhole Ck IF2



Description:



Description:

Site restrictions

Do you want to
Restrict this site?: ☐

Restriction type:

Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title Surname First name

Organisation:

Address:

Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees
				Scar Depth (cm) Regrowth (cm) Scar shape Tree Species
1. Artefact	7	35	25	

Description:

The site consists of approximately seven stone artefacts manufactured from predominantly mudstone and some chert and silcrete fragments. The site is situated within a small exposure adjacent to a gate with GSV within the track exposure of 80%.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees
				Scar Depth (cm) Regrowth (cm) Scar shape Tree Species
2.				

Description:

Features:

3.

Number of
features

Length of
feature(s)
extent (m)

Width of
feature (s)
extent (m)

Scarred Trees

Scar Depth
(cm)

Regrowth
(cm)

Scar shape

Tree Species

Description:

Features:

4.

Number of
features

Length of
feature(s)
extent (m)

Width of
feature (s)
extent (m)

Scarred Trees

Scar Depth
(cm)

Regrowth
(cm)

Scar shape

Tree Species

Description:

Features:

5.

Number of
features

Length of
feature(s)
extent (m)

Width of
feature (s)
extent (m)

Scarred Trees

Scar Depth
(cm)

Regrowth
(cm)

Scar shape

Tree Species

Description:

Other Site
Info:

Soils consisted of a yellow brown clayey loam. Vegetation comprised paddock grass and a small group of casuarinas along the fence line. Disturbances include previous clearing, erosion, fencing and a vehicle track. The site is likely to extend beyond the fence to the west.

Site plan



Site photographs



Description:

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type:

Why is this site restricted?:

Further information contact

Title	Surname	First name
Organisation:		
Address:		
Phone:		E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	5	5

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of approximately seven stone artefacts manufactured from predominantly mudstone and some chert and silcrete fragments. The site is situated within a small exposure adjacent to a gate with GSV within the track exposure of 80%.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

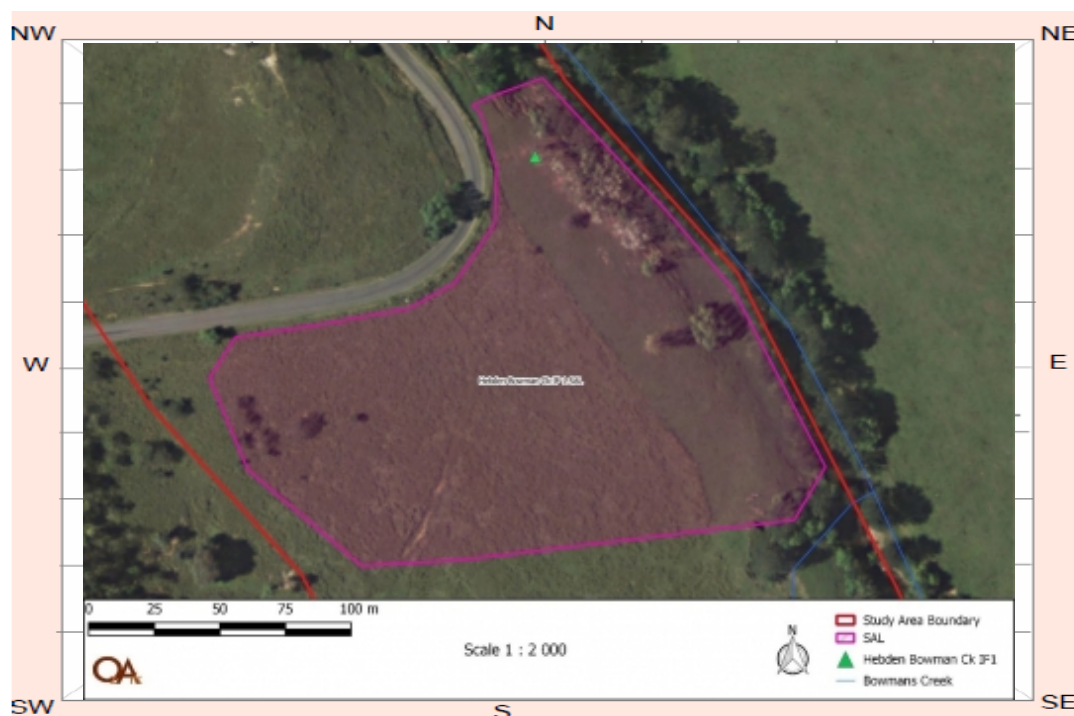
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a yellow brown clayey loam. Vegetation comprised paddock grass and a small group of casuarinas along the fence line. Disturbances include previous clearing, erosion, fencing and a vehicle track. The site is likely to extend beyond the fence to the west.

Site plan



Site photographs



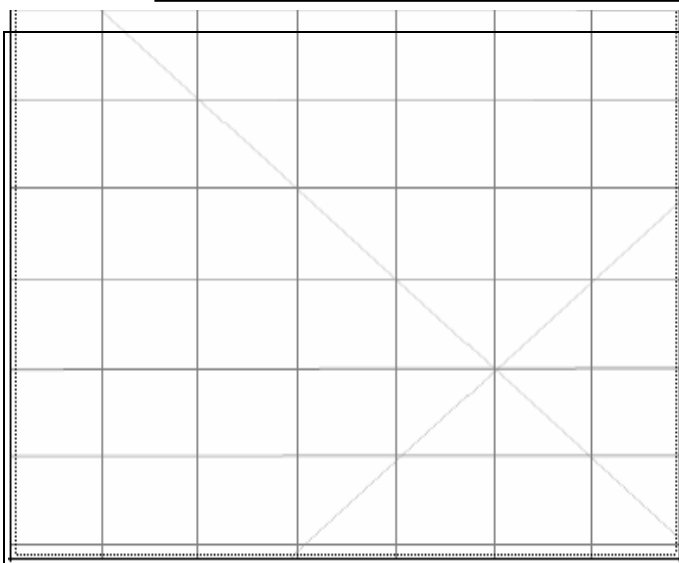
Description:

View north to Hebden Bowmans Creek IF1 site location.

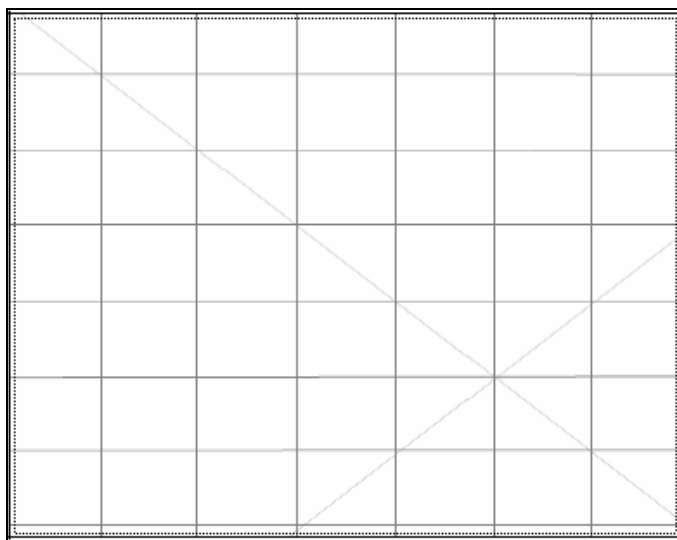


Description:

Selection of artefacts from Hebden Bowmans Ck IF1.



Description:



Description:

Site restrictions

Do you want to

Restrict this site?:

☐

Restriction type:

Gender

☐

General

☐

Location

☐

Why is this site restricted?:

Further information contact

Title

Surname

First name

Organisation:

Address:

Phone:

E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	5	5

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of a single artefact manufactured from silcrete. The site is situated along a fence line high above Bowmans Creek.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

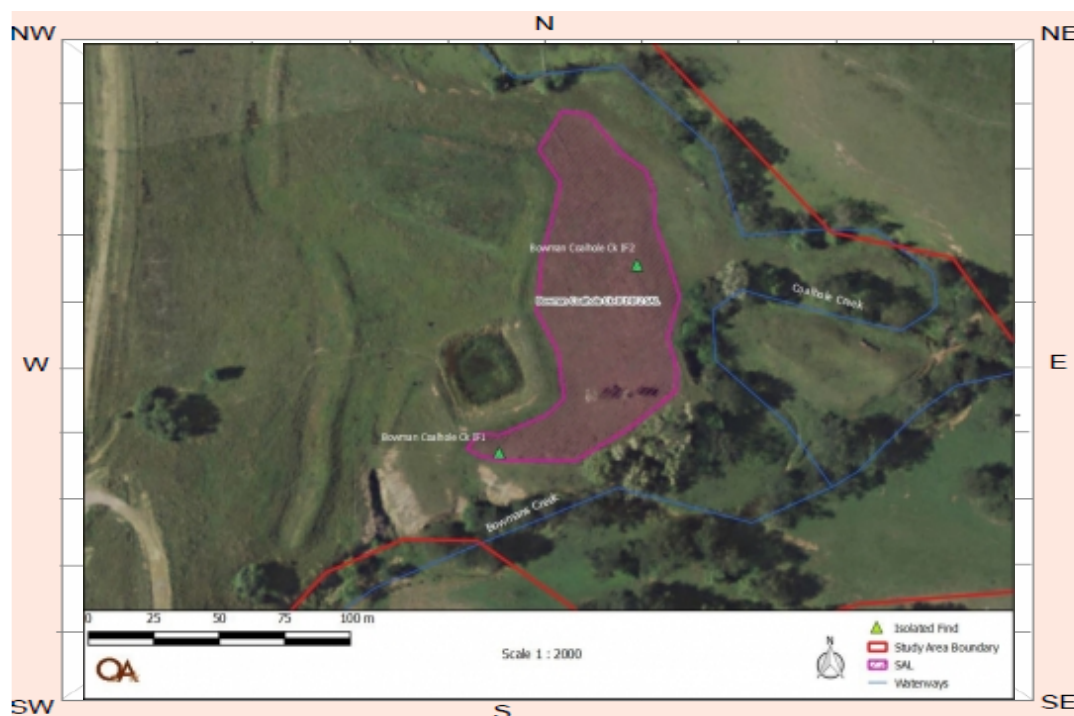
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

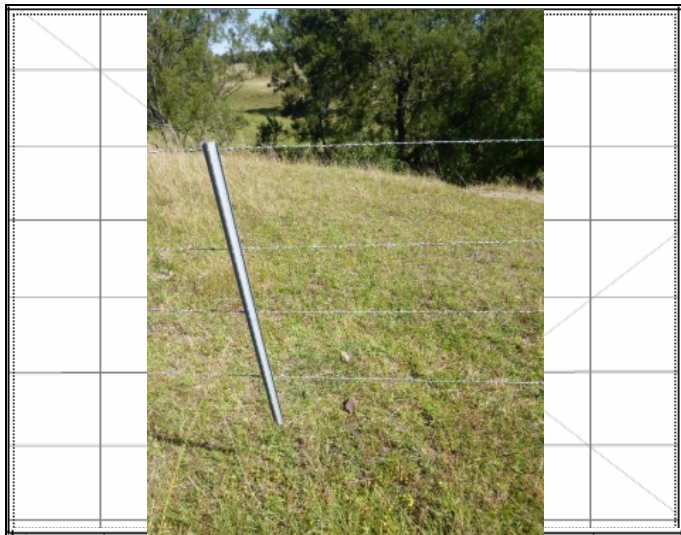
Other Site Info:

Soils consisted of a brown dry silty clay loam. Vegetation comprised paddock grass and a small group of casuarinas along the creek line. Disturbances include previous clearing, erosion, fencing, stock grazing and the excavation of a large dam nearby.

Site plan



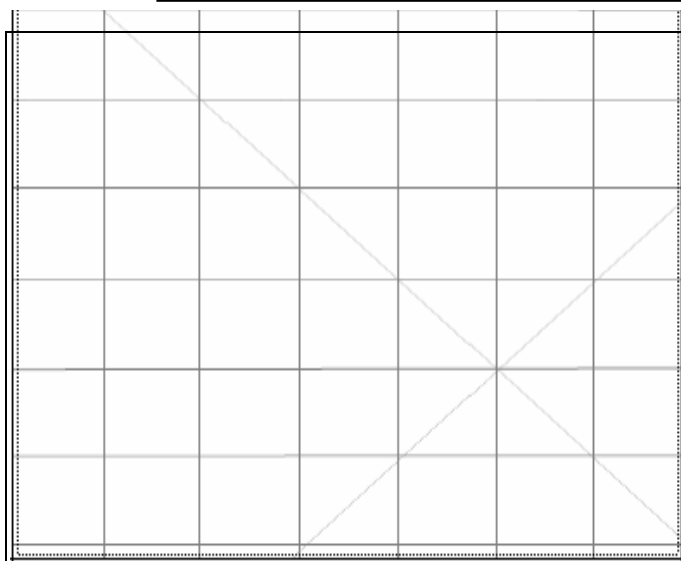
Site photographs



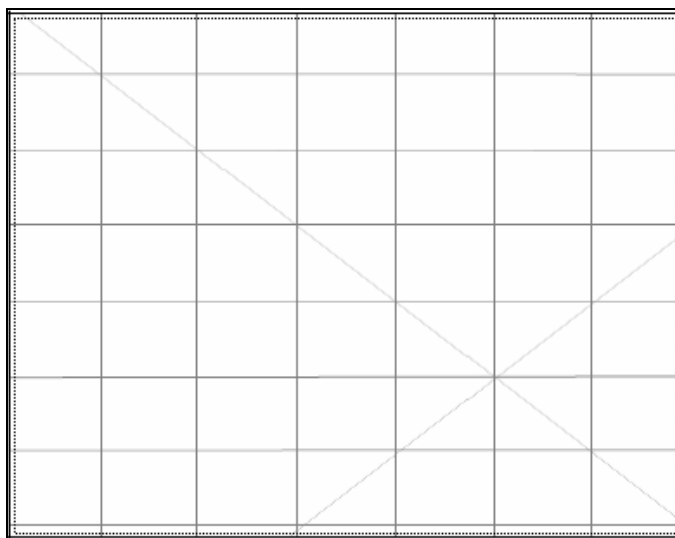
Description: View south to Bowman Coalhole Creek IF1 site location.



Description: Silcrete of artefact from Bowman Coalhole Ck IF1.



Description:



Description:

Site restrictions

Do you want to
Restrict this site?: ☐

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title Surname First name

Organisation:

Address:

Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	6	90	35

Description:

The site consists of approximately six stone artefacts manufactured from predominantly mudstone in addition to some silcrete fragments. It is situated within a small exposure located next to a gate, south of a sandstone outcrop and had a GSE of 0% and GSV within that exposure of 80%.

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

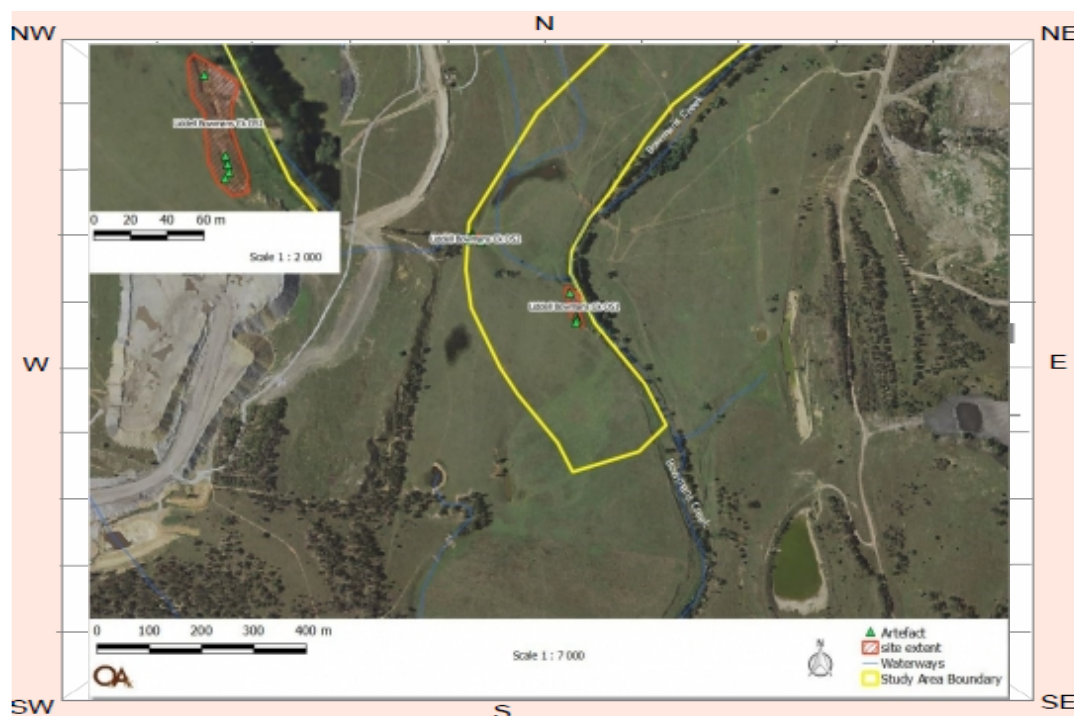
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a yellow brown clayey loam. Vegetation comprised of paddock grass and some young casuarinas along the creek line. Disturbances include previous clearing, erosion, fencing and a small vehicle track.

Site plan



Site photographs



Description:

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type:

Why is this site restricted?:

Further information contact

Title	Surname	First name
Organisation:		
Address:		
Phone:		E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	7	150	80

Description:

The site consists of at least seven artefacts manufactured from predominantly mudstone with some silcrete pieces. It extends approximately 150 metres by 80 metres. The site is situated within an area of significant gully erosion leading into a moderately steep creek line.

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
3.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
4.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
5.			

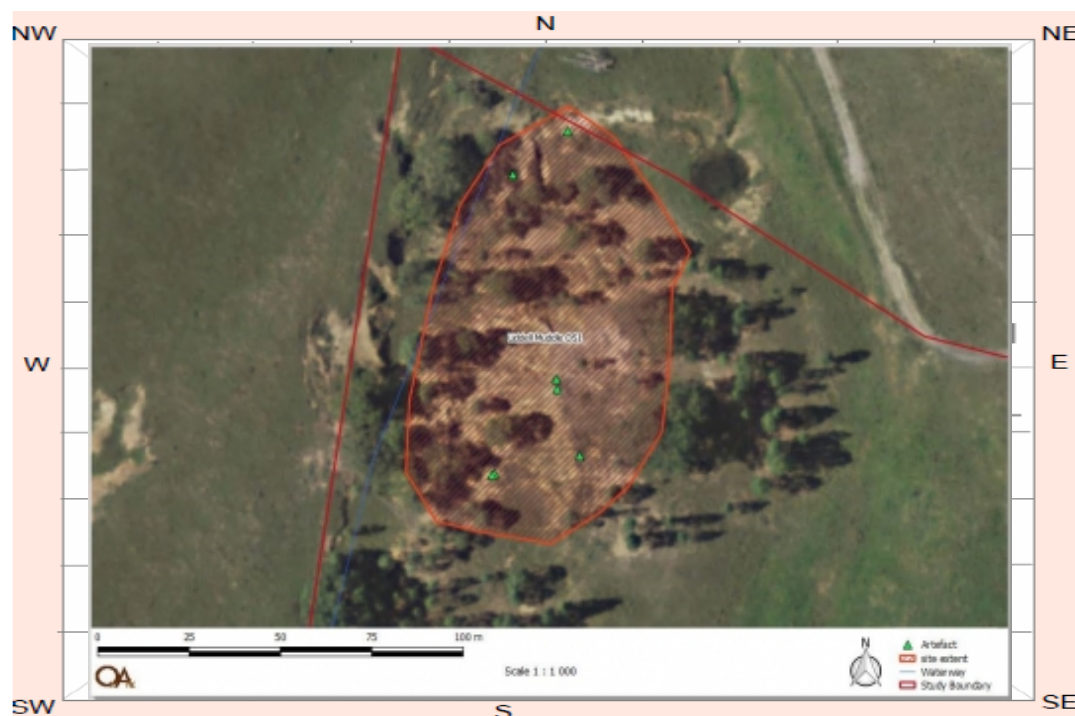
Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a brown dry silty clay loam with a surface cover of pebble laterite. Vegetation comprised paddock grass and a young to mature casuarinas around the site extent. Disturbances include previous clearing, extensive gully and rill erosion and stock grazing.

Site plan

Site photographs



Description:

Description:

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type:

Gender

General

Location

Why is this site restricted?:

Further information contact

Title

Surname

First name

Organisation:

Address:

Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Ms.	Sokol	Philippa

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

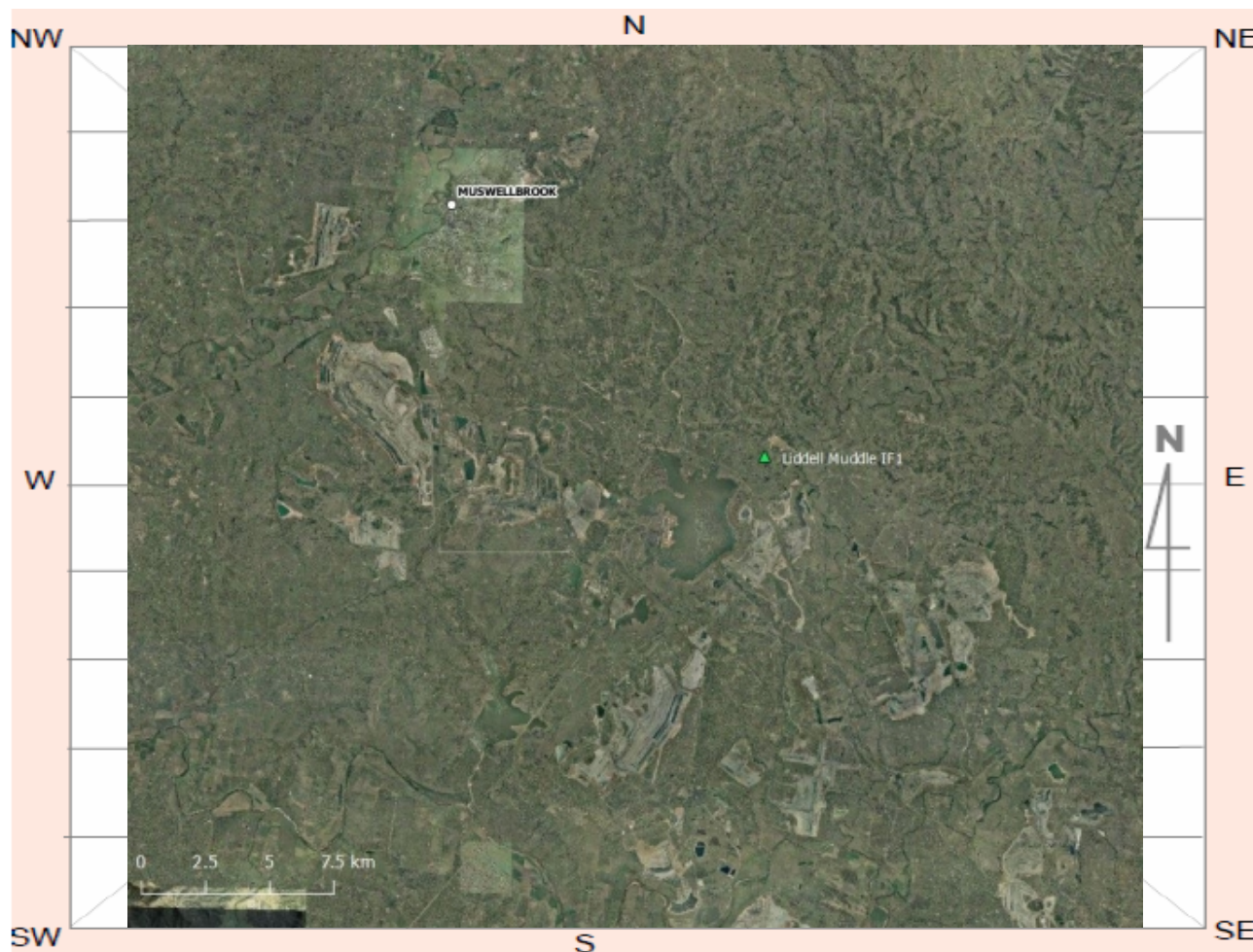
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	5	5

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of one silcrete artefact. The site is situated within an exposed area south of an unnamed tributary of Tinkers Creek, had a GSE of 0% and GSV within that exposure of 90%.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

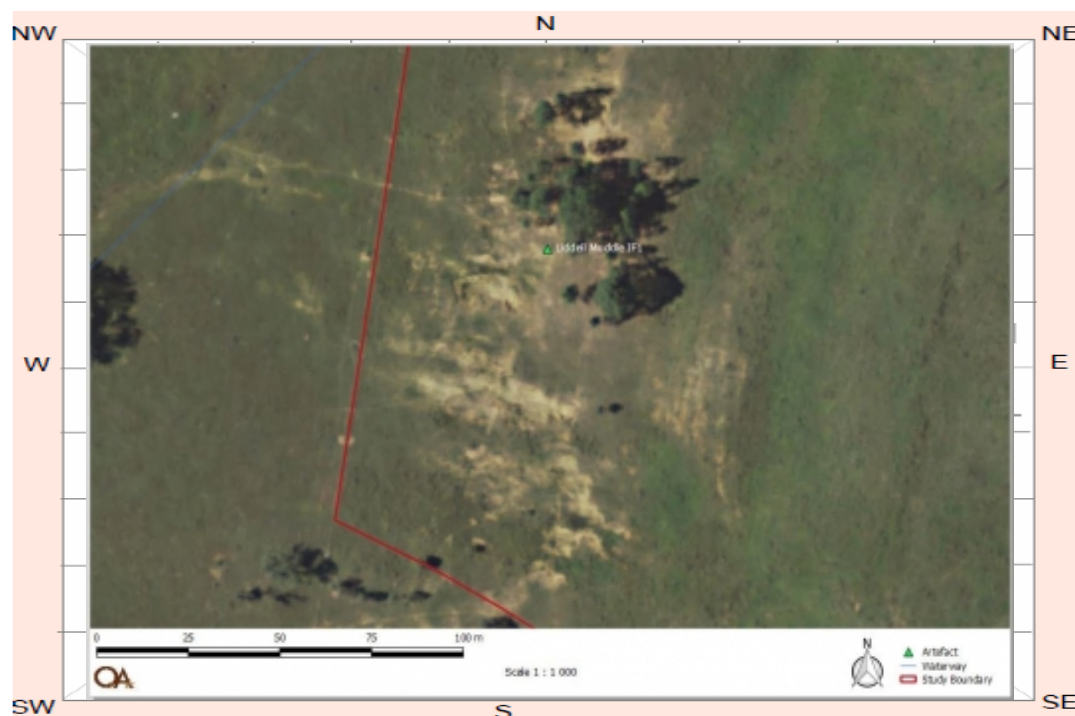
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of a brown dry silty clay loam with a surface cover of pebble laterite. Vegetation comprised paddock grass and a young Eucalypt around the site. Disturbances include previous clearing, extensive gully and rill erosion, and stock grazing.

Site plan



Site photographs



Description:

View north to Liddell Muddle IF-1 site location

A 6x6 grid with a diagonal line from the top-left to the bottom-right and a dashed diagonal line from the bottom-left to the top-right.

Description:



Description:

Artefact of Liddell Muddle IF-1.

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type:

Gender

11

General

7

Location

7

Why is this site restricted?:

--

Further information contact

Title

11

Surname

First name

Organisation:

Address:

--

Phone:

E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Artefact	1	5	5				

Description:

The site consists of a single mudstone artefact. The site is situated within a small exposure surrounded by thick grass cover. Soils consist of a hard setting yellow brown clay base. The site is located on the floodplain of Bowmans Creek. It is approximately 332 metres west of Bowmans Creek.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
				Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
3.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
-----------------	---------------	------------	--------------

----------------------	----------------------	----------------------	----------------------

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
4.			

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
-----------------	---------------	------------	--------------

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Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
5.			

Description:

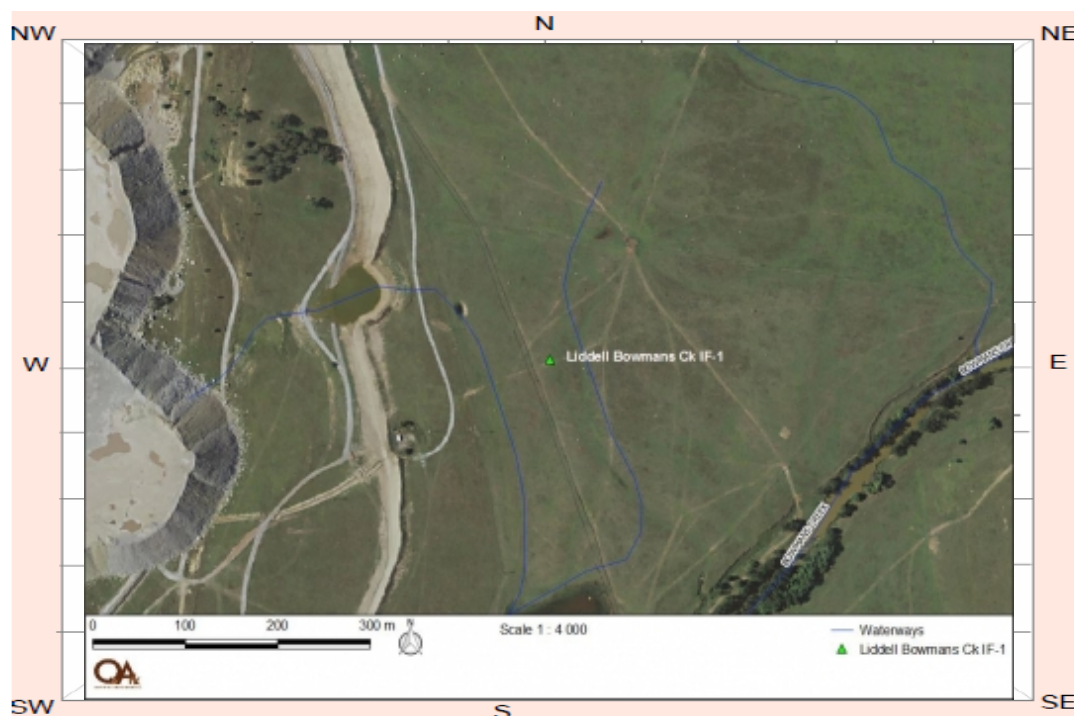
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
-----------------	---------------	------------	--------------

----------------------	----------------------	----------------------	----------------------

Other Site Info:

Disturbances include previous clearing and ploughing. As such, it is assessed that this isolated artefact is not associated with further sub-surface deposits.

Site plan

--



--

Do you want to Restrict this site?:

Restriction type: Gender General Location

--

Title	Surname	First name
Organisation:		
Address:		
Phone:		E-mail:



Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220



Office Use Only

Site Number 3 7 - 3 - 1 1 6 6

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

For Further Information Contact:

☐ Nominated Trustee

Title Surname First Name Initials

Organisation

Address

Phone number Fax

☐ Knowledge Holder

Title Surname First Name Initials

Organisation

Address

Phone number Fax

Aboriginal Heritage Unit or Cultural Heritage Division Contacts

Geographic Location

Site Name L I D E E - I F 3

Easting 3 1 5 9 3 0 Northing 6 4 1 3 1 4 9 AGD/GDA GDA

Mapsheet C A M B E R W E L L 9 1 3 3 3 S

Zone 56 Location Method Non-Differential GPS

Other Registration

Primary Recorder

Title Surname First Name Initials

Organisation

Address

Phone number Fax

Date recorded 21/09/2011

Office Use Only

Client on system

Client on system

Client on system

OPEN/CLOSE SITE

Site Context

Landform

- ☐ Mountainous
☐ Plain
☐ Rolling hills
☐ Steep hills
☐ Undulating plain

Landform Unit

- ☐ Beach
☐ Coastal rock platform
☐ Dune
☐ Intertidal flat
☐ Lagoon
☐ Tidal Creek

☐ Tidal Flat☐ Cliff☒ Crest☐ Flat☐ Lower slope☐ Mid slope☐ Upper slope☐ Plain☒ Ridge☐ Tor☐ Valley flat☐ Levy☐ Stream bank☐ Stream channel☐ Swamp☐ Terrace☐ Terrace flat

Slope

 degrees

Vegetation

- ☐ Closed forest
☐ Grasslands
☐ Isolated clumps of trees
☐ Open forest
☒ Open woodland
☐ Scrub
☐ Woodland
☒ Cleared
☐ Revegetated
☐ N/A

Land use

- ☐ Conservation
☐ Established urban
☐ Farming-intensive
☒ Farming-low intensity
☐ Forestry
☐ Industrial
☐ Mining
☐ Pastoral/grazing
☐ Recreation
☐ Semi-rural
☐ Service corridor
☒ Transport corridor
☐ Urban expansion
☐ N/A

Water

Distance to permanent water source metresDistance to temporary water source metresName of nearest permanent water source Name of nearest temporary water

Directions for Relocation

90 m south of the coal conveyor on the same landform as
 site 37-3-0419

Current Land Tenure

- ☐ Public National Park / other Government
 Dept.
☐ Private

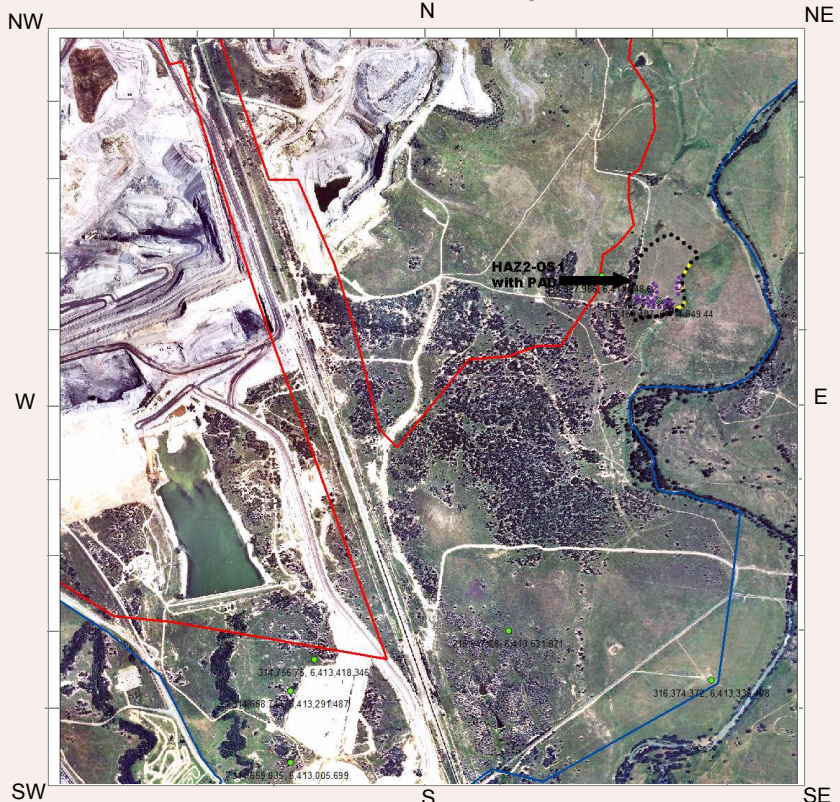
Primary report

I.D. (I.D. Office Use only)

ABORIGINAL AND HISTORIC HERITAGE

ASSESSMENT: Liddell Coal Operations Extension
 Project February 2012

Site Location Map



General Site Information

Closed Site

Shelter/Cave Formation

- ☐ Boulder
☐ Wind erosion
☐ Water erosion
☐ Rock collapse

Rock Surface Condition

- ☐ Boulder
☐ Sandstone platform
☐ Silica gloss
☐ Tessellated
☐ Weathered
☐ Other platform

Open Site

Site Orientation

- ☐ N-S
☐ NE-SW
☐ E-W
☐ SE-NW
☐ N/A

Condition of Ceiling

- ☐ Boulder
☐ Sandstone platform
☐ Silica gloss
☐ Tessellated
☐ Weathered
☐ Other platform

Shelter Aspect

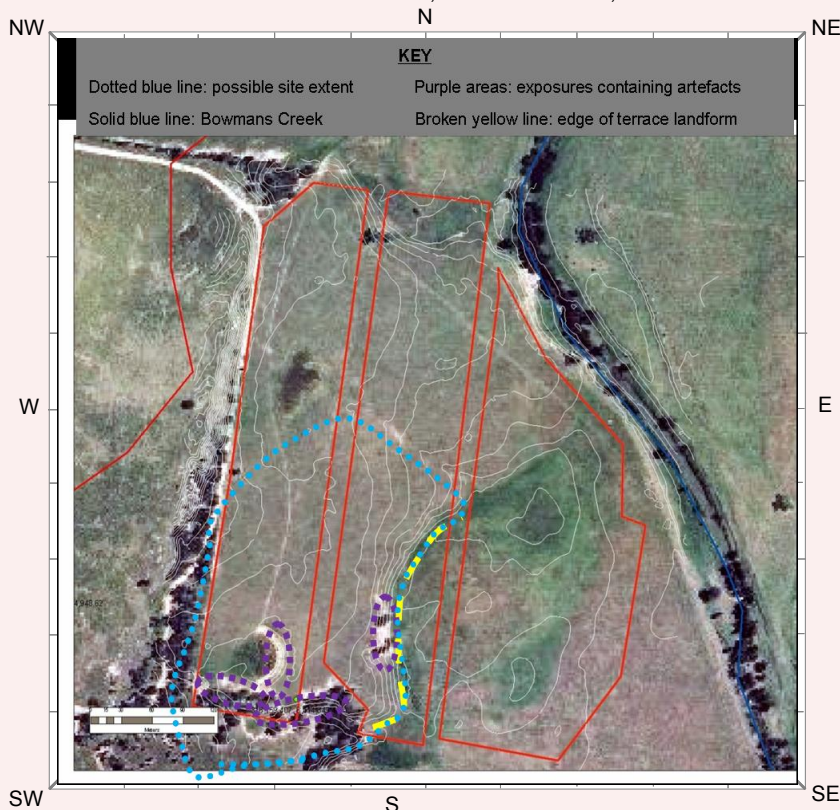
- ☐ North
☐ North East
☐ East
☐ South East
☐ South
☐ South West
☐ West
☐ North West

Features

- ☐ 1. Aboriginal Ceremony & Dreaming
☐ 2. Aboriginal Resource & Gathering
☐ 3. Art
☒ 4. Artefact
☐ 5. Burial
☐ 6. Ceremonial Ring
☐ 7. Conflict
☐ 8. Earth Mound
☐ 9. Fish Trap
☐ 10. Grinding Groove
☐ 11. Habitation Structure
☐ 12. Hearth
☐ 13. Non Human Bone & Organic Material
☐ 14. Ochre quarry
☐ 15. Potential Archaeological Deposit
☐ 16. Stone Quarry
☐ 17. Shell
☐ 18. Stone Arrangement
☐ 19. Modified Tree
☐ 20. Water Hole

Site Plan

Indicate scale, boundaries of site, features



Site Dimensions

Closed Site Dimensions (m)

- Internal length
 Internal width
 Shelter height
 Shelter floor area

Open Site Dimensions (m)

- Total length of visible site
 Average width of visible site
 Estimated area of visible site
 Length of assessed site area

Aboriginal Community Interpretation and Management Recommendations

All of the recommendations concerning Aboriginal heritage identified in this report were formed on the basis of the proposed impact zones illustrated and according to the Aboriginal site locations identified in the field (site locations). It is important to note that avoidance is the preferred option for all extant Aboriginal sites identified in this assessment. In the case of the Bowmans Creek Sensitive Archaeological Landscape (LID-BC-SAL), the client (LCO) has engaged in consultation with OzArk EHM and the Aboriginal community stakeholders to alter / modify the proposed Entrance Pit Extension impact zone to allow for partial or total avoidance of all but one site (LID 27; 37-3-0430) in this management area. During the AFGM held in December 2011, it was clear from all present that all sites over the LCO Project Site were considered to be of significance to the Aboriginal community. In particular, however, the complex of sites along Bowmans Creek was noted as being of greater

Preliminary Site Assessment**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

The three open campsites and three isolated artefacts sites identified during the survey have all been assessed as having low scientific significance. There is a preponderance of stone artefact sites throughout the region that reduces the overall rarity (hence significance) of the sites identified during the current survey. None of the stone artefact sites displayed noteworthy / unusually recorded features; however more detailed investigation such as sub-surface investigation has potential to provide additional scientific information about the regions prehistory. All the sites identified as part of the current heritage assessment are open sites or isolated finds, and such sites present evidence that would be challenging for the lay person to interpret. All the sites discussed as part of the current assessment were assessed as having low public significance. Significance of site recorded- Representativeness: Low, Rarity: Low, Research potential: Low, Integrity: Low, Complexity: Low, Connectedness: Low.

This section should only be filled in by the Endorsees

Endorsed by: ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title

Surname

First Name

Initials

Organisation

OzArk Environmental & Heritage Management

Address

145 Wingewarra Street, Dubbo, NSW 2830

Phone number

Fax

Attachments (No.)

- ☐ A4 location map
☐ B/W photographs
☐ Colour photographs
☐ Slides
☐ Aerial photographs
☐ Site plans, drawings
☐ Recording tables
☐ Other
☐ Feature inserts-No.

Comments

Site consists of a single orange indurated mudstone flake (dimensions: 27x13x10 mm) positioned on a slope 5 m above the Bowmans Creek floodplain. Site was observed in a sheetwash erosion exposure below the ridge crest. Additional artefacts can be expected up slope on the ridge crest; however, dense vegetation cover resulted in poor surface visibility making identification of additional artefacts difficult.

Photos Site HAZ2-OS1



View of the proposed location of borehole HAZ1.



View of the access track into proposed location of borehole HAZ2.



View of the proposed location of borehole HAZ2 and location of site HAZ2-OS1 with PAD.



View of the artefacts from HAZ2-OS1 with PAD.



View south along the edge of the alluvial terrace. Exposures visible all contained Aboriginal artefacts



View of the artefacts from the terrace edge as shown in this plate.

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

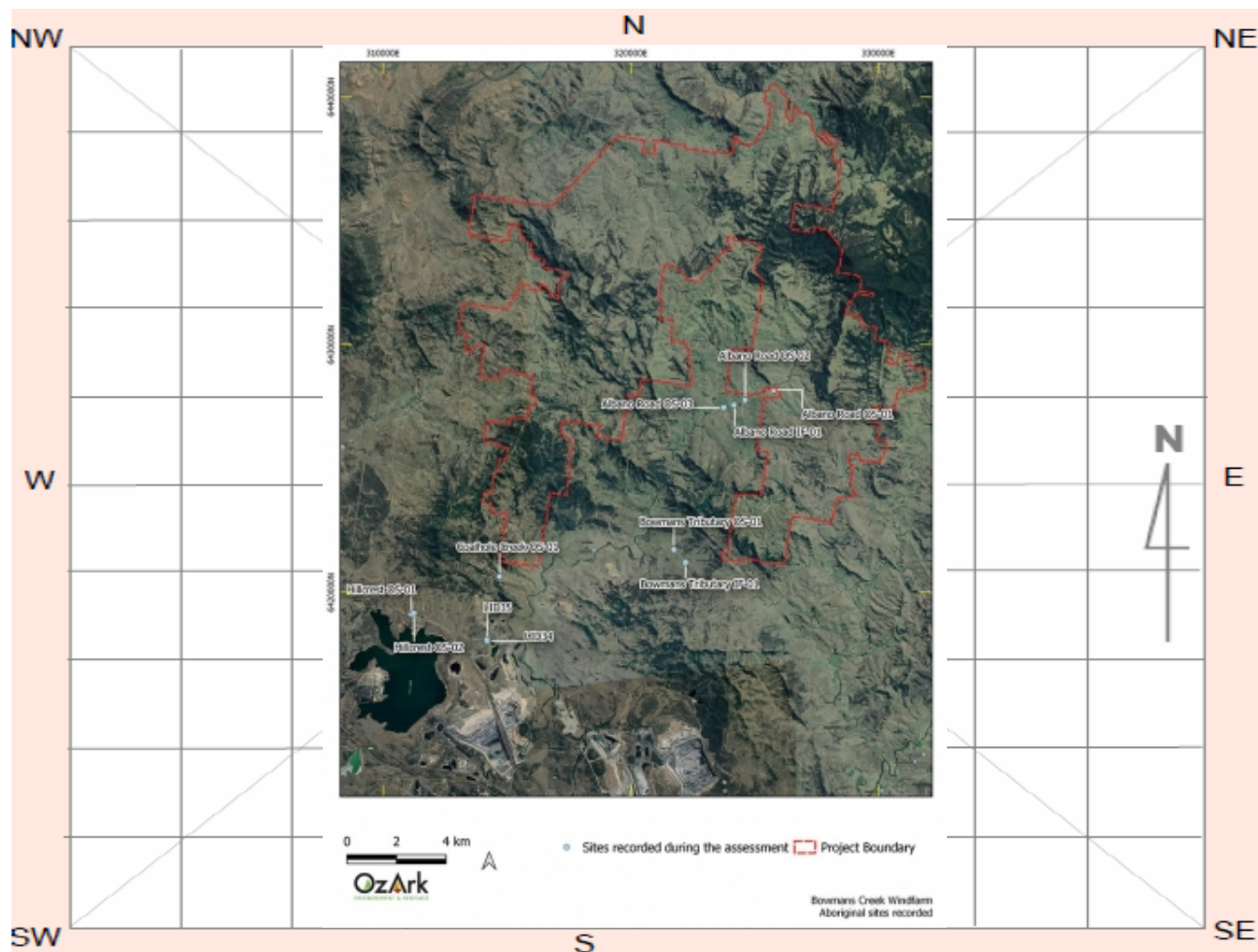
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	5	26
	10	

Scarred Trees	Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
Artefact	5	26	10	

Description:

The site consists of five artefacts: three flakes and two cores made from mudstone or silcrete. The site is located in an erosion scald on the west edge of a remnant tree line. The erosion scald measures approximately 30 m by 15 m.

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.		

Scarred Trees	Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

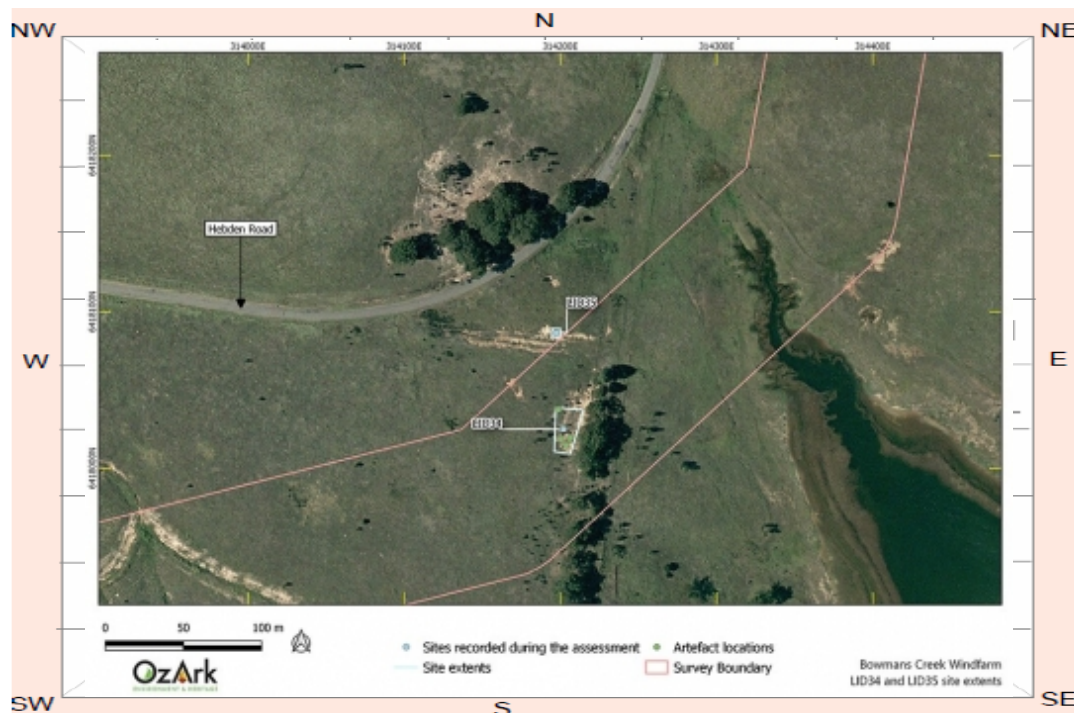
Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soil at the site location consists of a fine-grained light grey-brown silt with pebble and gravel inclusions. There is also dry light grey-brown clay present in areas where the soil has eroded further. The site has low potential for in situ subsurface deposits.

Site plan



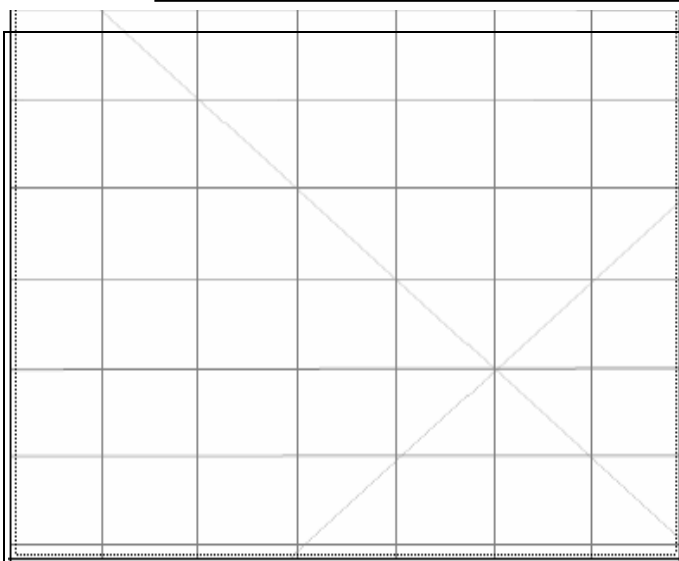
Site photographs



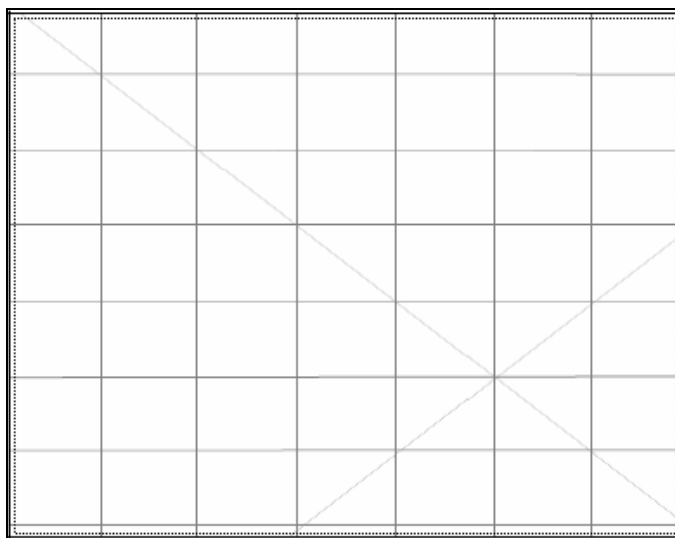
Description: View south of LID34 from the northern extent of site.



Description: View of an artefact from LID34.



Description:



Description:

Site restrictions

Do you want to
Restrict this site?: ☐

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title Surname First name
Organisation:
Address:
Phone: E-mail:

AHIMS site ID:

Date recorded:

Site Location Information

Site name:

Easting: Northing: Coordinates must be in GDA (MGA)

Horizontal Accuracy (m):

Zone: Location method:

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name

Organisation:

Address:

Phone: E-mail:

Site Context Information

Land Form Pattern: Land Use:

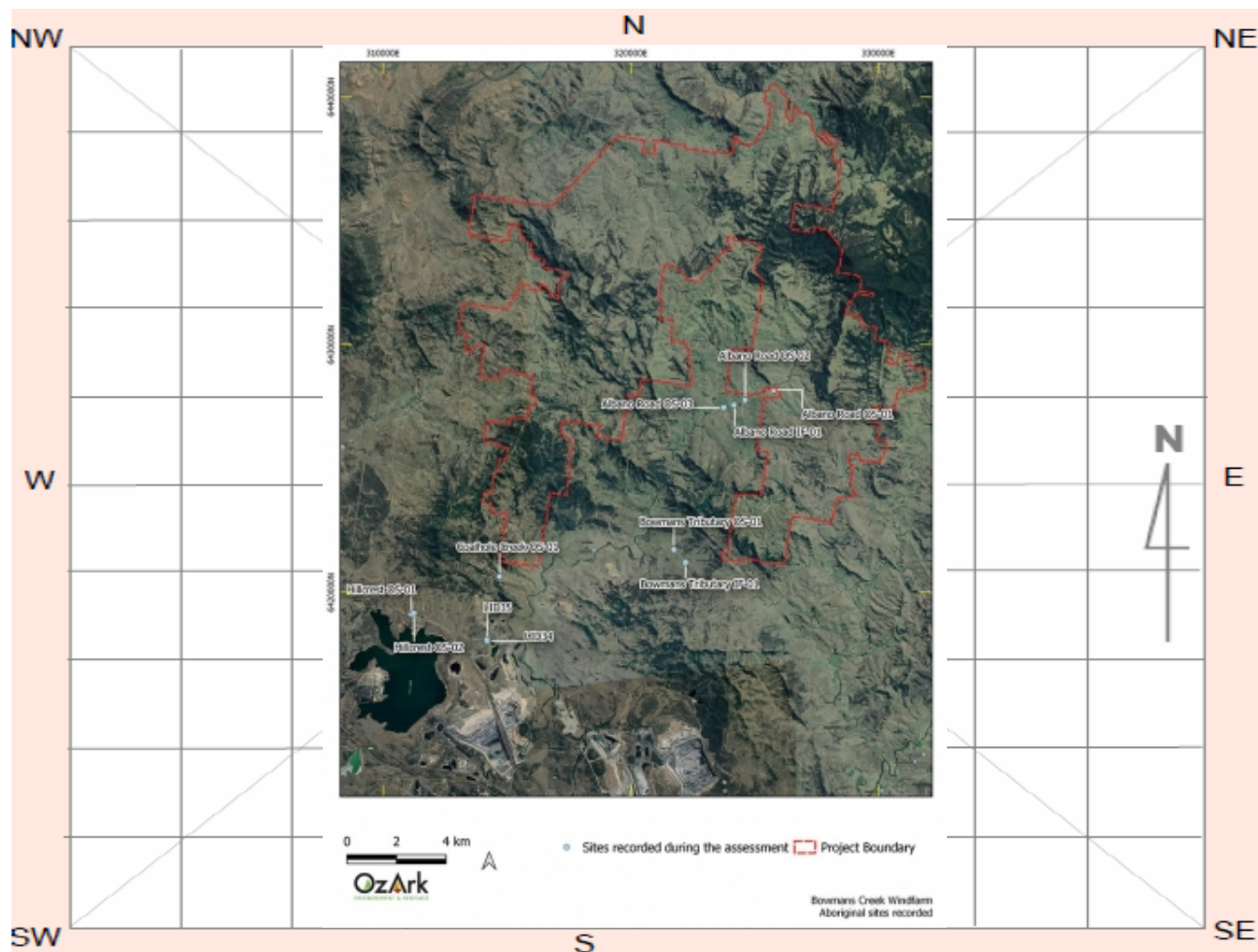
Land Form Unit: Vegetation:

Distance to Water (m): Primary Report:

How to get to the site:

Other site information:

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	5	26	10

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

The site consists of five artefacts: three flakes and two cores made from mudstone or silcrete. The site is located in an erosion scald on the west edge of a remnant tree line. The erosion scald measures approximately 30 m by 15 m.

Features:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.			

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Description:

Features:

3.

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

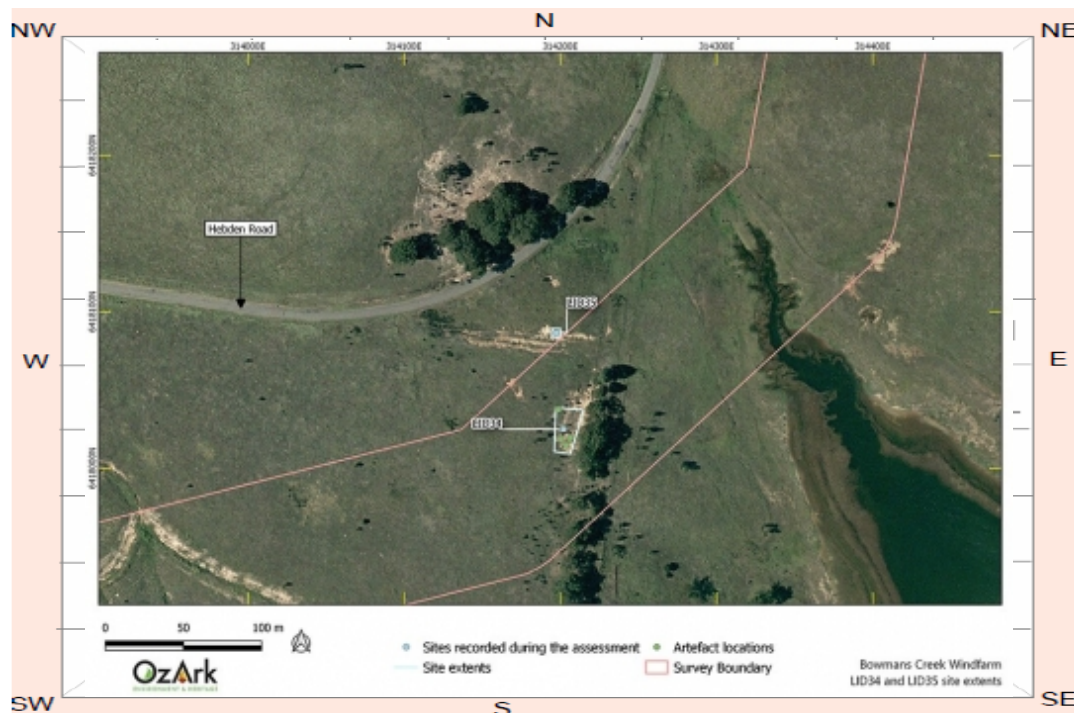
Description:

Scarred Trees			
Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soil at the site location consists of a fine-grained light grey-brown silt with pebble and gravel inclusions. There is also dry light grey-brown clay present in areas where the soil has eroded further. The site has low potential for in situ subsurface deposits.

Site plan



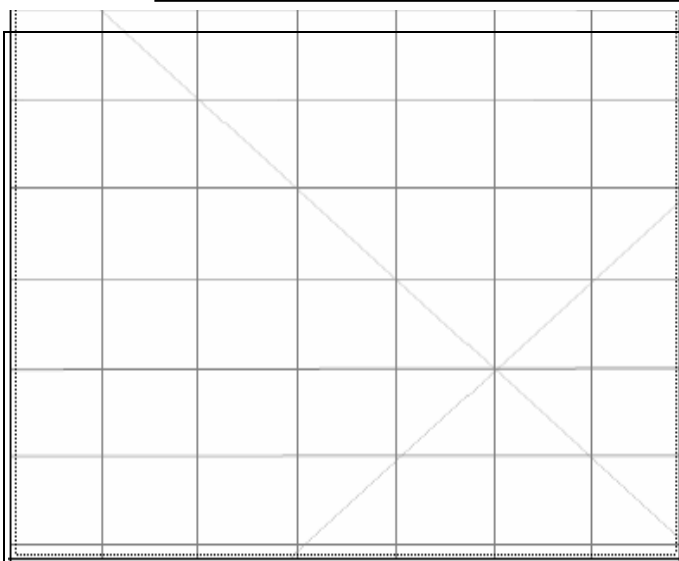
Site photographs



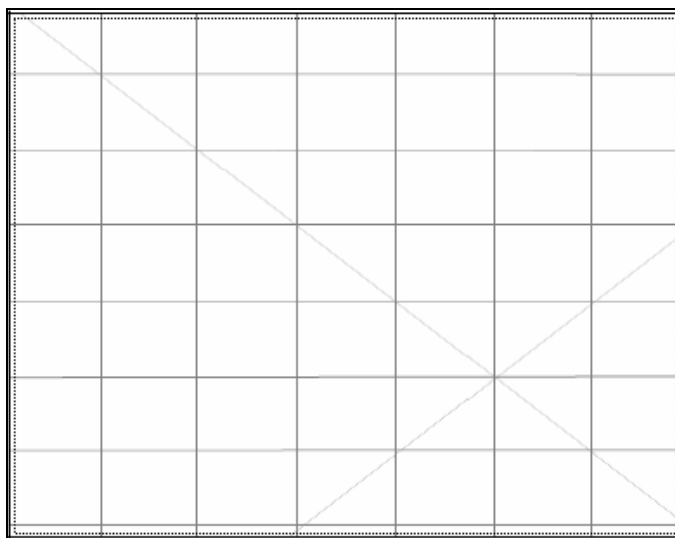
Description: View south of LID34 from the northern extent of site.



Description: View of an artefact from LID34.



Description:



Description:

Site restrictions

Do you want to
Restrict this site?: ☐

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title Surname First name
Organisation:
Address:
Phone: E-mail:

Hi Carlos,

37-3-0769

During the recent preparation of the Environmental Assessment for the proposed Ravensworth Project in the NSW Hunter Valley, Umwelt obtained an Aboriginal Heritage Licensing Agreement (#121) for provision and use of data on registered Aboriginal archaeological sites within the area. During the course of the Aboriginal cultural heritage assessment, existing data on registered archaeological sites within the project area was collated and analyzed; and many registered site locations were inspected during a seven week archaeological survey program. As a result of these works, a number of errors were identified within existing AHIMS sites records. In order to correct the above, Umwelt has provided detailed advice on errors identified in the attached document.

Please feel free to get in touch with Meaghan Russell, Jan Wilson or myself on (02) 4950 5322 if you have any queries regarding these errors.

Regards,

Julian Travaglia
Archaeologist

Umwelt (Australia) Pty Limited
PO Box 838
2/20 The Boulevarde
Toronto NSW 2283

Ph (02) 4950 5322
Fax (02) 4950 5737
www.umwelt.com.au

ATTACHMENT B – INCORRECT SITE COORDINATES

During review of AHIMS site data, 42 registered Aboriginal archaeological sites were identified as having incorrect site location coordinates due to errors in MGA/AMG made during site database entry; for example, where the site card states the coordinate is AMG but the same coordinate has been entered as MGA. Registered and actual locations for all sites are listed in **Table 2**.

Table 2 – Incorrect Site Location Coordinates, MGA/AMG Errors

AHIMS #	Site Name	Registered Location (Incorrect)			Actual Location (Correct)		
		Grid	Easting	Northing	Grid	Easting	Northing
37-2-2710	RW13 (Jerrys Plains)	GDA	311200	6406900	GDA	311304	6407089
37-2-2711	RW14 (Jerrys Plains)	GDA	311300	6406950	GDA	311404	6407139
37-2-2712	RW15 (Jerrys Plains)	GDA	311600	6406900	GDA	311704	6407090
37-2-2713	RW30 (Jerrys Plains)	GDA	311050	6407200	GDA	311154	6407390
37-2-2714	RW31 (Jerrys Plains)	GDA	311000	6407200	GDA	311104	6407390
37-2-2715	RW32 (Jerrys Plains)	GDA	311100	6406950	GDA	311204	6407139
37-2-2716	RW33 (Jerrys Plains)	GDA	311700	6407450	GDA	311804	6407640
37-2-2717	RW34 (Jerrys Plains)	GDA	311400	6407800	GDA	311504	6407990
37-2-2718	RW35 (Jerrys Plains)	GDA	311200	6408050	GDA	311304	6408240
37-2-2719	RW37 (Jerry Plains)	GDA	311100	6407200	GDA	311204	6407390

AHIMS #	Site Name	Registered Location (Incorrect)			Actual Location (Correct)		
		Grid	Easting	Northing	Grid	Easting	Northing
37-2-2720	RW44 (IF)	GDA	311700	6408623	GDA	311804	6408813
37-2-2721	RW60 (Jerrys Plains)	GDA	311050	6406999	GDA	311155	6407188
37-3-0566	SC-5	AGD	313110	6404940	GDA	32311	640494
37-3-0568	SC-8	AGD	313100	6404940	GDA	32376	640472
37-3-0762	Bowmans Ck 6	GDA	317540	6410576	GDA	317645	6410765
37-3-0763	Bowmans Ck 7	GDA	316437	6412953	GDA	316542	6413142
37-3-0764	Bowmans Ck 8	GDA	317100	6412140	GDA	317205	6412329
37-3-0765	Bowmans Ck 9	GDA	316773	6412221	GDA	316878	6412410
37-3-0766	Bowmans Ck 10	GDA	316728	6412377	GDA	316833	6412566
37-3-0767	Bowmans Ck 12	GDA	315476	6412248	GDA	315581	6412437
37-3-0768	Bowmans Ck_13	GDA	315877	6412751	GDA	315982	6412940
37-3-0769	Bowmans Ck 14	GDA	316308	6414181	GDA	316413	6414370
37-3-0770	Bowmans Ck 11	GDA	315719	6412304	GDA	315824	6412493
37-3-0771	Bowmans Ck 15	GDA	315720	6412488	GDA	315825	6412677
37-3-0772	Bowmans Ck 16	GDA	316254	6411297	GDA	316359	6411486
37-3-0775	RW3 (Camberwell)	GDA	313450	6407550	GDA	313554	6407739

AHIMS #	Site Name	Registered Location (Incorrect)			Actual Location (Correct)		
		Grid	Easting	Northing	Grid	Easting	Northing
37-3-0777	RW41 (Camberwell)	GDA	312700	6408450	GDA	312804	6408639
37-3-0778	RW42 (Camberwell)	GDA	312600	6408800	GDA	312704	6408989
37-3-0779	RW43 (IF)	GDA	312150	6408900	GDA	312254	6409089
37-3-0780	RW45 (IF)	GDA	313956	6408200	GDA	312504	6408389
37-3-0781	RW46 (Camberwell)	GDA	313402	6404008	GDA	313506	6404197
37-3-0782	RW47 (Camberwell)	GDA	313500	6404150	GDA	313604	6404639
37-3-0783	RW48 (Camberwell)	GDA	313531	6404294	GDA	313654	6404639
37-3-0784	RW49 (Camberwell)	GDA	313118	6404880	GDA	313222	6405069
37-3-0787	RW52 (Camberwell)	GDA	312335	6405854	GDA	312354	6406039
37-3-0788	RW53 (IF)	GDA	312283	6405900	GDA	312387	6406089
37-3-0790	RW55 (Camberwell)	GDA	312945	6406031	GDA	313049	6406220
37-3-0791	RW56 (Camberwell)	GDA	312960	6405900	GDA	313064	6406089
37-3-0792	RW57 (Camberwell)	GDA	312940	6406150	GDA	313044	6406339

During review of AHIMS site data, incorrect site coordinates were also identified for an additional three registered Aboriginal archaeological sites, due to incorrect site coordinates listed on the original site cards. Registered and actual locations for all sites are listed in **Table 3**.

Table 3 – Incorrect Site Location Coordinates, Site Card Errors

AHIMS #	Site Name	Registered Location (Incorrect)			Actual Location (Correct)		
		Grid	Easting	Northing	Grid	Easting	Northing
37-3-0785	RW50 (Camberwell)	GDA	313850	6407100	GDA	313254	6405039
37-3-0789	RW54 (Camberwell)	GDA	313850	6407100	GDA	312254	6406289
37-3-0793	RW58 (Camberwell)	GDA	312900	6406600	GDA	313480 ¹	6403870 ¹

Given the above, Umwelt recommends that both the AHIMS site register and AHIMS site cards for all above sites are amended to reflect their actual location.

¹ Approximate MGA site coordinates only, based on review of site mapping provided in original archaeological survey report as site card and report contain incorrect site location coordinates.

¹ Approximate MGA site coordinates only, based on review of site mapping provided in original archaeological survey report as site card and report contain incorrect site location coordinates.



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

New Recording ☒ Additional

information ☐

Site name	Bowmans Ck 14	NPWS Site Number	37-3-0769
Owner/manager	Glendell Joint Venture		
Owner Address	C/- Liddell Coal, P.O. Box 7, Singleton. 2330.		
Location	Approximately 22 kilometres north-west of Singleton and approximately 9 kilometres north-west of Camberwell. The Main Northern Railway runs is approximately 1.5 kms to the south-west and the New England Highway is approximately 2.5 kms to the south-west.		
How to get to the site	West of Hebden Road. See attached map.		
1:250,000 map name	Singleton	NPWS map code	
AMG Zone	56	AMG Easting	316308
		AMG Northing	6414181
Method for grid reference	Hand-held GPS	Map scale (if method = map)	1:25,000
		Map name	Camberwell 9133-111-S
NPWS District Name (see map)	Upper Hunter	NPWS Zone (see map)	Northern Zone
Portion no.	867083 Lot 353	Parish	Vane
Site type(s)	Isolated artefact	Site type code (NPWS use only)	
Description of site and contents CHECKLIST: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scar, grooves in rock. DEPOSIT: colour, texture, estimated depth, stratigraphy, contents-shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types. ART: area of decorated surface, motifs, colours, wet/dry pigment, engraving technique, no. of figures, sizes, patination. BURIALS: number & condition of bone, position, age, sex, associated artefacts. TREES: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth. QUARRIES: rock type, debris, recognisable artefacts, percentage quarried	Site located on midslope, 100m SE of Bowmans Creek, near house site. Artefact found in scour, 10m X 3m, on unformed road (50% visibility). Area disturbed by road clearance. Site contained 1 mudstone flake. Aboriginal significance - low. Archaeological significance - low. PAD - unlikely due to highly disturbed skeletal soils and slope wash.		



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Land form	midslope		Aspect	WSW	Slope	2 degrees
Mark position of the site						
Local rock type	sandstone, conglomerate		Land use/effect	agricultural		
Distance from drinking water	100m to Bowmans Ck		Source	Permanent water in Bowmans Creek		
Resource zone (eg. estuarine, river, forest)	Riparian		Vegetation	plume grass, saffron thistle, slender bamboo, couch grass		
Edible plants	rushes, typha, water ribbons, swamp dock, native willow		Faunal resources (include shellfish)	brown snakes, black snakes, goanna, echidna, grey kangaroo, tortoise, crayfish, wood ducks, water dragons, silver perch, crayfish, swamp hens		
Other exploitable resources (eg. ochre)	conglomerate pebbles					
Are there other sites in the locality	Yes	Are they in the Sites Register	No	Other site types include	Artefact scatters, isolated artefacts, rock engraving	
Site condition	Poor					
Management recommendations	Glendell/Liddell mines to be made aware of site for future reference if this area is to be mined					
Have artefacts been removed from site	No		When			
By whom			Deposited at			
Consent applied for	☐		Consent issued	☐		
Date of issue			Consent number			
Reason for investigation	Proposed conservation offset					
Were local Aborigines contacted or present for the recording	☐ Not contacted ☒ Contacted and present ☐ Contacted but not present		Names and addresses	Victor Perry Upper Hunter Wonnarua Council Inc. P.O. Box 184, Singleton. 2330.		
Is the site important to local Aborigines	Yes					
Verbal/written reference sources				ASR report number(s) (or title)	C- C-	



Aboriginal Sites Register of NSW

NPWS, PO Box 1967, Hurstville NSW 2220

Standard Site Recording Form

Photographs taken	Yes	No. of Photos attached	0
Site recorded by	Janice Wilson	Date of recording	17 October, 2001
Address/institution	Umwelt (Australia) Pty Limited		



Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 37-3-1598

Date recorded: 02-12-2020

Site Location Information

Site name: LTM-IF1

Easting: 316810 Northing: 6414388 Coordinates must be in GDA (MGA)

Horizontal Accuracy (m): 2

Zone: 56 Location method: Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name
Mr. Rochford Harrison

Organisation: OzArk Environmental and Heritage Management

Address: 145 Wingewarra St, Dubbo, 2830

Phone: 0268820118 E-mail: harrison@ozarkehm.com.au

Site Context Information

Land Form Pattern: Rolling Hills Land Use: Mining

Land Form Unit: Slope Vegetation: Cleared

Distance to Water (m): 320 Primary Report:

How to get to the site: The site is approximately 1.3 km west of Hebden Road, 20 km southeast of Muswellbrook.

Other site information: Soils consisted of hard packed light brown sandy loam. Vegetation comprised high grasses and regrowth casuarina. Disturbances include track construction and erosion.

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	2

Description:

The site consists of a single mudstone proximal fragment located on the eastern edge of an existing access track

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.		

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

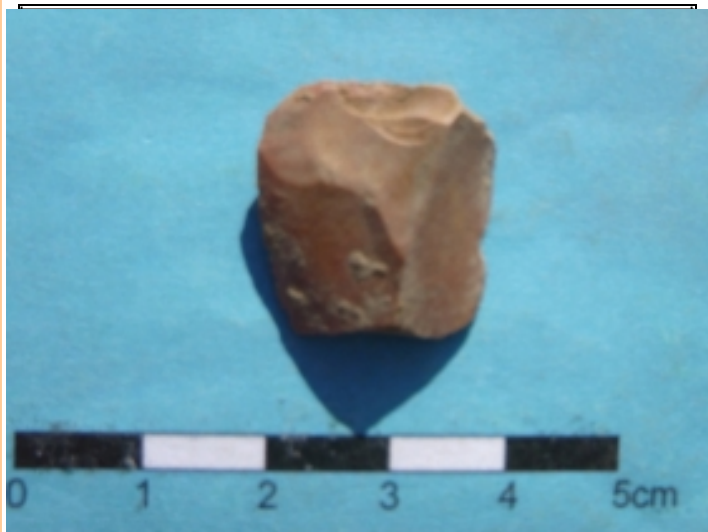
Other Site Info:

Soils consisted of hard packed light brown sandy loam. Vegetation comprised high grasses and regrowth casuarina. Disturbances include track construction and erosion.

Site plan



Site photographs



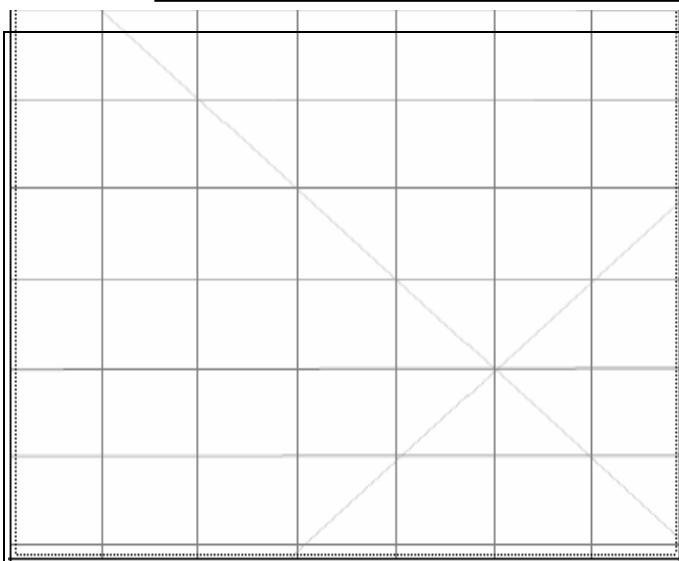
Description:

View of artefact

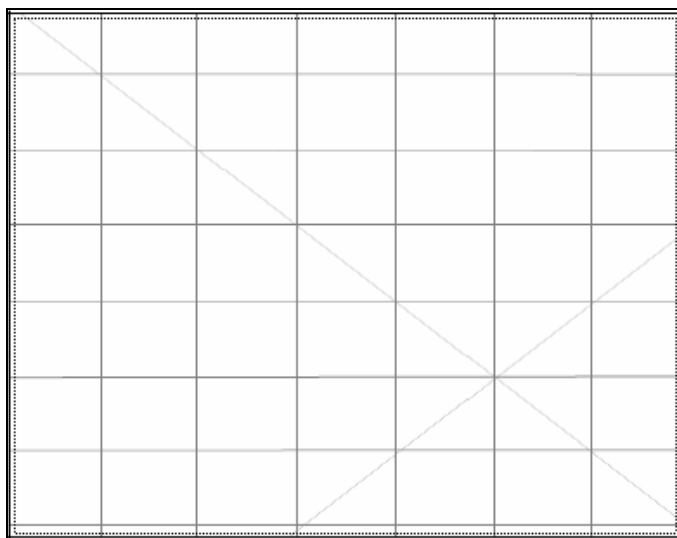


Description:

View west along track to site



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

☐

Restriction type:

Gender

☐

General

☐

Location

☐

Why is this site restricted?:

Further information contact

Title

Surname

First name

Organisation:

Address:

Phone:

E-mail:

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 37-3-1599

Date recorded: 02-12-2020

Site Location Information

Site name: LTM-IF2

Easting: 316687 Northing: 6414403 Coordinates must be in GDA (MGA)

Horizontal Accuracy (m): 2

Zone: 56 Location method: Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title Surname First name
Mr. Rochford Harrison

Organisation: OzArk Environmental and Heritage Management

Address: 145 Wingewarra St, Dubbo, 2830

Phone: 0268820118 E-mail: harrison@ozarkehm.com.au

Site Context Information

Land Form Pattern: Rolling Hills Land Use: Mining

Land Form Unit: Slope Vegetation: Cleared

Distance to Water (m): 205 Primary Report:

How to get to the site: The site is approximately 1.3 km west of Hebden Road, 20 km southeast of Muswellbrook.

Other site information: Soils consisted of hard packed light brown sandy loam. Vegetation comprised high grasses and regrowth casuarina. Disturbances include track construction and erosion.

Site location map



Site contents information

open/closed site:

Site condition:

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
1. Artefact	1	2

Description:

The site consists of a broken silcrete flake, located on the northern edge of an access track.

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)
2.		

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

3.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

4.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Other Site Info:

Soils consisted of hard packed light brown sandy loam. Vegetation comprised high grasses and regrowth casuarina. Disturbances include track construction and erosion.

Site plan



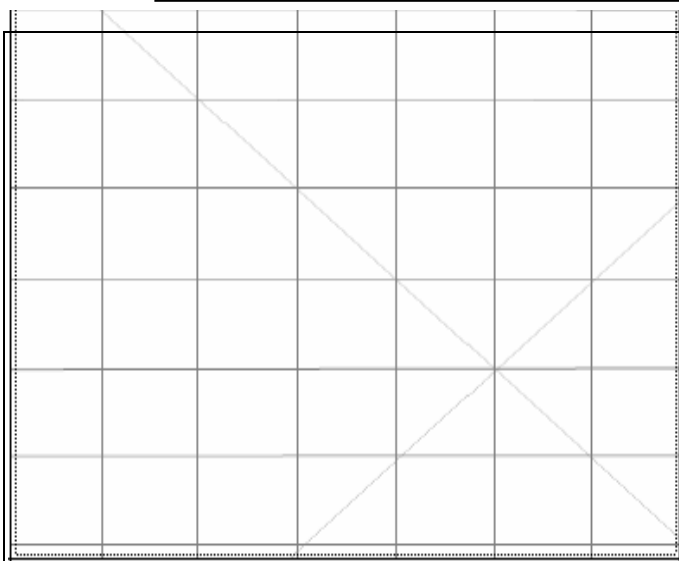
Site photographs



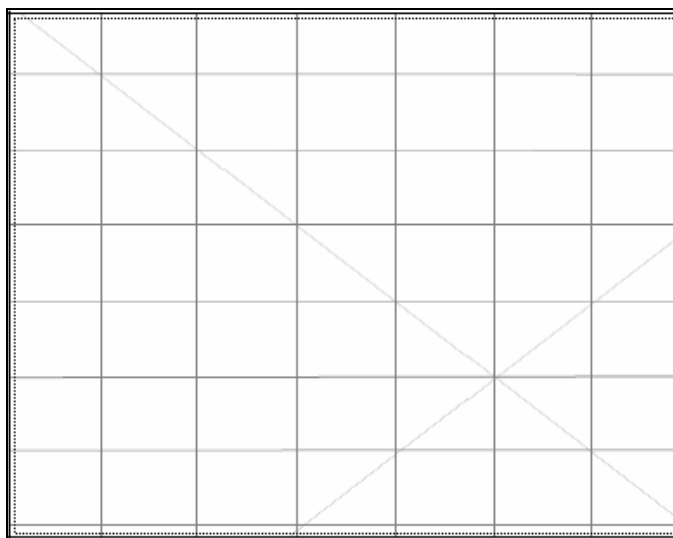
Description: View of silcrete artefact.



Description: View east along track past artefact site on left.



Description:



Description:

Site restrictions

Do you want to
Restrict this site?: ☐

Restriction type: Gender ☐ General ☐ Location ☐

Why is this site restricted?:

Further information contact

Title Surname First name

Organisation:

Address:

Phone: E-mail: