ULAN
COAL

GLENCORE

Heritage Management Plan

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1 Commitment and Policy

Ulan Coal Mines Limited (UCML) is situated in the central west of New South Wales. It is located in the Mid-Western Regional Council (MWRC) Local Government Area (LGA) near the village of Ulan; approximately 38 kilometres north-northeast of Mudgee and 19 kilometres northeast of Gulgong (**Figure 1**). UCML is a joint venture, managed by Glencore Coal Assets Australia (CCA).

UCML received Project Approval (PA 08_0184) from the NSW Department of Planning and Environment (DP&E, formerly Department of Planning (DoP)) on 15 November 2010 for continued operations. This Project Approval covers current and proposed mining of the Ulan Mine Complex for the next 21 years, and production of up to 20 Mtpa (million tonnes per annum) of product coal. This approval incorporates both underground and open cut mining operations undertaken 24 hours a day, seven days per week. The existing and proposed underground and open cut mining activities are referred to within as the Ulan Mine Complex (refer to **Figure 2**).

On 7 December 2011 PA 08_0184 was modified (MOD1) to incorporate the operations as described in the Environmental Assessment titled Ulan Coal Continued Operations North 1 Underground Mining Area, Minor Modification to Ulan No.3 & Ulan West Mine Plans & Proposed Concrete Batching Plant (Umwelt, 2011) (refer to **Figure 2**). An assessment of the impact of the s75w modification on Aboriginal Heritage Sites was undertaken by South East Archaeology (SEA) (Kuskie, 2010) as part of the s75w modification environmental assessment (EA) (Umwelt, 2011). This Project Approval was subsequently replaced by the Land and Environment Court final orders, issued on 5 April 2012. A second modification to the Project Approval (MOD2) relating to changes to the Ulan West Mine Plan and Construction Blasting (Umwelt, 2012) was approved on 29 May 2012. A number of updated and additional conditions were included within the Project Approval to reflect the activities as described within MOD2.

1.2 Purpose

This Heritage Management Plan (HMP) has been prepared to address the requirements of the *National Parks and Wildlife Act 1974* (NP&W Act), the *Heritage Act 1977* (NSW), and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environmental Planning and Assessment Act 1979* (EP&A Act). Additionally this HMP also addresses the requirements under Development Approval (DA) 113-12-98, until this approval is surrendered after the completion of mining in Longwall (LW) W3 and LW 26. It is noted that where there are any inconsistencies between PA 08_0184 and DA 113-12-98 then PA 08_0184 shall prevail to the extent of any inconsistency. The Conditions of Approval relevant to Aboriginal heritage and where these are addressed in this HMP are listed in **Section 2.1**

Implementation of this HMP also provides guidance for the engagement with the Aboriginal Community in accordance with CAA HSEC PCL 0013 Aboriginal Cultural Heritage – NSW and CAA HSEC PCL 0016 10.01 Stakeholder Engagement. Specific engagement strategies are further detailed in ULN SD PLN 0015 Social Involvement Plan (SIP).

This HMP:

- Establishes policies and actions for compliance with the *EPBC Act, Heritage Act, NP&W Act and EP&A Ac*t, PA 08_0184 and EPBC Approval;
- Addresses key risks identified in the UCML Sustainable Development Risk Register (*ULN SD ANN 0054*) in accordance with *ULN SD PLN 0050* (Environmental Management Strategy), and detail the necessary mitigation & management measures;
- Aligns UCML's operating philosophy with the Glencore Corporate Practice (GCP);
- Defines procedures in relation to the management and mitigation of Project impacts on Aboriginal, European and natural heritage;
- Defines responsibilities of personnel;
- Establishes key performance indicators;
- Facilitates a process of communication and decision-making; and

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- Assists UCML to meet legal and ethical obligations in relation to Aboriginal heritage, the Aboriginal community, European and natural heritage.

1.3 Scope

This HMP applies to the Ulan Coal Continued Operations Project area, as shown on **Figure 2** (blue boundary). This HMP specifically relates to the issue of Aboriginal, European and natural heritage.

Figure 1 - Locality Plan

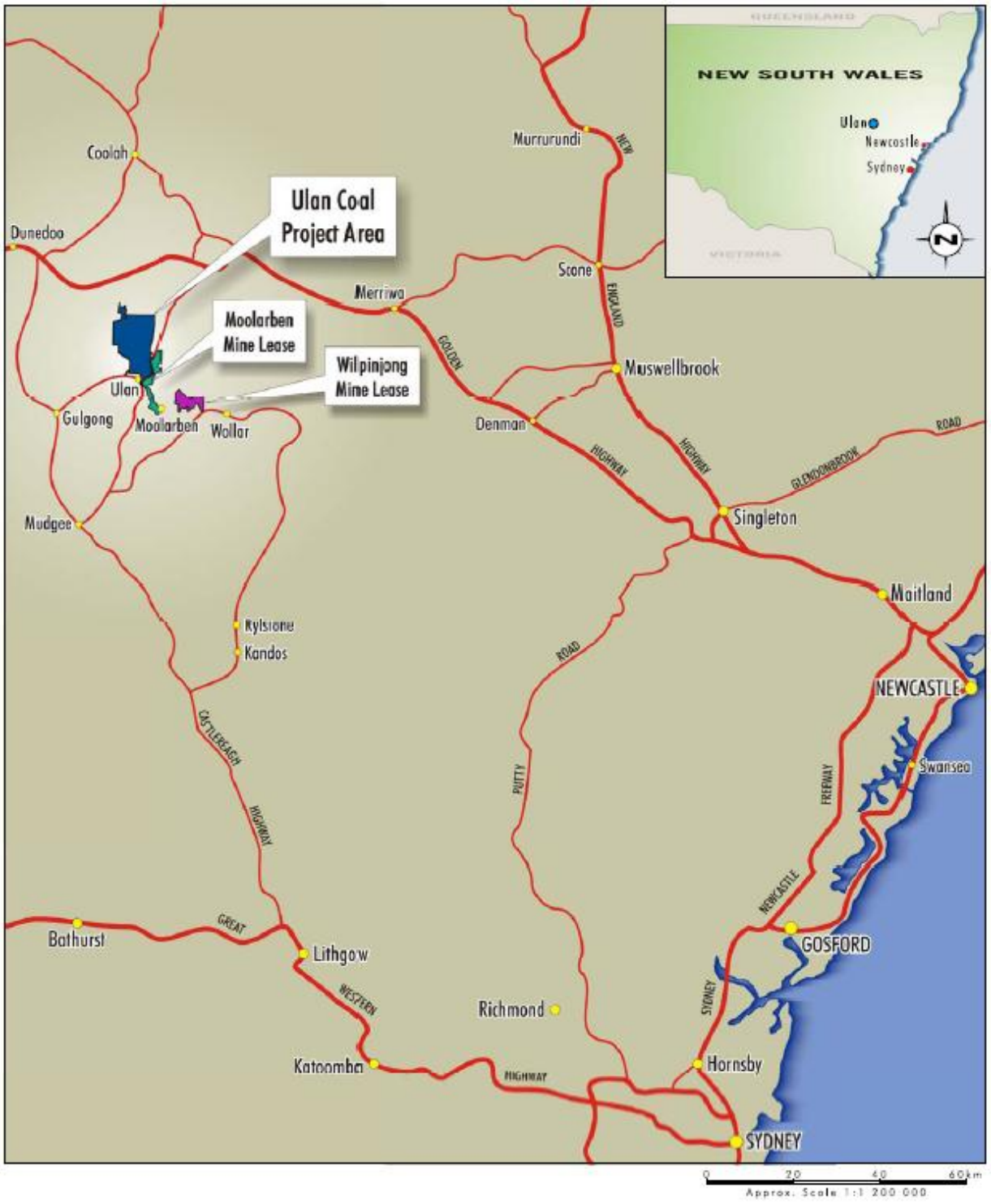

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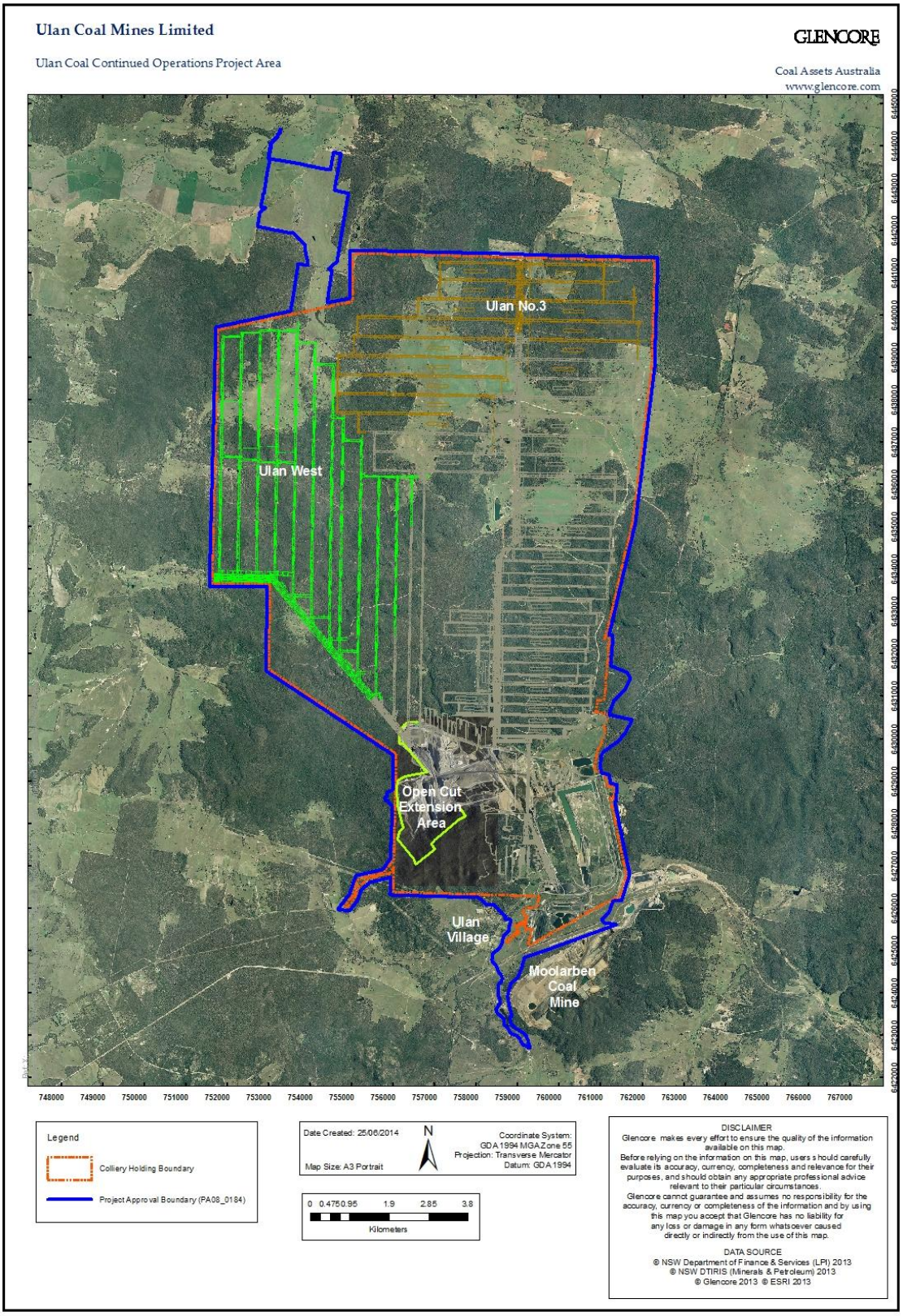
Figure 2 - Ulan Coal Continued Operations Project Area



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1.4 Consultation

Consultation was undertaken with Registered Aboriginal Parties (RAPs) and Government agencies during the preparation of Version 7 of this plan.

1.4.2 Registered Aboriginal Parties

The RAPs for the Continued Operations Project comprised:

- Warrabinga Native Title Claimants Aboriginal Corporation (Warrabinga);
- North East Wiradjuri Company Ltd (NEW);
- Mudgee Local Aboriginal Land Council (Mudgee LALC);
- Murong Gialinga Aboriginal and Torres Strait Islanders Corporation (MGATSIC);
- Warranha Ngumbaay; and
- Wellington Valley Wiradjuri Aboriginal Corporation1.

Consultation with RAPs was undertaken on 12 June 2014. Changes made to the management plan were discussed and a copy of the draft management plan was provided to the RAPs at the June 2014 Heritage Meeting for review. No changes were made to Version 6 following this consultation.

1.4.3 Government

Consultation with the Office of Environment and Heritage (OEH) and Mid-Western Regional Council (MWRC) was undertaken on 15 June 2014. No comments were received from OEH or MWRC. Consultation with the DP&E Version 6 of this Management Plan was submitted for comment to the DP&E on 30 June 2014. Comments were received 5 March 2015 relating to formatting changes and specific clarification suggestions. Version 7 (addressing DP&E comments) was resubmitted to DP&E on 30 June 2015 and to OEH (Heritage Branch) and MWRC on 23 July 2015. Version 7 was subsequently approved by DPE on 11 November 2015.

Current approvals, correspondence verification and a full consultation history for this Heritage Management Plan is provided in **Appendix F**.

1.5 Baseline Data

1.5.1 Heritage Investigations at UCML

UCML has been subject to numerous Aboriginal, European and natural heritage investigations since 1980. Portions of the Project area were investigated for Aboriginal heritage by Haglund and Associates, between 1980 and 1999, and South East Archaeology since the year 2000. Godden Mackay (1992), Aitken and Broadley (1997) and the Australian Museum Business Services (1996) have also undertaken studies in relation to European and natural heritage at Ulan.

These heritage investigations have typically been conducted in relation to applications for development approval or in compliance with approval conditions and/or to implement recommended outcomes from initial heritage assessments. These studies have often been limited to specific portions of the Project area, have involved sampling of varying levels of intensity, and have involved methodologies, Aboriginal community consultation and reporting that, although

[1] Became a registered Aboriginal stakeholder during 2014

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compliant with existing requirements at the time, may not be consistent with current OEH and DP&E guidelines.

Detailed information of these studies is available from the UCML Library, with a summary presented in the Ulan Coal Continued Operations project assessment report by Kuskie (2009) for Aboriginal heritage and Umwelt (2009) for European heritage.

A comprehensive Aboriginal heritage assessment for the Continued Operations Project was undertaken by South East Archaeology and reported on by Kuskie (2009). This heritage assessment was further supplemented by an additional study over the North 1 Panels for the s75w modification (Kuskie 2010).

The Aboriginal heritage investigation focused on the areas of potential subsidence impacts from the Ulan West and Ulan No. 3 Underground Mines, and areas of potential surface impacts from proposed infrastructure and the open cut extension, as known at that time (refer to **Figure 2**). Although extensive heritage surveys were undertaken with the Aboriginal stakeholders over 88% of the potential impact area of approximately 5,431 hectares (as it was known at the time of the Project application), due to access constraints or modifications to the Project, approximately 12% of the area that may be subject to impacts was not sampled (refer to **Figure 3**). These gaps in the survey coverage are addressed within **Section 3.7** of this Plan.

Much of the remainder of the 13,470 hectare Project area has not been subject to systematic archaeological investigation consistent with current OEH requirements, although portions of this area have been subject to assessments consistent with previous standards (refer to **Figure 3**). In general, this area will not be subject to impacts from the Continued Operations Project and, where future impacts may be proposed, procedures for addressing these are outlined within **Section 3.7** of this Plan.

A detailed Aboriginal occupation model for the Ulan locality and a predictive model of site location were devised and reassessed during the Continued Operations Project (refer to Kuskie 2009). Overall, identified stone artefacts occur at a very low mean density within the Project study area. The evidence indicates that Aboriginal utilisation of the proposed impact area was generally of a low intensity. In a large part this probably relates to the limited presence of higher order watercourses within the proposed impact area, being situated on and around the crest of the Great Dividing Range.

For the Continued Operations Project, a range of mitigation and management strategies were considered and recommended strategies presented for the 1,005 Aboriginal sites or Potential Archaeological Deposits (PADs) within the potential impact area (refer to Kuskie 2009). These strategies are documented in this Plan, consistent with PA 08_0184. After implementation of these management and mitigation measures, it was concluded that the risk of residual impacts to Aboriginal heritage from the Project will be moderate within a local context and very low within a regional context.

Similarly a comprehensive European and natural heritage assessment was undertaken of the Ulan West and Ulan No. 3 underground mining areas and the proposed open cut extension by Umwelt (Umwelt 2009). This European and natural heritage assessment revealed a total of 26 potential sites/items are located within the project area and supplemented the work that had previously been undertaken by various heritage studies since the 1980's.

1.5.2 Aboriginal Heritage Sites

Prior to the conduct of any Aboriginal archaeological investigations at Ulan in 1980, only three Aboriginal sites had been recorded within the immediate area of the UCML leases. The studies undertaken by UCML have now resulted in the knowledge of 1,503 Aboriginal sites or rock shelters with PADs within the Project area. These sites are summarised in **Table 1** and their locations are marked on **Figure 4**[2]**.** Detailed plans of Aboriginal heritage sites are accessed via GIS.

Detailed information on all identified Aboriginal sites within the Project area can be accessed via the following:

- The current UCML Aboriginal Site Database for the Project area (presently Revision 14, June 2014, entitled UCML *AbSiteDB Rev14 June 2014*);
- The current UCML Global Information System (GIS) files showing the dot point and spatial distribution of Aboriginal sites within the Project area (presently the *UCMLLithicSiteShapesJune2014* and *UCML AbSiteDB Rev14June2014 GIS files*);
- **Appendix B** of this Plan (*Management Strategies for Identified Aboriginal Sites – ULN SD ANN 0051*), which lists known sites within the Project study area/potential impact area at the time of the Continued Operations heritage assessment (Kuskie 2009) and supplementary report for the North 1 Panels (Kuskie 2010) and which has been updated to include newly identified sites and specify actions that have occurred to sites under this Plan;
- **Appendix D** (*Aboriginal Heritage Site Location Maps – ULN SD ANN 0050*) of this Plan provides detailed maps of all known Aboriginal sites within the Project study area/potential impact area at the time of the Continued Operations heritage assessment (Kuskie 2009) and supplementary report for the North 1 Panels (Kuskie 2010);
- The OEH Aboriginal site records (accessed via the UCML Environment and Community Manager (ECM)); and
- Detailed Aboriginal site descriptions within the heritage reports in the UCML Library, particularly Volume B of Kuskie (2009 & 2010).

[2] Based on the Aboriginal heritage study area/potential impact area at the time of the Environmental Assessment (Kuskie 2009 & 2010) and Revision 13 14 Project Area Aboriginal Site Database (Aug 2011June 2014).

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Figure 3 - Areas Subject to Archaeological Survey Sampling (consistent with OEH requirements)

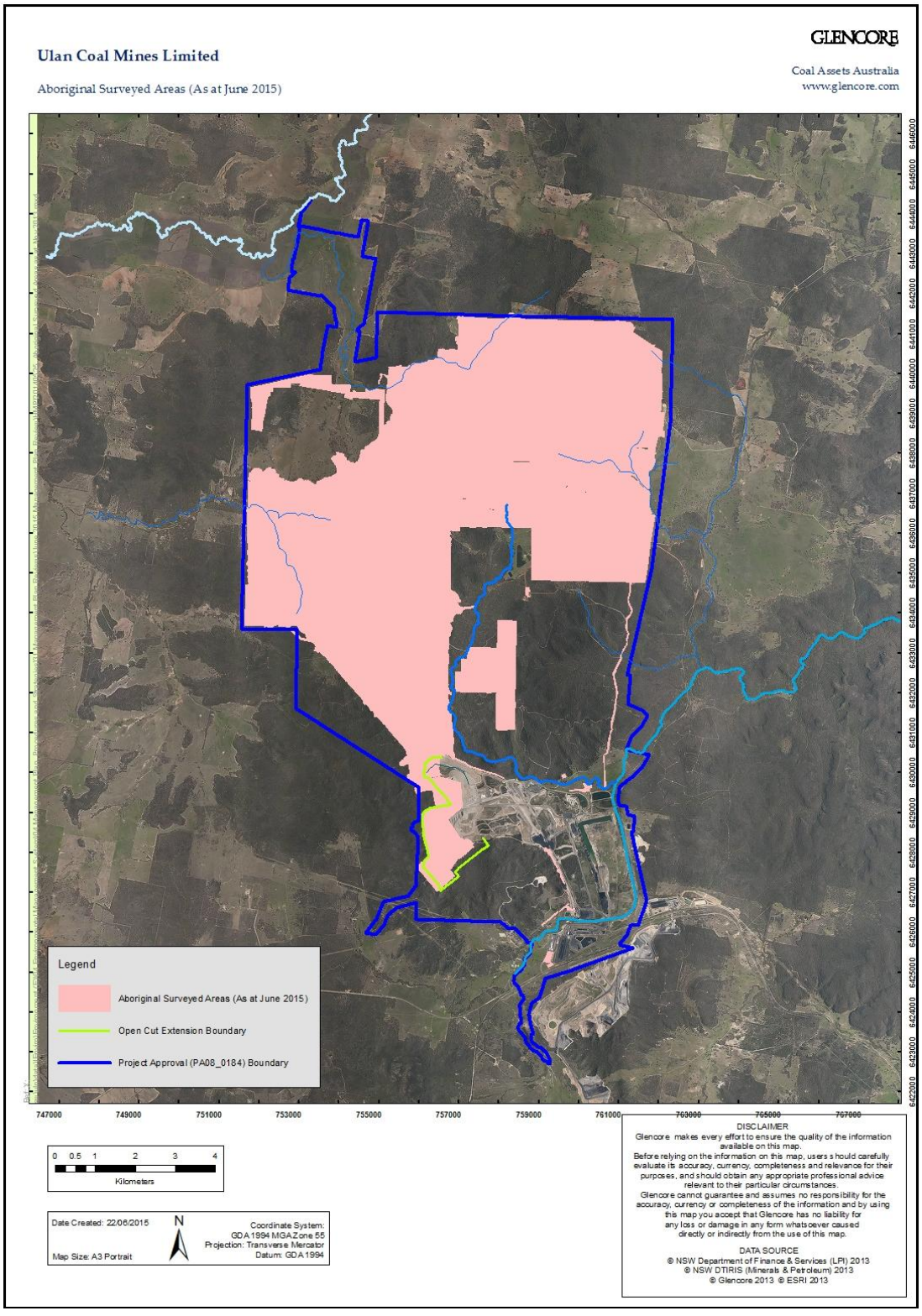

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Figure 4 - Location of Aboriginal Heritage Sites within the Project Area

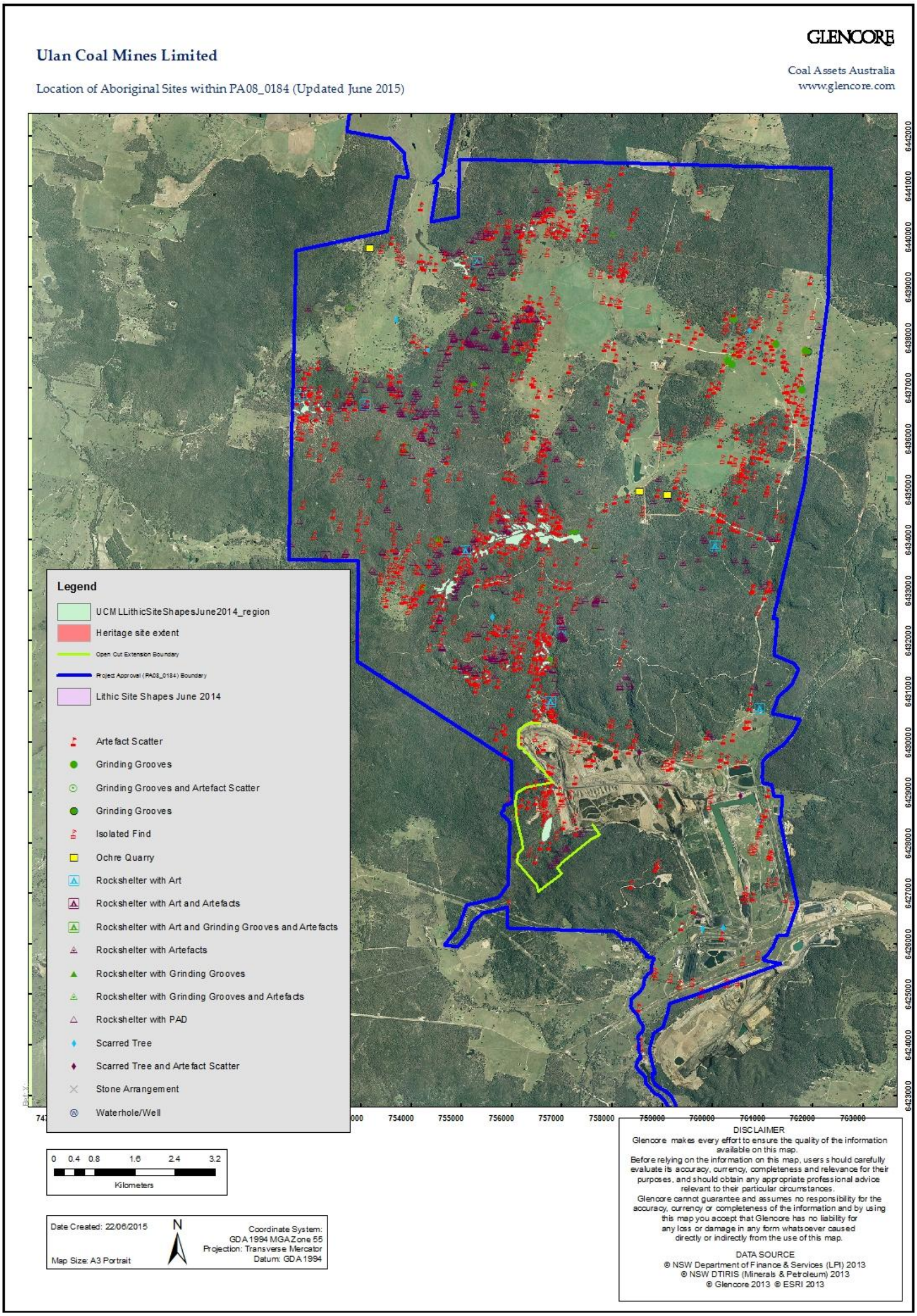

Table 1 - Summary of Aboriginal Heritage Evidence Recorded within the Project area.

Site Type	Total
Artefact Scatter	552
Grinding Grooves	14
Grinding Grooves and Artefact Scatter	4
Isolated Find	347
Ochre Quarry	3
Rockshelter with Art	9
Rockshelter with Art and Artefacts	4
Rockshelter with Art and Grinding Grooves and Artefacts	1
Rockshelter with Artefacts	176
Rockshelter with Grinding Grooves	3
Rockshelter with Grinding Grooves and Artefacts	8
Rockshelter with PAD	365
Scarred Tree	8
Scarred Tree and Artefact Scatter	2
Stone Arrangement	6
Waterhole/Well	1
Total	**1503**

Source: UCML Aboriginal Site Database Revision 14 Project Area (June 2014).

In relation to the Aboriginal Site Database, it is noted that the site grid references are only one point of the visible evidence (on the surface) - not the actual extent of the site. For the physical extent of evidence visible on the surface the GIS broad area shape files must be used. These are only applicable for artefact scatter sites recorded after 2001.

The Aboriginal Site Database may contain errors with grid references, particularly for sites recorded prior to 2001 which have not been revisited by South East Archaeology. This can apply to site data generated from topographic maps, and site data from older (Global Position System (GPS) readings. In general, a potential error of up to 50 metres should be applied to all grid references prior to 2006 in this database and 20 metres to all grid references from 2007. Specific consideration is this error is included within the Ground Disturbance Permit process, *Section 3.7.2 ULN SD PLN 0050* (Environmental Management Strategy),

All Aboriginal sites within the Project area have been allocated a unique Ulan ID Number. Some Ulan ID numbers have been deleted (for example, due to removal of previous duplicate entries) and have not been reallocated.

Aboriginal sites within the Project area are listed on the OEH Aboriginal Heritage Information Management System (AHIMS). No Aboriginal heritage sites are listed within the Project area on any other heritage registers or planning instruments, including the Mid-Western Regional Interim Local Environmental Plan 2008, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, *EPBC Act 1999* or the *Australian Heritage Council Act 2003* (such as the Register of the National Estate, Commonwealth Heritage List and National Heritage List).

The Aboriginal representatives have not disclosed any specific knowledge of sites or places associated with ceremonies, spiritual/mythological beliefs or traditional knowledge, which date from the pre-contact period and have persisted until the present time, within the Project study area.

The Aboriginal representatives have not disclosed any specific knowledge of sites or places associated with historical associations, which date from the post-contact period and are remembered by people today (for example, plant and animal resource use areas and known camp sites), within the Project study area.

The Aboriginal representatives have disclosed a number of associations with the Project study area of contemporary significance and identified the contemporary value of the archaeological evidence (refer to Kuskie 2009, 2010).

The significance of the Aboriginal heritage evidence within the Project study area (as known at the time of the Project application) was assessed against criteria widely used in Aboriginal heritage management (refer to Kuskie 2009, 2010). All heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape. The Aboriginal stakeholders expressed an interest in this heritage evidence and its contemporary cultural significance.

In overall terms, 74.8% of the sites within the Project study area, as known at the time of the application, were assessed as being of low significance within a local context, with 10.7% of sites assessed as being of low to moderate significance, 6.3% of moderate significance, 4.9% of moderate to high significance and 3.3% of high significance. Five sites were assessed as potentially being of significance within a regional context, four of them stone arrangements and one a large artefact scatter site at Old Ulan Village. However, if occupation deposits were to be identified in rock shelters or open contexts that relate to occupation older than 5,000 years of age, these may also rate as being of regional significance.

1.5.3 European and Natural Heritage Site

The European and natural heritage assessment revealed that a total of 26 potential sites/items are located within the Project area. The locations of the sites/items are illustrated in **Figure 5**. The significance of these sites/items is summarised in **Table 2**. In general terms, the majority of the identified and potential heritage components of the site are not of local or state significance with no or low research potential. The only significant European and natural heritage sites/items located within the Project area are Old Ulan Village, Bobadeen Station (site/item CI07), Apple Tree Flat farm complex (PK243) and the Talbragar Fish Fossil Reserve.

Other potential European heritage sites/items discovered included:

- timber getting sites;
- rock overhangs/shelters;
- former stockyards;
- a homestead complex;
- a metal windmill;
- unidentified, out of context, coins; and
- out of context bottles.

In order to clarify the significance of the potential sites/items their levels of significance have been re-assessed in accordance with the NSW Heritage Council endorsed ‘Assessing Significance’ guidelines to determine that the recommended site management is appropriate. The level of significance is included in **Table 2** and a summary statement of significance discussed below.

The Project area is typical of a rural landscape within the Central Tablelands of NSW. The history of the area from the mid nineteenth century, including its settlement by Europeans and subsequent use as cleared pastoral and agricultural land, through to its exploitation for timber and mineral resources, is reflected in the low potential of the archaeological resource and in the evidence of houses and other structures/shelters and former timber getting sites present within the Project area.

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With the exception of Old Ulan Village and the Talbragar Fish Fossil Reserve, potential heritage sites/items extant in the Project area are typical of the area as a large rural landscape and are unlikely to provide further unknown information regarding the area's history and development. There are unlikely to be any intact archaeological remains associated with any of the extant structures on the site, with the exception of Old Ulan Village.

Evidence of extant derelict houses (with the exception of the original portion of the house at Apple Tree Flat (site/item PK243) which could date to as early as the mid 1800s), timber getting camps, shelters and out of context dumps of objects/artefacts demonstrate the typical pattern of land use and historical development of the area and are unlikely to provide information not already known from the historical record.

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Figure 5 - Location of European and Natural Heritage sites within the Project Area

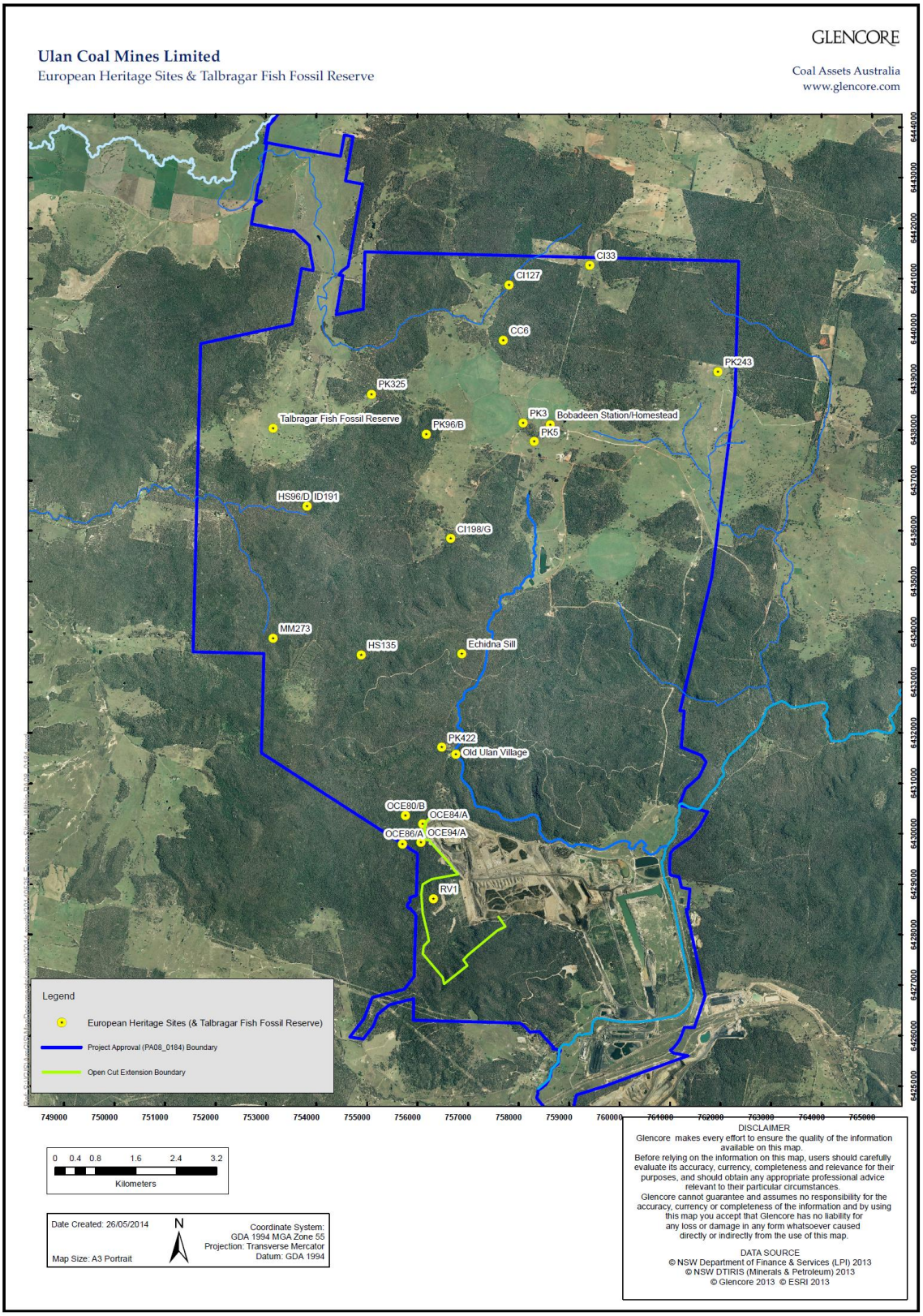

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Table 2 - European and Natural Heritage evidence recorded within the Project Area.

Site/Item	Site Type/Description	Level of Significance
Old Ulan Village and site/item PK422	Site of Old Ulan Village including the remains of a number of structures (including a hotel, a small outbuilding and a potential dwelling (site PK422)), a ford and roadway, a graveyard, two sets of stockyards and associated fence lines. Site PK422 comprises of two small mounds (likely former chimney bases) of conglomerate measuring approximately 1 by 2 metres and located approximately 6 metres apart. Isolated historical artefacts are located in the vicinity	Local
Bobadeen Station/Homestead (Site/item CI07)	Rural farm complex including homestead group of buildings (comprising the original slab timber residence, a former kitchen and laundry block, large timber post built shed, stables, workshop, toilet, carport, garden landscaping) and a number of other associated structures and features (including PK3 and PK5) related to the former operation of this large station. PK3 is a large recently constructed metal and timber post built hay shed. Adjacent to this shed is an approximately 25 metre long narrow concrete slab with a small timber post double enclosure at one end PK5 is a twentieth century metal windmill associated with a dam	Local
Talbragar Fish Fossil Reserve	Deposit of Jurassic age sediments that contain an abundance of extremely well preserved fish, plant and invertebrate fossils (further detail provided in **Section 1.4.3.1**)	State/National
PK243 (Apple Tree Flat)	Rural farm complex including house (comprising substantially intact mid to late 1800s constructed cottage reclad in fibrous cement sheeting with corrugated iron hipped roof and several later fibrous cement sheet extensions), corrugated iron and timber built sheds and associated yards	Local
RV3[3]	Derelict cottage site comprising house (former weatherboard cottage with corrugated iron hipped roof, external brick chimney and later fibrous cement sheet extension), timber post shed clad with corrugated iron, timber post and rail stockyards and former gardens	Nil
CI33 (Calbunya)	Derelict former weatherboard and corrugated iron clad cottage with brick built external chimney and corrugated iron gable and skillion roof. Associated with the cottage are timber and corrugated iron sheds, timber post built stockyards, water tanks and recently installed metal silos.	Nil
CI127	Small rectangular timber built shelter constructed using four corner timber posts with timber cross beams and roofed with corrugated iron	Nil

[3] RV3 Photographic record undertaken in March 2013, RV3 house and woolshed removed May 2013 for construction of Ulan West TG1 Vent Fan

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RV4	Former stockyard with adjacent current timber stockyard. Former stockyard comprises a derelict timber post and rail constructed yard. Current yard is timber post constructed with timber and metal rails.	Nil
HS63	Timber getting site comprising evidence of timber clearing and timber offcuts.	Nil
CC6	Timber getting site comprising evidence of timber clearing and timber offcuts.	Nil
MM273	Timber getting site comprising evidence of timber clearing and timber offcuts.	Nil
OCE80/B	Timber getting/sleeper cutting site comprising an area measuring approximately 400 square metres with extensive evidence of partially cut timber sleepers, timber offcuts and mounds of decomposed sawdust. Two small dams are located in the vicinity which may have served as small reservoirs while timber cutting works were being undertaken in the area. A single mature ironbark is the only surviving mature tree in the area.	Nil
OCE84/A	Timber getting/sleeper cutting site comprising an area with evidence of timber offcuts and bark (likely stripped off portions of iron bark) associated with a trench measuring approximately 10 by 5 metres with a mound of spoil at one end. The trench may have been used as a saw pit or to load timber for transportation.	Nil
OCE86/A	Timber getting/sleeper cutting site comprising an area with evidence of iron bark log portions and stripped bark. There is also a trench measuring approximately 9 by 5 metres with a mound of spoil at one end. The trench may have been used as a saw pit or to load timbers for transportation.	Nil
OCE94/A	Timber getting/sleeper cutting site comprising an area with piles of bark, which have been stripped off ironbark log portions and several cut logs associated with a trench measuring approximately 10 by 5 metres with a mound of spoil situated at one end. The trench may have been used as a saw pit or to load timber for transportation	Nil
RV1	Timber getting site comprising a stockpile of remnant timber offcuts and bark located on either side of a track	Nil
RV2	Timber getting site comprising remnant timber offcuts adjacent to a track.	Nil
CI198/G	Rock shelter comprising an isolated slab of rock tilted to form a shelter with associated low rough stone built wall.	Nil
PK96/B	Rock shelter with potential collapsed low stone wall.	Nil
ID191	Large natural rock overhang with occasional scattered metal and wooden objects (pieces of wood and metal derived from horse cart, oven with metal door and metal sheet walls, horse cart mud guard, swindle bar, cart metal bar, 2 x billy cans, 2 x copper barrel rings, wooden boards off the sulky, horse cart side rails, plough hook, spring metal hook to protect the wheel hub, horse cart wooden	Nil

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	seat, glass bottles (marked AGMIS106, AGM 1926 198l), whip hook, horse shoe, haymes, buckle with a floral design, rasp for grinding horse hooves, part of wheel-bolt and a horse cart axle).	
HS96/D	Natural rock overhang with occasional scattered objects - associated with site/item ID191.	Nil
Echidna Sill	Three unidentified out of context coins.	Nil
HS135	A number of out of context bottles – possibly associated with a timber getting camp.	Nil

Note: * Umwelt letter dated 17 January 2012, attached as Appendix 5 justifies and clarifies the Level of Significance of each European heritage site.

The European heritage resource of the Project area generally reflects the documented history and pattern of settlement of the area which indicates that the land has predominantly been utilised by graziers, agriculturalists, timber getters and miners from the mid nineteenth century.

In general terms, with the exception of Old Ulan Village, Bobadeen Station/Homestead (CI07), Apple Tree Flat farm complex (PK 243) and the Talbragar Fish Fossil Reserve, the identified and potential heritage components of the site are of no significance with no research potential. Old Ulan Village, Bobadeen Station/Homestead and the Apple Tree Flat farm complex have been assessed as being of local significance. Talbragar Fish Fossil Reserve has been assessed as being of State or National significance.

1.5.3.1 Talbragar Fish Fossil Reserve

The Talbragar Fish Fossil Reserve is an internationally significant site, listed on the Register of the National Estate as an example of a Jurassic fresh water lake deposit. It exhibits a high diversity of fossils, including twelve species of plant fossils, and eight species of fish fossils that are unique to the locality. The Reserve is located in the northwestern portion of the mine lease and covers an area of approximately four hectares. It is thought to have been the erosional remnant of the margin of a small fresh water lake bed deposit, with a thickness no greater than 0.6 metres. It comprises hard cherty shales, characteristically weathered into rectangular slabs with concentric iron stained bands. These slabs float over the soil and part readily along bedding planes to reveal perfectly preserved plant and fish fossils. The site itself is inconspicuous, forming a north-south trending low ridge on the side of a small hill.

1.5.4 Potential Impacts to Aboriginal Heritage

The proposed works associated with the Continued Operations Project principally comprise an extension of open cut mining west of the existing pit, underground mining of the Ulan No.3 and Ulan West areas, new infrastructure primarily associated with the operation of the Ulan West mine, and continued use and/or modification of existing infrastructure.

The impacts of the Continued Operations Project on Aboriginal heritage (comprising both the identified Aboriginal objects and the potential resource and cultural values) can potentially manifest itself in two distinct ways:

- Direct impacts from surface works; and
- Indirect impacts to the ground surface through underground mining induced subsidence.
  Existing facilities or proposed facilities that are located in areas which have been extensively impacted by earthmoving works, such that there is negligible potential for any Aboriginal heritage evidence to survive, are not likely to cause any impacts to Aboriginal heritage. These include:
- Major existing infrastructure such as the UCML rail loop, Coal Handling and Preparation Plant (CHPP), underground surface facilities, administration and corporate offices, coal stockpiles,

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open cut administration centre, workshop and bathhouse, and a decommissioned aircraft landing strip;

- Minor existing infrastructure such as the sealed access roads, conveyors, ventilation shafts, service boreholes, Bobadeen quarry, communication towers;
- Minor proposed infrastructure/works, such as conveyors, within the existing open cut mine and rehabilitated land, man riding facility and winding shaft office store and bath house; and
- Major proposed infrastructure/works such as the product coal stockpile, portion of the out of pit emplacement area within the existing open cut, stockpiles within the existing open cut, course reject and tailings emplacement areas within the existing open cut and rehabilitated land, rehabilitation works within the existing open cut and rehabilitated land, and the Ulan West surface facilities, administration and workshop.

The nature and level of potential direct surface impacts of relevance to Aboriginal heritage can be categorised as follows:

- Broad-scale high level impacts (e.g. open cut mining);
- Small-scale high level impacts, potentially with some flexibility in location (e.g. linear impacts such as conveyors, water pipelines and power lines, and small area impacts such as exploratory drilling, ventilation shafts, service boreholes, man riding shafts and dewatering bores);
- Low-level continuing land-use impacts (e.g. irrigation, pastoral and rural use); and
- Low to high level continuing land-use impacts (e.g. maintenance and use of lightly formed or unformed vehicle tracks).

The impacts of the Continued Operations Project on Aboriginal heritage, both direct impacts from surface works and indirect impacts to the ground surface through underground mining induced subsidence, have been assessed (refer to Kuskie 2009).

The greatest potential impact, both in terms of site numbers and significant sites, is from underground mining induced subsidence. Approximately 35% of the total number of sites in the Continued Operations impact area (primarily rock shelters) may be subject to subsidence impacts (greater than 10% probability of perceptible impacts), prior to the implementation of mitigation measures. Subsidence impacts to rock shelters can include rock falls, cracking and collapse, and may range from minor in nature to total impact.

1.5.4.1 Potential Impacts to Aboriginal Heritage from Blasting

The performance of the project is evaluated against the 100 mm/s blast impact criteria for aboriginal sites and assess the level of impact resulting from blasting.

Real-Time monitoring of blasting impacts (airblast overpressure and vibration) will be undertaken for three rock shelter sites considered susceptible to blast damage, as specified in the *Heritage Management Plan (ULN SD PLN 0082)*, including.

- Site 74 (BM5)
- Site 445 (BM7) , and;
- Site 1395 (BM8)

Real-Time monitoring of blasting impacts (airblast overpressure and vibration) will be undertaken as required to support heritage management strategies. Heritage sites are monitored based on the recommendations of SCT in consideration of the following;

- Heritage Item type
- Outcome of Significance Assessments
- Management Strategy and Rationale
- Proximity to the modelled 100mm boundary

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Bi-annual inspections are also undertaken to assess the physical condition of heritage items. Inspections are completed by a suitable qualified consultant who determines whether there has been any perceptible change to or deterioration in the physical condition of Heritage sites 74, 445 and 1396 as a direct result of blasting activities.

Outcomes of blast impact monitoring are provided in the Annual Environmental Review

1.5.5 Potential Impacts on European and Natural Heritage

European and natural heritage sites will be impacted by one or more activities depending on their location, being: open cut mining (removal or blasting), subsidence and / or construction of surface infrastructure. These impacts are further discussed in **Table 4**.

In November 2011 a condition assessment was undertaken by SEA on a number of these sites to determine if blasting in the Ulan West Box Cut area had impacted on these sites (Kuskie, 2011b). The condition assessment determined that there was no evidence of recent impacts from blasting at the sites.

The timing of approved mining related impacts on European and natural heritage sites will be subject to the advancement rates of the mine detailed in the MOP. The implementation of relevant European and natural heritage management strategies will occur as detailed in **Section 4**.

Table 3 - Summary of Potential Impacts on European and Natural Heritage Sites/Items

Site/Item	Site Type/Description	Potential Impacts
Old Ulan Village and site/item PK422	Site of Old Ulan Village including former hotel, former dwelling site (PK422), a ford and roadway, a graveyard, stockyards and associated fence lines.	Open Cut Mining No Impacts Subsidence There is not expected to be any direct impacts on the main area of Old Ulan Village. The standing stone chimneys are not likely to be perceptibly impacted by mining subsidence (SCT 2009). However, the site is continually deteriorating and will continue to deteriorate. Although unlikely, any acceleration or change in the degradation of the site resulting from mining subsidence would have an impact on the heritage significance of the site. The form and fabric of the remnant stone chimney bases (site/item PK422) may be impacted by subsidence and cracking. Surface Infrastructure Upgrade of existing track through Old Ulan Village is within existing track easement and unlikely to result in any impacts.
Bobadeen Station/Homestead (Site/item CI07)	Rural farm complex including homestead group of buildings and a number of other associated structures (including PK3 and PK5) and features related to the former operation of this large station.	Open Cut Mining No Impacts Subsidence There may be minor impacts as a result of subsidence to the fabric of the homestead (the two brick built chimneys, internal features, concrete pathways and the tank).

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	PK3 Large metal and timber post built hay shed and associated long narrow concrete slab with a small timber post double enclosure PK5 Metal windmill	<u>Surface Infrastructure</u> The construction of the infrastructure corridor may have a minor impact on views to and from the homestead. However, this is unlikely to impact on the assessed heritage significance of Bobadeen Homestead. <u>Subsidence</u> Although some cracking of the concrete slab may occur as a result of subsidence, tilts and strains, there are unlikely to be any significant impacts to PK3 as a result of the project. There are unlikely to be any significant impacts to site PK5 as a result of the project.
Talbragar Fish Fossil Reserve	Deposit of Jurassic age sediments that contain an abundance of extremely well preserved fish, plant and invertebrate fossils	<u>Open Cut Mining</u> No Impacts <u>Subsidence</u> While subsidence movements will result in a change in elevation to the location of the Talbragar Fish Fossil Reserve and possible cracking of the ground surface, these movements are expected to be accommodated without significant disturbance to the fish fossil beds because of their already fragmented nature. These changes are not predicted to be important, notable or of consequence or result in either direct or indirect impacts on the existing character or heritage values of the site. <u>Surface Infrastructure</u> No Impacts <u>Other Potential Impacts</u> The Talbragar Fish Fossil Reserve is located within a fenced and secure site and there are unlikely to be any impacts as a result of illegal collectors during the mining period.
PK243 (Apple Tree Flat)	Rural farm complex including house (likely originally from mid to late 1800s) corrugated iron and timber built sheds and associated yards	<u>Open Cut Mining</u> No Impacts <u>Subsidence</u> There are unlikely to be any significant impacts resulting from subsidence to site PK243 or its heritage significance during the proposed mining period as no perceptible subsidence movements are expected in this location (SCT 2009). <u>Surface Infrastructure</u> The construction of the infrastructure corridor in its current proposed alignment is likely to substantially impact the fabric and thus heritage significance of this site.
*RV3[4]	Derelict cottage site comprising house, timber post shed clad with corrugated iron, timber post and rail stockyards and former gardens	<u>Open Cut Mining</u> No Impacts <u>Subsidence</u> The structures at the site are standing ruins with little integrity. Any deterioration as a result of subsidence is unlikely to impact any heritage significance the site may have.

[4] RV3 Photographic record undertaken in March 2013, RV3 house and woolshed removed May 2013 for construction of Ulan West TG1 Vent Fan

		Surface Infrastructure The construction of the infrastructure corridor in its current proposed alignment is likely to substantially impact the fabric of this site.
*CI33 (Calbunya)	Derelict weatherboard cottage and associated timber and corrugated iron sheds, timber post built stockyards, water tanks and recently installed metal silos.	There are unlikely to be any significant impacts to site CI33 during the proposed mining period.
*CI127	Small rectangular timber built shelter	There are unlikely to be any significant impacts to this site during the proposed mining period.
*RV4	Derelict timber stockyard with adjacent current timber post and metal rail stockyard	There are unlikely to be any significant impacts to this site during the proposed mining period.
*HS63	Timber getting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*CC6	Timber getting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*MM273	Timber getting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*OCE80/B	Timber getting/sleeper cutting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*OCE84/A	Timber getting/sleeper cutting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*OCE86/A	Timber getting/sleeper cutting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*OCE94/A	Timber getting/sleeper cutting site	There are unlikely to be any significant impacts to this site during the proposed mining period.
*RV1	Timber getting site	Open Cut Mining Site RV1 is located within the proposed Open Cut Extension and will be removed during mining works.
*RV2	Timber getting site	Open Cut Mining Site RV2 is located within the proposed Open Cut Extension and will be removed during mining works.
*CI198/G	Rock shelter comprising an isolated slab of rock tilted to form a shelter with associated low rough stone built wall.	There are unlikely to be any significant impacts to this site during the proposed mining period. Although the full range of mining subsidence movements are expected in this location, as a result of the relatively small size of the site, impacts are likely to be limited to the cracking of the floor. The rock itself is not expected to be destabilised as a result of mining (SCT 2009).
*PK96/B	Rock shelter with potential collapsed low stone wall.	There are unlikely to be any significant impacts to this site during the proposed mining period. The full range of mining subsidence movements are expected in this location and as a result some movement and minor cracking is expected. However, the rock itself is not expected to be destabilised as a result of mining. The stones forming the collapsed wall do not appear to have been laid in a structured fashion and are unlikely to be adversely impacted by subsidence movements (SCT 2009).

*ID191	Large natural rock overhang with occasional scattered metal and wooden objects	Under the current mine plan (the conservation barrier remains) there are unlikely to be any significant impacts to this site during the proposed mining period.
*HS96/D	Natural rock overhang with occasional scattered objects - associated with site/item ID191.	Under the current mine plan (the conservation barrier remains) there are unlikely to be any significant impacts to this site during the proposed mining period.
*Echidna Sill	Three unidentified out of context coins.	This site is located outside the proposed longwall mining area and will not be impacted during the proposed mining period.
*HS135	A number of out of context bottles	There are unlikely to be any significant impacts to this site during the proposed mining period. Although between 400 and 600 millimetres of subsidence is expected to occur at the site, it is unlikely that subsidence movements will adversely impact the site (SCT 2009).

Note: * Identifies the removal of heritage sites with no heritage significance from the figure within the Project Approval (Appendix 7) as a result of the 2012 modification (MOD2) of the Project Approval. The modification was sought under Section 75W of the Environmental Planning and Assessment Act 1979.

1.5.6 Management of Potential Blasting Impacts on European and Natural Heritage

Predicted vibration levels from blasting were provided in the EA (Umwelt 2009) for a number of European heritage sites. These levels are reproduced in **Table 5**.

Table 4 - Predicted Vibration Levels at European Heritage Sites

Label	Type of Heritage Item	Northing	Easting	Year 1 PPV, mm/s Average	Year 1 PPV, mm/s 5% Exc.
OCE80/B	Sleeper Cutting Historic Site	755759	6430363	3.02	7.64
OCE84/A	Sleeper Cutting Historic Site	756100	6430190	4.37	11.06
OCE86/A	Sleeper Cutting Historic Site	755700	6429800	4.35	11.01
OCE94/A	Sleeper Cutting Historic Site	756064	6429828	6.16	15.59

As a result of the 2012 modification (MOD2)[5] of the Project Approval, blasting specific criteria was removed from heritage sites. Impacts are managed in accordance with Sections 3.6.2 and 3.6.3 of the Blast Management Plan.

[5] The modification was sought under Section 75W of the *Environmental Planning and Assessment Act 1979*.

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2 Planning

2.1 Project Approvals

This HMP has been developed in accordance with the PA 08_0184 conditions, specified in **Table 6,** and the EA Statement of Commitments, specified in **Table 7**. **Table 8** identifies the relevant conditions in DA 113-12-98 relevant to this HMP. These tables summarise the requirements of the project approvals and Statement of Commitments and the section of the HMP where the requirement has been addressed.

Table 5 - Project Approval Conditions (08_0184)

Condition Number	Condition	Where addressed in HMP
10A	The Proponent shall ensure that operational blasting and construction blasting on the site does not damage Heritage Sites on site. Heritage Sites can be identified in Appendix 7 of this approval.	**4, 5.3**
47	Heritage Management Plan The Proponent shall prepare and implement Heritage Management Plan for the project to the satisfaction of the Director General. This plan must:	**This plan**
47 (a)	be prepared in consultation with OEH, the Aboriginal community, the Heritage Branch, Council, any local historical organisations relevant landowners;	**3.1**
47 (b)	be submitted to the Director-General for approval within 3 months of the date of final Orders being made by the Land and Environment Court in proceedings No. 10998 of 2010;	**1.3**
47 (c)	include the following in relation to the Aboriginal Heritage management on site; A detailed plan of management for the Brokenback Conservation Area and two Grinding Groove Conservation Areas; Program/ procedures for: • recording, salvaging, excavating and/or managing the Aboriginal sites and potential archaeological deposits within the project disturbance area; • conserving, managing, and monitoring the Aboriginal sites outside the project disturbance area, including the 11 rock shelters located adjacent to Mona and Cockabutta Creeks, 27 rock shelter within the Brokenback Conservation Area and 4 groove sites within the two Grinding Groove Conservation Areas; • managing the discovery of any new Aboriginal objects or skeletal remains during the project; • maintaining and managing access to archaeological sites by the Aboriginal community; and • ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site.	**3.3** **3.5** **5.2** **3.4** **3.6.3** **3.1** **3.1**

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47(d)	include the following for the management of other heritage on site:
	• conservation management plans for the Old Ulan Village and Bobadeen Homestead;
	• program/procedures for:
	  • photographic and archival recording of potentially affected heritage items;
	  • protection and monitoring of heritage items outside the project disturbance area;
	  • baseline dilapidation surveys of all heritage items potentially affected by subsidence and/or blasting;
	  • monitoring, notifying and managing the effects of subsidence and/or blasting on potentially affected heritage items; and
	  • additional archaeological excavation and/or recording of any significant heritage items requiring demolition.
		4.0
		4.0
		3.8
		3.10
		4.1

	Note: The effectiveness of the Heritage Management Plan is to be reviewed and audited in accordance with the requirements in Schedule 5. Following these reviews and audits, the plan is to be revised to ensure it remains up to date (see Condition 4 of Schedule 5).	

Table 6 - Statement of Commitments

Condition Number	Statement of Commitments Aboriginal Archaeology	Where addressed in HMP
6.7.1	Impacts to the Mona Creek 23-30 rockshelter sites (ID# 180-187) and the Cockabutta Creek 18-20 sites (ID# 160-162) will be avoided under this project.	**3.4**
6.7.2	Detailed recording of the stone arrangements (ID# 589, 603, 697 and 700) will be undertaken, prior to commencement of secondary extraction under these sites.	**3.7.1**
6.7.3	Archaeological survey of all potential impact areas that could not be accessed during the present investigation will be completed prior to any impact occurring in these areas.	**3.7**
	European and Natural Heritage	
6.8.1	UCML will carry out archival recording of Old Ulan Village and Bobadeen Homestead to Heritage Branch, Department of Planning standards prior to longwall mining within 100 metres of the structure.	**4.1**
6.8.2	A Conservation Management Plan or Strategy will be prepared for the site of Old Ulan Village, in accordance with project approval requirements, to ensure appropriate short and long term management strategies are determined. This will include a maintenance strategy for Old Ulan Village, to be developed prior to longwall mining within 100 metres of the structure.	**4.0**
6.8.3	The Talbragar Fish Fossil Reserve will be secured with appropriate fencing and suitable signage subject to landowner approval.	**4.0**

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Table 7 - Development Approval Conditions (DA No. 113-12-98)

Condition Number	Development Approval Condition	Where addressed in HMP
3.2 (d)	The applicant shall prepare the following environmental management plans: • Archaeology and cultural management plan	**This entire HMP**
3.2 (e)	The management plans are to be revised/updated at least every 7 years or as otherwise directed by the Director-General in consultation with the relevant government agencies. They will reflect changing environmental requirements or changes in technology/operational practices. Changes shall be made and approved in the same manner as the initial environmental management plan. The plans shall also be made publicly available at Mid Western Regional Council (formerly MeSC and MuSC) within two weeks of approval of the relevant government authority.	**6.0**
~~3.3 (a)~~	The applicant shall prior to the commencement of construction of any surface facilities or Mining Operations; ~~a)~~ Prepare and update at least one month prior to the commencement of works associates with any approved modification to DA No. 113-12-98 in relation to an Archaeology & Cultural Management Plan address Aboriginal and European cultural heritage issues. The plan shall be prepared in consultation with NPWS, the Murong Gialinga Aboriginal & Torres Strait Islander Corporation, Wiradjuri Council of Elders, Warrabinga Native Title Claimants Aboriginal Corporation, the relevant Local Aboriginal Lands Council, an appropriately qualified archaeologist, and any other stakeholders identified by NPWS, to the satisfaction of the Director General.	**Refer to Project Approval Condition 47(b)**
3.3 (a)	Prepare an Archaeology and Cultural Management Plan to address Aboriginal and European cultural heritage issues. The plan shall be prepared in consultation with NPWS, the Murong Gialinga Aboriginal and Torres Strait Islander Corporation, Wiradjuri Council of Elders, Warrabinga Native Title Claimants Aboriginal Corporation, the relevant Local Aboriginal Land Council, a consultant archaeologist, any other stakeholders identified by NPWS, to the satisfaction of the Director-General. The plan shall include, but not be limited to: (i) the identification of any future salvage, excavation and monitoring of any archaeological sites within the MLA 80 area prior to and during the development	**Refer to Project Approval Condition 47**
	(ii) details of preservation measures and monitoring of the Fossil Fish Reserve for any adverse impacts cause by mining activity, including the fencing of the reserve and the erection of appropriate site notices to exclude any unauthorised access	
	(iii) details of a monitoring program including frequency and methods to document the effects of subsidence, and mining works on Aboriginal sites and areas of archaeological sensitivity	
	(iv) measures to protect Aboriginal sites from subsidence and mine working impacts	
	(v) identification and discussion of Aboriginal archaeological sites that will require a section 90 consent to destroy under the NPW Act (1974) and discussion of sites that will be preserved by the establishment of Conservation Areas identified in subclause (e).	**Refer to Project Approval Condition 47**
	(vi) a program for the proposed monitoring for adverse impacts caused by mining activity on the Bobadeen Homestead, particularly from potential subsidence impacts, and an outline of mitigation measures to ameliorate these impacts. This shall include the implementation of structural modifications prior to subsidence impacts, in accordance with advice from a heritage architect or structural engineer, an assessment of the potential impacts of the mine on the Homestead's heritage value, or through the avoidance of the Homestead area by the mining project, as outlined in the conclusion of the Heritage Assessment report prepared by Aitken (1997) for the Homestead.	
	b) If during the course of construction of any surface facilities, quarrying or mining, the Applicant becomes aware of any heritage or archaeological material not previously identified, all work likely to affect the material shall cease immediately and the relevant authorities consulted about an appropriate course of action prior to recommencement of work. The	**3.5, 3.6**

		relevant authorities may include the NPWS, the NSW Heritage office and the relevant Local Aboriginal Groups. Any necessary permits or consents shall be obtained and complied with prior to the recommencement of work.	
	c)	The Applicant shall: (i) establish Conservation Area 1 to include the Aboriginal sites MC23 to MC30 as marked on Schedule 3, or its latest versions. To ensure that all sites are protected, the edge of the buffer zone shall be a minimum of 150m from the sites and no secondary workings are to occur beneath the conservation area;	**3.3**
		(ii) establish Conservation Area 2 to include the Aboriginal sites BB4 to BB11 as marked on Schedule 3, or its latest version. To ensure that all sites are protected, the edge of the buffer zone shall be a minimum of 150m from the sites and no secondary workings are to occur beneath the conservation area;	**3.3**
		(iii) establish Conservation Area 3 to include the Aboriginal sites CC18 to CC20 as marked on Schedule 3, or its latest version. To ensure that all sites are protected, the edge of the buffer zone shall be a minimum of 150m from the sites and no secondary workings are to occur beneath the conservation area;	**3.3**
		(iv) Not subside any land in the vicinity of shelters sites MC2 to MC4 as marked on Schedule 3, or its latest version, if the risk of subsidence damage is predicted to exceed 10% at any time. If the estimate of subsidence damage is predicted to exceed 10% then the following will be undertaken: – test excavations in a number of the shelters around the known sites MC2 to MC4 to establish whether the shelters contain evidence of Aboriginal occupation; and – an assessment of the sites, which shall include a statement of the significance of the sites from the relevant Aboriginal groups. Should the investigations determine that the sites (a) had a significant occupation focus for the area; (b) have an evaluation of high risk of subsidence damage; and 9c) the sites are of significance to the Aboriginal community, then the area with the highest concentration of sites shall be conserved and not subsided. If damage from the risk of subsidence damage is estimated to be less than 10%, the shelters shall be monitored on a regular basis at the timing of mining and for 2 years after.	**3.5.5**
		(v) Not subside any land beneath the site BO5 and its immediate areas as marked on Schedule 3, or its latest version, unless; – the risk of additional damage to subsidence is estimated to be 10% or less; – a survey undertaken in comparable landscape contexts to that for B05 immediately beyond the subsidence area, establishes comparable grinding grooves are located in unaffected or protected area(s) adjacent to the mine; or – Statements from the Aboriginal Community are obtained which agree to subsidence of the site.	**AHIP 1101386** **3.3**
		(vi) Update schedule 3 in consultation with NPWS prior to the commencement of mining operations and quarrying to show: – the identification and verification of the co-ordinates of the archaeological sites nominated for each conservation area, including the labelling of each conservation area, key identifying the sites that make up the conservation areas, and an illustration of the sites in context with the proposed longwall panels. – Illustration of the minimum 150m radii buffer zone from the coordinates of each conservation site; – Drawn tangents to join the buffer zones and form continuous areas for each proposed conservation area; and – A squared off boundary and subsequent coordinates for each corner to clearly identify the boundary of the conservation areas.	**3.3**
	d)	known sites not listed above, and with a greater than 10% chance of damage through subsidence, will require s90 consents.	**2.0**
	e)	All known sites that will require a s90 consent to destroy are to be recorded in full detail (such as through diagrams, drawings of art, video records, etc) prior to the relevant site be disturbed.	**2.0, 5.1**

	f) The Applicant shall prepare a plan of management in consultation with NPWS and the relevant local Aboriginal community for the three conservation areas identified within its holdings within MLA 80 (as identified on Schedule 3 or its latest version). Any conservation areas that may subsequently be identified shall also require a plan of management to be prepared at the appropriate time. In preparing the plan of management the Applicant shall: (i) establish a management committee comprising representatives of the NPWS, the local Aboriginal community including the Murong Gialinga Aboriginal & Torres Strait Islander Corporation, Warrabinga Native Title Claimants Aboriginal Corporation, Wiradjuri Council of Elders and the Applicant; and (ii) be commenced within 3 months and completed within 12 months of the date of granting of a Mining Lease pursuant to this consent.	**3.3**
	Monitoring g) Known sites outside of the specified conservation areas outlined in Schedule 3 are to be monitored for subsidence impacts.	**5.2**
	h) The Applicant shall monitor the effectiveness of the measures outlined in the Archaeology and Cultural Management Plan (Condition 3.3(a)). A summary of the monitoring results, including any consultation undertaken with the Aboriginal community shall be included in the AEMR.	**5.2**
	Notes 1. No Aboriginal archaeological sites, that have been identified, shall be destroyed without the approval of the Director-General of NPWS, under section 90 of the *National Parks and Wildlife Act 1974*, prior to any disturbance of the identified sites by Mining Operations. 2. Wherever possible, the Applicant is to contract representatives of the local Aboriginal community to assist in the proposed archaeological investigations and to undertake salvage of artefacts.	**3.6**

Notes to **Table 2.3**:

- ~~Strikethrough~~ – condition superseded by PA 08_0184 condition.
- DA 113-12-98 remains in operation for the period whilst LW W3 & 26 are being mined. This approval is surrendered after the completion of LW W3 and 26. During this period if there are inconsistencies between PA 08_0184 and DA 113-12-98 then the PA 08_0184 conditions shall prevail to the extent of any inconsistency.

2.2 .SMP Approvals

SMP approval for LW 23-26 and W1 was received from the Director General (Department of Primary Industries) on 1 August 2006. SMP approval for LW W2 and W3 was received from the Acting Executive Director (Department of Primary Industries) on 21 January 2009.

In accordance with Condition 13 of the SMP approval for LW W2 and W3[6], UCML submitted *HSEC MGP 017 Environmental Monitoring Program* for approval to the Director Environmental Sustainability (NSW Industry and Investment – Mineral Resources) on 12 February 2010. This Program, which included flora and fauna monitoring, was developed in consultation with the NSW Office of Water (formerly the Department of Water and Energy) and was approved by the Director Environmental Sustainability on 16 February 2010.

UCML received Project Approval (PA 08_0184) from the DP&E on 15 November 2010 for continued operations. A section 75W modification application to the Project Approval was submitted for approval in July 2011 to permit second workings in the North 1 mining area and allow for minor alterations of the approved mine plans for Ulan West and Ulan No. 3 underground mines.

A Subsidence Management Plan (SMP) was prepared to satisfy the various requirements including conditions of PA 08_0184, Development Approval (DA) 113-12-98, mining leases and SMP Approvals affecting existing and future mining areas. PA 08_0184 applies to the current SMP / Extraction Plan

[6] Ulan No.3 has an approved SMP for mining of LW panels LW23-26 & W1 and W2-W3. To date longwall mining has been completed in LW23-26 and W1-W2, however longwall mining has not occurred in W3 due to geological difficulties. Development Approval (DA) 113-12-98 remains applicable until the completion of longwall mining of W3, which is scheduled for completion during 2017.

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(EP) whilst the second and first workings for LW 23-26 and W1-W3 are approved by DA 113-12-98 and the existing SMP approvals.

Approval for the SMP/EP for Longwall Panels LW C, E, F and G (ie North area 1) and supplementary supporting information was received on 20 December 2011 by the Director-General of DTIRIS and the Director General of DP&E.

Approval[7] for the SMP/EP for Longwall Panels LW27-29[8], W4-W5 and supplementary supporting information was received on 29 May 2013 and the 23 May 2013 by the Director-General of DTIRIS and the Director General of DP&E respectively.

During October 2013, an SMP/Extraction Plan (EP) application for Ulan West longwall panels LW1 and LW2 was submitted for assessment and approval to the Director-General of DTIRIS and the Director General of DP&E, for mining of coal from the Ulan Seam using longwall mining methods. Approval for the SMP/EP pertaining to Ulan West longwall panels LW1 and LW2 was received on 9 April 2014 and 25 March 2014 by the Director-General of DTIRIS and the Director General of DP&E respectively.

Appendix G provides the relevant SMP conditions applicable to this HMP and where they are addressed.

2.3 Relevant Legislation

The following section lists the relevant legislation as applicable to the HMP. A detailed register of legislation updates is maintained in accordance with CAA HSEC PCL 0020 11.01 Environmental Compliance Management and **Section 2** of the *EMS (ULN SD PLN 0050).*

If there is any change to environmental legislation or standards CAA will notify UCML of any changes to the way the operation works. Additionally UCML will seek legal advice in regards to any change in its operation that may affect its operational approvals or compliance with the relevant legislation.

The legislation applicable to this HMP is listed below:

2.3.1 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974 (NP&W Act)* provides the primary basis for the legal protection and management of Aboriginal heritage sites within NSW. Implementation of the Aboriginal heritage provisions of this Act is the responsibility of OEH. The rationale behind the Act is to prevent unnecessary or unwarranted destruction of Aboriginal objects and to protect and conserve objects where such action is considered warranted (DECCW 2009a, 2009b).

With the exception of some artefacts in collections, the Act generally defines all Aboriginal objects to be the property of the Crown. The Act then provides various controls for the protection, management and destruction of these objects. An 'Aboriginal object' is defined as

> *'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains' [Section 5(1)].*

In practice, archaeologists generally subdivide the legal category of 'object' into different site types, which relate to the way Aboriginal heritage evidence is found within the landscape. The archaeological

[7] Note this approval replaces the interim approval for LW27 on 7 March 2013.
[8] To date longwall mining has been completed in LW27. LW28 commenced in early 2014. An SMP/Extraction Plan variation application was submitted during December 2013 for approval by the DP&I and DRI-RE, as a result of the first working approval for LW28 and LW29. Approval was received during February 2014.

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definition of a 'site' may vary according to survey objectives, however it should be noted that even single and isolated artefacts are protected as objects under the Act.

Under the terms of the *National Parks and Wildlife Act 1974*, it is an offence for a person to:

- Harm or desecrate an object that the person knows is an Aboriginal object;
- Harm an Aboriginal object ('strict liability offence').

Penalties for infringement of the Act vary in relation to the nature of the offence but include up to 5000 penalty units or imprisonment for two years, or both.

Consents regarding harm to Aboriginal objects are managed through the OEH's Aboriginal Heritage Impact Permit (AHIP) system. The issuing of permits is dependent upon adequate archaeological assessment and review, together with an appropriate level of Aboriginal community liaison and involvement. The OEH determination of AHIP applications is guided by the OEH (2011a) *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, OEH (2011b) *Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants*, and OEH (2011c) *Guide to Aboriginal Heritage Impact Permit Processes and Decision-Making* policy. AHIPs are typically required (apart from Part 3A Major Projects or State Significant Development under Division 4.1 of Part 4 of the EP&A Act) to impact an Aboriginal object or Aboriginal place. As the UCML Continued Operations Project is a Part 3A Project, an AHIP is not required to permit impacts to occur to an Aboriginal object, rather management and any impacts must occur in accordance with the relevant Part 3A project approval conditions (ie. in accordance with this approved HMP).

Under Section 84 of the NP&W Act, 'Aboriginal places' may be declared by the Minister, by order published in the Gazette, over a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture. Aboriginal places may or may not contain Aboriginal objects.

Under Section 91AA of the NP&W Act, if the Director-General is of the opinion that any action is being, or is about to be carried out, that is likely to significantly affect an Aboriginal object or Aboriginal place or any other item of cultural heritage situated on land reserved under the Act, the Director-General may make a stop-work order for a period of 40 days.

Under s89A of the NP&W Act, a person who is aware of the location of an Aboriginal object that is the property of the Crown or, not being the property of the Crown, is real property, and does not, in the prescribed manner, notify the Director-General thereof within a reasonable time after the person first becomes aware of that location is guilty of an offence against this Act unless the person believes on reasonable grounds that the Director-General is aware of the location of that Aboriginal object.

Under Section 85A of the NP&W Act, the Director-General may "dispose" of Aboriginal objects that are the property of the crown:

a) by returning the Aboriginal objects to an Aboriginal owner or Aboriginal owners entitled to, and willing to accept possession, custody or control of the Aboriginal objects in accordance with Aboriginal tradition, or
b) by otherwise dealing with the Aboriginal objects in accordance with any reasonable directions of an Aboriginal owner or Aboriginal owners referred to in paragraph (a), or
c) if there is or are no such Aboriginal owner or Aboriginal owners - by transferring the Aboriginal objects to a person, or a person of a class, prescribed by the regulations for safekeeping (commonly known as a Care Agreement that is implemented between OEH and the Aboriginal person or community organisation).

Under Section 85A(3) of the NP&W Act, the regulations may make provision as to the manner in which any dispute concerning the entitlement of an Aboriginal owner or Aboriginal owners to possession, custody or control of Aboriginal objects for the purposes of this section is to be resolved.

2.3.2 Environment Planning and Assessment Act 1979

Under the Part 3A Major Project amendments to the *Environment Planning & Assessment Act 1979* (EP&A Act), subsequent to Part 3A Project Approval being granted, a Section 90 AHIP to impact Aboriginal objects under the NP&W Act is generally not required. In lieu however, a Part 3A application involving a Statement of Commitments outlining proposed heritage management and mitigation measures, must be approved by the DP&E. The UCML Continued Operations Project is a Part 3A Major Project (as part of Schedule 6A transitional provisions).

This Plan has been prepared in relation to a Part 3A Approval for the Continued Operations Project and must be implemented in accordance with the Conditions of Approval (refer to **Table 7**), in lieu of obtaining a Section 90 AHIP from the OEH.

2.3.3 Native Title Act 1993

Through the operation of the *Native Title Act 1993*, a Native Title Agreement (NTA) is maintained with the Warrabinga Native Title Claimants (WNTC) over Mining Lease 1468 (ML1468). The "Deed" (Government Party Deed) represents an agreement for the purposes of section 31(1)(b) of the NTA and has been validly lodged with the National Native Title Tribunal on the 24 August 1998. The implementation of the NTA is through the operation of the "Ancillary Deed" which was entered into by the grantee party (UCML) and the claimants (WNTC). UCML will continue to implement arrangements detailed in the NTA through the operation of this HMP and external to this HMP in consultation with WNTC.

2.3.4 Environment Protection and Biodiversity Conservation Act 1999

The amended *Environment Protection and Biodiversity Conservation Act 1999* and the *Australian Heritage Council Act 2003* include a National Heritage List of places of national heritage significance, a Commonwealth Heritage List of heritage places owned or managed by the Commonwealth and continued management of the Register of the National Estate. The Project area does not contain any heritage items registered for indigenous values under these Acts.

2.3.5 Heritage Act 1977

In regards to the management of European and natural heritage Items, the *Heritage Act 1977* and the *EP&A Act* provide the statutory requirements for conservation and protection of European and natural heritage. As Part 3A approval (PA 08_0184) was granted to allow for continued mining operations at UCML, Section 75U of the EP&A Act 1977 is applicable (under transitional provisions) to this project (Section 75U states that authorisations otherwise required do not need to be completed). In this instance Section 75U removes the requirement for approval under Part 4 or an excavation permit under Section 139 of the *Heritage Act 1977.*

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3 Implementation – Management of Aboriginal Heritage

This section outlines the policies for management of identified and potential Aboriginal heritage evidence within the Project area, along with actions necessary to implement these policies consistent with PA 08_0184 and, where relevant, DA 113-12-98.

Condition 24 (Schedule 3) of PA 08_0184 requires that the Project does not cause any exceedance of the subsidence performance measures in **Table 9.**

Table 8 - Summarised Subsidence Performance Criteria from PA 08_0184 (Table 14)

Heritage	
Aboriginal sites	Nil impact in the Brokenback Conservation Area, Grinding Groove Conservation Areas; and on Mona Creek/Cockabutta Creek Rock Shelter Sites
Other Heritage Sites	No greater impact than predicted in the EA

Monitoring of subsidence impact on Aboriginal Heritage sites will be in accordance with an approved extraction plan (and subsequent subsidence monitoring program), in accordance with Condition 26 (Schedule 3) of PA 08_0184.

Specific actions that will be implemented in the management of the Brokenback Conservation Area, Grinding Groove Conservation Areas and on Mona Creek/Cockabutta Creek Rock Shelter Sites are detailed in **Sections 3.3** and **3.4**.

3.1 Aboriginal Community Involvement

UCML acknowledges that Aboriginal heritage is of primary interest to the Aboriginal community and that Aboriginal people have the right to be consulted and involved in all aspects of decision-making in relation to their heritage. Consultation with Aboriginal stakeholders is undertaken in accordance with CAA HSEC PCL 0013 11.21 Aboriginal Cultural Heritage - NSW and further detailed in *UCML's SIP (ULN SD PLN 0015)* and Section 3.5 of the *EMS (ULN SD PLN 0050).*

UCML recognises that the Aboriginal community has a paramount role in identifying cultural significance and cultural values.

UCML recognises that Warrabinga Native Title Claimants Aboriginal Corporation, North East Wiradjuri Company Ltd, Mudgee LALC, Murong Gialinga Aboriginal and Torres Strait Islanders Corporation and Warranha Ngumbaay are the RAPs consulted as part of the Continued Operations Project. In March 2014, an additional RAP the Wellington Valley Aboriginal Corporation was registered with UCML. These RAPs will be the parties consulted with in relation to ongoing Aboriginal heritage issues associated with the Project and this Plan.

The known contact details of these stakeholders are listed in **Appendix A.**

Actions

- UCML will provide the RAPs with details of the proposed methodology of any forthcoming archaeological survey, salvage collection or excavation (where that methodology is different from that already approved by the stakeholders for the Continued Operations Project or in this Plan) and allow a minimum of 15 working days to provide comment, including identification of issues or areas of cultural significance that might affect, inform or allow refinement of the methodology. UCML will document and take into account all comment provided by the RAPs and identify how these comments were considered in finalising the methodology;

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- UCML will engage representatives of the RAPs to participate in any archaeological survey, collection, excavation or monitoring required under this Plan (for example, refer to **Sections 3.4, 3.5, 3.6, 3.7 and 5.2** of this Plan). UCML may engage RAPs through a competitive selection process involving criteria such as demonstrated qualifications in cultural heritage, skills or experience in the conduct of heritage studies in the local area, specific cultural knowledge of the Project area and/or ability to report the results to the broader Aboriginal community, consistent with Part C of the DECCW (2004) *Interim Community Consultation Requirements for Applicants Policy*;
- UCML will provide the RAPS engaged for any field investigation with a minimum of five working days notice of the date of commencement of the field investigation, unless a shorter period is agreed to by the engaged stakeholders. UCML will provide safe access to the investigation area and induct representatives to an appropriate level for Occupational Health and Safety purposes;
- The RAPs will provide suitably qualified and/or experienced representatives to participate in any archaeological survey, collection, excavation or monitoring required under this Plan. The representatives will comply with all requirements of UCML, including PPE at all times when in the Project area. Representatives will be escorted during onsite activities;
- UCML will ensure that any heritage reports produced under this Plan that require the review and input of the RAPs (for example, the draft Conservation Management Plan as set out in **Section 3.3** of this Plan, and further investigations as set out in **Section 3.7** of this Plan) are distributed in a draft format to the RAPs for review where specified in this Plan, with a minimum 15 working days allowed for comment. Final heritage reports would be prepared that address and incorporate any input received within the specified timeframe from the registered Aboriginal stakeholders;
- The RAPs will provide written comment to UCML on the draft of any heritage report or in relation to any other heritage issue where requested by UCML, within the time period requested (minimum 15 working days);
- UCML will provide the RAPs with final hard copies of all heritage reports produced under this Plan (for example, in relation to the Conservation Management Plan in **Section 3.3**, salvage activities in **Sections 3.5 and 3.6**, further investigations in **Section 3.7**, and monitoring in **Section 5.2**) within 30 working days of the completion of the report;
- UCML will prepare a heritage awareness training package and a brief cultural awareness training package (refer to **Section 3.9** of this Plan) in consultation with the registered Aboriginal stakeholders, with the provision of a draft for review and minimum 15 working days for comment;
- UCML will provide the RAPs notification of and a minimum 15 working days to comment on any proposed amendments to this Plan (refer to **Section 6.0** of this Plan). UCML will ensure that copies of any updated version of this Plan are distributed to the RAPs within 30 working days of completion;
- Prior to or after the salvage of Aboriginal objects from any Aboriginal site within the Project area, UCML will consult with the RAPs about the curation of the Aboriginal objects from each specific site, and seek to reach a consensus agreement on the manner of curation of those objects (refer to **Section 3.8** of this Plan). Where it is an outcome of the consensus agreement that Aboriginal objects are transferred to a RAP, UCML will assist with the transferral of those objects, the obtainment of a Care Agreement from OEH under Section 85A of the NP&W Act, and the storage and/or display of those objects;
- UCML will immediately notify the RAPs should any human skeletal material be identified within the Project area (refer to **Section 3.6.3** of this Plan);
- UCML will permit RAPs representatives access to inspect recorded Aboriginal heritage evidence or visit Conservation Areas on UCML controlled land, subject to the receipt of a minimum five working days written notice and safety and operational considerations at that time;
- UCML will permit RAPs representatives access to UCML controlled land for cultural purposes or activities (for example, the conduct of smoking ceremonies), subject to the receipt of a minimum

five working days written notice and the consensus agreement of UCML and the registered Aboriginal stakeholders, and safety and operational considerations at that time;

- UCML will provide a printed copy of the Aboriginal Site Database to any registered Aboriginal stakeholder that requests it, within 15 working days of receipt of such a request; and
- UCML will host Aboriginal Heritage Meetings with the registered Aboriginal stakeholders, heritage experts and/or other parties as determined by the ECM, at any times as determined by the ECM, with the provision of a minimum 10 working days notice to invitees requesting their attendance. The operating protocols for Aboriginal Heritage Meetings are detailed in **Appendix C**.

3.2 Educational Video

An educational video was produced in 2013 by UCML in conjunction with Aboriginal stakeholders, to showcase the heritage resources and cultural background of the Project area, and UCML's management of those resources and interactions with the Aboriginal community. The completed video was presented at the June 2013 Aboriginal Heritage meeting.

3.3 Aboriginal Conservation Areas

To ensure compliance with Condition 24 (Schedule 3) of PA 08_0184, the Brokenback Conservation Area and two Grinding Groove Conservation Areas have been established (**Figure 6**) to protect specific Aboriginal heritage sites. Additionally the mine plan has been designed to ensure no impact on the Mona Creek/Cockabutta Creek rock shelter sites.

In late 2013, UCML developed a draft Conservation Agreement for the two Grinding Groove Conservation Areas in consultation with the registered Aboriginal stakeholders, OEH and the DP&E. This draft agreement is currently subject to further assessment by OEH. An extension by the DP&E was granted for the long term conservation agreements until February 2015. In February 2015 the Conservation Agreement was finalised with OEH.

An extension for the Brokenback Conservation Area long term agreements for conservation was provided by DP&E to 30 December 2015 and a request for extension of conditions was sent to Department of the Environment. UCML will register required offset areas as soon as the appropriate mechanism is finalised.

These Conservation Areas will be managed in accordance with the *Aboriginal Conservation Management Plan (ACMP) (ULN SD PLN 0060)* which was developed by South East Archaeology, in consultation with the registered Aboriginal stakeholders. The ACMP includes a location plan, a description of the Aboriginal sites, and a statement of the policies and actions required for the ongoing conservation of the Aboriginal heritage evidence within the Conservation Areas.

Actions

- The Brokenback Conservation Area was established prior to the commencement of longwall mining of Ulan West, and encompasses an area of approximately 58 hectares and results in the avoidance of subsidence impacts to 27 rock shelter sites (as listed in Table 12.6 of Kuskie 2009);
- Undermining that results in an assessed potential[9] for impacts (possible, likely or almost certain) to any of the specified rock shelter sites in the Brokenback Conservation Area (as listed in Table 12.6 of Kuskie 2009) will not be permitted. Minor impacts may need to occur to the surface for fire-control or vehicle track maintenance purposes, however no disturbance will not be permitted to occur at all to the rock shelter sites listed in Table 12.6 of Kuskie (2009);

[9] Following the same methodology and terminology as the subsidence impact assessment for the EA (refer to Kuskie 2009 Section 11.2 and Appendix 5, and Mills 2009).

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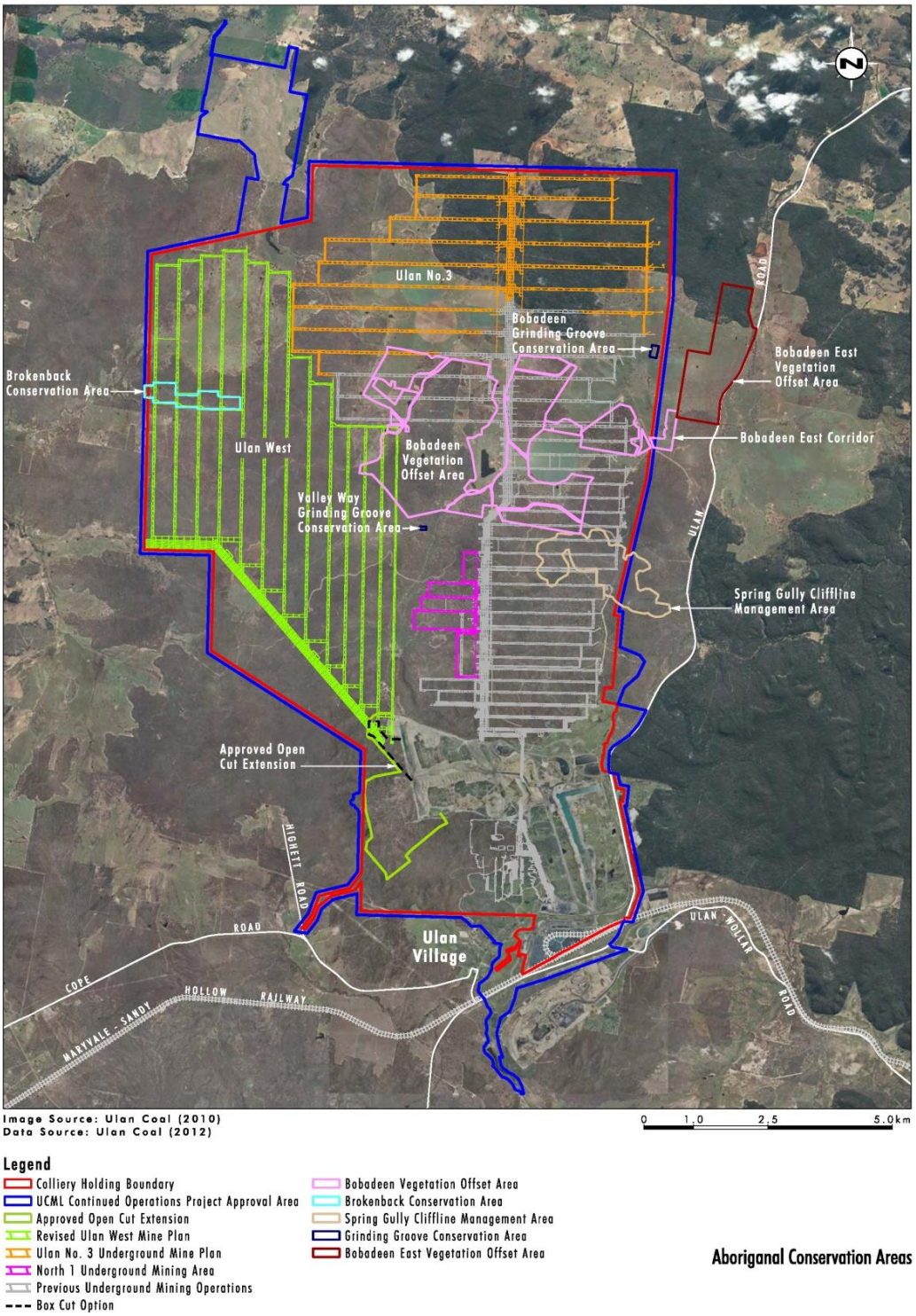
- The Valley Way Grinding Groove Conservation Area was established (ID# 1074-1076, as marked on Figure 12.2 of Kuskie 2009) prior to the commencement of longwall mining of Ulan West, and encompasses an area of approximately 0.8 hectares and results in the avoidance of any development impacts to the grinding groove sites ID# 1074, 1075 and 1076.;
- The Bobadeen Grinding Groove Conservation Area was established (ID# 323, as marked on Figure 12.2 of Kuskie 2009) prior to the commencement of mining, and encompasses an area of approximately 3.4 hectares and results in the avoidance of any development impacts to the grinding groove site ID# 32310. The Bobadeen Grinding Groove Conservation Area was fenced in 2013 after consultation with the registered Aboriginal Stakeholders;
- No development impacts will occur within either Grinding Groove Conservation Area;
- UCML will implement formal gazettal or designation of the Conservation Areas and ensure that any potential future modifications to mine plans will not result in impacts to or modifications to the boundaries of these Conservation Areas;
- UCML will ensure that the Conservation Areas are managed in accordance with the *ACMP (ULN SD PLN 0060)* for the duration of the mine life; and
- UCML will ensure that inadvertent impacts do not occur to the Aboriginal sites or land within the Conservation Areas until the *ACMP (ULN SD PLN 0060)* is in effect, through the GDP Process, staff/contractor awareness, and appropriate fencing and signage (refer to **Section 3.4** of this HMP and the *ACMP (ULN SD PLN 0060)*).

[10] This Grinding Groove Conservation Area has already been established as a condition of the ML1468 Development Consent (DA 113-12-98, December 1999).

Figure 6 - Aboriginal Conservation Areas



Note: Please refer to **Figure 2** for approved mine plan.

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3.4 Protection of Aboriginal Sites Where Impacts are Avoided

Where impacts will be avoided to identified Aboriginal heritage evidence, appropriate site-specific precautionary measures will be implemented for those sites within close proximity of the area of works, in order to ensure that inadvertent impacts do not occur to the heritage evidence during the works.

Precautionary measures will be identified as part of the *Ground Disturbance Permit* (GDP) *(CCA HSEC PER 0004)* process. The purpose of the *GDP* is to ensure site clearing of vegetation and topsoil is planned and carried out in a manner to minimise SD impacts. This includes impacts on heritage sites. Ground disturbance includes drilling, clearing/grubbing, non-habitat tree disturbance, trenching, access roads etc. Until UCML's Environmental Department is satisfied that the proposed work activity complies with the site approval conditions, the proposed work cannot commence.

Impacts will continue to be avoided to the Mona Creek 23-30 rock shelter sites (ID# 180-187) and the Cockabutta Creek 18-20 sites (ID# 160-162), with additional heritage recording undertaken and consideration given to implementation of a CMP should UCML obtain ownership or control of those specific areas.

In general, the risk of inadvertent impacts will continue to be minimised for other identified Aboriginal sites within the Project area, for which specific development impacts are not planned. The following actions will be taken in order to comply with this HMP:

Actions

- UCML will implement an *GDP* process for any new works proposed within the Project area;
- Where those works are proposed within portions of the Project area that have not been subject to heritage survey sampling consistent with OEH requirements at the time of the EA, procedures outlined in **Section 3.7.4, 3.7.5 and 3.7.6** f this Plan will be implemented;
- Where those works are proposed within portions of the Project area that have been subject to heritage survey sampling consistent with OEH requirements at the time of the EA, and will occur in close proximity to an identified Aboriginal site, but impacts to the site can be avoided, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence. This will vary on a site specific basis, with consideration of the nature of the proposed works, and may include provision of information to relevant staff and contractors, temporary protective fencing, and/or signage;
- Generally, in relation to all identified Aboriginal sites within the Project area that will not be subject to specific development impacts, the ECM will ensure that measures are implemented to minimise the risk of inadvertent impacts from anything other than low-level continuing land-use. This may be particularly relevant for sites of moderate to high significance for which there is a perceptible risk of unacceptable continuing land-use impacts occurring, and may involve:
    - Provision of information to relevant staff and contractors and other landowners and users of the land;
    - Protective fencing and/or signage;
    - Restricting vehicle use to designated access tracks where practical;
    - Control of feral animals (to prevent impacts to rock shelters);
    - General restrictions on access of members of the Public to the Mine site; and
    - Management of erosion.
- UCML will continue to ensure that development impacts are avoided to the Mona Creek 23-30 rock shelter sites (ID# 180-187) and the Cockabutta Creek 18-20 rock shelter sites (ID# 160-162);
- If in future UCML obtains ownership or control of the land on which sites ID# 180-187 and #160-162 are situated, UCML will engage an appropriately qualified expert to conduct a detailed

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archaeological survey and recording of the heritage evidence in those locations, in consultation with the registered Aboriginal stakeholders;

- If in future UCML obtains ownership or control of the land on which sites ID# 180-187 and #160-162 are situated, UCML will give consideration to the dedication of Conservation Areas around these sites and the preparation of a CMP for these locations (refer to procedures in **Section 3.3** of this Plan).

3.5 Management of Identified Aboriginal Heritage Evidence

In order to manage and mitigate the impacts of the Project on the scientific and cultural values of the identified Aboriginal heritage evidence, measures will be implemented for known Aboriginal sites consistent with the Project Approval and EA (Kuskie 2009).

UCML has adopted the GDP process for all new ground disturbance on site. The purpose of the *GDP* is to ensure site clearing of vegetation and topsoil is planned and carried out in a manner to minimise SD impacts. This includes impacts on heritage sites. Ground disturbance includes drilling, clearing/grubbing, non-habitat tree disturbance, trenching, access roads etc.

Any Aboriginal heritage sites identified during the *GDP* process are managed in accordance with **Appendix B** of this Plan.

Actions

- Management measures for known Aboriginal sites within the Project study area will be implemented as set out in **Appendix B** of this Plan and detailed in the following Sections:
  - **Section 3.1** - Procedures relating to the involvement of the RAPs in the management of the sites;
  - **Section 3.3** - Procedures relating to sites subject to conservation within the Brokenback or Grinding Groove Conservation Areas;
  - **Section 3.4** - Procedures relating to sites subject to avoidance of impacts;
  - **Section 3.5.1** - Procedures relating to surface collections of artefacts and other evidence;
  - **Section 3.5.2** - Procedures relating to the conduct of mechanical surface scrapes and localised hand excavation of features of significance within the scrapes;
  - **Section 3.5.3** - Procedures relating to the excavation by hand of open artefact sites;
  - **Section 3.5.4** - Procedures relating to the excavation by hand of rock shelters;
  - **Section 3.5.5** - Procedures relating to specific sites within LW 26 and W3 that are required under DA 113-12-98;
  - **Section 3.6** - Procedures relating to previously unrecorded Aboriginal heritage evidence should it be identified within the Project area;
  - **Section 3.7** - Procedures relating to additional heritage investigation required for certain Aboriginal sites and areas;
  - **Section 3.8** - Procedures relating to the photography and curation of Aboriginal heritage evidence that is salvaged;
  - **Section 3.10** - Procedures relating to the management of heritage outside of disturbance areas;
  - **Section 5.1** - Procedures relating to the lodgement of site records with OEH for all newly identified locations of heritage evidence and all modifications to any known Aboriginal sites already registered with OEH, and updating the UCML Aboriginal Site Database (typically, for all newly identified locations of heritage evidence and for newly identified evidence that extends or modifies the boundaries of a previously recorded Aboriginal site);
  - **Section 5.2** - Procedures relating to Aboriginal sites subject to monitoring; and
- **Section 5.5** - Procedures relating to the reporting of Aboriginal heritage mitigation measures and further investigations;
- **Appendix B** of this Plan will be updated on a continuous basis with respect to the addition of newly identified heritage evidence in locations where evidence has not previously been

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recorded, and the addition of previously recorded heritage evidence where it may become subject to impacts due to Project study area/impact area revisions;

- Work that may impact upon identified Aboriginal heritage evidence may only occur after the approval of the ECM and after relevant actions set out in this Plan have been implemented; and
- Where specified in **Appendix B**, or where identified Aboriginal objects cannot be relocated and salvaged, or where unidentified Aboriginal objects exist within impact areas, unmitigated impact is permissible under this Plan subject to the implementation of all other relevant provisions.

3.5.1 Surface Collections

Actions

For open artefact sites specified in **Appendix B** or elsewhere in this Plan for which surface collection is required, the collection will:

- Be undertaken by appropriately qualified and experienced archaeologists, in consultation with the registered Aboriginal stakeholders;
- Be undertaken prior to any development impacts occurring to those specific areas or sites;
- Involve systematic collection procedures selected by the archaeologist with respect to the nature and extent of the evidence and collection area, but involving delineation of the collection area, recording of artefact locations (for example, by using measurements offset from baselines, or by collection within a grid such as 5 x 5 metre squares, or by GPS of individual artefacts), collection of artefacts with the provenance recorded and labelled on the bag containing the item, and photographs and recording of each site location;
- Involve collected artefacts being washed and dried if necessary and recorded by a qualified archaeologist. A minimal level of information will be recorded for every artefact collected (provenance, stone material type, lithic item type, size, weight, nature and quantity of cortex, and presence and nature of any use-wear or residues) with additional attributes recorded where necessary. Individual artefacts of significance may be photographed and/or illustrated;
- Involve curation of collected artefacts as set out in **Section 3.8** of this Plan. Following recording of artefacts into a computer database, individual objects will be bagged separately in resealable, labelled plastic bags, with provenance information recorded on waterproof ink on the plastic bag label strips. Artefact bags will be grouped together for each collection area or site and further provenance information included on metal tags;
- Involve preparation of a report by a qualified archaeologist with reference to the DECCW Aboriginal Heritage Standards and Guidelines Kit (1997) and the requirements of this Plan, documenting the methods, results (including a plan of the site and collection areas, and an artefact database) and Aboriginal involvement. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan);
- Involve lodging updated site records with OEH (refer to **Section 5.1** of this Plan);

For the waterhole/well site (ID# 1391) specified in **Appendix B** for which surface collection is required, the collection will:

- Be undertaken in consultation with the RAPs prior to any development impacts occurring to that site;
- Involve careful removal of the single, small boulder hosting the feature;
- Involve curation of the item as set out in **Section 3.8** of this Plan; and
- Involve lodging an updated site record with OEH (refer to **Section 5.1** of this Plan).

For the open grinding groove site (ID# 416) specified in **Appendix B** for which removal is required, the removal will:

- Be undertaken in consultation with the RAPs prior to any development impacts occurring to that site;
- Involve careful cutting and removal of the sandstone slab hosting the cluster of grooves;
- Involve curation of the item as set out in **Section 3.8** of this Plan; and

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- Involve lodging an updated site record with OEH (refer to **Section 5.1** of this Plan).

For the rock shelter sites with portable grinding grooves specified in the EA (Kuskie 2009) for which the temporary surface collection of the portable grooves is required (ID# 163, 164, 171, 188, 462, 470 and 917), the collection will:

- Be undertaken by appropriately qualified and experienced archaeologists, in consultation with the registered Aboriginal stakeholders;
- Be undertaken prior to any subsidence impacts occurring to those specific sites;
- Involve recording of the shelter and location of the portable grooves (for example, by using measurements offset from a baseline), collection of the rock hosting the portable grooves with the provenance recorded and labelled on the item, and photographs of the site location; and
- Involve curation of the collected items as set out in **Section 3.8** of this Plan. The portable rocks/grooves would be temporarily removed to a safe storage area at the UCML office or placed in an open context adjacent to the shelters, prior to undermining, and replaced in their original positions in the shelters after undermining and all subsidence impacts have occurred.

3.5.2 Surface Scrapes and Localised Hand Excavations

Actions

For open artefact sites specified in **Appendix B** or elsewhere in this Plan for which surface scrapes and localised hand excavations are required, these procedures will:

- Be undertaken by appropriately qualified and experienced archaeologists, in consultation with the registered Aboriginal stakeholders;
- Be undertaken prior to any development impacts occurring to those specific areas or sites;
- Aim to identify the broader nature of the spatial distribution of evidence at the site, collection of identified artefacts, and the inspection for, identification of, and salvage prior to development impact of any significant, unexpected or unusual features;
- Involve systematic procedures selected by the archaeologist with respect to the nature and extent of the evidence and potential impacts, but involving delineation of the surface scrape area, use of a dozer, grader or similar machinery to progressively expose the surface (firstly by removal of vegetation, then by subsequent removal of thin [for example, 2-5 centimetres] layers of soil), inspection for and collection of any visible artefact evidence after each pass of the machinery, recording of individual artefact positions (for example, by using measurements offset from baselines, or by collection within a grid such as 5 x 5 metre squares, or by GPS of individual artefacts) with the provenance recorded and labelled on the bag containing the item, and photography and recording of each surface scrape location;
- Involve where any features of potential significance (for example, in situ hearths/fireplaces or dense artefact clusters representative of activity areas) are identified during the surface scrapes, hand excavation of those features in order to retrieve the evidence that comprises the feature. Hence, where identified, these features will be temporarily protected from further surface scrapes or other impacts until controlled hand excavation has been undertaken. For many features, this may involve excavation of one or more contiguous one square metre units by shovel and trowel to the depth of the A unit soil/top of B unit soil or visible or predicted cultural deposits, as determined by the archaeologist. Soil from each excavation unit will be dry-sieved or wet-sieved (where soils have a high clay content) through 2-3 mm mesh. Material (both natural and cultural) remaining in the sieve will be sorted by a qualified archaeologist to retain all probable and potential cultural items and dispose of the natural items. The excavation locations will be photographed and recorded;
- Involve where features (e.g. fireplaces, hearths or heat-treatment pits) are identified that contain samples suitable for radiocarbon or other methods of direct dating, retrieval of these samples and submission to an accredited laboratory for dating. Soil samples will also be retained;
- Involve collected artefacts being washed and dried if necessary and recorded by a qualified archaeologist. A minimal level of information will be recorded for every artefact collected (provenance, stone material type, lithic item type, size, weight, nature and quantity of cortex, and presence and nature of any use-wear or residues) with additional attributes recorded where necessary. Individual artefacts of significance may be photographed and/or illustrated;

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- Involve curation of collected artefacts as set out in **Section 3.8** of this Plan. Following recording of artefacts into a computer database, individual objects will be bagged separately in resealable, labelled plastic bags, with provenance information recorded on waterproof ink on the plastic bag label strips. Artefact bags will be grouped together for each collection area, excavation area or site and further provenance information included on metal tags;
- Involve preparation of a report by a qualified archaeologist with reference to the DECCW Aboriginal Heritage Standards and Guidelines Kit (1997) and the requirements of this Plan, documenting the methods, results (including a plan of the site and collection and excavation areas, artefact databases and analysis with respect to relevant research questions) and Aboriginal involvement. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan); and
- Involve lodging updated site records with OEH (refer to **Section 5.1** of this Plan).

3.5.3 Hand Excavation of Open Artefact Sites

Actions

For open artefact sites specified in **Appendix B** or elsewhere in this Plan for which broad area hand excavation is required, these procedures will:

- Be undertaken by appropriately qualified and experienced archaeologists, in consultation with the registered Aboriginal stakeholders;
- Be undertaken prior to any development impacts occurring to those specific areas or sites;
- Aim to retrieve the evidence that comprises the feature or site in a manner consistent with obtaining maximum possible information to address relevant research aims and mitigate the impacts of the Project;
- Involve systematic procedures selected by the archaeologist with respect to the nature and extent of the evidence and potential impacts, but involving hand excavation by shovel and trowel of multiple contiguous one square metre units to the depth of the A unit soil/top of B unit soil or visible or predicted cultural deposits. Soil from each excavation unit will be dry-sieved or wet-sieved (where soils have a high clay content) through 2-3 mm mesh. Material (both natural and cultural) remaining in the sieve will be sorted by a qualified archaeologist to retain all probable and potential cultural items and dispose of the natural items. The excavation locations will be photographed and recorded;
- Involve where features (e.g. fireplaces, hearths or heat-treatment pits) are identified that contain samples suitable for radiocarbon or other methods of direct dating, retrieval of these samples and submission to an accredited laboratory for dating. Soil samples will also be retained;
- Involve collected artefacts being washed and dried if necessary and recorded by a qualified archaeologist. A minimal level of information will be recorded for every artefact collected (provenance, stone material type, lithic item type, size, weight, nature and quantity of cortex, and presence and nature of any use-wear or residues) with additional attributes recorded where necessary. Individual artefacts of significance may be photographed and/or illustrated;
- Involve curation of collected artefacts as set out in **Section 3.8** of this Plan. Following recording of artefacts into a computer database, individual objects will be bagged separately in resealable, labelled plastic bags, with provenance information recorded on waterproof ink on the plastic bag label strips. Artefact bags will be grouped together for each collection area, excavation area or site and further provenance information included on metal tags;
- Involve preparation of a report by a qualified archaeologist with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan, documenting the methods, results (including a plan of the site and excavation area, artefact databases and analysis with respect to relevant research questions) and Aboriginal involvement. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan); and
- Involve lodging updated site records with OEH (refer to **Section 5.1** of this Plan).

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3.5.4 Excavation of Rock Shelters

In accordance with UCML's Statement of Commitments (see **Table 2.2**) a representative sample of rock shelters that are predicted to be impacted will be test excavated for potential salvage. To refine the representative sample UCML is awaiting the results of 12 rock shelter excavations in LW W3 and W4 and potentially any of the rock shelters 104,105 and 1420 (over LW F of the North 1 panels) (see **Section 3.5.6**) that will provide highly useful information relevant to the formulation of the sampling strategy.

The rock shelter test excavation program for the Ulan Complex has been finalised in consultation with the RAPs to enable a staged test excavation program to be implement prior to subsidence impacts on those rock shelters within the underground subsidence impact areas.

Actions

For rock shelter sites and PADs specified in **Appendix B** or elsewhere in this Plan that require "consideration as part of a rock shelter test excavation sample, with potential salvage collection and excavation", or for which only hand excavation is required, the following procedures will apply as relevant[11]:

- The process will be undertaken by appropriately qualified and experienced archaeologists, in consultation with the registered Aboriginal stakeholders;
- The process will be undertaken prior to any subsidence impacts occurring to any of those specific areas or sites;
- The purpose of the process is to enable mitigation of subsidence impacts to the 82 rock shelter sites of low to moderate or higher significance that are susceptible to impacts12, as listed in **Appendix B**;
- The process is a four-stage sequential process as outlined below:

1. Selection of a representative sample from the 82 sites of low to moderate or higher significance that are susceptible to impacts, as listed in **Appendix B**, has occurred.
    - The sample was selected by an appropriately qualified and experienced archaeologist, in consultation with the registered Aboriginal stakeholders, and includes examples of the rock shelter sites/PADs specified in Appendix 2 from different locations in the Project study area and with different characteristics (for example, size of habitable floor area and PAD, and nature of identified evidence and topographic context) (refer to Kuskie, 2013, *Ulan Coal Continued Operations: Aboriginal Rock Shelter Test Excavation Sampling Strategy*);

2. An initial small test excavation in each rock shelter in the representative sample selected in Step 1:
    - The aim of each test excavation is to identify the nature of deposits, site integrity and research potential, and enable a reassessment of significance;
    - A baseline will be established in each shelter and an accurate plan prepared;
    - A 2 metre x 0.5 metre trench will be pegged out in the central portion of the main habitable floor area of each shelter, extending from near or at the rear of the shelter towards or across the dripline;
    - Each excavation will be dug by trowel within 0.5 x 0.5 metre units to the depth of the visible or predicted cultural deposits or to bedrock. Each unit will be labeled using an alphanumerical grid. Major rock will be excavated around and not removed;

[11] Where only test excavation is required, the preceding general notes and procedure #2 are applicable. Where only salvage excavation is required, the preceding general notes and procedure #4 are applicable.
[12] The total known at the time of the Environmental Assessment (Kuskie 2009) was 77. This tally has increased by three with the North 1 Panels and by a further two with a Modification to the Ulan West mine plan. This tally may be refined further where investigation is undertaken of areas that were not sampled during the survey, or of any modifications to the Project study area/impact area.

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- Excavation units will be dug in successive levels ('spits') of five centimetres depth, within individual soil units. Where pits or lenses are identified, these will also be excavated and sieved separately as a sub-unit. Where stratigraphy/soil profile changes occur, a new spit will be commenced;
- In order to gain an early understanding of the soil profile, one or several units may be excavated to the basal depth at the commencement of the excavation;
- Vertical control (depth below surface) will be established using levels off a datum point;
- Data will be recorded for each excavation unit on an 'Excavation Unit Recording Form', including the position of any features or key evidence and soil descriptions;
- Soil from each level within an excavation unit will be placed into separate buckets and separately dry-sieved through 2-3 mm mesh. Material (both natural and cultural) remaining in the sieve will be sorted by a qualified archaeologist to retain all probable and potential cultural items and dispose of the natural items;
- Samples of soil will be retained;
- Charcoal samples will be retained where identified and where suitable for radiocarbon or other methods of direct dating, submitted to an accredited laboratory for dating;
- At the completion of each excavation the trench will be lined with plastic and backfilled with the excavated/sieved sediment;
- The excavations and location will be photographed;
- Retrieved artefacts will be washed and dried if necessary and recorded by a qualified archaeologist. A minimal level of information will be recorded for every artefact collected (provenance, stone material type, lithic item type, size, weight, nature and quantity of cortex, and presence and nature of any use-wear or residues) with additional attributes recorded where necessary. Individual artefacts of significance may be photographed and/or illustrated;
- Any shell and bone material retrieved will be recorded, with identification to genus or species level where possible and counts of minimum numbers undertaken. Similar shell and bone items will be bagged together for each unit spit;
- Retrieved artefacts will be curated as set out in **Section 3.8** of this Plan. Following recording of artefacts into a computer database, individual objects will be bagged separately in resealable, labeled plastic bags, with provenance information recorded on waterproof ink on the plastic bag label strips. Artefact bags will be grouped together for each excavation area or site and further provenance information included on metal tags;
- A report will be prepared by a qualified archaeologist with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan, documenting the methods, results (including a plan of the site and excavation area, artefact databases and analysis with respect to relevant research questions) and Aboriginal involvement. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan);
- Updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan).

3. On the basis of the initial test excavations (Step 2), revision of the sample (derived in Step 1) will occur, to include one or several sites of each level of significance for further, more detailed salvage excavation, to mitigate the overall impacts of the Project on this type of evidence:
   - The sample will be selected by an appropriately qualified and experienced archaeologist, in consultation with the registered Aboriginal stakeholders, and may include one or several sites of each level of significance;

4. More detailed salvage excavation would occur for the revised sample (obtained in Step 3), using a similar methodology to Step 2 but involving larger samples from each selected rock shelter:

- The aim of each salvage excavation would be to mitigate the impacts of the Project on scientific and cultural values, through the retrieval and analysis of evidence and contribution to an improved understanding of Aboriginal occupation of the Ulan locality. This can be achieved through the analysis of the data obtained to address relevant research questions, particularly those relating to occupation models, stone working technology, stone material procurement and use, and the chronology of occupation within the Ulan locality;
- The excavation area and location will be determined by an appropriately qualified and experienced archaeologist, in consultation with the registered Aboriginal stakeholders, with consideration of the potential subsidence impacts, extent of the habitable floor area and PAD, nature of the evidence, and the spatial area and quantity of data required to address relevant research questions and thereby successfully mitigate the impacts of the Project;
- A baseline will be established in each shelter, the excavation area pegged out, and an accurate plan prepared;
- Each excavation will be dug by trowel within 0.5 x 0.5 metre units to the depth of the visible or predicted cultural deposits or to bedrock. Each unit will be labeled using an alphanumerical grid. Major rock will be excavated around and not removed;
- Excavation units will be dug in successive levels ('spits') of five centimetres depth, within individual soil units. Where pits or lenses are identified, these will also be excavated and sieved separately as a sub-unit. Where stratigraphy/soil profile changes occur, a new spit will be commenced;
- In order to gain an early understanding of the soil profile, one or several units may be excavated to the basal depth at the commencement of the excavation;
- Vertical control (depth below surface) will be established using levels off a datum point;
- Data will be recorded for each excavation unit on an 'Excavation Unit Recording Form', including the position of any features, location or key evidence and soil descriptions. The excavation will also be photographed;
- Soil from each level within an excavation unit will be placed into separate buckets and separately dry-sieved through 2-3 mm mesh. Material (both natural and cultural) remaining in the sieve will be sorted by a qualified archaeologist to retain all probable and potential cultural items and dispose of the natural items;
- Samples of soil will be retained;
- Charcoal samples will be retained where identified and where suitable for radiocarbon or other methods of direct dating, submitted to an accredited laboratory for dating;
- At the completion of each excavation the trench will be lined with plastic and backfilled with the excavated/sieved sediment;
- The excavations and location will be photographed;
- Retrieved artefacts will be washed and dried if necessary and recorded by a qualified archaeologist. A minimal level of information will be recorded for every artefact collected (provenance, stone material type, lithic item type, size, weight, nature and quantity of cortex, and presence and nature of any use-wear or residues) with additional attributes recorded where necessary. Individual artefacts of significance may be photographed and/or illustrated;
- Any shell and bone material retrieved will be recorded, with identification to genus or species level where possible and counts of minimum numbers undertaken. Similar shell and bone items will be bagged together for each unit spit;
- Retrieved artefacts will be curated as set out in **Section 3.8** of this Plan. Following recording of artefacts into a computer database, individual objects will be bagged separately in resealable, labeled plastic bags, with provenance information recorded on waterproof ink on the plastic bag label strips. Artefact bags will be grouped together for each excavation area or site and further provenance information included on metal tags;

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- A report will be prepared by a qualified archaeologist with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan, documenting the methods, results (including a plan of the site and excavation area, artefact databases and analysis with respect to relevant research questions) and Aboriginal involvement. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan);
- Updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan).

3.5.5 Longwall Panels 26 and W3

Actions

To permit the continued mining of LW 26 and W3 under DA 113-12-98 the following actions will be implemented consistent with specific approval conditions in DA 113-12-98:

- UCML will ensure continued compliance with AHIP #1101386 issued by OEH for sites ID# 348, 349, 350, 351 and 363, for LW 26; and
- UCML will ensure compliance with DA 113-12-98 Condition 3.3(c)(iv) through continued compliance with AHIP 123 issued by OEH for sites ID# 163, 164, 165, 166, 470, 472, 473, 476, 646, 651, 653 and 654 for LW W3.

3.5.6 Longwall Panels C, E, F and G (North 1)

In accordance with **section 3.5.4** of the HMP, UCML has determined which, of the rock shelters 104, 105 and 1420 (over LW F of the North 1 panels) were included in the detailed salvage excavation program. This work, including any detailed salvage excavation, was undertaken prior to subsidence impacts (nominally July 2012). This program included:

- Undertaking an initial small test excavation in each rock shelter (104, 105 and 1420) in accordance with Step 2 of **section 3.5.4** in the HMP (Kuskie 2012);
- Based on the results of the test excavations, determination by an appropriately qualified and experience archaeologist, in consultation with the registered Aboriginal stakeholders, whether more detailed salvage excavation of any of the 3 rock shelters was required (Kuskie 2012);
- Detailed salvage excavation was identified as being required at sites ID# 104 and 105 and Step 4 of **section 3.5.4** in HMP was implemented.

3.5.7 Ulan West Longwalls 1, 2, 3 and 4

The test excavation fieldwork at ID# 1054, conducted in accordance with Section 3.5.4 of the HMP, was completed on 18 February 2015. Recording of artefacts, analysis of results and reporting is ongoing. Following the field work, detailed consultation was undertaken with the RAPs regarding consensus was reached that further more detailed salvage excavation of site ID# 1054 is not required. As such, Step 4 of Section 3.5.4 of the HMP would not be implemented for this site, and undermining can proceed without further salvage.

In accordance with **section 3.5.4** of the HMP, UCML has determined which, of the rock shelters (over Ulan West LW1-4) were included in the detailed salvage excavation program. This work, including any detailed salvage excavation, is undertaken prior to subsidence impacts. The current salvage program includes:

- In 2015 the Mona Creek s87 rock shelter test excavations ID# 646, 165, 476 and 651 will be completed.

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3.6 Management of Previously Unrecorded Aboriginal Heritage Evidence

When previously unrecorded Aboriginal heritage evidence is identified within the Project area during the course of operations or further heritage investigations[13], this evidence will be subject to temporary protection, recorded and appropriate management strategies implemented, in consultation with the registered Aboriginal stakeholders. Where no impact is cause and no further approvals are required, previously unrecorded heritage evidence will be reported to the DP&E and OEH within the Annual Environmental Review.

If the Aboriginal heritage evidence is located outside the Project area or has the potential to be disturbed as a result of activities not consistent with the Project Approval, UCML will seek the required modifications to the Project Approval from DP&E.

Should any human skeletal remains be identified, UCML will ensure that actions are implemented to comply with statutory obligations and will consider the special needs of the Aboriginal community should those remains be identified as Aboriginal.

Actions

- Upon identification of any previously unrecorded Aboriginal heritage evidence, all work that may cause impacts to that evidence shall immediately cease and the ECM be notified;
- Temporary fencing and/or marking of the site location and signage may be implemented as deemed necessary by the ECM to ensure that inadvertent impacts do not occur;
- Relevant personnel may be notified as deemed necessary by the ECM to ensure that inadvertent impacts do not occur;
- With the exception of skeletal material (refer to **Section 3.6.3** of this Plan), where the newly identified heritage evidence will not be impacted by any proposed works, but works will occur in close proximity, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the heritage evidence. This will vary on a site specific basis, with consideration of the nature of the proposed works, and may include provision of information to relevant staff and contractors, temporary protective fencing, and/or signage (refer to **Section 3.4** of this Plan). Further action under **Sections 3.6.1** or **3.6.2** of this Plan will not be required;
- With the exception of skeletal material (refer to **Section 3.6.3** of this Plan), where the newly identified heritage evidence may be subject to impacts, UCML will engage an appropriately qualified and experienced archaeologist to undertake a detailed archaeological recording of the evidence and assess the significance of the evidence in consultation with the registered Aboriginal stakeholders14, assess the nature of the proposed impacts, and provide advice on appropriate management strategies consistent with this Plan;
- Management of any previously unrecorded Aboriginal heritage evidence that is identified within the Project area during the course of operations or further heritage investigations will occur with consideration of the nature of the evidence, significance of the evidence and nature of the proposed impacts. Management measures for individual site types will be implemented as detailed in the following Sections and below:
- **Section 3.6.1** - newly identified Aboriginal heritage evidence that may be subject to direct surface impacts;
- **Section 3.6.2** - newly identified Aboriginal heritage evidence that may be subject to subsidence impacts;
- **Section 3.6.3** - human skeletal material;

[13] Other than new evidence identified during heritage mitigation works in a location where evidence has previously been recorded (for example, new stone artefacts identified during the surface collection or excavation of a known site). Such evidence is dealt with under **Section 4.8** of this Plan.

[14] Following the same methodology and terminology as the recording procedures, significance assessment and Aboriginal consultation as for the EA (refer to Kuskie 2009).

- Where required (typically, for all newly identified heritage evidence in locations where evidence has not previously been recorded, and for newly identified evidence that extends or modifies the boundaries of a previously recorded Aboriginal site), the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- For all newly identified heritage evidence, updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan);
- **Appendix B** of this Plan will be updated for newly identified heritage evidence in locations where evidence has not previously been recorded;
- Work that may impact upon the Aboriginal heritage evidence may only recommence with the approval of the ECM and after relevant actions set out in this Plan have been implemented, including the approval of DP&E where the works are not consistent with the Project Approval;
- Reports will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and this Plan documenting the results of any additional archaeological survey and/or mitigation measures, and Final Reports will be distributed to the RAPs and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

3.6.1 Surface Impacts

3.6.1.1 Open Artefact Sites

Actions

- Where broad-scale impacts are proposed (for example, open cut mining), and avoidance of impacts is not feasible:
  - Where the site is assessed as being of low significance, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of low to moderate, or moderate significance, following detailed recording of the evidence, it will be subject to surface collection (refer to procedures in **Section 3.5.1** of this Plan) before impacts are permitted to occur. Where the consensus agreement of UCML and the RAPs is reached, additional mitigation measures, such as surface scrapes and/or hand excavation (refer to procedures in **Sections 3.5.2** and **3.5.3** of this Plan), may be implemented;
  - Where the site is assessed as being of moderate to high, or high significance, following detailed recording of the evidence, it will be subject to surface collection and any other mitigation measures, such as surface scrapes and/or hand excavation, as determined by the consensus agreement of UCML and the RAPs (refer to procedures in **Sections 3.5.1 - 3.5.3** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert, but it will as a minimum involve surface collection of the evidence (refer to procedures in **Section 3.5.1** of this Plan);
- Where small-scale high-level impacts are proposed (for example, exploratory drilling, ventilation shafts, service boreholes, dewatering bores, or narrow linear corridors associated with conveyors, water pipelines and power lines):
  - Where feasible, UCML will seek to redesign the proposed works such that impacts are minimised or avoided to the heritage evidence;
  - Where the site is assessed as being of low significance and impacts cannot be avoided, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of low to moderate, or moderate significance, and impacts cannot be avoided, following detailed recording of the evidence, the ECM will determine in consultation with a heritage expert the extent of proposed impacts, and where impacts are substantial, the evidence within the impact area will be subject to surface collection (refer to procedures in **Section 3.5.1** of this Plan) before impacts are permitted to occur. Where the consensus agreement of UCML and the RAPs is reached, additional mitigation measures, such as surface scrapes and/or hand excavation (refer to procedures in **Sections 3.5.2** and **3.5.3** of this Plan), may be implemented for evidence

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within the impact area. Where the impacts are determined to be minimal, impacts will be permitted to occur without further action;

- Where the site is assessed as being of moderate to high, or high significance, and impacts cannot be avoided, following detailed recording of the evidence, the ECM will determine in consultation with a heritage expert the extent of proposed impacts, and where impacts are substantial, the evidence within the impact area will be subject to surface collection and any other mitigation measures, such as surface scrapes and/or hand excavation, as determined by the consensus agreement of UCML and the RAPs(refer to procedures in **Sections 3.5.1 - 3.5.3** of this Plan) before impacts are permitted to occur. Where the impacts are determined to be minimal, impacts will be permitted to occur after the evidence within the impact area has been subject to surface collection (refer to procedures in **Section 3.5.1** of this Plan). In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert, but it will as a minimum involve surface collection of the evidence (refer to procedures in **Section 3.5.1** of this Plan);

- Where high-level continuing land-use impacts are proposed (for example, maintenance and use of lightly formed or unformed vehicle tracks or roads):
  - Where the site is assessed as being of low significance and impacts cannot be avoided, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of low to moderate, or moderate significance, following detailed recording of the evidence, where the consensus agreement of UCML and the RAPs is reached it will be subject to surface collection (refer to procedures in **Section 3.5.1** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**);
  - Where the site is assessed as being of moderate to high, or high significance, following detailed recording of the evidence, it will be subject to surface collection and any other mitigation measures, such as surface scrapes and/or hand excavation, as determined by the consensus agreement of UCML and the RAPs (refer to procedures in **Sections 3.5.1 - 3.5.3** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert, but it will as a minimum involve surface collection of the evidence (refer to procedures in **Section 3.5.1** of this Plan);
- Where low-level continuing land-use impacts are proposed (for example, pastoral use):
  - UCML will ensure that relevant information about the nature and location of any sites of moderate to high, or high significance is provided to relevant UCML personnel and contractors, and other landowners and users of the land;
  - Following detailed recording of the evidence, impacts will be permitted to occur without further action.

3.6.1.2 Open Grinding Grooves

Actions

- Where broad-scale impacts are proposed (for example, open cut mining), and avoidance of impacts is not feasible:
  - Where the site is assessed as being of low, low to moderate, or moderate significance, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of moderate to high, or high significance, following detailed recording of the evidence, it will be subject to any mitigation measures, such as removal of the sandstone slab hosting the grooves and subsequent display for educational purposes, as determined by the consensus agreement of UCML and the RAPs (refer to procedures in **Section 3.5.1** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and

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the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**);

- Where small-scale high-level impacts are proposed (for example, exploratory drilling, ventilation shafts, service boreholes, dewatering bores, or narrow linear corridors associated with conveyors, water pipelines and power lines):
  - Where feasible, UCML will seek to redesign the proposed works such that impacts are minimised or avoided to the heritage evidence;
  - Where the site is assessed as being of low, low to moderate, or moderate significance and impacts cannot be avoided, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of moderate to high, or high significance, following detailed recording of the evidence, the ECM will determine in consultation with a heritage expert the extent of proposed impacts. Where impacts are substantial, the evidence will be subject to any mitigation measures, such as removal of the sandstone slab hosting the grooves and subsequent display for educational purposes, as determined by the consensus agreement of UCML and the RAPs(refer to procedures in **Section 3.5.1** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert. Where the impacts are determined to be minimal, impacts will be permitted to occur without further action;
- Where high-level continuing land-use impacts are proposed (for example, maintenance and use of lightly formed or unformed vehicle tracks or roads):
  - The ECM will, in consultation with a heritage expert, implement appropriate measures to protect the evidence from further impacts (for example, rerouting of the vehicle track, or emplacement of protective material above the evidence), before further impacts are permitted to occur;
- Where low-level continuing land-use impacts are proposed (for example, pastoral use):
  - UCML will ensure that relevant information about the nature and location of any sites of moderate to high, or high significance is provided to relevant UCML personnel and contractors, and other landowners and users of the land;
  - Following detailed recording of the evidence, impacts will be permitted to occur without further action.

3.6.1.3 Rock Shelters

Actions

- Where broad-scale impacts are proposed (for example, open cut mining), and avoidance of impacts is not feasible:
  - Where the site is assessed as being of low significance and impacts cannot be avoided, following detailed recording of the evidence, impacts will be permitted to occur without further action;
  - Where the site is assessed as being of low to moderate, or moderate significance, following detailed recording of the evidence, where the consensus agreement of UCML and the RAPs is reached, the site will be subject to test excavation and consideration of further mitigation measures (salvage excavation) as per the procedures established in **Section 3.5.4** of this Plan;
  - Where the site is assessed as being of moderate to high, or high significance, it will be subject to test excavation and any other mitigation measures, such as salvage excavation by hand, as determined by the consensus agreement of UCML and the RAPs(refer to procedures in **Section 3.5.4** of this Plan) before impacts are permitted to occur. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert, but it will as a minimum involve test excavation of the shelter (refer to procedures in **Section 3.5.4** of this Plan);
- Where small-scale high-level impacts are proposed (for example, exploratory drilling, ventilation shafts, service boreholes, dewatering bores, or narrow linear corridors associated with conveyors, water pipelines and power lines):

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- UCML will seek to redesign the proposed works such that impacts are minimised or avoided to the heritage evidence;
- Where the site is assessed as being of low to moderate, or moderate significance, following detailed recording of the evidence, where the consensus agreement of UCML and the RAPs is reached, the site will be subject to test excavation and consideration of further mitigation measures (salvage excavation) as per the procedures established in **Section 3.5.4** of this Plan;
- Where the site is assessed as being of moderate to high, or high significance, it will be subject to test excavation and any other mitigation measures, such as salvage excavation by hand, as determined by the consensus agreement of UCML and the RAPs(refer to procedures in **Section 3.5.4** of this Plan) before impacts are permitted to occur In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**); but it will as a minimum involve test excavation of the shelter (refer to procedures in **Section 3.5.4** of this Plan);

- Where low-level continuing land-use impacts are proposed (for example, pastoral use):
  - The ECM will ensure that measures are implemented where deemed necessary to minimise the risk of inadvertent impacts from continuing land-use (refer to **Section 3.4** of this Plan).

3.6.1.4 Other Site Types (scarred trees, carved trees, ochre quarries or stone arrangements)

Actions

- For site types that contain or are defined as Aboriginal objects (for example, scarred trees, carved trees, ochre quarries or stone arrangements)15:
  - Where broad-scale impacts are proposed (for example, open cut mining) and avoidance of impacts is not feasible, the ECM will determine an appropriate mitigation strategy in consultation with a heritage expert and with the consensus agreement of the registered Aboriginal stakeholders. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will determine that strategy in consultation with a heritage expert. Where the site is assessed as being of moderate to high, or high significance, and impacts are substantial, some form of mitigation will be implemented before impacts are permitted to occur;
  - Where small-scale high-level impacts are proposed (for example, exploratory drilling, ventilation shafts, service boreholes, dewatering bores, or narrow linear corridors associated with conveyors, water pipelines and power lines), UCML will seek to redesign the proposed works such that impacts are minimised or avoided to the heritage evidence. Where avoidance of impacts is not feasible, the ECM will determine an appropriate mitigation strategy in consultation with a heritage expert and with the consensus agreement of the registered Aboriginal stakeholders. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**). Where the site is assessed as being of moderate to high, or high significance, and impacts are substantial, some form of mitigation will be implemented before impacts are permitted to occur;
  - Where high-level continuing land-use impacts are proposed (for example, maintenance and use of lightly formed or unformed vehicle tracks or roads) the ECM will, in consultation with a heritage expert, implement appropriate measures to protect the evidence from further impacts (for example, rerouting of the vehicle track);
  - Where low-level continuing land-use impacts are proposed (for example, pastoral use) the ECM will ensure that measures are implemented where deemed necessary to minimise the risk of inadvertent impacts from continuing land-use (refer to **Section 3.4** of this Plan).

[15] Excluding open artefact, open grinding groove and rock shelter sites that are addressed in Sections 3.6.1.1-3.6.1.3 of this Plan and skeletal remains that are addressed in Section 3.6.3 of this Plan.

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For sites or places of traditional or historical Aboriginal cultural value[16], the ECM will determine an appropriate management strategy in consultation with a heritage expert and with the consensus agreement of the registered Aboriginal stakeholders. In the event that consensus agreement cannot be reached between UCML and the registered Aboriginal stakeholders, the ECM will determine that strategy in consultation with a heritage expert.

3.6.2 Subsidence Impacts

3.6.2.1 Rock Shelters

Actions

- For rock shelter sites/PADs assessed as being of low significance, following detailed recording of the evidence, impacts will be permitted to occur without further action;
- For rock shelter sites/PADs assessed as being of low to moderate, moderate or high significance, following detailed recording of the evidence, UCML will engage a qualified subsidence expert to provide an assessment of potential subsidence impacts[17]:
  - Where the potential for subsidence impacts is assessed as 10% or less (unlikely or most unlikely), impacts will be permitted to occur without further action;
  - Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), and the significance is assessed as low to moderate, or moderate, impacts will be permitted to occur with monitoring (refer to **Section 5.2** of this Plan);
  - Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), and the significance is assessed as moderate to high, or high, the site will be subject to test excavation and consideration of further mitigation (salvage excavation) will occur as per the procedures established in **Section 3.5.4** of this Plan). Subsequently, impacts will be permitted to occur with monitoring (refer to **Section 5.2** of this Plan);
  - Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), and grinding grooves are present within the shelter on portable rock formations, these will be removed prior to undermining for temporary storage at the UCML mine office, then replaced at or as close to their original positions after undermining has occurred (refer to the procedures established in **Section 3.5.1** of this Plan);
  - Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), and grinding grooves are present within the shelter on the main body of the rock mass, impacts will be permitted to occur with monitoring (refer to **Section 5.2** of this Plan).

3.6.2.2 Open Grinding Grooves

Actions

- For open grinding groove sites assessed as being of low or low to moderate significance, following detailed recording of the evidence, impacts will be permitted to occur without further action;
- For open grinding groove sites assessed as being of moderate or high significance, following detailed recording of the evidence, UCML will engage a qualified subsidence expert to provide an assessment of potential subsidence impacts:
  - Where the potential for subsidence impacts is assessed as 10% or less (unlikely or most unlikely), impacts will be permitted to occur without further action;

[16] Sites or places associated with ceremonies, spiritual/mythological beliefs or traditional knowledge, which date from the pre-contact period and have persisted until the present time, or with historical associations, which date from the post-contact period and are remembered by people today (for example, plant and animal resource use areas and known camp sites). These do not necessarily contain or constitute Aboriginal objects as defined under the NP&W Act.

[17] Following the same methodology and terminology as the subsidence impact assessment for the EA (refer to Kuskie 2009 Section 11.2 and Appendix 5, and Mills 2009).

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- Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), impacts will be permitted to occur with monitoring (refer to **Section 5.2** of this Plan).

3.6.2.3 Other Site Types

Actions

- For site types other than rock shelters and open grinding grooves that are assessed as being of low or moderate significance, following detailed recording of the evidence, impacts will be permitted to occur without further action (in general, impacts are anticipated to be unlikely or most unlikely for these other site types: Kuskie 2009);
- For site types other than rock shelters and open grinding grooves that are assessed as being of high significance, following detailed recording of the evidence, UCML will engage a qualified subsidence expert to provide an assessment of potential subsidence impacts:
  - Where the potential for subsidence impacts is assessed as 10% or less (unlikely or most unlikely), impacts will be permitted to occur without further action;
  - Where the potential for subsidence impacts is assessed as greater than 10% (possible, likely or almost certain), impacts will be permitted to occur with monitoring (refer to **Section 5.2** of this Plan) and subject to the consensus agreement of UCML and the registered Aboriginal stakeholders, any mitigation measures deemed necessary will be implemented.

3.6.3 Skeletal Remains

Actions

- If human skeletal material is identified, all work in the area of the material will cease immediately;
- UCML will immediately notify the NSW Police, registered Aboriginal stakeholders, DP&E and OEH (via the incident reporting telephone line);
- UCML will immediately implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the skeletal material. This may include provision of information to relevant staff and contractors, temporary protective fencing, and/or signage;
- UCML will facilitate, in cooperation with the Police, registered Aboriginal stakeholders, DP&E and OEH, the identification of the skeletal remains by an appropriately qualified person;
- Should the remains be identified as Aboriginal and the Police require no further involvement, UCML will manage the remains in consultation with the RAPs and DP&E, with advice from a heritage expert. Options available are listed below. Where consensus agreement over the preferred option is not reached between UCML and the registered Aboriginal stakeholders, the matter will be referred to DP&E for resolution (refer to **Section 3.5** of the *EMS (ULN SD PLN 0050)*);
  - In the first instance, UCML would seek to redesign the proposed works to avoid impacts to the skeletal remains;
  - Where the skeletal remains occur within an area designated for construction and impacts cannot be avoided, but the impacts involve the emplacement of fill or overburden, the evidence would be left in situ unless consensus agreement is reached between the RAPs and UCML to excavate the remains (refer below). Where agreed to by the consensus of the RAPs and UCML, and with the agreement of DP&E, detailed recording of the evidence may be undertaken by an appropriately qualified and experienced archaeologist with the registered Aboriginal stakeholders, and/or a protective barrier and fill may be emplaced above the evidence;
  - Where the skeletal remains occur within an area designated for construction and impacts cannot be avoided, but the impacts involve the emplacement of fill or overburden, where consensus agreement is reached between UCML and the registered Aboriginal stakeholders, and with the agreement of DP&E, the evidence would be retrieved by hand excavation and reburied outside of the impact zone at a location agreed to by UCML and the registered Aboriginal stakeholders. In the event that consensus agreement cannot be

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reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**);

- Where the skeletal remains occur within an area designated for construction and impacts cannot be avoided (particularly excavation), the evidence would be retrieved by hand excavation and reburied outside of the impact zone at a location agreed to by UCML and the registered Aboriginal stakeholders. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**);
- Where the skeletal remains occur within an area susceptible to potential subsidence impacts only, the evidence may be left in situ if agreed to by UCML and the registered Aboriginal stakeholders, or with the additional agreement of DP&E, retrieved by hand excavation and reburied outside of the impact zone at a location agreed to by UCML and the registered Aboriginal stakeholders. In the event that consensus agreement cannot be reached between UCML and the RAPs about the mitigation strategy, the ECM will promote and / or initiate the dispute resolution procedure (**Section 5.7**);
- Where the skeletal remains occur within an open context, and impacts are proposed in adjacent areas of the same environmental context, UCML will engage an appropriately qualified and experienced expert and the RAPs to conduct investigations in that area to identify whether further skeletal material exists. The methodology of the investigation will be determined by the heritage expert in consultation with the RAPs and the ECM, and may include surface scrapes (refer to **Section 3.5.2** of this Plan) and/or geophysical techniques (for example, ground magnetic survey, ground penetrating radar, electromagnetic survey and resistivity);

- Any hand excavation will be undertaken by an appropriately qualified and experienced archaeologist with the RAPs in accordance with best practice methods, with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)*. Excavation may include submission of samples for radiometric dating and isotope analysis where approved by the registered Aboriginal stakeholders;
- In locations where proposed works will occur in close proximity to an identified Aboriginal burial site, but impacts to the site can be avoided, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence (refer to **Section 3.4** of this Plan);
- A report will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and this Plan, documenting the results of any excavation and reburial, and hard copies will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

3.7 Additional Aboriginal Heritage Investigation Required

Aboriginal heritage assessments will be undertaken for the Aboriginal sites and areas as specified in **Appendix B** and below, in order to ensure that the potential impacts of proposed works or future alterations to the existing Project on Aboriginal heritage are adequately assessed, and appropriate mitigation and management measures are implemented in consultation with the registered Aboriginal stakeholders.

Actions

Prior to any development impacts occurring to those Aboriginal sites or areas as specified in **Appendix B** of this Plan and below, Aboriginal heritage assessments will be undertaken as detailed in the following Sections:

- **Section 3.7.1** - specific stone arrangement sites;
- **Section 3.7.2** - specific large open artefact sites;
- **Section 3.7.3** - reassessment of certain planned surface impacts;
- **Section 3.7.4** - any future proposed surface impacts;

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- **Section 3.7.5** - areas not sampled during the EA (and subsequent North 1 EA);
- **Section 3.7.6** - areas not sampled during the EA in Open Cut blast zone;
- **Section 3.7.7** - any future mine plan alterations; and
- **Section 3.7.8** - Subsidence Management Plan requirements.

3.7.1 Stone Arrangements

Actions

- UCML will engage an appropriately qualified and experienced archaeologist to undertake a detailed archaeological survey and recording of the stone arrangement sites ID# 589, 603, 697 and 700, in consultation with the registered Aboriginal stakeholders;
- The recording will involve the use of a theodolite or differential GPS to accurately record the locations of the stones and produce detailed site plans;
- Where required, the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- Where required, updated site records will be lodged with OEH (refer to Section 5.1 of this Plan);
- Measures will be implemented to protect these stone arrangement sites from continuing land use and any development impacts. This may involve provision of information to relevant staff and contractors, protective fencing and/or signage (refer to **Section 3.4** of this Plan).

3.7.2 Large Identified Open Artefact Sites

Actions

- UCML will engage an appropriately qualified and experienced archaeologist to undertake a detailed archaeological survey and recording of the large open artefact sites ID# 1084, 1091, 1092 and 1098 that were not fully recorded during the EA, in consultation with the registered Aboriginal stakeholders, should any future impacts be proposed in those site locations;
- The recording will involve the use of the same methodology as for the EA (Kuskie 2009);
- Where required, the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- Where required, updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan);
- Where future impacts are proposed to occur to any of these specific sites, management strategies will be applied as set out in **Appendix B** of this Plan;
- In locations where the proposed works will occur in close proximity to an identified Aboriginal site, but impacts to the site can be avoided, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence (refer to **Section 3.4** of this Plan).

3.7.3 Reassessment of Planned Surface Impacts

Actions

- When detailed design plans are available, UCML will engage an appropriately qualified and experienced archaeologist to reassess the potential impacts to identified Aboriginal sites of small-scale high impact works[18] (such as surface infrastructure and essential services) within areas that have been subject to heritage survey sampling consistent with the methodology and standards in the EA (Kuskie 2009);
- Subsequent to this assessment, where future impacts are proposed to occur to any of these specific sites, management strategies will be applied as set out in **Appendix 2** of this Plan;
- In locations where the proposed works will occur within 10m close proximity to an identified Aboriginal site, but impacts to the site can be avoided, UCML will implement measures

[18] At the time of the EA (Kuskie 2009), approximately 53 Aboriginal sites may be affected by such small-scale high impact works, as listed in Appendix 3 of this Plan.

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considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence (refer to **Section 3.4** of this Plan).

3.7.4 Future Proposed Small-Scale Surface Impacts

Actions

- For all future proposed small-scale surface impacts consistent with the Project Approval, such as those associated with:
  - The pipeline to the Talbragar River;
  - New access roads;
  - New power easements or other essential services or infrastructure;
  - Additional exploratory drilling;
  - Other minor works involving ground disturbance such as fence lines, vehicle tracks, significant vegetation removal, contour banks or farm dams;
  - Any post-mining subsidence repair works to surface infrastructure;
- UCML will implement the procedures outlined in the GDP process, as detailed in Section 3.7 of the *EMS (ULN SD PLN 0050)*, to identify whether the proposed impact areas have been subject to heritage survey sampling (consistent with the methodology and standards in the EA; Kuskie 2009), and whether any identified Aboriginal sites may be subject to impacts;
- Where the works are proposed within portions of the Project area that have been subject to heritage survey sampling consistent with OEH requirements at the time of the EA, management strategies will be applied as set out in **Appendix B** of this Plan for any identified sites that may be subject to impacts, or in **Section 3.4** of this Plan for any identified sites where works will occur in close proximity, but impacts to the site will be avoided. Additional action is not required;
- In locations with Aboriginal heritage potential[19] where impacts are proposed that may involve significant ground disturbance (e.g. pipeline to Talbragar River, new access roads and new power easements or other essential services or infrastructure), but heritage survey sampling has not occurred to a level consistent with the methodology and standards in the EA (Kuskie 2009), UCML will engage an appropriately qualified and experienced archaeologist to conduct a detailed archaeological survey and recording of those locations, in consultation with the registered Aboriginal stakeholders. The archaeological survey and recording will occur prior to any impacts occurring at the relevant locations, using the same methodology as for the EA (Kuskie 2009);
- In locations with Aboriginal heritage potential where impacts are proposed that may involve minimal ground disturbance (e.g. exploratory drilling, minor works involving ground disturbance such as fence lines, vehicle tracks, significant vegetation removal, contour banks or farm dams, and post-mining subsidence repair works to surface infrastructure), but heritage survey sampling has not occurred to a level consistent with the methodology and standards in the EA (Kuskie 2009), UCML will exercise due diligence and ensure that the works proceed with minimal impact. Additional action is not required;
- Where required, the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- Where required, updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan);
- In locations where impacts are proposed and existing identified Aboriginal sites listed in **Appendix B** may be subject to impacts, management strategies will be applied as set out in **Appendix B** of this Plan;
- In locations where impacts are proposed and newly identified Aboriginal sites, or previously recorded sites not listed in **Appendix B** of this Plan, may be subject to impacts, management strategies will be applied as set out in **Section 3.6** of this Plan;

[19] All locations apart from those in which the upper soil unit has been totally removed and negligible potential exists for any Aboriginal heritage evidence (for example, within the existing open cut mine, many existing facilities, well formed roads, etc.).

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- In locations where the proposed works will occur in close proximity to an identified Aboriginal site, but impacts to the site can be avoided, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence (refer to **Section 3.4** of this Plan);
- A report will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit* (1997) and the requirements of this Plan, documenting the results of any additional archaeological survey and management outcomes, and Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

3.7.5 Survey Areas Not Sampled During EA (and subsequent North 1 EA)

Actions

- UCML will engage an appropriately qualified and experienced archaeologist to conduct a detailed archaeological survey and recording, in consultation with the registered Aboriginal stakeholders, of the following locations:
  - All potential impact areas that were not sampled during the EA investigation (Kuskie 2009), currently totaling about 604 hectares for the potential subsidence impact area and 57 hectares for the potential surface impact area (outside of the subsidence impact area) (refer to **Figure 3** of this Plan and **Figure 7.3** and Appendix B11 of Kuskie 2009);
- All unformed or lightly formed vehicle tracks with Aboriginal heritage potential that were not sampled during the EA investigation (Kuskie 2009) and which may be subject to continuing use; The archaeological survey and recording will occur prior to any impacts occurring at the relevant locations, using the same methodology as for the EA (Kuskie 2009), in consultation with the RAPs(refer to **Section 3.1** of this Plan);
- Where required, the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- Where required, updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan);
- In locations where impacts are proposed and existing identified Aboriginal sites listed in **Appendix B** may be subject to impacts, management strategies will be applied as set out in **Appendix B** of this Plan;
- In locations where impacts are proposed and newly identified Aboriginal sites, or previously recorded sites not listed in **Appendix B** of this Plan, may be subject to impacts, management strategies will be applied as set out in **Section 3.6** of this Plan;
- In locations where proposed works will occur in close proximity to an identified Aboriginal site, but impacts to the site can be avoided, UCML will implement measures considered necessary by the ECM to ensure that inadvertent impacts do not occur to the relevant heritage evidence (refer to **Section 3.4** of this Plan);
- A report will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan, documenting the results of any additional archaeological survey and management outcomes, and Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

3.7.6 Survey of Areas Not Sampled During EA in Open Cut Blast Zone

Vibrations from blasting within the Open Cut Extension Area may affect heritage sites that are outside the area surveyed during the EA. These areas and any relevant sites (i.e. rock shelters and grinding grooves) that may occur within them require investigation to assess the potential impact from blasting.

Additional areas within the approved Open Cut Extension Area that were not sampled during the EA have since been surveyed by SEA and the Aboriginal stakeholder groups (refer to **Appendix B**). In

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addition, a buffer area around the current Ulan West Box Cut mining operation was also surveyed to identify Aboriginal sites that may be impacted by blasting.

The information obtained from the current blast monitoring of heritage sites will provide valuable information to inform the ongoing assessment of the potential impacts of blasting (particularly as the Open Cut Extension commences operations and then extends further to the west, close to the Open Cut Extension Area boundary). It will help address the lack of empirical information presently available (not just at UCML but throughout NSW) about the potential effects of blasting on particular Aboriginal heritage site types. It will also assist in identifying whether any additional heritage survey is required (e.g. in areas west of the Open Cut Extension Area). For example, if it is determined that there is some risk of perceptible impacts to a zone that is a particular distance from the blasting, and that area has not been subject to heritage survey (see **Figure 3**), then it will be subject to survey in accordance with this HMP. The studies will also assist in revising blast design and vibration criterion that would be more appropriate to rock shelter types.

Actions

- UCML will engage an appropriately qualified and experienced archaeologist to conduct a condition assessment of previously surveyed heritage sites, particularly rock shelter sites that may be affected by vibrations, within the Open Cut Extension blast impact zone (refer to sites listed in **Table 2**);
- UCML will engage a blast vibration consultant to undertake an assessment of UCML's blast monitoring data, define the zone of potential impacts from blasting with respect to susceptible heritage site types such as rock shelters and grinding grooves and provide advice on the risk of perceptible blast impacts on heritage sites in the blast impact zone that were not surveyed during the EA. This assessment will be completed prior to blasting within the Open Cut Extension Area and be completed bi-annually (during active blasting operation) to review impact predictions and actual results. The results of this re-assessment will be provided within the Annual Environmental Review.
- If this assessment determines that there are additional heritage sites or areas that have not yet been subject to archaeological survey that are at risk of perceptible blast impacts, UCML will engage an appropriately qualified and experienced archaeologist to conduct a detailed archaeological survey of these areas and recording of these sites, in consultation with the registered Aboriginal stakeholders;
- The archaeological survey and recording will occur as soon as possible, using a similar methodology as for the EA (Kuskie 2009) but with a primary focus on rock formations, in consultation with the RAPs(refer to **Section 3.1** of this Plan);
- Where required, the Aboriginal Site Database will be updated as soon as practical (refer to **Section 5.1** of this Plan);
- Where required, updated site records will be lodged with OEH (refer to **Section 5.1** of this Plan);
- In locations where impacts are proposed and existing identified Aboriginal sites listed in **Appendix B** may be subject to impacts, management strategies will be applied as set out in **Appendix B** of this Plan;
- In locations where impacts are proposed and newly identified Aboriginal sites, or previously recorded sites not listed in **Appendix B** of this Plan, may be subject to impacts, management strategies will be applied as set out in **Section 3.6** of this Plan;
- A report will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan, documenting the results of any additional archaeological survey and management outcomes, and Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan);
- Depending on the outcome of the above assessments, UCML may revise the blast design and vibration criterion that would be more appropriate to rock shelter types.

3.7.7 Assessment of Future Mine Plan Alterations

Prior to any moderate to significant alterations or modifications to the mine plan or Approved Project a risk assessment consistent with Risk Management (CAA FIN STD 0001) will be undertaken in conjunction with appropriated due diligence detailed in this section to assess the potential impacts of any change on Aboriginal heritage.[20]

Actions

- Where future alterations are proposed to the underground mine plan or open cut mine plan or Approved Project, the potential impacts of any changes on the identified and potential Aboriginal heritage resource will be assessed;
- Where the alterations to the underground mine plan are proposed in areas already subject to heritage survey sampling (consistent with the methodology and standards in the EA; Kuskie 2009), this will involve an assessment of potential subsidence impacts by a qualified subsidence expert and reconsideration of the management strategies for relevant identified sites presented in **Appendix B** of this Plan by an appropriately qualified and experienced archaeologist, in consultation with the registered Aboriginal stakeholders;
- Where the alterations to the open cut mine plan are proposed in areas already subject to heritage survey sampling (consistent with the methodology and standards in the EA; Kuskie 2009), this may involve an assessment of potential impacts and reconsideration of the management strategies for relevant identified sites presented in **Appendix B** of this Plan by an appropriately qualified and experienced archaeologist, in consultation with the registered Aboriginal stakeholders;
- Where the alterations to the underground mine plan or open cut mine plan are proposed in areas that have not been subject to heritage survey sampling (consistent with the methodology and standards in the EA; Kuskie 2009), the procedures outlined in **Section 3.7.5** of this Plan will be implemented. In addition, with respect to broad-scale surface impacts, the assessment will also address the possible impacts on Potential Artefact Deposits in open contexts. This may involve the conduct of test excavations by an appropriately qualified and experienced archaeologist, in consultation with the RAPs(refer to excavation procedures in **Section 3.5** of this Plan);
- The requirements of DP&E in relation to any application for a Modification to the Project Approval that is required will also be addressed;
- A report will be prepared with reference to the DECCW *Aboriginal Heritage Standards and Guidelines Kit (1997)* and the requirements of this Plan and where relevant, DP&E, documenting the results of any heritage assessment of future proposed alterations to the underground mine plan or open cut mine plan or Approved Project. Any draft reports will be distributed to the RAPs for review, with a minimum 15 working days allowed for comment. Final heritage reports would be prepared that address and incorporate any input received within the specified timeframe from the registered Aboriginal stakeholders. Final reports will be distributed to the registered Aboriginal stakeholders; DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

3.7.8 Subsidence Management Plan Requirements

Actions

- Subsequent to the implementation of the actions set out under **Section 3.7.8** of this Plan for the detailed archaeological survey and recording, in consultation with the registered Aboriginal stakeholders, of potential subsidence impact areas that were not sampled during the EA investigation (Kuskie 2009: refer to Figure 7.3 and Appendix B11), all standard Aboriginal heritage requirements for the SMP will be satisfied and further heritage surveys or Aboriginal consultation are not required;
- Copies of this Plan, the EA Aboriginal heritage assessment (Kuskie 2009) and any subsequent reports completed for potential subsidence impact areas that were not sampled during the EA investigation, may need to be forwarded to the Department of Primary Industries (DPI) as evidence that appropriate management systems are in place to address potential subsidence

[20] In addition to any application that may be required to DP&I for a Modification to the Project Approval.

related impacts consistent with the DPI (2003) Guidelines for Subsidence Management Approval Applications.

3.8 Photography and Curation of Heritage Evidence

UCML acknowledges that the Aboriginal objects that may be salvaged from the Project area are of primary interest to the registered Aboriginal stakeholders. All Aboriginal objects salvaged under the Project will be curated in an appropriate manner, as determined in consultation with the RAPs and OEH.

Agreement was reached at the June 2013 Aboriginal Heritage meeting that some artefacts would be displayed at UCML mine offices and the remaining artefacts placed in a safe keeping place at Ulan No.3 after recording and reporting is completed by the UCML Aboriginal heritage consultant, in accordance with the actions below.

Actions

- During site investigation, photographs of identified heritage items are to be taken in conjunction with GPS and field data.
- Method, Type and Frequency of photographic monitoring are to be incorporated into management and mitigation consultation with RAPs following identification and are to be based on significance.
- Any Aboriginal objects salvaged under the Project may be temporarily stored during analysis and recording at the office of the UCML Aboriginal heritage consultant. Such objects will be stored in a secure location and returned to UCML as soon as practical after analysis and recording is completed;
- Any Aboriginal objects salvaged under the Project may be temporarily stored in a secure facility at the UCML mine office, prior to transfer to their final destination;
- Prior to or after the salvage of Aboriginal objects from any Aboriginal site within the Project area, UCML and the RAPs will discuss the curation of the Aboriginal objects from each specific site, and seek to reach a consensus agreement on the manner of curation of those objects;
- The consensus agreement for specific salvaged objects may involve the following outcomes:
    - Transferral to a registered Aboriginal stakeholder with the approval of OEH under Section 85A of the NP&W Act;
    - Transferral to another party for storage and/or display (such as the Australian Museum, or a local museum or historical society or educational institution);
    - Storage and/or display at the UCML mine office;
    - Storage within the Project area at a designated secure location that will not be subject to future development impacts (a 'natural' keeping place, for example, within the Brokenback Conservation Area);
    - Storage and/or display within or outside of the Project area at a purpose-built secure location (a constructed keeping place);
    - Return of the objects to or as near as possible to the locations from which they were salvaged (including for example, reburial of objects excavated from a rock shelter within the same rock shelter after subsidence impacts have passed, or reburial of objects collected from open artefact sites along roads, as close as possible to their original positions but adjacent to the impact area).
- Where consensus agreement is not reached between the RAPs and UCML as to the curation of any salvaged Aboriginal object, such objects will be retained in storage at the UCML mine office and/or transferred to the care of the Australian Museum or a third party as determined by the ECM, in consultation with DP&E;
- Aboriginal cultural material that is suitable for radiocarbon dating may be submitted to an accredited laboratory and used for dating purposes;

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- An application will be made to OEH under Section 85A of the NP&W Act for the curation of any salvaged items that are removed from any heritage site and will be permanently transferred to any third party.

3.9 Heritage Awareness Training

In accordance with UCML's Environmental Management Strategy (EMS) (ULN SD PLN 0050), all relevant contractors and staff engaged on the Project who are undertaking tasks on-site that may give rise to any interactions with Aboriginal, European or natural heritage will receive heritage awareness training prior to commencing work on-site, to ensure that this Plan is effectively implemented.

Further information regarding Cultural Heritage awareness is provided in the Site Familiarisation Training for all new employees and contractors.

Actions

- UCML will identify relevant staff and contractors who will be undertaking tasks on site that may give rise to any interactions with Aboriginal and /or European and natural heritage. ;
- UCML engaged an appropriately qualified expert to prepare a brief cultural awareness training package, a component of which includes information about the Aboriginal culture and history of the locality, for incorporation within the general UCML site-specific induction. The training package was formulated in consultation with the registered Aboriginal stakeholders, with the provision of a draft for review and minimum 15 working days for comment. The training package continues to be presented as a component of the general site-specific induction procedure for all staff and contractors at UCML.

For more information on training please refer to Section 3 of the *EMS (ULN SD PLN 0050).*

3.10 Protection and Management of Heritage Items Outside of Disturbance Area

The management strategy for Ulan's biodiversity offsets and agricultural lands outside of the disturbance area is in accordance with the existing Ground Disturbance Permit (GDP) process. Where mining related activities are required in these areas and previous heritage surveys have been completed, **Section 3.5** of this plan will apply. Where mining related activities are required in these areas and previous heritage surveys have been completed, **Section 3.6** of this plan will apply.

4 Implementation – Management of European and Natural Heritage

Condition 24 (Schedule 3) of PA 08_0184 requires that the Project does not cause any exceedance of the subsidence performance measures in **Table 10**.

Table 9 - Summarised Subsidence Performance Criteria from PA 08_0184

Heritage	
Aboriginal Sites	Nil impact in the Brokenback Conservation Area, Grinding Groove Conservation Areas; and on Mona Creek/Cockabutta Creek Rock Shelter Sites
Talbragar Fish Fossil Reserve	Negligible Impact
Other Heritage Sites	No greater impact than predicted in the EA

Condition 10A (Schedule 3) of PA 08_0184 requires that operational blasting and construction blasting on site does not cause any damage to Heritage Sites on site.

In October 2013, UCML commissioned a review of the blast criterion for Aboriginal heritage sites 74, 445 and 1395 with respect to peak particle velocity (or ground vibration). The review was undertaken by SCT Operations Pty Ltd (SCT) for the three nominated archaeological sites and an empirical site law for estimating peak particle velocities associated with blasting based on available blast monitoring data from UCML.

SCT concluded that a blast criterion on 100mm/s peak particle velocity is likely to limit potential impacts on sandstone rock formations to low levels. The site law based on currently available data indicates that proposed mining to within 150m of the sites would not be expected to cause perceptible impacts. However, further refinement of the site law is recommended as additional close proximity blast data becomes available (**Section 5.2** of the HMP).

Table 11 below details the management, monitoring and mitigation measures for each of the identified European and natural heritage sites within the UCML Project Area. Monitoring requirements for European and natural heritage sites are discussed in **Section 5.3**.

Actions

Monitoring of subsidence impact on European and natural heritage sites will be in accordance with the relevant approved Extraction Plan[21] (in accordance with Condition 26 (Schedule 3) of PA 08_0184) and the Subsidence Monitoring Program as required by the Subsidence Management Plan Guidelines 2003;

Monitoring of blast impact on European heritage sites will be in accordance with the *Blast Management Plan (ULN SD PLN 0082);*

If during the course of works (for example during works associated with the construction of surface infrastructure or the proposed open cut extension) any previously unknown potential historical archaeological material or heritage sites/items are uncovered or identified, all work in the area of the site/item(s) shall cease immediately and a qualified archaeologist/heritage consultant be consulted to assess the potential site/item(s). If the archaeologist considers the archaeological material uncovered constitutes an archaeological 'relic', the Heritage Council will be notified and consulted, in accordance with Section 146 of the *Heritage Act 1977* (NSW), to

[21] Ulan West Underground: Subsidence Management Plan and Extraction Plan for LW1 and 2 (ULN SD PLN 0103) and Appendix G Subsidence Monitoring Program for LW1 – 2 (ULN SD ANN 0064)
Ulan No. 3 Underground: Subsidence Management and Extraction Plan (ULN SD PLN 0024) and Subsidence Monitoring Program (ULN SD PLN 0061)

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determine an appropriate course of action prior to the recommencement of work in the area of the item.

- A 'relic' under the Heritage Act *1977* is defined as any deposit, artefact, object or material evidence that:
- relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and
- is of State or local heritage significance.

- If any additional potential impacts or deterioration to any identified heritage items or potential archaeological resource, other than those discussed in this report, are identified prior to or during the course of works, additional assessment, archaeological excavation and / or recording may be required to be undertaken in accordance with professional standards and guidelines.

Table 10 – Mitigation / Management Measures for European and Natural Heritage within PA

Site/Item	Site Type/Description	Management/Mitigation Measures
Old Ulan Village and site/item PK422	Site of Old Ulan Village including former hotel, former dwelling site (PK422), a ford and roadway, a graveyard, stockyards and associated fence lines.	• Archivally record prior to longwall mining within 100 metres of the site. • Conservation Management Plan will be prepared, which includes a maintenance strategy, prior to longwall mining within 100 metres of the site. • Dilapidation survey prior to longwall mining within 100 metres of the site. • Blast monitoring during blasting in Open Cut Areas • Blast monitoring results will be reported in the Annual Report. • Subsidence effect will be reported in the Annual Report. • Signage at precinct entry points (two on Old Ulan Road and one on Milton Road) noting no access off the existing road without written permission from the Environment Manager • Basic fencing (along Old Ulan Road) to prevent vehicles leaving the existing road
Bobadeen Station/Homestead (Site/item CI07)	Rural farm complex including homestead group of buildings and a number of other associated structures (including PK3 and PK5) and features related to the former operation of this large station.	• Archivally record prior to longwall mining within 100 metres of the site. • Conservation Management Plan will be prepared prior to longwall mining within 100 metres of the site. • Dilapidation survey prior to longwall mining within 100 metres of the site. • Subsidence effect will be reported in the Annual Report. • Signage at precinct entry points (three) noting no access off the existing track without written permission from the Environment Manager • Basic fencing, where practical to do so, of the precinct boundary
PK3 (part of Bobadeen Station/Homestead complex)	Large metal and timber post built hay shed and associated long narrow concrete slab with a small timber post double enclosure	• Archivally record prior to longwall mining within 100 metres of the site. • Dilapidation survey prior to longwall mining within 100 metres of the site. • Subsidence effect will be reported in the Annual Report. • No signage or fencing required
PK5 (part of Bobadeen Station/Homestead complex)	Metal windmill	• Archivally record prior to longwall mining within 100 metres of the site. • Dilapidation survey prior to longwall mining within 100 metres of the site. • Subsidence effect will be reported in the Annual Report. • No signage or fencing required
Talbragar Fish Fossil Reserve	Deposit of Jurassic age sediments that contain an abundance of extremely well preserved fish, plant and invertebrate fossils	• Following completion of the Project, the Talbragar Fish Fossil Reserve should be secured with appropriate fencing and suitable signage. • Dilapidation survey prior to longwall mining within 100 metres of the site. • Subsidence effect will be reported in the

		Annual Report. ▪ Located on Private Land; an assessment of fencing & signage requirements be conducted in consultation with the landholder.
PK243	Rural farm complex including house (likely originally from mid to late 1800s) corrugated iron and timber built sheds and associated yards	• Proposed infrastructure corridor should be realigned during the detail design phase to avoid impacting the farm complex. • Further assessment should be undertaken should the site be impacted. ▪ No signage or fencing required
*RV322	Derelict cottage site comprising house, timber post shed clad with corrugated iron, timber post and rail stockyards and former gardens	• Proposed infrastructure corridor could be realigned during the detail design phase to avoid impacting the farm complex. • Dilapidation survey not required as site has no heritage significance. • Photographic record to be undertaken if site is to be destroyed during mining • No further management is required. ▪ Note: RV3 Photographic record undertaken in March 2013, RV3 house and woolshed removed May 2013 for construction of Ulan West TG1 Vent Fan. Recording report available from UCML internet site .
*CI33	Derelict weatherboard cottage and associated timber and corrugated iron sheds, timber post built stockyards, water tanks and recently installed metal silos.	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*CI127	Small rectangular timber built shelter	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*RV4	Derelict timber stockyard with adjacent current timber post and metal rail stockyard	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*HS63	Timber getting site	▪ Timber getting site with no subsidence impact expected. No further management is required.
*CC6	Timber getting site	▪ Timber getting site with no subsidence impact expected. No further management is required.
*MM273	Timber getting site	▪ Timber getting site with no subsidence impact expected. No further management is required.
*OCE80/B	Timber getting/sleeper cutting site	▪ Timber getting site located outside subsidence zone. No further management is required.
*OCE84/A	Timber getting/sleeper cutting site	▪ Timber getting site located outside subsidence zone. No further management is required.
*OCE86/A	Timber getting/sleeper cutting site	▪ Timber getting site located outside

[22] RV3 Photographic record undertaken in March 2013, RV3 house and woolshed removed May 2013 for construction of Ulan West TG1 Vent Fan.

		subsidence zone. No further management is required.
*OCE94/A	Timber getting/sleeper cutting site	▪ Timber getting site located outside subsidence zone. No further management is required.
*RV1	Timber getting site	• Timber getting site with no research potential to be removed within open cut extension. • Photographic record to be undertaken prior to removal ▪ No further management is required.
*RV2	Timber getting site	• Timber getting site with no research potential to be removed within open cut extension. • Photographic record to be undertaken prior to removal • No further management is required.
*CI198/G	Rock shelter comprising an isolated slab of rock tilted to form a shelter with associated low rough stone built wall.	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*PK96/B	Rock shelter with potential collapsed low stone wall.	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*ID191	Large natural rock overhang with occasional scattered metal and wooden objects	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*HS96/D	Natural rock overhang with occasional scattered objects - associated with site/item ID191.	• Dilapidation survey not required as site has no heritage significance and there are unlikely to be any impacts during the proposed mining period. ▪ No further management is required.
*Echidna Sill	Three unidentified out of context coins.	▪ Site located outside subsidence zone. No further management is required.
*HS135	A number of out of context bottles	• Site has no heritage significance and there are unlikely to be any significant impacts during the proposed mining period ▪ No further management is required.

Note: * Identifies the removal of heritage sites with no heritage significance from the figure within the Project Approval (Appendix 7) as a result of the 2012 modification (MOD2) of the Project Approval. The modification was sought under Section 75W of the *Environmental Planning and Assessment Act 1979*.

Conservation Management Plans (CMPs) have been prepared for both *Bobadeen Homestead (ULN SD PLN 0093)* and *Old Ulan (ULN SD PLN 0094).* Management of these areas will be in accordance with these CMPs.

Archival records for Bobadeen Homestead and Old Ulan will be forwarded to the MWRC library for inclusion in historical records archive for the area. Archival report for Bobadeen Homestead and Old Ulan available from the UCML internet site: www.ulancoal.com.au.

Prior to any moderate to significant alterations or modifications to the mine plans a risk assessment consistent with **Section 2** of the *EMS (ULN SD PLN 0050)* will be undertaken in conjunction with

appropriated due diligence assessments to ensure that any change will not result in new hazards or risks to European heritage sites.

4.1 Dilapidation Surveys

The preparation of details pre-mining and post-mining dilapidation surveys for European heritage items will include;

Undertaken by a suitably qualified consultant;

Site identification of individual components or features of the heritage item, including as assessment of features that may be more robust and hence can tolerate greater subsidence effects and components or features that are at high risk of damage due to their state of repair or construction;

Consideration of the risk of damage to individual or features of the heritage item with the predicted subsidence / blasting effects;

Assessment of contribution associated with mining induced impact; and

Provision of recommendations to further protect heritage items.

4.2 Impacts not directly relation to the Project

Any archaeological excavations or disturbance not directly related to the project or subsequent modifications, or maintenance of the properties, would require the appropriate permits under the *Heritage Act 1977.*

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5 Measurement and Evaluation

5.1 Aboriginal Site Database and Site Records

UCML will maintain a database and other records providing details of all identified Aboriginal heritage evidence within the Project area so that this HMP can be effectively implemented.

UCML will inform OEH in the manner prescribed under the NP&W Act of any previously unrecorded Aboriginal heritage evidence that is identified within the Project area, or any modifications to any Aboriginal sites already registered with OEH (for example, after test excavation or salvage has occurred).

Actions

UCML will continue to maintain an Aboriginal Site Database (Version 14 or subsequent revised versions) in both tabular and GIS form that documents the locations and names and other relevant details of all identified Aboriginal heritage evidence within the Project area;

UCML will update the Database as soon as practical after becoming aware of the identification of any previously unrecorded Aboriginal heritage evidence within the Project area (other than additional evidence at an already known site location);

UCML will make information from the Database available to all relevant personnel, contractors and Aboriginal representatives where necessary to ensure that this Plan can be effectively implemented;

UCML will provide a printed copy of the Database to any registered Aboriginal stakeholder that requests it, within 15 working days of receipt of such a request;

UCML will lodge site records with OEH in the manner prescribed under the NP&W Act for any previously unrecorded Aboriginal heritage evidence that is identified within the Project area in a new location, or for any modifications to any known Aboriginal sites already registered with OEH (for example, when additional evidence is identified and/or removed during test excavations, surface collections, salvage excavations or further surveys), as soon as practical after identification of such evidence.; and

UCML will retain copies of the Database, OEH site records and Aboriginal heritage reports.

5.2 Aboriginal Heritage Sites Monitoring

Monitoring of subsidence impacts will be undertaken for one stone arrangement site and a number of rock shelter and open grinding groove sites, as specified in the Subsidence / Extraction Management Plans for Ulan No3 Underground and Ulan West, in order to identify and document whether any subsidence impacts have arisen from mining, with this information used to guide future assessments in the Project area.

Actions

UCML will engage an appropriately qualified expert to monitor the Aboriginal sites as specified in **Appendix B**;

Monitoring will involve inspecting and recording the condition of these specific Aboriginal sites within three to six months after undermining has occurred. Each inspection will involve recording of data on environmental conditions, pre-existing human and natural impacts, heritage evidence present and any identified changes to these environmental and heritage conditions compared with previous inspections. The potential cause (subsidence or other impacts) of changes to the condition of individual sites will be assessed. These actions will be reported on (refer below);

Where insufficient pre-existing information is available for any of the specific Aboriginal sites to permit comparison with the condition post-mining, more detailed recording will occur prior to undermining;

A report documenting the results of monitoring will be prepared that details the methodology of the inspections, conditions of the environment and Aboriginal heritage evidence at the relevant sites, comparisons with previously reported conditions at each site, identification of any natural and/or human impacts during the intervening period, identification of any implications for the ongoing management and protection of Aboriginal heritage evidence throughout the Project area, and documentation of the actual impacts of the Project. Final Reports will be distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion (refer to **Section 5.5** of this Plan).

Monitoring of sites not to be impacted by subsidence will be undertaken as required in accordance with **Section 5.2**.

Monitoring of blasting impacts (airblast overpressure and vibration) will be undertaken for three rock shelter sites, as specified in the *Blast Management Plan (ULN SD PLN 0082)*

Actions

UCML will monitor the following Aboriginal sites;

Site 74 (Blast Monitoring (BM) location BM5) – during blasting in the Ulan West Box Cut Area and Open Cut Extension Area;

Site 445 (BM7) – during blasting in the Ulan West Box Cut Area and Open Cut Extension Area;

Site 1395 (BM8) – when blasting activities commence in the Open Cut Extension Area.

Blast monitoring may be undertaken using:

Specialist blast monitoring contractors;

UCML's own in-field blast monitoring equipment; and/or

Moolarben Coal Operation's in-field blast monitoring equipment (under a data sharing agreement);

Blast data from the blast monitoring will be provided to the Environment and Community Coordinator (ECC) (or delegate) for review;

The ECC will review the data and provide advice to the open cut contractor on whether blasting activities need to be amended;

Annual monitoring (during active open cut operations) to inspect the physical condition and determine whether there has been any perceptible change to or deterioration in the physical condition of Aboriginal sites ID# 74, 445 and 1396 as a direct result from UCML's blasting activities subsequent to the previous inspections has occurred; and,

Results of blast monitoring for heritage sites will be reported in the Annual Review Report (see **Section 5.5**)

5.3 European and Natural Heritage Monitoring

The European and natural heritage monitoring requirements for each site are detailed in **Table 12**.

Monitoring of blasting impacts (airblast overpressure and vibration) will be undertaken for Old Ulan Village, as specified in the *Blast Management Plan (ULN SD PLN 0082).* No monitoring will undertaken at any of the other European Heritage Sites, as these sites are all timber getting/sleeper cutter sites which are unlikely to show any impact from overpressure or vibration levels.

Actions

- UCML will monitor Old Ulan Village (location BM9) during blasting in the Open Cut areas;
- Blast monitoring may be undertaken using:
  - Specialist blast monitoring contractors;

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- UCML's own in-field blast monitoring equipment; and/or
- Moolarben Coal Operation's in-field blast monitoring equipment (under a data sharing agreement);

- Blast data from the blast monitoring will be provided to the Environment and Community Coordinator (ECC) (or delegate) for review;
- The ECC will review the data and provide advice to Ulan Surface Operations on whether blasting activities need to be amended;
- Conditional monitoring to inspect the physical condition and determine there has been no perceptible change to or deterioration in the physical condition of Old Ulan Village as a direct result from UCML's blasting activities subsequent to the previous inspections.
- Results of blast monitoring for heritage sites will be reported in the Annual Review Report (see **Section 5.5**)

As discussed in **Section 3.6**, if during the course of works (for example during works associated with the construction of surface infrastructure or the proposed open cut extension) any previously unknown archaeological 'relics' are uncovered or identified, all work in the area of the site/item(s) shall cease immediately and the Heritage Council and DP&E will be notified and consulted, in accordance with Section 146 of the *Heritage Act 1977* (NSW), to determine an appropriate course of action prior to the recommencement of work in the area of the item.

Monitoring requirements of European and natural heritage sites will be reviewed annually based on the requirements detailed in **Table 12** or when a mine sequence change occurs.

Table 11 European and Natural Heritage Monitoring Requirements

Site/Item	Site Type/Description	Monitoring Requirements
Old Ulan Village and site/item PK422	Site of Old Ulan Village including former hotel, former dwelling site (PK422), a ford and roadway, a graveyard, stockyards and associated fence lines.	• Monthly inspections by the UCML Environment and Community Manager or delegate, during the mining period. • Monthly inspections will be carried out when mining the first longwall of Ulan West, when the longwall is within 100 metres of the site and during active longwall phase. • Annual monitoring of subsidence impacts following completion of longwall extraction until subsidence ceases (approximately two years). • Blast monitoring during blasting in Open Cut Areas • Blast monitoring results will be reported in the Annual Report.
Bobadeen Station/Homestead (Site/item CI07)	Rural farm complex including homestead group of buildings and a number of other associated structures (including PK3 and PK5) and features related to the former operation of this large station.	• Monthly monitoring of subsidence impacts when the longwall is within 100 metres of the site and during active longwall phase. • Annual monitoring following completion of longwall extraction until subsidence ceases (approximately two years).
PK3 (part of Bobadeen Station/Homestead complex)	Large metal and timber post built hay shed and associated long narrow concrete slab with a small timber post double enclosure	• Monthly monitoring of subsidence impacts when the longwall is within 100 metres of the site. • Annual monitoring following completion of longwall extraction until subsidence ceases (approximately two years).
PK5 (part of	Metal windmill	• Monthly monitoring of subsidence

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Bobadeen Station/Homestead complex)		impacts when the longwall is within 100 metres of the site. • Annual monitoring following completion of longwall extraction until subsidence ceases (approximately two years).
Talbragar Fish Fossil Reserve	Deposit of Jurassic age sediments that contain an abundance of extremely well preserved fish, plant and invertebrate fossils	• Monthly monitoring of subsidence impacts when the longwall is within 100 metres of the site. • Annual monitoring following completion of longwall extraction until subsidence ceases (approximately two years).
PK243	Rural farm complex including house (likely originally from mid to late 1800s) corrugated iron and timber built sheds and associated yards	• Monthly monitoring of subsidence impacts if the longwall is within 100 metres of the site. ▪ Annual monitoring following completion of longwall extraction until subsidence ceases (approximately two years).
*RV3[23]	Derelict cottage site comprising house, timber post shed clad with corrugated iron, timber post and rail stockyards and former gardens	▪ No monitoring required.
*CI33	Derelict weatherboard cottage and associated timber and corrugated iron sheds, timber post built stockyards, water tanks and recently installed metal silos.	▪ No monitoring required.
*CI127	Small rectangular timber built shelter	▪ No monitoring required.
*RV4	Derelict timber stockyard with adjacent current timber post and metal rail stockyard	▪ No monitoring required.
*HS63	Timber getting site	▪ No monitoring required.
*CC6	Timber getting site	▪ No monitoring required.
*MM273	Timber getting site	▪ No monitoring required.
*OCE80/B	Timber getting/sleeper cutting site	▪ No monitoring required.
*OCE84/A	Timber getting/sleeper cutting site	▪ No monitoring required.
*OCE86/A	Timber getting/sleeper cutting site	▪ No monitoring required.
*OCE94/A	Timber getting/sleeper cutting site	▪ No monitoring required.
*RV1	Timber getting site	▪ No monitoring required.
*RV2	Timber getting site	▪ No monitoring required.
*CI198/G	Rock shelter comprising an isolated slab of rock tilted to form a shelter with associated low rough stone built wall.	▪ No monitoring required.
*PK96/B	Rock shelter with potential collapsed low stone wall.	▪ No monitoring required.
*ID191	Large natural rock overhang with occasional scattered metal and wooden objects	▪ No monitoring required.
*HS96/D	Natural rock overhang with occasional scattered objects - associated with site/item ID191.	▪ No monitoring required.
*Echidna Sill	Three unidentified out of context coins.	▪ No monitoring required.

[23] RV3 Photographic record undertaken in March 2013, RV3 house and woolshed removed May 2013 for construction of Ulan West TG1 Vent Fan.

*HS135	A number of out of context bottles	▪ No monitoring required.

Note: * Identifies the removal of heritage sites with no heritage significance from the figure within the Project Approval (Appendix 7) as a result of the 2012 modification (MOD2) of the Project Approval. The modification was sought under Section 75W of the *Environmental Planning and Assessment Act 1979*.

5.4 Non Conformity, Corrective Action and Preventative Action

Non-conformances are tracked and managed in accordance with CAA HSEC PRO 0012 Incident Reporting and Investigation which details the procedure for handling and investigating of non-conformances, including allocation of responsibility, external and internal reporting requirements, and initiating and completing corrective and preventative actions.

Non-conformances may be identified through:

- environmental monitoring programs;
- receiving community complaints;
- site inspections;
- internal communication; and
- audit findings.

Non-conformance that does NOT cause or threaten material harm will be recorded as an internal Environmental Incident, investigated and rectified. The PIRMP will not be triggered. These non-conformances will be reported to the RAPs, OEH and DP&E immediately. A summary will also be provided within the Annual Environmental Review.

5.5 Reporting Requirements

All heritage mitigation and monitoring measures undertaken for the Project will be adequately documented and reports provided to relevant stakeholders within appropriate timeframes.

Actions

- UCML will ensure that any additional Aboriginal heritage reporting required under this Plan in relation to salvage activities (as set out in **Sections 3.5** and **3.6** of this Plan), further investigations (as set out in **Section 3.7** of this Plan) and monitoring (as set out in **Section 5.2** of this Plan) is completed in a timely manner consistent with the DECCW Aboriginal Heritage Standards and Guidelines Kit (1997), PA 08_0184 and this Plan, and final reports are distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion;
- UCML will ensure that any heritage reports produced under this Plan that require the review and input of the RAPs (for example, the draft Conservation Management Plan as set out in **Section 3.3** of this Plan, and further investigations as set out in **Section 3.7** of this Plan) are distributed in a draft format to the RAPs for review where specified in this Plan, with a minimum 15 working days allowed for comment. Final heritage reports would be prepared that address and incorporate any input received within the specified timeframe from the registered Aboriginal stakeholders. UCML will ensure that copies of final reports are distributed to the registered Aboriginal stakeholders, DP&E and OEH within 30 working days of completion.
- Subsidence effects on any heritage sites/items will be reported in the Annual Review Report (formerly the Annual Environmental Management Report (AEMR)) and in Subsidence Status Management Reports and End of Panel Reports (see **Sections 5.5.1** and **5.5.2**);
- Results of blast monitoring for heritage sites will be reported in the Annual Environmental Review;
- The archival record of Old Ulan Village and Bobadeen Homestead has been submitted to the DP&E for the approval of the Director-General. A copy of the archival record has been lodged with the State Library of NSW or Local Council Library (as appropriate) and a copy will be kept at the Ulan Coal Mine.

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- The Conservation Management Plan for *Old Ulan (ULN SD PLN 0094)* and *Bobadeen Homestead (ULN SD PLN 0093)* has been submitted to the DP&E for review and approval.
- End of Panel Reports will be published on the UCML Internet site www.ulancoal.com.au.
- A summary of UCML Heritage activities throughout the year will be reported in the Annual Environmental Review.

5.5.1 SMP Reporting

Section 4.3.4 of the Environmental Management Strategy (ULN SD PLN 0050) provides the details of the relevant SMP reporting requirements (also refer to **Appendix G**) for:

- LW 23-26 and W1;
- LW W2 and W3;
- North 1 (ie LWC, E, F and G);
- LW 27-29, W4 and W5; and
- LW1 and LW2 (Ulan West).

5.6 Complaint Management

Community complaints management includes receipt of complaints, investigation, implementation of appropriate remedial action, and feedback to the complainant as well as communication to site management or personnel and notification to external bodies, such as DP&E or the OEH, where necessary.

Community complaints received by the Ulan Mine Complex are managed in accordance with the *Social Involvement Plan (SIP) (ULN SD PLN 0015)* and ULN SD PRO 0001 Complaints Procedure

UCML maintain a 24 hour, 7 day a week community and employee information telephone line **1800 647630** and email address ulancommunity@glencore.com.au. Further information on complaints management can be found in Section 3 of the *EMS (ULN SD PLN 0050).*

UCML will ensure that any complaints received in relation to Aboriginal heritage (excluding feedback from RAPs in response to comments sought on the draft of any heritage report or document) will be registered as community complaint in accordance with *CAA HSEC PCL 0019 10.05 Community Complaint Management*

5.7 Dispute Resolution

The following independent dispute resolution procedure in **Figure 7** will be followed if there is continued disagreement between UCML and the RAPs in implementing this plan. Both UCML and the RAPs can initiate this procedure.

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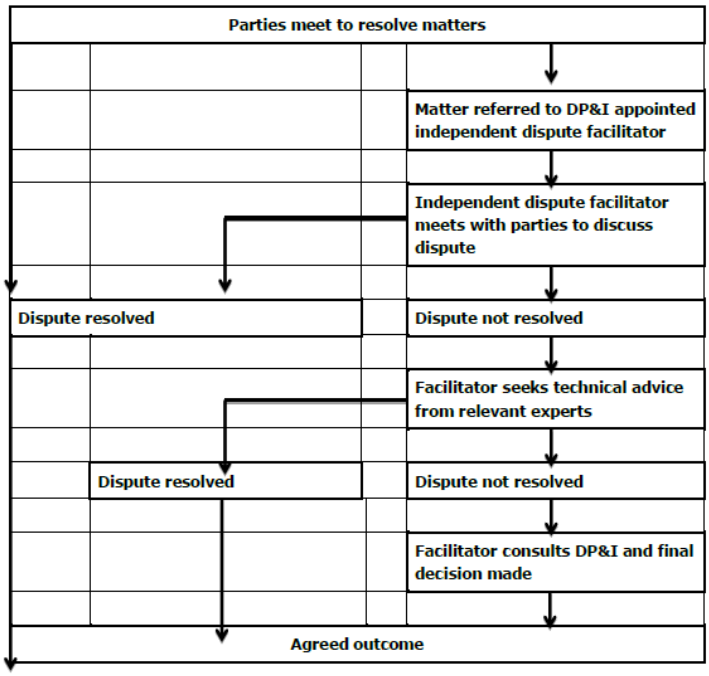
Figure 7 - Independent dispute Resolution Procedure



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6 Review and Improvement

The ECM (or delegate) will periodically review the HMP. On an annual basis and after submission of the Annual Review (ie AER) report, UCML shall review, and if necessary revise, the strategies, plans, and programs required under PA 08_0184 to the satisfaction of the Director-General within 3 months of:

- the submission of an annual review under Condition 3 (Schedule 5);
- the submission of an incident report under Condition 6 (Schedule 5);
- the submission of an audit report under Condition 8 (Schedule 5); and
- any modification to the conditions of this approval, (unless the conditions require otherwise).

In accordance with Environmental Monitoring Programs and Management Plans will be dynamic and be revised regularly to reflect changes in operational practices, legislative requirements and to strive towards continual improvement.

The HMP will reflect changes in environmental requirements, technology and operational procedures. Updated versions of the approved monitoring program will be made publicly available on UCML's website at www.ulancoal.com.au

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7 Accountabilities

Role	Accountabilities for this document
Operations Manager	• Approve appropriate resources for the implementation of this Plan • Ensure the effective implementation of strategies designed to reduce heritage impacts from the operation. • Ensure any potential or actual heritage issue is reported in accordance with legal requirements and the corporate standard. • Authorise internal and external reporting requirements of this plan • Approve subsequent revisions of this plan
Environment and Community Manager	• Ensure appropriate resources are budgeted for to enable appropriate monitoring and management of Heritage items. • Ensure that heritage considerations are undertaken in the installation of all new infrastructure for the operation. • Identify heritage management risks and assess resources required to mitigate identified risks to heritage items within the site. • Ensure that the heritage management controls are implemented in accordance with this Plan. • Ensure that the results of monitoring are evaluated and reported to senior management and to relevant personnel for consideration as part of ongoing mine planning. • Ensure any potential or actual heritage issue is reported in accordance with legal requirements and the corporate standard. • Provide visible and proactive leadership in relation to the heritage management. • Ensure that operational changes consider potential heritage impacts. • Ensure all internal and external reporting requirements are met, including incident reporting in accordance with EMS. • Ensure all reporting complies with internal and external monitoring standards, protocols and regulations. • Proactively engage government and community as required. • Coordinate the ongoing review of this Plan. • Review and approve external reports e.g. Annual Review Report, prior to final approval by the Operations Manager.

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Role	Accountabilities for this document
Environment & Community Coordinator	• Manage and maintain the heritage monitoring programs in accordance with this plan. • Ensure that all monitoring records are effectively maintained on site in accordance with the EMS. • Ensure that measures are implemented to minimise the risk of inadvertent impacts on identified Aboriginal sites in accordance with this plan • Ensure that heritage considerations are undertaken in the installation of all new infrastructure for the operation in the approval of Ground Disturbance Permits • Coordinate the monitoring data. • Conduct periodic environmental inspections of Heritage sites. • Ensure any potential or actual heritage issue, including incidents and non conformances is reported to the ECM. • Provide visible and proactive leadership in relation to heritage management. • Participate in the ongoing review of this Plan. • Coordinate training in accordance with this plan.
All Employees & Contractors	• Ensure the effective implementation of this Plan with respect to their work area. • Ensure any potential or actual heritage issues, including environmental incidents, are reported to their Project Manager, Supervisor or Task Coordinator

8 Document Information

Relevant legislation, standards and other reference information must be regularly reviewed and monitored for updates and should be included in the site management system. Related documents and reference information in this section provides the linkage and source to develop and maintain site compliance information.

8.1 Definitions

Table 8-1 – Definitions

Term	Definition
Aboriginal Community	Refer to definition of "Registered Aboriginal Stakeholder"
Aboriginal Object	Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, including Aboriginal remains [NP&W Act s5(1)]
Aboriginal Site	Location of evidence of Aboriginal occupation (typically, Aboriginal objects, but also places of traditional or historical cultural value for which no Aboriginal objects exist)
ACMP	Aboriginal Conservation Management Plan, incorporating the Brokenback and Grinding Groove Conservation Areas.
AHIP	Aboriginal Heritage Impact Permit, issued by OEH under Section 90 of the NP&W Act to allow impacts to Aboriginal objects.
HMP	Heritage Management Plan, this Plan in relation to the Ulan Coal - Continued Operations Project.
DP&E	Department of Planning and Environment (NSW), the NSW government Department responsible for implementing the EP&A Act. Formerly known as Department of Planning (DoP).
EA	Environmental Assessment, specifically in relation to the present HMP, the Ulan Coal - Continued Operations Project Environmental Assessment (Aboriginal heritage assessment reported by Kuskie, 2009).
ECM	Environment and Community Manager of UCML.
EP&A Act	*Environmental Planning and Assessment Act 1979*, the primary legislation for the regulation of land use, planning and development within NSW.
Incident	A set of circumstances that causes or threatens to cause material harm to heritage and/or breaches or exceeds the limits or performance measures/criteria in the Part 3A Approval.
NP&W Act	*National Parks and Wildlife Act 1974*, the primary legislation for the protection and management of Aboriginal heritage within NSW.
OEH	Office of Environment and Heritage, the NSW government Department responsible for implementing the NP&W Act. Formerly Department of Environment, Climate Change and Water (DECCW).

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PAD	Potential Archaeological Deposit, archaeological evidence (typically stone artefacts buried within the upper soil unit of rock shelters or in open contexts) predicted to occur in a specific place through application of a predictive model of site location.
Project	In relation to the present HMP, the Ulan Coal - Continued Operations Project.
Project Area	In relation to the present HMP, the Ulan Coal - Continued Operations Project area, bordered by the solid blue line on **Figure 1.2**
Project Study Area	in relation to the present HMP, the Ulan Coal - Continued Operations Aboriginal heritage study area at the time of the heritage assessment (Kuskie 2009). This comprised the then known areas within the Project area in which Aboriginal heritage may exist *and* which may be subject to impacts from the Project. It excluded both areas within the Project area that would not be subject to impacts and areas within the Project area that were totally modified, irrespective of whether continuing or additional impacts would occur. The Project Study Area can be subdivided into a Surface Impact Area, in which the primary impacts will occur from surface works, and an Underground Impact Area, in which the primary impacts will occur from underground mining related subsidence, with minimal direct surface impacts (e.g. limited to small areas from continued use of existing access tracks and exploratory drilling) (refer to **Figure 1.3**).
Registered Aboriginal Stakeholder	A comprehensive program of Aboriginal community consultation was undertaken for the Continued Operations Project in compliance with the DECCW (2004) *Interim Community Consultation Requirements for Applicants* policy (refer to Kuskie 2009). The RAPsfor the Project comprised Warrabinga Native Title Claimants Aboriginal Corporation (Warrabinga), North East Wiradjuri Company Ltd (NEW), Mudgee Local Aboriginal Land Council (Mudgee LALC), Murong Gialinga Aboriginal and Torres Strait Islanders Corporation (MGATSIC) and Warranha Ngumbaay.
SMP	Subsidence Management Plan, which the NSW Department of Primary Industries (DPI) generally requires submission and approval of prior to granting a Section 138 approval under the *Coal Mines Regulations Act 1982* (NSW) to allow underground mining to proceed. This requirement is now being enforced through the powers available under Section 239(2) of the NSW *Mining Act 1992*. The intention of this approval is not to redefine the activities permitted under a Development Approval and Mining Lease, but to assess and ensure appropriate management systems are in place to address potential subsidence related impacts resulting from the approved mining. SMP applications must normally be prepared in accordance with the DPI (2003) *Guidelines for Subsidence Management Approval Applications*.
UCML	Ulan Coal Mines Limited, proponent of the Ulan Coal Continued Operations Project.

8.2 Related Documents

Related documents, listed in ***Table 8-2*** below, are internal documents directly related to or referenced from this document.

Table 8-2 – Related documents

Number	Title
ULN SD ANN 0051 - **Appendix B**	Management Strategies for Identified Aboriginal Sites
ULN SD ANN 0050 – **Appendix D**	Aboriginal Heritage Site Location Maps
ULN SD PLN 0050	Environmental Management Strategy
ULN SD PLN 0060	Aboriginal Conservation Management Plan
ULN SD PLN 0094	Old Ulan Conservation Management Plan
ULN SD PLN 0093	Bobadeen Homestead Conservation Management Plan
ULN SD PLN 0082	Blast Management Plan

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8.3 Reference Information

Reference information, listed in ***Table 8-3*** below, is information that is directly related to the development of this document or referenced from within this document.

Table 8-3 – Reference information

Reference	Title
Legislation	• National Parks and Wildlife Act 1974 • Environmental Planning and Assessment Act 1979 • Environment Protection and Biodiversity Conservation Act 1999 • Heritage Act 1977 • Mining Act 1992 • Native Title Act 1993 • Aboriginal and Torres Strait Islander Heritage Protection Act 1984 • Australian Heritage Council Act 2003
Glencore Coal Assets Australia	• CAA HSEC PLC 0013 11.21 Aboriginal Cultural Heritage - NSW • CAA HSEC PLC 0016 10.01 Stakeholder Engagement
Ulan Coal Mines Limited	• Management Strategies for Identified Aboriginal Sites (ULN SD ANN 0051) • Aboriginal Heritage Site Location Maps (ULN SD ANN 0050) • Environmental Management Strategy (EMS) (ULN SD PLN 0050) • Aboriginal Conservation Management Plan (ACMP) (ULN SD PLN 0060) • Old Ulan Conservation Management Plan (UCMP) (ULN SD PLN 0094) • Bobadeen Homestead Conservation Management Plan (BCMP) (ULN SD PLN 0093) • Aboriginal Site Location Maps (ULN SD ANN 00050) • Management Strategies for Identified Aboriginal Sites (ULN SD ANN 00051) • Blast Management Plan (ULN SD PLN 0082) • Subsidence Monitoring Program (ULN SD PLN 0061) • Social Involvement Plan (ULN SD PLN 0015) • Complaints Procedure (ULN SD PRO 0001) • Hazard & Incident Management procedure (ULN SD PRO 0018) • Ulan Coal Incident Report & Investigation Form (ULN SD FRM 0008)
External	• Australian Government, Department of the Environment, Water, Heritage and Arts Australian Heritage Database, Register of the National Estate Place ID <http://www.environment.gov.au/heritage>. Accessed on 28 January 2009 • Aitken, C & Broadley, B. 1997. Bobadeen Station, Ulan NSW 2850 A Statement of Significance the property, the homestead and adjacent farm buildings. Report prepared for Kinhill Engineers Pty Ltd and Ulan Coal Mines Limited. • Australian Museum Business Services (AMBS Consulting) 1996. Assessment of the Talbragar Fish Fossil Reserve. Report prepared by Kinhill Engineers on behalf of Ulan Coal Mines Limited. • Australian Dictionary of Biography (ADB), Research School of Social Sciences, Australian National University. Australian Dictionary of Biography Online. • Australian Commission (AHC), 2001. Significance of Heritage Places. Australian Heritage Commission, Canberra.

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- Historical Archaeological Sites …
- Statements of Heritage Impact...
- Heritage Assessment Guidelines …
- Assessing Heritage Significance…
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- Umwelt (May 2012) Environmental Assessment Modification to Ulan Coal Continued Operations, Ulan West Mine Plan (Approved Panels 1 – 4) and Construction Blasting

8.4 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in ***Table 8-4*** below. Example detail shown below.

Table 8-4 – Change information

Version	Date	Review team (consultation)	Change Summary
1	28 March 2011	Jamie Lees (ECM), Peter Kuskie (SEA), Cheryl Henriques (ECC), Ian Flood (ECO), Registered Aboriginal Stakeholders, DECCW, MWRC	Review of Heritage Management Plan following the granting of Part 3A project Approval (08_0184) for Ulan Coal Continued Operations by DP&E.
2	19 July 2011	Jamie Lees (ECM), Peter Kuskie (SEA), Cheryl Henriques (ECC)	Revision includes amendments made to address DP&E and OEH comments.
3	18 August 2011	Cheryl Henriques	Updated version number - to match version provided to DP&E
4	18 August 2011	Cheryl Henriques	Updated to address NSW Heritage Office comments, added Fig 1.1 Locality Plan, minor document formatting
5	25 January 2012	Cheryl Henriques, Jamie Lees, Peter Kuskie (SEA), Tim Adams (Umwelt)	Updated to address NSW Heritage Branch comments, added blast monitoring of heritage sites, updated consultation & info for s75w mod, updated Appendix 2/3 (following recent survey/salvage works), updated figures, added Appendix 4 (figures) and Appendix 5 Assessment Significance
5.1	25 May 2012	Bertie Stanley, Robyn Stoney, Rachel Murray	Annual Review & updated based on MOD 1 & 2, & EPL 394 variation
5.2	10 June 2013	Tara Stokes, Robyn Stoney	AER 2012 Management Plan Review
6	12 June 2014	Peter Kuskie (SEA), Ian Flood, Robyn Stoney and Stephen Bragg Aboriginal Stakeholders provided hard copies of this document 12 June 2014.	• Update Figures and Tables and table of contents; • Formatting; • Align document to Glencore requirements; • Update legislative requirements; • Revise blasting criteria; • Update status of approvals and actions; • Relocate SMP/EP Conditions to Appendix 6.
7	30 June 2015	Stephen Shoesmith and Robyn Stoney	• Addressing DP&E comments • Update Glencore documentation

Appendix A - Registered Aboriginal Stakeholder Contact Details

Stakeholder Name	Contact Details
Warrabinga Native Title Claimants Aboriginal Corporation	Refer to UCML stakeholder database
North East Wiradjuri Company Ltd	Refer to UCML stakeholder database
Mudgee LALC	Refer to UCML stakeholder database
Murong Gialinga Aboriginal and Torres Strait Islanders Corporation	Refer to UCML stakeholder database
Warranha Ngumbaay	Refer to UCML stakeholder database
Wellington Valley Wiradjuri Aboriginal Corporation	Refer to UCML stakeholder database

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Appendix B - Management Strategies for Identified Aboriginal Sites

Refer to ULN SD ANN 0051 (Management Strategies for Identified Aboriginal Sites)

Appendix C - Aboriginal Heritage Meeting Protocols

Purpose

This protocol sets down the process for the conduct of the Aboriginal Heritage review meetings for both **operational heritage communication** and **project specific heritage consultation** meetings. The aim of the review meetings is to inform the Native Title Claimant and other RAPs of UCML's operations and other issues of potential interest to Aboriginal community groups as required by **section 3.1** of the UCML Heritage Management Plan.

The protocol also defines the difference between:

- **Operational Heritage communication** activities as part of implementation and management of Aboriginal Heritage in accordance with UCML Heritage Management Plan; and
- **Project specific heritage consultation** where UCML seeks a service from the registered Aboriginal Stakeholder community on Aboriginal Heritage issues.

Scope

This protocol applies to the operation of the Aboriginal Heritage review meetings held in respect to the Ulan Coal Continued Operations Project in accordance with condition 47 of Project Approval 08_0184. It also applies to Aboriginal Heritage meetings convened to discuss project specific issues where UCML actively seeks Aboriginal stakeholder input.

Frequency

The **operational heritage communication** meeting frequency will be quarterly for the first year during the initial implementation of the Heritage Management Plan. After the first year the meetings will become six monthly or more frequently if required.

Project specific consultation meetings will be convened on a project by project basis.

Responsibility

Personnel with responsibilities for this protocol are as follows:

Position	Responsible for
Environment & Community Manager	Convening meetings Chairing meetings Provide an update on UCML mining activities and implementation of the Heritage Management Plan Provide an Archaeologist to represent UCML on Aboriginal Heritage matters Confirming meetings are minuted Distributing minutes
Environmental Coordinator / Officer	Attend meetings Provide information as required Take minutes of meetings
Registered Aboriginal Group Representatives	Attend **operational heritage communication** meetings on behalf of the Aboriginal stakeholders Attend **project specific heritage consultation** meetings on behalf of the registered Aboriginal stakeholder groups Provide information and advice on Aboriginal Heritage matters in the requested format i.e. written or verbal Report back to their Aboriginal community on all Aboriginal Heritage matters discussed

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Actions

Operational Heritage Communication Meeting

Step	Action
1	Review meetings participants should normally be: • Environment & Community Manager (Chairperson) • UCML nominated Archaeologist (when required) • Environmental Coordinator / Officer • Relevant sites officer (DECCW) (when required) • Registered Aboriginal Stakeholder (maximum 2 per group) Other specialists shall be invited to attend by the Chairperson on an as required basis. Participants may request specialists through the chair.
2	Meetings shall be convened on a quarterly basis during 2011 and then six monthly thereafter. Additional meetings may be requested through the Chairperson.
3	Dates for the meetings shall be set annually (where possible a year in advance)
4	The location of the meeting shall be nominated by the Chairperson. Normally the location will be at the Ulan Underground mine office.
5	Should the nominated participant be unable to attend, a substitute from the relevant organisation shall be allowed. This shall be communicated to the Chairperson prior to the meeting.
6	Agendas for the review meetings shall be provided to the various representatives prior to the meeting in the form of a formal notification of the meeting. Representatives are to RSVP their attendance or nominate a substitute. Representatives are to notify their requests for any additions to the agenda to the Chairperson via their RSVP.
7	The Agenda shall be structured to ensure participants: • Are informed of the mine operations which may impact on issues of Aboriginal heritage • Are informed on key implementation actions undertaken in accordance with the Heritage Management Plan • Are informed on issues of concern for Aboriginal community groups • Receive written minutes from the previous meeting Can comment on mine operations and the conservation of sites and artefacts
8	Mine operations which may impact on Aboriginal heritage issues may include but not be limited to: • open cut mining • exploration • mine infrastructure • subsidence
9	Meetings will be minuted with minutes distributed to all participants by the Chairperson. Should any culturally sensitive material be discussed and notified to the Chairperson, it may be deleted from minutes at the request of an Aboriginal representative.
10	No payment of money will be made to any Aboriginal stakeholder attending normal operational communication meetings. Where excessive travel or out of pocket expenses are incurred the participants may request reimbursement of these expenses from the Chairperson with the provision of evidence (i.e. tax invoices) to support their claim.

Project Specific Heritage Consultation Meetings

Step	Action
1	Consultation meeting participants should normally be: • Environment & Community Manager (Chairperson) • UCML nominated Archaeologist • Environmental Coordinator / Officer • Registered Aboriginal Stakeholder (maximum 1 per group) Other specialists shall be invited to attend by the Chairperson on an as required basis. Participants may request attendance of specialists through the Chairperson.
2	Meetings shall be convened as required on a project by project basis.
3	Consultation will be undertaken in accordance with **Section 3.1** of the Heritage Management Plan
4	The location of the meeting shall be nominated by the chairperson. Normally the location will be at the Ulan Underground mine office.
5	Should the nominated participant be unable to attend, a substitute from the relevant organisation shall sent. This shall be communicated to the Chairperson prior to the meeting.
6	Agendas for the Consultation meetings shall be provided to the various representatives prior to the meeting in the form of a formal notification of the meeting. Representatives are to RSVP their attendance or nominate a substitute.
7	Meetings will be minuted with minutes distributed to all parties by the Chairperson. Should any culturally sensitive material be discussed and notified to the Chairperson it may be deleted from minutes at the request of an Aboriginal representative.
8	UCML undertakes to pay **ONE** representative per registered Aboriginal stakeholder group as per the agreed daily rate or half daily rate if the meeting is only for less than half a normal working day (a working day being defined as 8 hours). Where travel or out of pocket expenses are incurred, the participants may request reimbursement of these expenses from the Chairperson with the provision of evidence (i.e. tax Invoices & vehicle km) to support their claim.

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Appendix D - Aboriginal Heritage Meeting Protocols

Refer to ULN SD ANN 0050 (Aboriginal Heritage Site Location Maps)

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Appendix E - European & Natural Heritage Sites – Assessment of Significance

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Umwelt
Environmental Consultants

Ph. 02 4950 5322
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Our Ref: 3004/MN/PW/TA/170112

17 January 2012

Jamie Lees
Environment & Community Manager
Ulan Coal Mines Limited - Complex
PMB 3006
4505 Ulan Road
MUDGEE NSW 2850

Dear Jamie

Re: European and Natural Heritage Sites — Significance Assessment

As discussed with Matthew Newton in December 2011 please find the following information regarding the recent comments from the Heritage Branch, OEH and DP&I in relation to European Heritage sites.

Significance Assessment

In regards to the European and Natural Heritage sites (RV3, CI33, RV4, HS63, CC6, MM273, OCE80/B, OCE84A, OEC86A, OEC 94A, RV1, RV2, CI198/G, PK96/B, ID191 and HS96/D) which were classified as having nil – local significance in the Ulan Coal Continued Operations (UCCO) European and Natural Heritage Assessment (2009) and which have been subsequently clarified in the HMP (in accordance with Heritage Branch, OEH comments dated May 2011) as being of Nil significance we make the following comments:

- Throughout the UCCO assessment process these sites have not been considered as being locally significant sites, but as noted in correspondence from OEH, have been identified as being of Nil – Local significance.

- In accordance with comments provided by the Heritage Branch, OEH and DP&I (December 2011) clarification and justification for assessing these sites as being of nil significance is provided in **Table 1**. **Table 1** assesses each site in accordance with the Heritage Branch, OEH standard criteria and also Bickford and Sullivan's work on archaeological significance. A summary statement of significance, with reference to all of the potential European and Natural Heritage sites/items in the UCCO Project area is also provided.

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Table 1 Significance Assessment

Site Name	Description	Significance Assessment
RV3	Derelict cottage site	Criterion (a) Historical: is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the McDonald, Robinson and Crossing families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential associated with any of the extant structures on the site; Criterion (f) Rarity: is typical of structures and other sites/items typically found within rural landscapes; and Criterion (g) Representativeness: is representative of the sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have nil heritage significance.
CI33	Derelict weatherboard cottage (Calbunya)	Criterion (a) Historical: is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the McDonald, Robinson and Crossing families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential associated with any of the extant structures on the site; Criterion (f) Rarity: is typical of structures and other sites/items typically found within rural landscapes; and

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Site Name	Description	Significance Assessment
		Criterion (g) Representativeness: is representative of the sites typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have nil heritage significance.
RV4	Former stockyard	Criterion (a) Historical: is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential; Criterion (f) Rarity: is typical of yard complexes typically found within rural landscapes; and Criterion (g) Representativeness: is representative of yard complexes typically found in a rural landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have nil heritage significance.
HS63, CC6, MM273, OCE80/B,	Timber getting/Sleeper cutting sites	Criterion (a) Historical: are unlikely to provide information not already known from the historical record; Criterion (b) Associative: are unlikely to provide evidence of any strong or special associations, for example with any Aboriginal people who may have been involved in timber getting or with the McDonald, Robinson and Crossing families;

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Site Name	Description	Significance Assessment
OCE84/A, OCE86/A, OCE94/A, RV1, RV2		Criterion (c) Aesthetic: do not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: are unlikely to have a strong association with any previous or contemporary community or group, including any Aboriginal people who may have been involved in timber getting; Criterion (e) Scientific: are unlikely to have significant archaeological remains with any research potential; Criterion (f) Rarity: are typical of other sites/items typically found within rural landscapes; and Criterion (g) Representativeness: are representative of the sites typically found in a rural landscape with a history of timber getting activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria these sites are therefore considered to have nil heritage significance.
CI198/G	Rock shelter with potential stone wall	Criterion (a) Historical: is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the McDonald, Robinson and Crossing families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely to have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential Criterion (f) Rarity: is likely an example of a makeshift temporary shelter utilising a natural tilted rock typically found within the rock outcrops of the area; and Criterion (g) Representativeness: is likely representative of a makeshift temporary shelter found within the typical rock outcrops of the area. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions

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Site Name	Description	Significance Assessment
		regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have nil heritage significance.
PK96/B	Rock shelter with potential collapsed stone wall	Criterion (a) Historical: is unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the McDonald, Robinson and Crossing families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely that the site would have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential Criterion (f) Rarity: is likely an example of a makeshift temporary shelter utilising a natural rock overhang typically found within the rock outcrops of the area; and Criterion (g) Representativeness: is likely representative of a makeshift temporary shelter found within the typical rock overhangs of the area. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative and in conjunction with the Heritage Branch assessment criteria the site is therefore considered to have nil heritage significance.
ID191	Large natural rock overhang with historical artefacts	Criterion (a) Historical: unlikely to provide information not already known from the historical record; Criterion (b) Associative: is unlikely to provide evidence of any strong or special associations, for example with the McDonald, Robinson and Crossing families; Criterion (c) Aesthetic: does not generally demonstrate distinctive aesthetic qualities or technical innovations; Criterion (d) Social: is unlikely to have a strong association with any previous or contemporary community or group; Criterion (e) Scientific: is unlikely to have significant archaeological remains with any research potential Criterion (f) Rarity: is typical of groups of isolated out of context artefacts found within rural landscapes; and

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Site Name	Description	Significance Assessment
		Criterion (g) Representativeness: is representative of groups of artefacts that might typically be found in the landscape with a history of pastoral and agricultural activities. In regards to archaeological significance (Bickford and Sullivan 1984): 1) Can the site contribute knowledge that no other resource can? 2) Can the site contribute knowledge that no other site can? 3) Is this knowledge relevant to general questions about human history or other substantive questions regarding human history, or does it contribute to other major research questions? Bickford and Sullivan's questions are answered in the negative as the evidence at the site is related to surface artefacts (remains of buggy) and are unlikely to include significant archaeological deposits or be able to answer substantive research questions. In conjunction with the Heritage Branch assessment criteria the site is considered to have limited archaeological potential and is therefore assessed as having nil heritage significance.
HS96/D	Natural rock overhang with historical artefacts	Natural rock overhang with historical artefacts - associated with site/item ID191. Site is associated with ID191 and considered to have nil significance for the same reasons.

Summary Statement of Significance

The project area is typical of a rural landscape within the Central Tablelands of NSW. The history of the area from the mid nineteenth century, including its settlement by Europeans and subsequent use as cleared pastoral and agricultural land, through to its exploitation for timber and mineral resources, is reflected in the low potential of the archaeological resource and in the evidence of houses and other structures/shelters and former timber getting sites present within the project area.

With the exception of Old Ulan Village and the Talbragar Fish Fossil Reserve, potential heritage sites/items extant in the project area are typical of the area as a large rural landscape and are unlikely to provide further unknown information regarding the area's history and development. There are unlikely to be any intact archaeological remains associated with any of the extant structures on the site, with the exception of Old Ulan Village.

Evidence of extant derelict houses (with the exception of the original portion of the house at Apple Tree Flat (site/item PK243) which could date to as early as the mid 1800s, timber getting camps, shelters and out of context dumps of objects/artefacts demonstrate the typical pattern of land use and historical development of the area and are unlikely to provide information not already known from the historical record.

In general terms, with the exception of Old Ulan Village, Bobadeen Station/Homestead (CI07), Apple Tree Flat farm complex (PK 243) and the Talbragar Fish Fossil Reserve, the identified and potential heritage components of the project area are of no significance with no research potential. Old Ulan Village, Bobadeen Station/Homestead and the Apple Tree Flat farm complex have been assessed as being of local significance. Talbragar Fish Fossil Reserve has been assessed as being of State or National significance.

If you have any questions or require any additional information relating to the information discussed in this letter please contact me on (02) 4950 5322

Yours faithfully

Tim Adams
Senior Archaeologist

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Appendix F - Management Plan Consultation History

The consultation undertaken throughout the development and refinement of this Heritage Management Plan includes;

8.5 Government

In accordance with Condition 47(a), Schedule 3 of PA 08_0184, this HMP was:

- Submitted to DP&E for approval on 31 March 2011. Comments received from DP&E on 29 April 2011 have been addressed in this version of the plan;
- Submitted to the Office of Environment & Heritage (OEH, formerly Department of Environment, Climate Change and Water (DECCW)) for comment and review on 3 February 2011. No comments have been received from the OEH in relation to this plan;
- Submitted to the NSW Heritage Branch (OEH, formerly a branch of DP&E) on 19 April 2011, after approval was sought on 6 March 2011 for a time extension to submit the HMP and Conservation Management Plans (CMPs). Comments received from the OEH on 17 May 2011 have been addressed in this version of the plan; and
- Submitted to MWRC for review and comment on 5 January 2011. Correspondence received on 21 June 2011 confirmed that MWRC has no further comment in relation to this Plan.

The plan was resubmitted to DP&E and the NSW Heritage Branch on 19 July 2011 for approval. Further comments received from NSW Heritage Branch, in a letter dated 12 August 2011, were addressed in Version 4 of the plan, submitted to the Department for approval on 19 August 2011.

On 10 November 2011 UCML received further correspondence from the NSW Heritage Branch regarding the HMP. This correspondence specifically relating to blast impacts on heritage sites following the notification to DP&E on 27 October 2011 of an incident regarding blast monitoring of heritage sites on site. Further correspondence was received on 9 December 2011. All of the Department's comments have been addressed in this version (Version 5) of the HMP. Approval of the HMP was received from DP&E on the 20th of February 2012. Final approval of the HMP was received from OEH (Heritage) on the 16th July 2012.

8.6 Aboriginal Stakeholders

UCML has regularly consulted with a number of Aboriginal stakeholders during the course of its ongoing operations and continued implementation of the requirements of the Native Title Agreement, as maintained for the Ulan Coal Mine.

A comprehensive program of Aboriginal community consultation was undertaken for the Continued Operations Project in compliance with the DECCW (2004) *Interim Community Consultation Requirements for Applicants* policy applicable to the Project (refer to Kuskie 2009).

The RAPs for the Continued Operations Project comprised:

- Warrabinga Native Title Claimants Aboriginal Corporation (Warrabinga);
- North East Wiradjuri Company Ltd (NEW);
- Mudgee Local Aboriginal Land Council (Mudgee LALC);
- Murong Gialinga Aboriginal and Torres Strait Islanders Corporation (MGATSIC);
- Warranha Ngumbaay; and
- Wellington Valley Wiradjuri Aboriginal Corporation[24].

The known contact details of these stakeholders are listed in **Appendix 1.**

[24] Became a registered Aboriginal stakeholder during 2014

The draft HMP was provided to the Aboriginal stakeholders and discussed in full detail at an all-day meeting on 18 November 2010. Hard copies of the draft HMP were then posted to the register stakeholders on 5 January 2011, allowing for a minimum period of 28 days for comment. The HMP was not finalised until comments had been received from every group. Comments received from the stakeholders have been forwarded to DP&E under separate cover. The consultation process raised several minor issues or comments that have been, or were already, addressed in the HMP. The *Aboriginal Conservation Management Plan (ACMP) (ULN SD EXT 0095)* was also forwarded to all stakeholders for comment on 1 March 2011. All stakeholders endorsed the *ACMP (ULN SD EXT 0095)* with minor comments.

The HMP and ACMP were provided to Wellington Valley Aboriginal Corporation (WVAC) on 1 February and 1 March 2011 respectively. An onsite meeting was held with WVAC on 23 March 2011. At that stage WVAC did not provide feedback to UCML. In March 2014, WVAC re-registered and will participate in Heritage work and advice going forward.

The ongoing involvement of the Aboriginal community is outlined in this Plan (refer in particular to **Section 3.1**), consistent with PA 08_0184 and in accordance with internal corporate guidelines (Previous Xstrata Guidelines - *XCN GDL 12.0 Social and Community Engagement* and *XCN SD ANN 0047 12.2 Aboriginal Engagement.* Specific engagement strategies are further detailed in UCML's *SIP (ULN SD PLN 0015).*
UCML retains copies of all communication records associated with the development of this plan and the *ACMP (ULN SD EXT 0095)*. In addition these records were provided electronically to DP&E on 16 June 2011.

A summary of the consultation undertaken to date for this HMP (and the European and Aboriginal Conservation Management Plans) is included in **Table 1** below. Copies of correspondence are available on request.

Table 5 Consultation Undertaken for HMP

Date	Nature of Consultation
19 Nov 2010	Onsite Aboriginal Stakeholder Meeting to discuss heritage issues including detailed review of Draft HMP. Comments from stakeholders noted for consideration in next review of HMP.
5 Jan 2011	Updated draft HMP sent to MWRC and Aboriginal Stakeholders for review
18 Jan 2011	Letter received from WVAC seeking involvement in consultation for HMP
19 Jan 2011	Email received from Murong Gialinga approving the HMP.
28 Jan 2011	Draft HMP sent to WVAC for review
30 Jan 2011	Letter received from Warranha Ngumbaay regarding Draft HMP
31 Jan 2011	Letter received from Aboriginal Stakeholders (MLALC) regarding Draft HMP
31 Jan 2011	Draft HMP sent to OEH for review
1 Feb 2011	Letters received from Warrabinga and NEW regarding Draft HMP
3 Feb 2011	Draft HMP sent to OEH for review
14 Feb 2011	Letter from UCML's solicitor to WVAC solicitor regarding consultation meeting to discuss heritage issues including Draft HMP
24 Feb 2011	Follow up letter (to 14 Feb letter) from UCML's solicitor to WVAC solicitor regarding consultation meeting to discuss heritage issues including Draft HMP
1 Mar 2011	Draft Aboriginal CMP sent to OEH, MWRC and WVAC for review
3 Mar 2011	Letter received from WVAC solicitors regarding meeting to discuss heritage issues including Draft HMP and Aboriginal CMP
15 Mar 2011	Letter received from WVAC solicitors (to DP&E, CC UCML) regarding consultation on Draft Aboriginal CMP
15 Mar 2011	Letter received from Warranha Ngumbaay regarding Draft Aboriginal CMP
16 Mar 2011	Letter received from MLALC regarding Draft Aboriginal CMP
23 Mar 2011	Onsite meeting between UCML and WVAC to discuss heritage issues including Draft HMP and

	Aboriginal CMP
23 Mar 2011	Letters received from Warrabinga and NEW regarding Draft Aboriginal CMP
31 Mar 2011	Draft HMP sent to DP&E for approval
19 Apr 2011	Telephone discussion between UCML (Cheryl Henriques) and DP&E (Sara Wilson) regarding submission of Draft European CMPs to OEH Heritage Branch at same time as submission to DP&E
19 Apr 2011	Draft European CMPs sent to MWRC, DP&E and OEH (Heritage Branch) for review
29 Apr 2011	Comments received (via email) from OEH (Heritage Branch) on Draft HMP
17 May 2011	Onsite Aboriginal Stakeholder Meeting to discuss heritage issues including Draft HMP
17 May 2011	Comments received from OEH (Heritage Branch) on Draft HMP and European CMPs seeking changes to HMP
15 Jun 2011	Letter to OEH (Heritage Branch) addressing Dept's comments on Draft HMP
16 Jun 2011	Letter to MWRC seeking feedback on Draft MPs (including HMP)
16 Jun 2011	Meeting between UCML (Jamie Lees), SEA (Peter Kuskie) and OEH (Heritage Branch) (Kylie Seretis) to discuss Draft HMP
21 Jun 2011	Letter from MWRC advising no comments on Draft MPs (including HMP)
6 Jul 2011	Letter from MLALC regarding amendments to Draft HMP following North 1 EA
19 Jul 2011	Revised Draft HMP (Ver 3) sent to OEH (Heritage Branch) for review following changes to HMP (based on letter received 17 May)
12 Aug 2011	Comments received from OEH (Heritage Branch) on Draft HMP seeking further changes to HMP
18 Aug 2011	Electronic Copy of Draft HMP (Ver 4) sent to DP&E for approval
19 Aug 2011	Revised Draft HMP (Ver 4) sent to OEH (Heritage Branch) and DP&E following changes to HMP (based on comments received 12 Aug)
15 Sep 2011	Revised Draft HMP (Ver 4) and Aboriginal CMP sent to Aboriginal Stakeholders following changes to HMP (based on comments received from OEH on 12 Aug)
23 Sept 2011	Telephone discussion between UCML (Cheryl Henriques) and DP&E (Sara Wilson) regarding approval of Draft HMP
17 Oct 2011	Onsite Aboriginal Stakeholder Meeting to discuss heritage issues including Draft HMP
3 Nov 2011	Incident report sent to DP&E regarding blast monitoring of heritage sites – reference to Draft HMP and monitoring of heritage sites.
10 Nov 2011	Comments received from OEH (Heritage Branch) on Draft HMP seeking further changes to HMP following notification of incident relating to blast monitoring of heritage sites
14 Nov 2011	Letter to OEH (Heritage Branch) responding to comments received on 10 Nov relating to Draft HMP and blast monitoring
9 Dec 2011	Comments received from OEH (Heritage Branch)/DP&E relating to Draft HMP, Conservation Mgmt Plans & Blast Mgmt Plan
12 Dec 2011	Letter to DP&E regarding information on the management of Heritage sites within the Extraction Plan areas.
16 Dec 2011	Letter to DP&E regarding supplementary information on the management of Heritage sites within the Extraction Plan area for LW C,E,and F (North 1)
20 Dec 2011	Letter from DP&E approving Extraction Plan for North 1 area.
24 Jan 2012	Revised Draft HMP (Ver 5) sent to OEH (Heritage Branch) and DP&E following changes to HMP (based on comments received 9 Dec)
13 June 2013	Storage of Aboriginal Artefacts (Safe Keeping Place): Agreement was reached at the June 2013 meeting that some artefacts would be displayed at UCML mine offices and the remaining artefacts placed in a safe keeping place at Ulan No.3 after recording and reporting is complete by UCML archeologist as identified in Section 3.8 of the HMP.;
13 June 2013	Aboriginal Documentary Video and Induction Video: reviewed and subsequently provided to UCML operations personnel.
11 June 2013 12 December 2013	Rock Shelter Sampling Strategy: UCML have finalised the sampling strategy in consultation with each of the registered Aboriginal stakeholders. A copy of the rock shelter sampling strategy was provided at the December 2013 Heritage meeting.

	Revised Vibration Criteria for Rock Shelters (Blasting)
March 2014	WVAC registered as Aboriginal stakeholders
June 2014	Copies of the revised HMP were provided to UCML's registered Aboriginal stakeholders

Major Development Assessment
Mining & Industry
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Fax: (02) 9228 6466
Email: sara.wilson@planning.nsw.gov.au
Room 305
23-33 Bridge Street
GPO Box 39
SYDNEY NSW 2001

Jamie Lees
Environment & community Manager
Ulan Coal Mines Limited
Private Mail Bag 3006
MUDGEE NSW 2850

Our ref: S04/01722

Dear Mr Lees

Ulan Coal Continued Operations Project
Management Plan Approvals

The Department has reviewed the following Management Plans for the Ulan Coal Continued Operations Project (MP 08_0184) and considers them to be adequate:

- **Heritage Management Plan** (19 December 2012) – prepared in accordance with Schedule 3, Condition 47 of the Project Approval and including the:
  - Aboriginal Conservation Management Plan;
  - plans of management for the Brokenback Conservation Area and the Grinding Groove Conservation Areas; and
  - conservation management plans for the Old Ulan Village and the Bobadeen Homestead,

  and supported by correspondence from Ulan Coal Mine Limited dated 16 December 2011 and 16 February 2012;
- **Blast Management Plan** (20 December 2012) – prepared in accordance with Schedule 3, condition 16 of the Project Approval; and
- **Biodiversity Management Plan** (22 December 2012) – prepared in accordance with Schedule 3, Condition 44 of the Project Approval.

Accordingly the Director-General has approved the above plans.

The Department also notes the requirement under Condition 10, Schedule 5 to make copies of all approved plans, programs and strategies publicly available.

Please feel free to call Sara Wilson on (02) 9228 6583 if you have any enquiries in relation to this matter.

Yours sincerely

Howard Reed 20.2.12
Howard Reed
A/Director
Mining & Industry
As delegate for the Director-General

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30 June 2015

Mr Wayne Jones
Senior Compliance Officer
Department of Planning and Environment
Suite 14 – Level 1
1 Civic Ave
Singleton, NSW 2330

Seq No: 49/15

Dear Mr Jones

RE: 2014 AER Management Plan Review

The 2014 Annual Environment Review (AER) was submitted to the Department of Planning and Environment (DP&E) on 31 March 2015. Ulan Coal Mines Limited (UCML) has reviewed the Environmental Management Strategy and management plans listed below in accordance with the Project Approval; PA 08_0184 which states:

> ***Revisions of Strategies, Plans and Programs***
> *(a) The submission of an annual review under Condition 3 above;*
>
> *…. the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. (Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project).*

The following plans are consistent with the approved plans; minor updates include changes to retain consistency with approvals, site operations and revised maps (review details for each plan outlined in attached document *AER Management Plan Review 2015*).

- ULN SD PLN 0013 Heritage Management Plan (comments provided March 2015, detailed description of incorporated comments in attached *AER Management Plan Review 2015*);
- ULN SD PLN 0016 Waste Management Plan (comments incorporated in response to email 5 March 2015);
- ULN SD PLN 0017 Water Management Plan (comments incorporated in response to email 4 September 2014);
- ULN SD PLN 0031 Noise Management Plan (comments incorporated in response to email 4 December 2014);
- ULN SD PLN 0050 Environment Management Strategy (document revised, no consequential changes);

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Manager of the Ulan Joint Venture

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- ULN SD PLN 0055 Surface Water Monitoring Program (comments incorporated in response to email 9 September 2014);
- ULN SD PLN 0056 Groundwater Monitoring Program (comments incorporated in response to from email 29 September 2014);
- ULN SD PLN 0057 Surface & Ground Water Response Plan (comments incorporated 3 March 2015);
- ULN SD PLN 0059 Air Quality & Greenhouse Gas Management Plan (document revised, no consequential changes); and
- ULN SD PLN 0082 Blast Management Plan (document revised, no consequential changes);

These plans will be updated on our website, if revisions are satisfactory to the Director General.

The following management plans were reviewed and are consistent with previous versions. No changes are proposed for these plans following the 2014 AER:

- ULN SD EXT 0094 The Bobadeen Homestead Conservation Management Plan;
- ULN SD EXT 0095 Old Ulan Conservation Management Plan;
- ULN SD PLN 0025 Erosion & Sediment Control Plan;
- ULN SD PLN 0051 Construction Traffic Management Plan;
- ULN SD PLN 0054 The Goulburn River Diversion Remediation Plan;
- ULN SD PLN 0060 Aboriginal Conservation Management Plan;
- ULN SD PLN 0079 Integrated Mining Operations Plan; and
- ULN SD PLN 0089 Pollution Incident Response Management Plan.

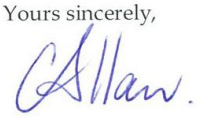
These plans will be updated on the UCML website www.ulancoal.com.au.

The following management plans are no longer relevant for the purposes of compliance to the Project Approval and with your approval, would be obsoleted:

- ULN SD PLN 0051 Construction Traffic Management Plan; and
- ULN SD PLN 0014 Visual and Landscape Management Plan.

Please contact Robyn Stoney on (02) 6372 5368, if you have any questions. We look forward to your review and advice that the plans meet the satisfaction of the Secretary. Thank you for your consideration of the plans.

Yours sincerely,



Charlie Allan
General Manager
Ulan Coal Mines Limited

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23 July 2015

Ms Sonya Ardill
Senior Team Leader Planning – North West
Regional Operations Group
Office of Environment and Heritage
PO Box 2111
Dubbo NSW 2830

Seq No: 55/15

Dear Ms Ardill,

2015 Revised Management Plans for Review and Approval

Ulan Coal Mines Limited (UCML) Project Approval 08_0184 requires a review of management plans annually. As a result of the annual review process, UCML has revised the approved Biodiversity Management Plan (BMP), Offset Management Program (OMP) and Heritage Management Plan (HMP). As required by of Condition 44 and Condition 47, Schedule 3 of the Project Approval 08_0184, the BMP and HMP must be prepared in consultation with the Office of Environment and Heritage (OEH).

The 2015 review of the BMP and HMP was conducted in consultation with Ecological Australia and South East Archaeology respectively. Copies of the revised HMP will be provided to UCML's registered Aboriginal stakeholders. The 2015 review has resulted in changes to the content and format of the plans as follows:

UCML Document Identification:	Management Plan Name	PA08_0184 Condition	Summary of Changes
ULN SD PLN 0026	Biodiversity Management Plan	44	• Integration of the Biodiversity Management Plan (BMP) and Offset Management Plan (OMP) into a one document (i.e. OMP as an appendix to the BMP); • Alignment of the revised BMP with *Best Practice Guidelines for Biodiversity Offset Management Plans* (January 2014) as provided by the Department of Planning & Environment (DP&E); • Incorporate comments from DP&E issued in December 2014, including; - Revised vegetation mapping to Biometric Vegetation Type; - Introduce revised performance indicators; and - Provide specific risk assessment in BMP. • Revise Bobadeen Offset Area to provide 169ha of EEC after vegetation mapping identified shortfall compared with original estimates; • Include the findings of the review regarding management strategy for Acacia *Ausfelldii* undertaken by EcoLogical Australia; • Revise OMP work program to a more simplified model with earlier establishment timeframes;

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UCML Document Identification:	Management Plan Name	PA08_0184 Condition	Summary of Changes
			• Include trial of natural regeneration technique in fragment area of Bobadeen Offset Area; • Update BMP accountabilities and responsibilities; and • Formatting to align with Glencore Coal Assets Australia (GCAA) requirements.
ULN SD PLN 0013	Heritage Management Plan	47	• Address several minor DP&E comments; and • The document was updated to the GCAA template.

The above mentioned changes to the plans are not considered substantive with respect to PA08_0184 and other UCML approvals. A copy of the revised plans are provided on the attached CD. Any suggestions for improvement or comments would be welcomed as part of on-going consultation and maintenance of the plans. Please provide the Heritage Management Plan to the appropriate OEH person.

When you have to consider the BMP and OMP, UCML would welcome the opportunity to meet and discuss the plans. Please contact Robyn Stoney to arrange this meeting.

When the plans are approved by The NSW Department of Planning and Environment, they will be uploaded to the UCML website, www.ulancoal.com.au.

Please contact Robyn Stoney on (02) 6372 5368, if you have any questions or comments.

Yours sincerely,

CHARLIE ALLAN
General Manager
Ulan Coal Mines Limited

Attachment: 1 x CD *2015 Revision of Biodiversity Management Plan & Heritage Management Plan*

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23 July 2015

Mr Brad Cam
General Manager
Mid-Western Regional Council
86 Market Street
Mudgee NSW 2850

Seq No: 52/15

Dear Mr Cam,

2015 Revision of Strategies, Management Plans, Programs

Ulan Coal Mines Limited (UCML) are required to review and if necessary revise existing approved strategies, plans and programs in accordance with Condition 4, Schedule 5 of Project Approval 08_0184 (PA08_0184) on an annual basis. Further to Schedule 3 of PA 08_0184 (regarding conditions listed in respect of the relevant plans below), several plans must be prepared in consultation with the Mid-Western Regional Council (MWRC). The 2015 review has resulted in changes to the content and format of the plans as follows:

UCML Document Identification:	Management Plan Name	PA08_0184 Condition	Summary of Changes
ULN SD PLN 0026	Biodiversity Management Plan	44	• Integration of the Biodiversity Management Plan (BMP) and Offset Management Plan (OMP) into a one document (i.e. OMP as an appendix to the BMP); • Alignment of the revised BMP with *Best Practice Guidelines for Biodiversity Offset Management Plans* (January 2014) as provided by the Department of Planning & Environment (DP&E); • Incorporate comments from DP&E issued in December 2014, including; - Revised vegetation mapping to Biometric Vegetation Type; - Introduce revised performance indicators; and - Provide specific risk assessment in BMP. • Revise Bobadeen Offset Area to provide 169ha of EEC after vegetation mapping identified shortfall compared with original estimates; • Include the findings of the review regarding management strategy for Acacia *Ausfelldii* undertaken by EcoLogical Australia;

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UCML Document Identification:	Management Plan Name	PA08_0184 Condition	Summary of Changes
			• Revise OMP work program to a more simplified model with earlier establishment timeframes; • Include trial of natural regeneration technique in fragment area of Bobadeen Offset Area; • Update BMP accountabilities and responsibilities; and • Formatting to align with Glencore Coal Assets Australia (GCAA) requirements.
ULN SD PLN 0013	Heritage Management Plan	47	• Address several minor DP&E comments; and • The document was updated to the GCAA template.
ULN SD PLN 0031	Noise Management Plan	9	• An additional alarm level for the real-time monitoring equipment was included for consistency with *NSW Draft Guideline – Mining;* • Noise Monitoring Application Note 2014, provided by NSW Department of Planning and Environment (DP&E); • References to a real time monitor (Sentinex 72) that was not part of the current monitoring support network were removed; and • The document was updated to the GCAA noise protocol and template.
ULN SD PLN 0082	Blast Management Plan	16	• Fume Management Strategy included as requested by DP&E; • Minor updates to text and re-ordering of document; and • Note: No blasting in the open cut is planned in 2015.
ULN SD PLN 0059	Air Quality & Greenhouse Gas Management Plan	22	• The document was updated to meet the intent of the GCAA air quality management and carbon management protocol; • References to the repealed energy efficiency opportunities and energy savings action plan legislation and annual review of energy and greenhouse reduction opportunities were removed; and • Greenhouse minimisation requirements are captured through ongoing life of mine and project assessment processes.
ULN SD PLN 0017	Water Management Plan	34	• The document was updated to the Glencore Coal Assets Australia (GCAA) noise protocol and template. including: - clarification of clean and dirty water management areas, separated by catchment; - update status of water improvement projects; - re-order source and fate information to introductory material; - updated forecast information for water balance management; - consistent wording with conditions of approval; and - correction of administrative errors, references within text and to PA08_0184 conditions. • Reformat WMP to GCAA template for management plans.
ULN SD PLN 0055	Surface Water Monitoring Program	38	• Address DP&E comments including: - the descriptions and procedures defined by catchment and source water type; - the criteria, monitoring and reporting measures for surface water monitoring within the Goulburn River System and the Talbragar River System; - update baseline data table with water quality averages for the Goulburn River and Talbragar River systems; • Align document to GCAA documents.
ULN SD PLN 0056	Groundwater Monitoring Program	39	• Address DP&E comments including: - inclusion of salt water balance calculations in annual water balance;

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UCML Document Identification:	Management Plan Name	PA08_0184 Condition	Summary of Changes
			- update consultation section; - update Private Bore Monitoring section; - include standard deviation values in base line groundwater quality data table; - clarify groundwater triggers for investigation purposes; • Reformat GWMP to GCAA template for management plans; and • Align document to GCAA documents.
ULN SD PLN 0057	Surface and Groundwater Response Plan	40	• Address DP&E comments including: - Revision of Trigger Action Response Plans (TARPs) for surface water Goulburn River Systems; - Revision of Trigger Action Response Plans (TARPs) for surface water Talbragar River Systems; - Revision of Trigger Action Response Plans (TARPs) for groundwaters; • Align document to GCAA documents.

The above mentioned changes to the plans are not considered substantive with respect to PA08_0184 and other UCML approvals. A copy of the revised plans are provided on the attached CD and should you have any suggestions for improvement or comments, they would be welcomed as part of on-going consultation and maintenance of the plans.

When the plans are approved by The NSW Department of Planning and Environment, they will be uploaded to the UCML website, www.ulancoal.com.au.

Please contact Robyn Stoney on (02) 6372 5368, if you have any questions or comments.

Yours sincerely,

Charlie Allan
General Manager
Ulan Coal Mines Limited

Attachment: 1 x CD ***2015 Revision of Strategies, Management Plans, Programs***

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Appendix G - SMP Conditions

The following tables provide the relevant conditions of the SMP approvals relevant to the HMP and where they are addressed in this plan.

Table 6-1 SMP Approval Requirements (LW 23-26 & W1)

Condition	Requirement	HMP Section
9	**Subsidence Management Approvals** The leaseholder shall develop and implement a program to ensure ongoing baseline data collection, investigation, assessment and regular reviews with the relevant stakeholders. A review schedule shall be developed in consultation with these stakeholders. The review schedule shall be submitted to the director of environment and sustainability within four months of this approval. The leaseholder shall undertake further reviews if such reviews are requested by the director of environmental sustainability or the principal subsidence engineer.	Section 5
10	The ongoing baseline data collection, investigation, assessment and reviews shall aim to identify appropriate management measures to mitigate and/or remediate subsidence impacts. The leaseholder shall ensure that management reviews are conducted in consultation with relevant stakeholders, prior to the subsidence of any important surface features or as otherwise determined in the said schedule in condition 9.	Section 5
11	The leaseholder shall regularly seek advice and/or feedback from the relevant stakeholders, with regard to the adequacy, quality and effectiveness of the implemented management processes and the need for any appropriate management measures, early response actions or emergency response procedures to ensure adequate management of any potential subsidence impacts due to longwall mining.	Contained in Ulan Coal Subsidence Monitoring Program (ULN SD PLN 0061) and Subsidence Management and Extraction Plan (ULN SD PLN 0024)
13	**Subsidence Reporting** End of Panel Report- The leaseholder shall prepare an end of panel report to encompass all environmental and subsidence monitoring, including a comparison of actual impacts with predicted subsidence impacts. The report shall be submitted to the director, Environmental Sustainability, within 3 months of extraction being completed for each longwall panel.	Section 5.5
14	The leaseholder shall provide to the mine subsidence board, the owners/operators of any infrastructure and the Director Environmental Sustainability and Principal subsidence engineer of the Department of Primary Industries, notification within 24 hours of occurrence or identification of the following during the development of subsidence caused by longwall mining. The same information shall also be made available to other relevant stakeholders if requested. a) any subsidence impacts adverse to the groundwater and/or the natural environment which may be affected by longwall mining. b) any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining; c) any significant unpredicted and/or higher than predicted subsidence and/or abnormalities in subsidence development in any surface areas that may be affected by longwall mining; d) any adverse subsidence impacts reported by a relevant stakeholder, and e) any other relevant information requiring prompt notification.	Section 5.7
16	**Implementation of the Approved SMP** The leaseholder shall prepare and regularly update the Subsidence Management Status Report until completion of subsidence in the application area. This status report shall be provided to the Mine Subsidence Board, the Director of Environmental Sustainability and the Principal Subsidence Engineer of the Department of Primary Industries. The report may also be made available to other relevant stakeholders if requested. It shall be submitted at a minimum of four monthly intervals from the date of this approval, or at any other interval as required in writing by the Director Environmental Sustainability or the Principal Subsidence Engineer, and shall include but not be limited to: a) face Position of the longwall panel being extracted;	Section 5.5

	b) a summary of any management action undertaken by the leaseholder; c) a summary of the results of consultation with stakeholders as per condition 11 and 15; d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other information reported as per condition 14;	

Table 6-2 SMP Approval Requirements (LW W2 & W3)

Condition	Requirement	HMP Section
13	**Environmental Monitoring** The leaseholder must submit to the Director Environmental Sustainability for approval an environmental monitoring programme (EMP) for the longwall panels which are the subject of this Approval. This programme must address subsidence impacts on: • surface and groundwater (quality and quantity) • Aboriginal sites; • flora & fauna The EMP must develop a response strategy for each of the above to include: **a)** trigger levels for subsidence impacts that require actions and responses; **b)** the procedure that would be followed in the event that the monitoring indicates an exceedance of the trigger levels **c)** measures to mitigate, remediate and/or compensate any identified impacts **d)** a protocol for the notification of identified exceedances of the trigger levels. This response strategy must be prepared within 60 days of this approval in consultation with relevant landholders, Department of Water and Energy and government agencies. The Groundwater EMP must be consistent with the Department of Water and Energy's "*Draft Guidelines for Groundwater Monitoring*". **Note:** The programme should be submitted to the Principal Subsidence Engineer at least 30 days prior to the expected commencement of extraction to enable sufficient time for the assessment of the programme. The Principal Subsidence Engineer may require the provision of further information to assist in the assessment of the programme or a resubmission of the programme if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period.	Contained in Ulan Coal Subsidence Monitoring Program (ULN SD PLN 0061) and Subsidence Management and Extraction Plan (ULN SD PLN 0024)
15	**Incident and Ongoing Management Reporting** The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify: i. the Principal Subsidence Engineer; ii. the NSW Office of Water; and iii. other relevant stakeholders and Government Agencies with a regulatory role if they request such notifications, of the following: a) any significant unpredicted and/or higher than predicted subsidence and/or abnormalities in the development of subsidence; b) any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; c) any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining; d) any significant subsidence induced cracking and/or ground deformations observed in any surface areas within the SMP application area.	Section 5.7
16	The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to: a) the current face position of the longwall panel being extracted; b) a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report;	Section 5.5

	c) a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to the comments, advice and feedback given by the stakeholders; d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impacts, incidents, service difficulties and complaints; e) a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f) a summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above; and g) a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early responses or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining. The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal Subsidence Engineer, the Department of Water and Energy every four (4) months from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability, the Principal Subsidence Engineer of the Department of Primary Industries, owners/operators of any infrastructure within the application area and any other stakeholders.	
17	**End of Panel Report** Within 4 months of the completion of each longwall panel, an end of panel report must be prepared to the satisfaction of the Director Environmental Sustainability. The end of panel report must: a) include a summary of the subsidence and environmental monitoring results for the applicable longwall panel; b) include an analysis of these monitoring results against the relevant: • impact assessment criteria; • monitoring results from previous panels; and • predictions in the SMP; c) identify any trends in the monitoring results over the life of the activity; and d) describe what actions were taken to ensure adequate management of any potential subsidence impacts due to longwall mining.	Section 5.5

Table 6-3 SMP Approval Requirements for North 1

Condition	Requirement	HMP Section
13.	**Environmental Management Plan** **Note** – The Rehabilitation Management Plan, Water Management Plan, Biodiversity Management Plan and Heritage Management Plan approved by DP&E under conditions 26(g) and 26(h) Schedule 3 of Project Approval (08_0184 MOD 1) forms the Environmental Management Plan for this approval.	NA
16	**Incident and Ongoing Management Reporting** The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify: i. the Principal Subsidence Engineer; ii. the Department of Water and Energy; iii. the Mine Subsidence Board; iv. NSW Office of Water; and v. other relevant stakeholders and Government Agencies with a regulatory role if they request such notifications, of the following:	Section 5.7

	a) any significant unpredicted and/or higher than predicted subsidence and/or abnormalities in the development of subsidence; b) any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; c) any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining; and d) any significant subsidence induced cracking and/or ground deformations observed in any surface areas within the SMP application area. **Note:** Under Condition 11, the Leaseholder can be directed to, among other things, prepare a report on an incident reported under this condition. A report on the details of the incident, including likely or known causes, response action and proposed response measures will generally be required for incidents that involve material property or environmental damage or have the potential to cause such damage.	
17	**Status Report** The Leaseholder must prepare and maintain a Subsidence Management Status and Report which must include but not be limited to: a) the current face position of the longwall panel being extracted; b) a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report; c) a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to the comments, advice and feedback given by the stakeholders; d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impacts, incidents, service difficulties and complaints; e) a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f) a summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above; and g) a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early responses or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining. The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal Subsidence Engineer and the NSW Office of Water every four (4) months from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability & Land Use, the Principal Subsidence Engineer and any other stakeholders.	Section 5.5
18	**End of Panel Report** Within 4 months of the completion of each longwall panel, an end of panel report must be prepared to the satisfaction of the Director Environmental Sustainability. The end of panel report must: a) include a summary of the subsidence and environmental monitoring results for the applicable longwall panel; b) include an analysis of these monitoring results against the relevant: • impact assessment criteria; • monitoring results from previous panels; and • predictions in the SMP; c) identify any trends in the monitoring results over the life of the activity; and describe what actions were taken to ensure adequate management of any	Section 5.5

	potential subsidence impacts due to longwall mining.	

Table 6-4 SMP Approval Requirements (Longwalls 27-29, W4 & W5)

Condition	Requirement	HMP Section
16	**Incident and Ongoing Management Reporting** The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify: i. The Principal Subsidence Engineer; ii. The Director, Environmental Sustainability; iii. The Mine Subsidence Board; iv. NSW Office of Water; v. the operators of all infrastructure as listed in condition 14; and v. Other relevant stakeholders and Government Agencies with a regulatory role if they request such notifications, of the following: a) Any significant unpredicted and/or higher than predicted subsidence and/or abnormalities in the development of subsidence; b) Any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; c) Any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining; d) any significant subsidence induced cracking and/or ground deformations observed in any surface areas within the SMP application area;	Section 5.7
17	**Status Report** The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to: a) the current face position of the longwall panel being extracted; b) a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report; c) a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to the comments, advice and feedback given by the stakeholders; d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impacts, incidents, service difficulties and complaints; e) a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f) a summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above; and g) a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early responses or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining. The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal	Section 5.5

	Subsidence Engineer, the Department of Water and Energy every four (4) months from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability & Land Use, the Principal Subsidence Engineer, owners/operators of any infrastructure within the application area and any other relevant stakeholders.	
18	**End of Panel Report** End of Panel Report- Within 4 months of the completion of each longwall panel, an end of panel report must be submitted to the Director General. The end of panel report must: a) include a summary of the subsidence and environmental monitoring results for the applicable longwall panel; b) include an analysis of these monitoring results against the relevant impact assessment criteria, monitoring results from previous panels, and predictions in the SMP; c) identify any trends in the monitoring results over the life of the activity; and describe what actions were taken to ensure adequate management of any potential subsidence impacts due to longwall mining.	Section 5.5

Table 6-5 SMP Approval Requirements (Longwalls 1 & 2 Ulan West)

Condition	Requirement	HMP Section
16	**Incident and Ongoing Management Reporting** The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify: a) The Principal Subsidence Engineer; b) The Director, Environmental Sustainability; c) The Mine Subsidence Board; d) NSW Office of Water; e) the operators of all infrastructure as listed in condition 14; and f) Other relevant stakeholders and Government Agencies with a regulatory role if they request such notifications, of the following: i. Any significant unpredicted and/or higher than predicted subsidence and/or abnormalities in the development of subsidence; ii. Any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence; iii. Any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining; iv. any significant subsidence induced cracking and/or ground deformations observed in any surface areas within the SMP application area; ***Note: Under Condition 11, the Leasholder can be directed to, among other things, prepare a report on an incident reported under this condition. A report on the details of the incident, including likely or known causes, reponse action and proposed response measures will generally be required for incidents that involve material property or environmental damage or have the potential to cause such damage.***	Section 5.5
17	**Status Report** The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to: a) the current face position of the longwall panel being extracted; b) a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report; c) a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to the comments, advice and	Section 5.5

	feedback given by the stakeholders; d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impacts, incidents, service difficulties and complaints; e) a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts; f) a summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above; and g) a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early responses or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining. The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal Subsidence Engineer, the Department of Water and Energy every four (4) months from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability & Land Use, the Principal Subsidence Engineer, owners/operators of any infrastructure within the application area and any other relevant stakeholders.	
18	**Annual Report** The Leasholder shall prepare an annual report. This report shall be submitted to the Secretary within twelve months of the date of this approval and annually thereafter. The annual end of panel report must: a) include a summary of the subsidence and environmental monitoring results for the year; b) include an analysis of these monitoring results against the relevant; c) impact assessment criteria, d) monitoring results from previous panels, and e) predictions in the SMP; f) identify any trends in the monitoring results over the life of the activity; and g) describe what actions were taken to ensure adequate management of any potential subsidence impacts due to longwall mining. Note: The requirement of this condition may be satisified via an Annual Review prepared under conditions of development consent or project approval.	Section 5.5