



# APPENDIX L NON-ABORIGINAL HERITAGE IMPACT ASSESSMENT

**MT ARTHUR COAL CONSOLIDATION PROJECT**

**NON-ABORIGINAL HERITAGE IMPACT ASSESSMENT**

For  
Hansen Bailey  
on behalf of Hunter Valley Energy Coal Pty Ltd  
August 2009

Archaeology Australia

## **EXECUTIVE SUMMARY**

The aim of this report is to assess the significance of any Non-Aboriginal heritage items located within the survey area or within 5 km of its boundary; assess the impact that the Mt Arthur Coal Consolidation Project may have on those items; outline statutory requirements relating to heritage; and to recommend how to manage any identified items while complying with all relevant legislation.

This assessment has found that there are two sites within the survey area containing relics that would be afforded protection under the (NSW) *Heritage Act 1977*. The location and description of these items are detailed in the body of the report. The integrity and condition of these relics are such that further archaeological investigation of the site is not warranted. A significance assessment of those items has found that they are of low significance and that the Mt Arthur Coal Consolidation Project will not impact on them.

Four heritage sites of local significance identified and recorded by previous assessments were found to be located in the Mt Arthur Coal Consolidation Environmental Assessment Boundary. As discussed in the body of this report, two of these sites will be directly impacted. The study also found that there are several heritage items located in the vicinity of the survey area that may be indirectly impacted upon through blasting associated with the Mt Arthur Coal Consolidation Project. Recommendations and more detailed management strategies to address these issues are also contained in this report.

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## 1 INTRODUCTION

Hunter Valley Energy Coal Pty Ltd (HVEC), a wholly owned subsidiary of BHP Billiton operates the Mt Arthur Coal Complex (Mt Arthur Coal) which includes combined operations of the Mt Arthur North Mine, the Bayswater No. 2 Mine, Bayswater No. 3 Mine, South Pit Extension and the Mt Arthur Underground (MAU) Project. The Mt Arthur Coal Complex is located south-west of Muswellbrook, off Thomas Mitchell Drive in the Muswellbrook Shire Council (MSC) Local Government Area (LGA) in the Upper Hunter Valley of NSW (see **Figure 1**).

Archaeology Australia has been commissioned by Hansen Bailey to undertake a Non-Aboriginal Heritage Impact Assessment to form part of the Environmental Assessment for the proposed Mt Arthur Coal Consolidation Project (the Project).

This investigation proceeded by recourse to the historical and environmental background of the area associated with the Project and included:

- A search of databases that may contain listed heritage items including those held by the Australian Heritage Council, NSW Heritage Council, National Trust of Australia (NSW), NSW Rail Corporation Conservation and Heritage Register and local council holdings;
- Review of available literature including local histories, heritage studies and a search of holdings of the National Library of Australia, NSW State Library (Mitchell Collection), NSW State Archives and local libraries;
- Identification of heritage items inside or within five kilometres (km) of the EA Boundary area;
- Providing a predictive model to identify the potential extent and nature of previously unrecorded heritage items that may be located within the survey area;
- Assessment of the potential impacts of the Project upon any identified heritage items;
- An outline of the statutory requirements relating to heritage items that may be impacted upon by the Project;
- Identifying areas requiring further investigation; and
- The presentation of recommendations to assist in the development of management and mitigation strategies for any potential impact on heritage items.

This report contains a description and discussion of the sites located in the field followed by an assessment of significance using the criteria outlined by the NSW Heritage Council. This report concludes with a summary and recommendations relating to the potential impact of the proposed works and mitigation and management strategies.



## 2 SITE DESCRIPTION

### 2.1 Location & General Description

The survey area consists of two portions that had not been previously assessed by Non-Aboriginal heritage studies completed at The Mt Arthur Coal Complex (see **Figure 2**). The first is a narrow corridor running south from Denman Road, which contains the alignment for Edderton Road proposed by the Project. The second is a smaller portion to the west of the approved Mt Arthur Coal open cut mining operation.

The survey area is located within the MSC LGA, County Durham and contains portions with the parishes of Vaux and Brougham. The survey area lies between Mount Arthur and the Hunter River, in the Upper Hunter Valley. It includes steep wooded gullies on the slopes of Mount Arthur. The proposed road corridor is located on a natural terrace above the Hunter River floodplain. The lower areas have been cleared of major vegetation and are currently used for grazing stock. The upper areas are partly cleared and contain some areas of open Eucalypt woodland.

### 2.2 Project Description

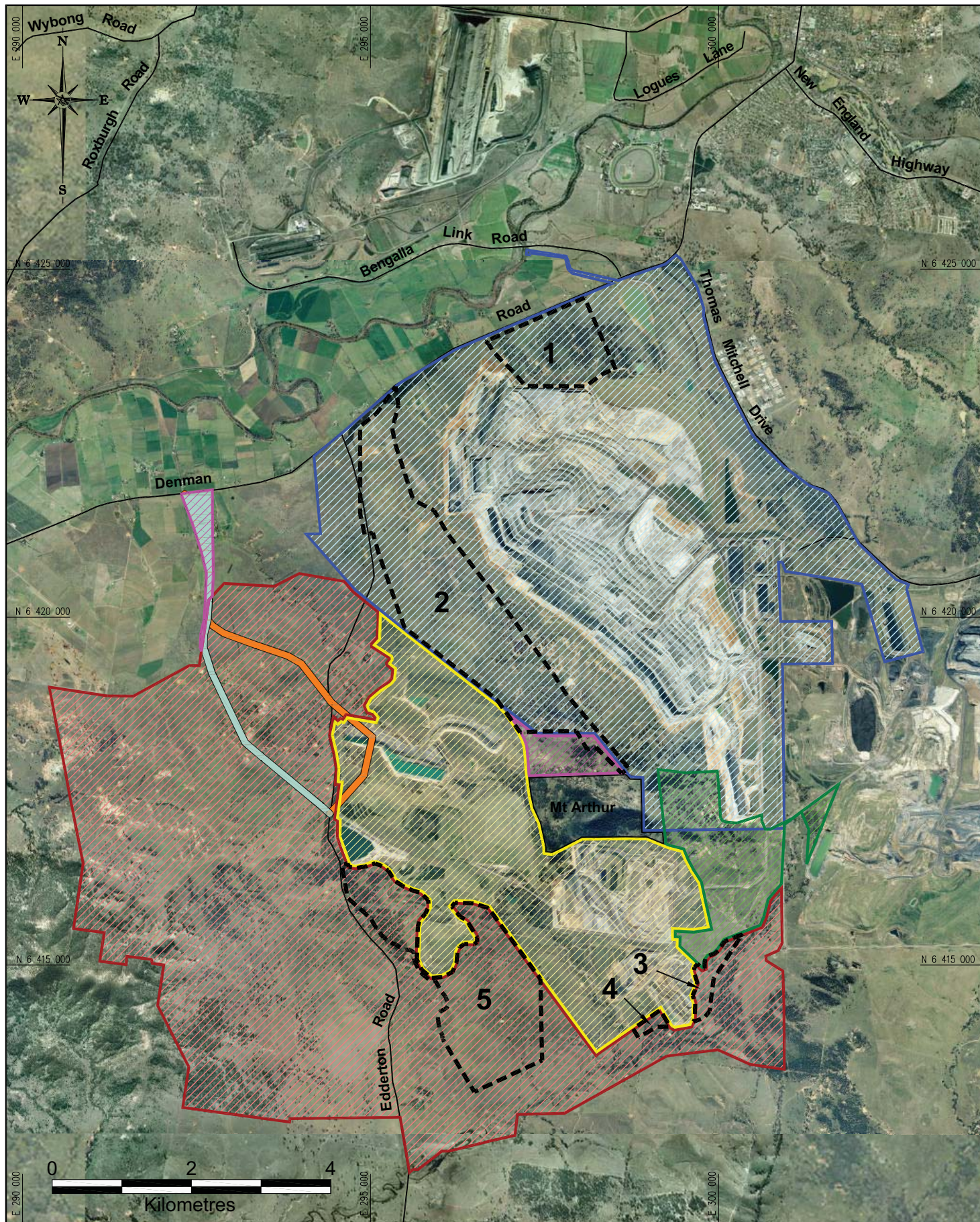
HVEC is applying to the Minister for Planning for a new Project Approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to gain a single, contemporary planning approval for its open cut operations and the mining of additional areas within its current Mining Leases (ML). The Project Application Boundary (EA Boundary) is shown on **Figure 2**.

The Project will continue all aspects of Mt Arthur Coal's current activities and specifically, comprises the following:

- Consolidation of all of Mt Arthur Coal's open cut mining related planning approvals into one contemporary Project approval;
- Extending the mine footprint to uncover additional coal reserves within the current MLs;
- Increasing the Mt Arthur Coal Complex approved production levels by 8 Million tonnes per annum (Mtpa) up to 36 Mtpa Run of Mine (ROM) coal. This will be achieved by;
  - Increasing open cut coal production by up to 8 Mtpa; and
  - Having the flexibility to increase either open cut or underground production by an additional 4 Mtpa if the maximum production from either underground or open cut methods is not being met (total to not exceed 36 Mtpa).
- Relocation of a section of Edderton Road in approximately 2019;
- Upgrading the existing Mt Arthur Coal Handling and Preparation Plant (CHPP) to wash up to 36 Mtpa of ROM coal and allow the inclusion of an ultra-fine coal circuit to re-process fines which will facilitate increased resource recovery and reduce water demand;
- Increasing the approved rail haulage capacity (in line with the increased coal production) from 19 Mtpa to 27 Mtpa, with the construction of a second rail loading facility and associated conveyor system;
- Modifications to existing infrastructure (such as workshop and bath house), construction of additional ROM coal hoppers and the extension of ROM and product coal stockpiles; and
- A total workforce of approximately 2,600 at peak production.

No changes to the mining method or hours of operation are proposed, although a gradual increase in the mobile equipment fleet will be required.





- Mt Arthur Coal Consolidation Extension Areas
- ▨ Mt Arthur North Survey Area (2001)
- ▨ South Pit Extension Survey Area (2007)
- ▨ Mt Arthur Underground Survey Area (2008)
- ▨ Bayswater No. 3 Survey Area (1993)
- ▨ Edderton Road Realignment Option 1
- ▨ Edderton Road Realignment Option 2
- ▨ Areas Surveyed for the Mt Arthur Coal Consolidation Project (October 2008)

Hansen Bailey



Co-ordinate System: MGA Zone 56  
Sources: Umwelt (2007 & 2008), Dames & Moore (2001)

## MT ARTHUR COAL

### Consolidation EA Survey Area

Cad File: 03776C.dwg

Date: 04.08.09

Drawn: JD

Figure  
**2**



### **3 STATUTORY OBLIGATIONS**

#### **3.1 Legislation**

##### **3.1.1 National**

A new national heritage system commenced on 1 January 2004. Its main features include:

- A National Heritage List of places of national heritage significance;
- A Commonwealth Heritage List of heritage places owned or managed by the Commonwealth;
- The creation of the Australian Heritage Council – an independent expert body to advise the Minister on the listing and protection of heritage places; and
- Continued management of the Register of the National Estate.

##### **National Heritage List:**

The National Heritage List records the natural, indigenous and historic places with outstanding heritage value to our nation. These places will have values or characteristics that have special meaning for all Australians. They will show important aspects of the history of the continent on which we live, and will reflect the diverse experience of its human occupation. The list may also include important places overseas such as Anzac Cove – subject to the agreement of the sovereign country in which they are located. Places on the National Heritage List will be protected under Section 15 (b) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

##### **Commonwealth Heritage List:**

The Commonwealth Heritage List includes places or groups of places that are in Commonwealth lands and waters or under the control of the Australian Government.

Anyone, including the Minister and the Australian Heritage Council, can nominate a place to the Commonwealth Heritage List through a public nomination process. In the first six months of the new laws (until 30 June 2004), the Minister also had the power to transfer to the Commonwealth Heritage List those places that are in Commonwealth areas currently listed on the Register of the National Estate.

The newly established Australian Heritage Council assesses the nominations for the Commonwealth Heritage List. After receiving the Council's advice; the Minister will decide whether or not a place warrants listing using criteria prescribed in the Act, and may invite public comments on the inclusion of the place in the Commonwealth Heritage List.

##### **Register of the National Estate:**

The Register of the National Estate is a list of more than 13,000 heritage places around Australia that has been compiled by the former Australian Heritage Commission since 1976. It will continue as an evolving record of Australia's natural, cultural and indigenous heritage places that are worth keeping for the future. Members of the public can still nominate places to the Register. The Australian Heritage Council will then assess nominations and will list places meeting relevant criteria.

It will maintain information about places on the Register in a publicly accessible database that will be used for public education and to promote heritage conservation in general.

Places on the Register are protected under the EPBC Act by the same provisions that protect Commonwealth Heritage places.

### **3.1.2 State**

#### **National Trust of Australia (NSW):**

The National Trust of Australia (NSW) (The Trust) is a Non-government Community Organisation which promotes the conservation of both the built and natural heritage (e.g. buildings, bushland, cemeteries, scenic landscapes, rare and endangered flora and fauna, and steam engines may all have heritage value). The Trust has approximately 30,000 members in NSW.

Following its survey and assessment of the natural and cultural environment, the Trust maintains a Register of landscapes, townscape, buildings, industrial sites, cemeteries and other items or places which the Trust determines to have heritage significance and are worthy of conservation. Currently there are some 11,000 items listed on the Trust's Register. They are referred to as 'Classified' items.

The Trust's Register is intended to perform an advisory and educational role (the listing in the Register has no legal force). However, it is widely recognised as an authoritative statement of the heritage significance of a place. The Trust does not have any control over the development or demolition of the Classified Places or Items in its Register.

While the National Trust Register does not provide any statutory obligations for protection of a site as such, the acknowledgment of a place being listed on the Register as a significant site lends weight to its heritage value. Also, the fact that the actual data for sites may be minimal does not diminish the significance of a place. In fact, many sites were listed with only basic data added, especially in the early developmental stages of the Register.

#### **NSW Heritage Act (1977):**

##### ***Overview:***

The purpose of the *NSW Heritage Act 1977* (Heritage Act) is to ensure that the heritage of NSW is adequately identified and conserved. In practice the Act has focused on items and places of non-indigenous heritage to avoid overlap with the *NSW National Parks & Wildlife Act, 1974*, which has primary responsibilities for nature conservation and the protection of Aboriginal objects and places in NSW. In recent years however, the Heritage Council of NSW has targeted these other areas, working with relevant state agencies to identify gaps in the protection of Aboriginal and natural heritage places.

The *Heritage Amendment Act 1998* came into effect in April 1999. This Act instigated changes to the NSW heritage system, which were the result of a substantial review that commenced in 1992. A central feature of the amendments was the clarification and strengthening of shared responsibility for heritage management between Local Government Authorities, responsible for items of local significance, and the Heritage Council of NSW. The Heritage Council of NSW retained its consent powers for alterations to heritage items of State significance. The Heritage Act is concerned with all aspects of conservation ranging from the most basic protection against damage and demolition, to restoration and enhancement. It recognises two levels of heritage significance, State significance and Local significance, across a broad range of values.

Some key provisions of the Act are:

- The establishment and functions of the Heritage Council (Part 2);
- Interim heritage orders (Part 3);
- The State Heritage Register (Part 3A);
- Heritage Agreements (Part 3B);
- Environmental planning instruments (Part 5);
- The protection of archaeological deposits and relics (Part 6); and
- The establishment of Heritage and Conservation Registers for State government owned and managed items (Part 7).

Generally this Act provides protection to items that have been identified, assessed and listed on various registers including State government Section 170 registers, local government Local Environment Plans and the State Heritage Register. The only ‘blanket’ protection provisions in the Heritage Act relate to the protection of archaeological deposits and relics greater than 50 years of age.

### **The Heritage Council of NSW:**

The role of the Heritage Council of NSW is to provide the Minister with advice on a broad range of matters relating to the conservation of the heritage of NSW. It also has a role in promoting heritage conservation through research, seminars and publications. The membership of the Heritage Council of NSW is designed to reflect a broad range of interests and areas of expertise.

### **The State Heritage Register:**

Changes to the Heritage Act in the 1998 amendments established the State Heritage Register which includes all places previously protected by Permanent Conservation Orders (PCOs) and items identified as being of State significance in heritage and conservation registers prepared by State Government instrumentalities. Sites or places which are found to have a State level of heritage significance should be formally identified to the Heritage Council and considered for inclusion on the State Heritage Register.

## Protection of Archaeological Relics and Deposits:

Section 139 of the Act specifically provides protection for any item classed as a relic. A relic is defined as “... *any deposit, object or material evidence –*

- a) which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and*
- b) which is 50 or more years old.”*

(Heritage Act, Part 1, Section 4).

Section 139 of the Act disallows disturbance of a relic unless in accordance with an 'excavation permit' from the Heritage Council of NSW. In practice, excavation permits are required only for relics that, according to their assessed heritage significance, warrant this form of documentation and control.

Section 139(4) of the Act provides exceptions to be granted when an excavation permit is required. Standard exception #4 (Excavation, as amended 18 June 2004) is relevant to the present assessment (NSW Heritage Office 2004:12):

- 1. Excavation or disturbance of land of the kind specified below does not require approval under s.57(1) of the Act, provided that the Director is satisfied that the criteria in (a), (b) or (c) have been met and the person proposing to undertake the excavation or disturbance of land has received a notice advising that the Director is satisfied:*
  - a) where an archaeological assessment has been prepared in accordance with guidelines published by the Heritage Council of NSW which indicates that any relics in the land are unlikely to have State or local heritage significance; or*
  - b) where the excavation or disturbance of land will have a minor impact on archaeological relics; or*
  - c) where the excavation or disturbance of land involves only the removal of unstratified fill which has been deposited on the land.*
- 2. A person proposing to excavate or disturb land in the manner described in paragraph 1 must write to the Director and describe the proposed excavation or disturbance of land and set out why it satisfies the criteria set out in paragraph 1. If the Director is satisfied that the proposed development meets the criteria set out in paragraph (a), (b) or (c) the Director shall notify the applicant.*

The relevant exception that applies to the relics identified within the present survey area is (a). Recommendations are presented later to address this issue.

Section 146 of the Act requires that the discovery of a previously unknown relic be reported to the Heritage Council within a reasonable time of its discovery.

## **Heritage and Conservation Registers:**

Section 170 of the Act requires all State government instrumentalities to establish and maintain a Heritage and Conservation Register that lists items of environmental heritage. The register is to include items which are, or could potentially be, the subject of a conservation instrument, and which are owned, occupied or otherwise under the control of that instrumentality.

The State Rail Authority is a State government instrumentality and is required to maintain a Heritage and Conservation Register. The Main Northern Railway passes along the southern boundary of the development area and is listed on the State Rail Authority's register.

## **Environmental Planning and Assessment Act (1979):**

The EP&A Act and its regulations, schedules and associated guidelines require that environmental impacts be considered in land use planning and decision-making. Environmental impacts include those to cultural heritage. There are three main areas of protection under the Act:

- Planning instruments allow particular uses for land and specify constraints. Part III governs the preparation of planning instruments. Both Aboriginal and Historic (Non-Aboriginal) cultural heritage values should be assessed when determining land use;
- Section 90 lists impacts that must be considered before development approval is granted. Part IV relates to the development assessment process for Local Government Authorities. Impact to both Aboriginal and Historic (Non-Aboriginal) cultural heritage values are included; and
- State Government agencies that act as the determining authority on the environmental impacts of proposed activities must consider a variety of community and cultural factors in their decisions, including Aboriginal and Historic (Non-Aboriginal) cultural heritage values. Part V relates to activities that do not require consent but still require an environmental evaluation, such as proposals by government authorities.

The Minister administering the EP&A Act may make various planning instruments such as Regional Environmental Plans (section 51) and Local Environment Plans (section 70). The Minister may direct a public authority such as a Local Council, to exercise certain actions within a specified time, including the preparation of draft Local Environmental Plans and appropriate provisions to achieve the principles and aims of the Act (section 117).

These planning instruments may identify places and features of cultural heritage significance and define various statutory requirements regarding the potential development, modification and conservation of these items. In general, places of identified significance, or places requiring further assessment, are listed in various heritage schedules that may form part of a Local Environmental Plan (LEP) or a Regional Environmental Plan (REP). Listed heritage items are then protected from certain defined activities, normally including demolition, renovation, excavation, subdivision, and other forms of damage, unless consent has been gained from an identified consent authority. The consent authority under a LEP is normally the Local Government Authority.

In addition to the development of these environmental planning instruments, the Director-General of the Department of Planning or a Council may prepare a Development Control Plan (DCP), where it is considered that more detailed provisions or guidelines are required over any part of land covered by an REP, LEP or their Drafts (sections 51A and 72).

In determining a Development Application (DA), a consent authority, such as a Local Government Authority, must take into consideration any of the following that are relevant to the subject application (section 79C(1) Potential Matters for Consideration):

- *The provisions of any environmental planning instrument, or draft environmental planning instrument (which has been placed on public exhibition), any development control plan, and the regulations;*
- *The likely impacts of that development on the natural and built environments, and the social and economic impacts on the locality;*
- *The suitability of the site for the development;*
- *Any submissions made in accordance with the Act or the regulations; and*
- *The public interest.*

Best Practice Guidelines have been issued by the Department of Planning on the use of Section 79C(1) and include an assessment of how a project will affect the heritage significance of the property, or adjacent properties, in terms of the historic, scientific, cultural, spiritual and archaeological value of indigenous, Non-Aboriginal and natural heritage.

If development consent is required from Council under the provisions of an LEP and a permit or licence is also required from a State Government Agency, then an 'Integrated Development Application' (IDA) must be submitted to the Consent Authority. For example, a development is an 'integrated development' if it requires an approval under Section 90 of the *NSW National Parks & Wildlife Act, 1974* or if the Director-General of NPWS is of the opinion that consultation with an indigenous group or organisation should be conducted prior to a determination being made. Any development approval issued for an integrated development of this kind must be consistent with the General Terms of Approval (GTAs) or requirements provided by the relevant State Government Agency.

The Act, as amended, provides for the listing of heritage items and conservation areas and for the protection of these items or areas through environmental planning instruments (like LEPs and REPs) at the local government and State planning levels. These statutory planning instruments usually contain provisions for the conservation of these items and areas as well as an assessment process to reduce the impacts of new development on the heritage significance of a place, building or conservation area.

### **Muswellbrook Local Environmental Plan (2009):**

This is a legal document that sets the framework for the land use structure of the MSC LGA. The Muswellbrook Local Environmental Plan (LEP) includes land use zones and provides detailed requirements for various developments within the MSC LGA. It also establishes what types of development may be permitted on a particular parcel of land with the permission of MSC and contains a range of heritage provisions and listings which were considered in the preparation of this report.

### **Implications of Part 3A of the EP&A Act on the Regulation of NSW Heritage:**

Due to the power afforded to the Minister for Planning by *SEPP (Mining, Petroleum Production and Extractive Industries)* (2007), open cut mining on any land is permissible with Development Consent where the land is the subject of a Mining Lease (ML) immediately prior to commencement of SEPP (Mining), as is the case at the Mt Arthur Coal Complex.



It is noted that, as a result of Section 75J(3) of Part 3A of the EP&A Act, it is available for the Minister for Planning to overrule any environmental planning instrument and to grant Project Approval for the Project.

Further, under Section 75U(c) an approval under Part 4, or an excavation permit under section 139 of the Heritage Act is not required for a project that has been approved under Part 3A of the EP&A Act.

### **3.2 Listed Items**

The table below summarises the results of searches of databases held by:

1. World Heritage List;
2. Commonwealth Heritage List;
3. National Heritage List;
4. Register of the National Estate;
5. Australian Heritage Places Inventory;
6. NSW State Heritage Register;
7. National Trust of Australia (NSW); and
8. Muswellbrook Local Environmental Plan.

Searches were conducted on 25 October 2008 and following the revision of the Muswellbrook LEP in 2009. A summary of each of the listed heritage items is provided below in **Table 1**. Further detail on these listed heritage items is provided in Section 6.1.

## **4 METHODOLOGY**

The investigation commenced with historical and archival research and searches of various heritage registers and planning instruments to ascertain whether any heritage sites had previously been recorded within or within five km of the EA Boundary. Registers, databases and plans of the Australian Heritage Council (National Heritage List and Commonwealth Heritage List), Australian Heritage Commission (Register of the National Estate), National Trust (NSW) and Heritage Council of NSW (State Heritage Register) were inspected. Historical records retained by the Newcastle Regional library were also searched.

A historical background of the region surrounding the Project is provided to present context and understanding of the processes of settlement and land use development within the area. This will assist with the production of a basic predictive model to assess the potential for heritage items to occur within the EA Boundary.

The EA Boundary was not physically inspected in its entirety due to much of the area being assessed by previous Non-Aboriginal heritage studies undertaken across the site as mentioned in Section 2.1. Previous heritage assessments relevant to the Mt Arthur Coal Complex and surrounds include:

- A European Heritage assessment undertaken for the Bayswater No. 3 Coal Mine Project Environmental Impact Statement (Resource Planning 1993);
- A study of the heritage items of the Muswellbrook Shire (Turner 1996);
- A study of the archaeology of the Bayswater No. 3 mining tenements (McDonald 1997);
- A European Heritage Investigation for the Mt Arthur North Coal Project Environmental Impact Statement (Carter 2000);



- A study of the heritage significance of the Bengalla Homestead (Hansen Bailey 2007); and
- A Historic Heritage Impact Assessment undertaken for the Mt Arthur Underground Project Environmental Assessment (Umwelt, 2007).

The extent of the coverage of these surveys is displayed in **Figure 2**.

Physical inspections were based on information gleaned from historical and archival research. Areas considered to potentially contain evidence of any items of interest were more closely examined, with any sites recorded in detail. No sub-surface testing was undertaken.

**Table 1**  
**Listed Heritage Items**

| Site Name             | Owner                   | Coordinates (MGA 1994) |          | Heritage Listing(s)                                  | Significance                                    |
|-----------------------|-------------------------|------------------------|----------|------------------------------------------------------|-------------------------------------------------|
|                       |                         | Easting                | Northing |                                                      |                                                 |
| Edinglassie Homestead | Mt Arthur Coal          | 295978                 | 6424196  | Register of the National Estate                      | Listed, no classification                       |
|                       |                         |                        |          | State Heritage Register                              | High local                                      |
|                       |                         |                        |          | Schedule 2, Hunter Regional Environmental Plan (REP) | High regional                                   |
|                       |                         |                        |          | Muswellbrook LEP 2009                                | State                                           |
|                       |                         |                        |          | National Trust Register                              | Listed, no classification                       |
| Bengalla Homestead    | Bengalla Mining Company | 297161                 | 6426692  | Schedule 4, Hunter REP                               | Moderate local (requires further investigation) |
|                       |                         |                        |          | Muswellbrook LEP 2009                                | Local                                           |
|                       |                         |                        |          | National Trust Register                              | Listed, no classification                       |
| Overdene              | Bengalla Mining Company | 297827                 | 6427660  | Register of the National Estate                      | High regional                                   |
|                       |                         |                        |          | Schedule 3, Hunter REP                               | High local                                      |
|                       |                         |                        |          | Muswellbrook LEP 2009                                | Local                                           |
| Balmoral Homestead    | Private                 | 299150                 | 6425410  | Register of the National Estate                      | Registered                                      |
|                       |                         |                        |          | Schedule 2, Hunter REP                               | High regional                                   |
|                       |                         |                        |          | Muswellbrook LEP 2009                                | Local                                           |
|                       |                         |                        |          | National Trust Register                              | Listed, no classification                       |
| Rous Lench Homestead  | Mt Arthur Coal          | 296636                 | 6424347  | State Heritage Register                              | High local                                      |
|                       |                         |                        |          | Schedule 2, Hunter REP                               | High regional                                   |
|                       |                         |                        |          | Muswellbrook LEP 2009                                | State                                           |
|                       |                         |                        |          | National Trust Register                              | Listed, no classification                       |

## **5. HISTORICAL BACKGROUND**

### **5.1 Regional History**

The Hunter region was identified by Lieutenant John Shortland of HMS Reliance on 16 September 1797. The region was declared a coal and timber (cedar) reserve in 1801 (Davidson & Lovell-Jones, 1993:7). After the penal settlement of Newcastle was transferred to Port Macquarie in 1823, Assistant Surveyor Henry Dangar was instructed to survey the valley with a view to opening it up for settlement (Hartley 1995). Within a year of Dangar's survey, all of the land along the Hunter River had been granted, sold or reserved by the government (Wood 1972:72). This includes the current survey area.

From the 1840s to 1870s settlement extended from the main valleys into the hilly terrain (Dean-Jones & Mitchell 1993:2). Grazing sheep and cattle were the primary activities but along the riverine floodplains, maize, potatoes, wheat, barley and later tobacco were cultivated. Timber getting was also an important industry from the time of the initial European settlement (Windross & Ralston 1897:17). In the 1820s cedar gangs were working 110 km up the Hunter River (Goold 1981). After the 1860s extensive tree clearing, ringbarking and sapping, to improve grazing capacity, occurred in the upper Hunter (Dean-Jones & Mitchell 1993:2). Improved pastures were widely established on river flats and irrigation was used to develop the dairy industry.

Coal mining was one of the first non-agricultural industries in the region, commencing in 1798 in the lower Hunter Valley (Windross & Ralston 1897). In the upper Hunter Valley, coal mining was undertaken on a limited scale from the early 1900s and expanded rapidly with open cut mining after the 1950s (Dean-Jones & Mitchell 1993:2).

### **5.2 Local Settlement History**

The survey area was originally alienated in 1824 following a grant of land to George Forbes, the brother of the Chief Justice of the Colony, Dr Francis Forbes (Wood 1972:73). He was granted 2,000 acres on 1 September 1824 and a further 4,000 acres was reserved for purchase in 1825. He named the station 'Edinglassie' after the Forbes' ancestral home in Aberdeenshire, Scotland. The recorded spelling differs and the property is also known as 'Edenglassie' (*Bailliere's Gazette* 1866: 497). Francis Forbes took up land a little further to the east to establish 'Skellatar' (Magee 1984:9).

George Forbes was the first to introduce stock into the area and by 1828 was grazing 4,200 sheep and 270 cattle (Wood 1972:181). To increase grazing capacity, Edinglassie was extensively cleared of trees. The surveyor John Neill noted this in 1866 and 1872. He also reported that a Box dominated woodland was partially present and that part of the property was under cultivation. Forbes sold Edinglassie to James White in 1837 and White built the first homestead on the property in 1840 (Muswellbrook & Upper Hunter Historical Society 1981:3-4). White divided the property into

30 paddocks with 'native grasses and some prairie affording plenty of nourishing fodder for cattle of which there are about 3000 head running' (*Maitland Weekly Mercury* 5 October 1895).

The township of Musclebrook (*sic*) was gazetted on 23 October, 1833 (*NSW Government Gazette*: 429). Town blocks went on sale in 1834 and the first purchasers were Samuel Wright of 'Bengalla' and George Forbes. By 1840 the population of the town had reached 250 and a small number of stores and inns were open for business (Magee 1984:18).

By 1840 wool growing was the major industry in the area but there were significant areas under cultivation, particularly wheat (*ibid*: 27). The rainfall in this area proved to be too high for wool production and by the 1890s dairying had become the dominant activity.

The introduction of the *Crown Lands Alienation Act* of 1861 had little impact on the survey area. Free selectors were generally unsuccessful as the majority of the land in the Upper Hunter had already been alienated (Muswellbrook & Upper Hunter Historical Society 1981:14). Alienation had been allowed via land grants, pre-emptive purchase (*vide* improvements made to land held under lease) or through sale at auction (Carter 1994:15). Early parish maps divide the area into numerous portions, however few blocks were selected by persons other than those who already owned large tracts of land in this locality. The few portions that were selected by outsiders were generally further from permanent water and in steeper areas, mostly unsuitable for successful small-scale farming ventures. Selectors however did impact on Edinglassie as they ‘plucked the eyes out of the property’ where they could and sold it back to the White family at inflated prices (*Maitland Weekly Mercury* 5 October 1895).

In 1910 over 2,000 acres originally contained within the Edinglassie Estate were sub-divided into six lots and sold at auction. The land was described as ‘...ideal dairying country and fattening as well with good areas of agricultural land on each block...’ (1910 sale brochure). The portions displayed were located adjacent to each other on the slopes of Mount Arthur and could not be accurately described as ‘ideal dairying country’ due to the lack of permanent water. No dwellings were built on any of these portions at this time.

Edinglassie was further subdivided in 1936 when Mrs. Dutton, a member of the White family, decided to dispose of 6,380 acres - her portion of the original holding (1936 sale brochure). The portions relating to this sale are located to the east of Thomas Mitchell Drive and outside of the survey area.

‘Solider Settlement’ programs in 1948 resulted in further subdivision of Edinglassie. These lie to the west of Edinglassie Homestead, extending from the Hunter River across Denman Road toward Mount Arthur. A number of these portions, along with others subdivided in the 1950s, contain evidence of settlement in the form of similar weatherboard clad timber framed houses dated to the late 1950s and early 1960s.

The first coal in the area was mined at ‘Kayuga’ and developed by Arthur Cox around 1900 (Magee 1984: 34). Coal was later discovered under the town common and the Muswellbrook Coal Company was formed in 1907.

### **5.3 Summary**

While the survey covers an area that was occupied by European settlers in the early 19<sup>th</sup> century, the primary evidence of these settlements is located on the alluvial flats of the Hunter River. Evidence located away from river consists of relics relating to pastoral activities such as fences, stock-yards, tanks and troughs.

Local histories relating to the survey area indicate that previously unidentified heritage items may be present within or in close proximity to it and may be impacted upon by the works proposed for the Project. While these items may be of low heritage significance, all relics are protected by the Heritage Act and must be recorded and assessed prior to being disturbed, collected and/or destroyed.

## **6 SITE SURVEY**

### **6.1 Previous Investigations**

There have been a number of previous heritage surveys in the close proximity of the survey area.

The Muswellbrook Heritage Study was completed by Turner (EJE Group) in 1996. The report contained a comprehensive list of items throughout the Muswellbrook Local Government Area and included several items within five km of the survey area.

In 2000, the author completed a European heritage study for the proposed Mt Arthur North Open Cut Project. The survey identified a number of heritage items, which included windmills, wells and stockyards – all relating to a grazing property. None of these items were assessed to be of any heritage significance (Carter, 2000).

In 2007, Umwelt prepared a Historical Heritage Assessment for the Mt Arthur Underground Project. This study covered an area to the south-west of the current survey area and recorded a number of heritage items of local significance which are shown in **Figure 3**.

The following sections provide reference to the items previously identified in or within five km of the survey area. A summary of each item is also provided below in **Table 2**.

#### **6.1.1 Edinglassie Homestead**

Edinglassie Homestead is a prominent late Victorian residence constructed during the period 1880 – 1895. The homestead structure is a two storey sandstone building with 14 main rooms and a corrugated iron roof. The curtilage is well defined and includes significant vegetation, and the outbuildings include a two storey service wing, timber stables, a meat-house, killing shed and a dovecote.

The property is presently owned by Mt Arthur Coal and as such is managed under the approved Archaeology and Cultural Heritage Management Plan (Umwelt 2002), which has been developed to preserve it and minimise any impacts of mining operations on the site.

#### **6.1.2 Bengalla Homestead**

The Bengalla Homestead is a large single storey brick residence with a corrugated iron roof. The earliest stage of the Homestead was constructed in 1877 in the Colonial Georgian style with a split timber shingle roof. A second stage of construction involved a major extension to the Homestead in 1895 with an eastern wing built in Gothic revival styles, and the addition of a serving wing. Recent additions post-1960 include the construction of a garage, bathroom, laundry and pergola structures.

This heritage item is presently owned and managed by Bengalla Mining Company.



**Table 2**  
**Heritage Items of local, regional or state significance previously recorded within or in close proximity to survey area**

| Item                          | Location                                       | Report                                           |
|-------------------------------|------------------------------------------------|--------------------------------------------------|
| Edinglassie Homestead         | Denman Road                                    | Turner 1996<br>Carter 2000<br>Hansen Bailey 2007 |
| Bengalla Homestead            | Bengalla Road                                  | Turner 1996<br>Hansen Bailey 2007                |
| Overdene Homestead            | Bengalla Road                                  | Turner 1996<br>Hansen Bailey 2007                |
| Balmoral Homestead            | Denman Road                                    | Turner 1996                                      |
| Rous Lench Homestead          | Denman Road                                    | Turner 1996<br>Hansen Bailey 2007                |
| Edderton Homestead Complex    | 1477 Edderton Road<br>Portion 6 Parish of Wynn | Turner 1996<br>Umwelt 2007                       |
| Edderton Catena Heritage Site | Portion 54 Parish of Wynn                      | McDonald 1997<br>Umwelt 2007                     |
| Mills Cottage                 | Portion 83 parish of Vaux                      | McDonald 1997<br>Umwelt 2007                     |
| ‘Ruins’ Site                  | Portion 154 Parish of Vaux                     | Turner 1996<br>McDonald 1997<br>Umwelt 2007      |
| Hospital Building             | Edderton Road                                  | Turner 1996<br>Umwelt 2007                       |
| Belmont Homestead Complex     | 721 Edderton Road                              | Turner 1996<br>Umwelt 2007                       |
| Beer Homestead – slab hut     | 721 Edderton Road                              | Turner 1996<br>Umwelt 2007                       |
| Farm and Farmhouse            | 550 Edderton Road                              | Umwelt 2007                                      |

### 6.1.3 Overdene Homestead

The Overdene Homestead site was constructed c.1830 - 1860 and consists of a single storey sandstone house in the Colonial Georgian style with a corrugated iron roof and a bellcast verandah on all sides. Originally, several outbuildings and a kitchen were situated to the rear of the main house, but no obvious evidence of these structures remains.

This heritage item is presently owned and managed by Bengalla Mining Company.

### 6.1.4 Balmoral Homestead

Balmoral Homestead was built c. 1857 and is an excellent example of Colonial Georgian style. The main residence, a two storey brick structure, was designed by Reuss and Brown, well known architects of that period. Features of Balmoral Homestead include a two storey verandah, a hipped roof and a two storey service wing.

The property remains within private ownership, currently being occupied by the Drake family.

### **6.1.5 Rous Lench Homestead**

The site consists of a single storey building in the Colonial Georgian style with a skillion verandah extending from the main roof. While the date of construction of the Rous Lench Homestead has not been categorically verified, it is known that it was built prior to 1880 at an earlier time than the Edinglassie Homestead, which makes the site highly significant in the region.

The site and surrounds of Rous Lench are owned by Mt Arthur Coal and are managed in accordance with the approved Archaeology and Cultural Heritage Management Plan (Umwelt 2002).

### **6.1.6 Edderton Homestead Complex**

The Edderton Homestead is a substantial single storey, timber framed structure with weatherboard cladding and a corrugated iron roof. The homestead residence was constructed in 1915 and remains set in a curtilage that is enhanced by surviving outbuildings and garden (Umwelt 2007).

The lands of the Edderton Homestead Complex were formally granted to George Bowman as part of an original land grant of 2,560 acres. The Edderton Homestead and the associated property was acquired by Hector Cameron McDonald in 1914 and consolidated with other lands in the area over a 25 year period into a large pastoral property. The Edderton property was broken up in the years following World War II as the estate became less economically viable.

### **6.1.7 Edderton Catena Heritage Site**

The Edderton Catena site consists of sandstone slabs, positioned to form a rectangular pavement measuring 2.3 m by 1.1 m. Within this area, twelve sandstone slabs are visible and appear to be obscured by the heavy grasses of the area. Material culture associated with the sandstone features include a steel picket at ground level at the southwest corner of the stone arrangement, a scatter of bottles and glass dating to the period 1917 to 1925 and metal bricks and batts (McDonald et al, 1997).

Other features identified at the Edderton Catena site include a scattering of garden vegetation, collapsed post and rail fencing, ceramics, bottles, and three cut cross blades from a harness.

### **6.1.8 Mills Cottage**

The site consists of a weatherboard cottage constructed post 1928 and represents a typical late nineteenth to early twentieth century two room cottage with a rear skillion extension of two stages and a corrugated iron roof.

### **6.1.9 ‘Ruins’ Site**

The site comprises the partially standing remains of a slab hut and elements of associated pastoral infrastructure, including yards. A substantial scatter of bottles, glass, ceramics, domestic refuse and a possible home garden are also present surrounding the remains of the hut (Umwelt, 2007).

The ‘Ruins’ site is located on lands originally granted to James Russell in 1870 and 1879 and it is possible that the hut relates to that period of settlement.

### 6.1.10 Hospital Building

The Hospital Building is a standing structure of timber frame clad in corrugated iron. The building is internally lined with mini-orb and comprises six rooms and may have been constructed by, or in the style of Walter Liberty Vernon, Government Architect.

The Hospital Building was constructed in 1914 as an isolation ward of the former Brentwood Hospital located in Muswellbrook. However the structure was moved to its current location in August 1972 following the opening of the New Muswellbrook District Hospital in 1971.

### 6.1.11 Belmont Homestead Complex

The Belmont Homestead is a single storey timber house with a verandah on three sides, which was built in the 1920s by the McDonald family of Edderton. Outbuildings on the property within the Belmont Homestead Complex include a three bay garage and water tank, a meat house and tack store, shearing sheds and shearer's quarters. The shearing shed and quarters show the importance of pastoralism in the early twentieth century. The 'Beer Homestead' hut was also relocated from its position near Edderton Road to near the Belmont Homestead.

### 6.1.12 Beer Homestead – Slab Hut

The Beer Homestead consists of a free standing single room slab hut with vertical split slab cladding and was built by the Beer family who settled on one of the square mile allotments during 1867-1868. This structure was moved to within the greater Belmont Homestead Complex and re-erected with corrugated metal roofing and a brick chimney and breast.

### 6.1.13 Farm and Farmhouse – 550 Edderton Road

The farmhouse is a weatherboard cottage of early 20<sup>th</sup> century design surrounded by a shed, water tank, set of children's swings and enclosed by fencing and associated yards. The farmhouse has a corrugated iron gable roof, with chimneys removed.

## 6.2 Site Visit

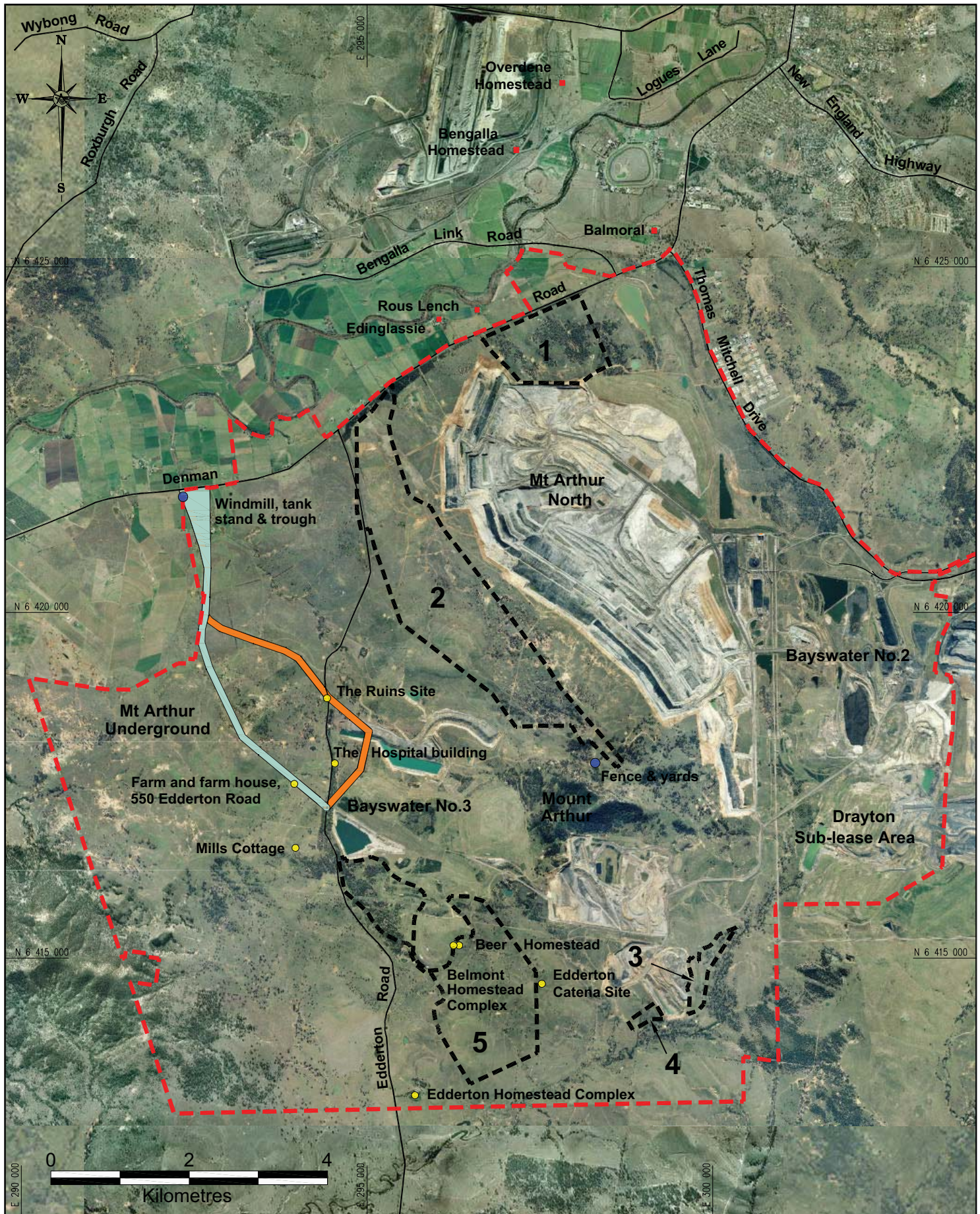
The survey area was inspected by the author on 3 October 2008. Generally, the survey was conducted by vehicle, traversing tracks within the survey area. Several areas were examined on foot. The majority of the survey area has been cleared for agriculture and fenced.

**Table 3** summarises heritage items located during the survey which are illustrated on **Figure 3** and described below.

**Table 3**  
**Summary of heritage items located within survey area**

| Item                          | Location (MGA94 – Z56) | Description                                                                                                                                                               |
|-------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Windmill, tank-stand & trough | E292338<br>N6421672    | Collapsed windmill located adjacent to a concrete tank-stand supported on timber posts. A stock trough made from a hollowed tree trunk is located next to the tank-stand. |
| Fence & yards                 | E298300<br>N6417823    | A fence line consisting of posts, checked for rails – no rails remain. Temporary yards and loading ramp also extant.                                                      |





- EA Boundary
- Mt Arthur Coal Consolidation Extension Areas
- Listed Heritage Items
- Newly Identified Historical Sites
- Previously Identified Historical Sites
- Edderton Road Realignment Option 1
- Edderton Road Realignment Option 2

Hansen Bailey



Co-ordinate System: MGA Zone 56  
Sources: Umwelt (2007, 2008) and Moore (2001)

## MT ARTHUR COAL

### Identified Historical Sites

Cad File: 03777D.dwg

Date: 04.08.09

Drawn: JD

Figure  
**3**



### 6.2.1 Windmill, tank-stand and trough

**Location:** E 292338 N 6421672 (MGA 1994)

This site is located on land that was formerly known as Portion 2, Parish of Vaux, County of Durham which was originally part of the 2,000 acre grant to George Forbes. The site is located on the edge of a natural terrace above the Hunter Valley floodplain above Denman Road in the north of the area surveyed for Edderton Road realignment proposed by the Project. Pipework appears to have run down the slope to buildings north of Denman Road. The tank may have been used to supply water to a house and outbuildings located opposite.

The well is disused, overgrown and partially filled in (3.7 m diameter). The windmill-stand has fallen and the propeller (4.2 m diameter) is separated from the pump unit. The windmill-stand is 8.7 m long.

The tank-stand is circular and 4.6 m in diameter. It consists of a 120 mm concrete slab supported on 150 x 45 mm boards on 140 x 90 mm joists on 230-250 mm round stumps.

The trough is constructed out of a 7.2 m long log approximately 700 mm in diameter. The log has been sawn in half lengthwise and hollowed out. The ends have been sealed with bricks and cement mortar to enable the hollow section to hold water. Pipes connect the trough to the tank-stand. The trough is supported by standing 100 mm diameter posts.

**Figure 4 to Figure 8** contain photographs of these relics.

The site is summarised as:

**Condition:** Poor. The windmill has collapsed, tank has been removed and stand is deteriorating. The stock trough was constructed from a log and is badly decayed.

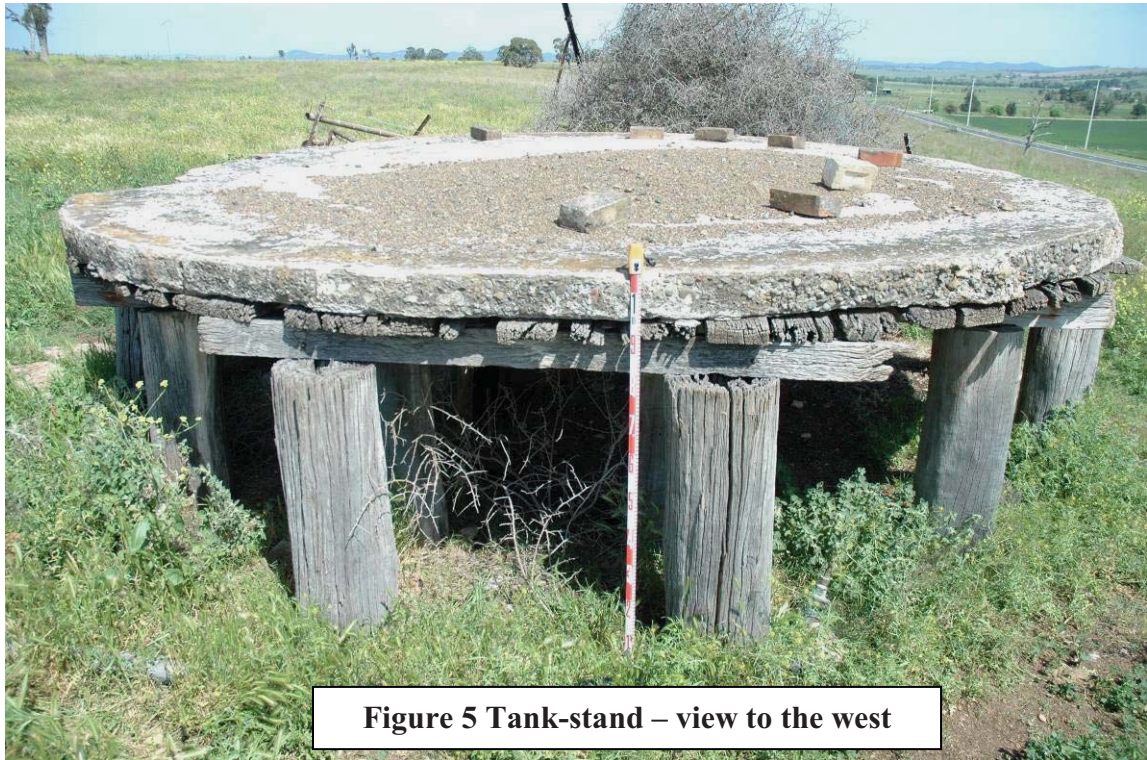
**Archaeological potential:** Low.

**Impact:** The site is located within the proposed Edderton Road realignment footprint, however impacts will be avoided during road construction.



**Figure 4 View to the north-east showing well, mill & tank-stand**



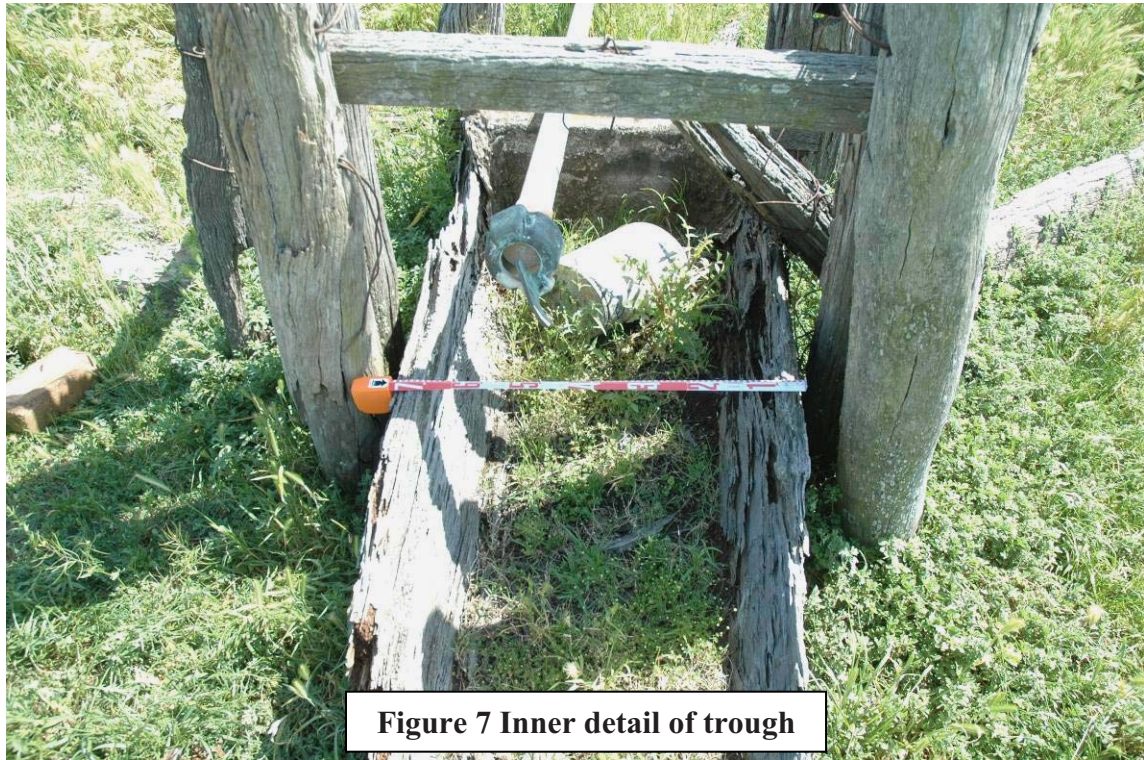


**Figure 5 Tank-stand – view to the west**

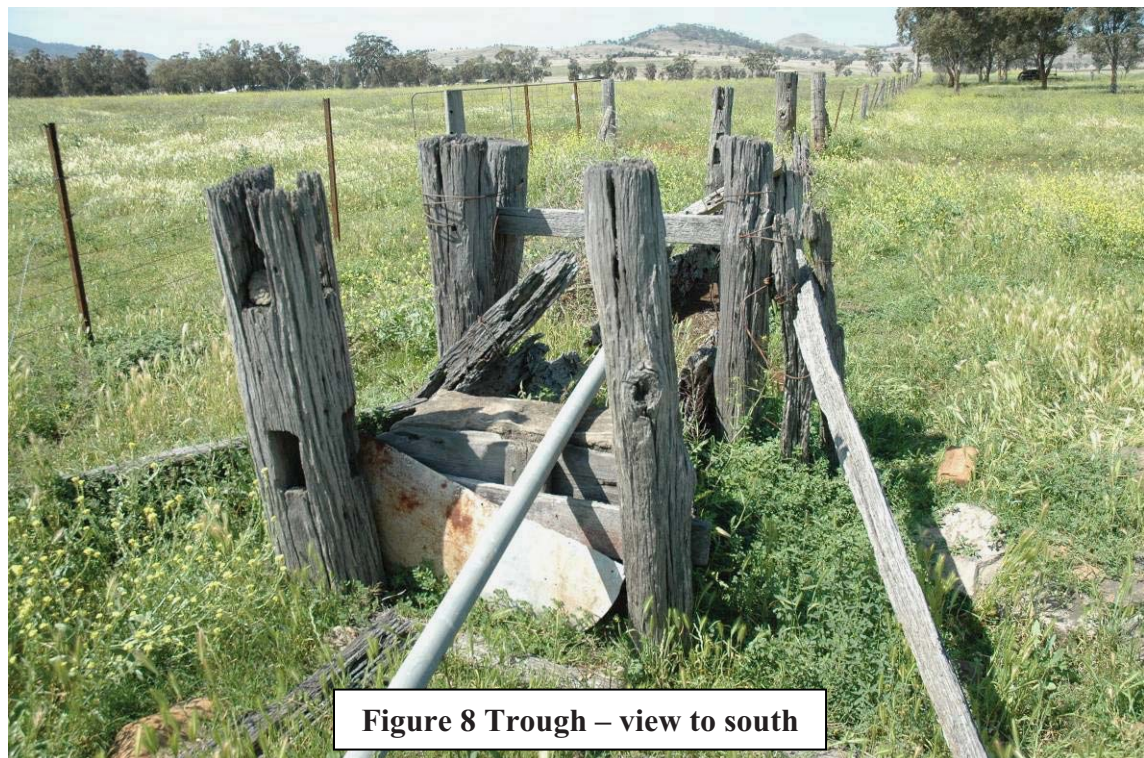


**Figure 6 Tank-stand & trough – view to east**





**Figure 7 Inner detail of trough**



**Figure 8 Trough – view to south**



## 6.2.2 Fence and yards

**Location:** E 298300 N 6417823 (MGA 1994)

The remains of a fence line and stock yards are located adjacent to a public road that passes through the portion of the survey area located to the west of the approved Mt Arthur Coal open cut mining operation. An early post and rail fence has been replaced by post and wire. Numerous posts are extant but no rails were located. The yards are located in the corner of the paddock bounded by the post and rail fence. These appear to have been temporary yards as living trees have been used as corner posts to secure rails.

A makeshift loading ramp is located adjacent to the yards. The yards post-date the post and rail fence as they are constructed using galvanized steel wire.

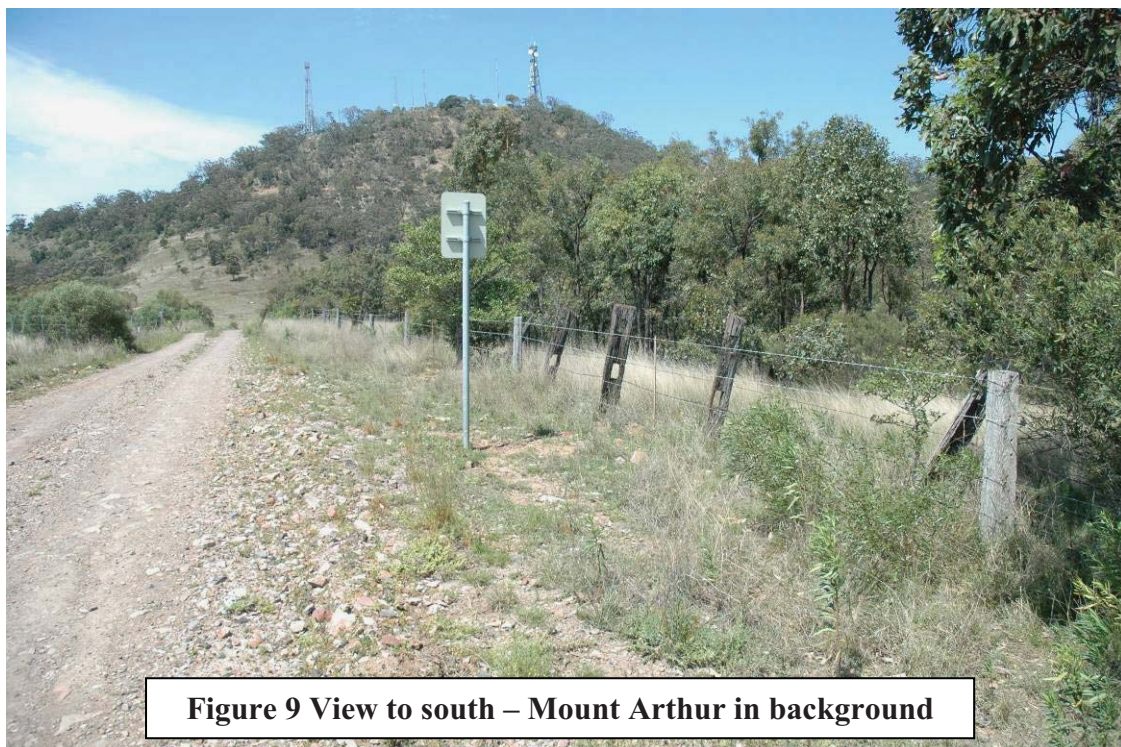
**Figure 9 to Figure 11** contain photographs of the fence posts and yards.

The site is summarised as:

**Condition:** Poor. Timber posts are decaying.

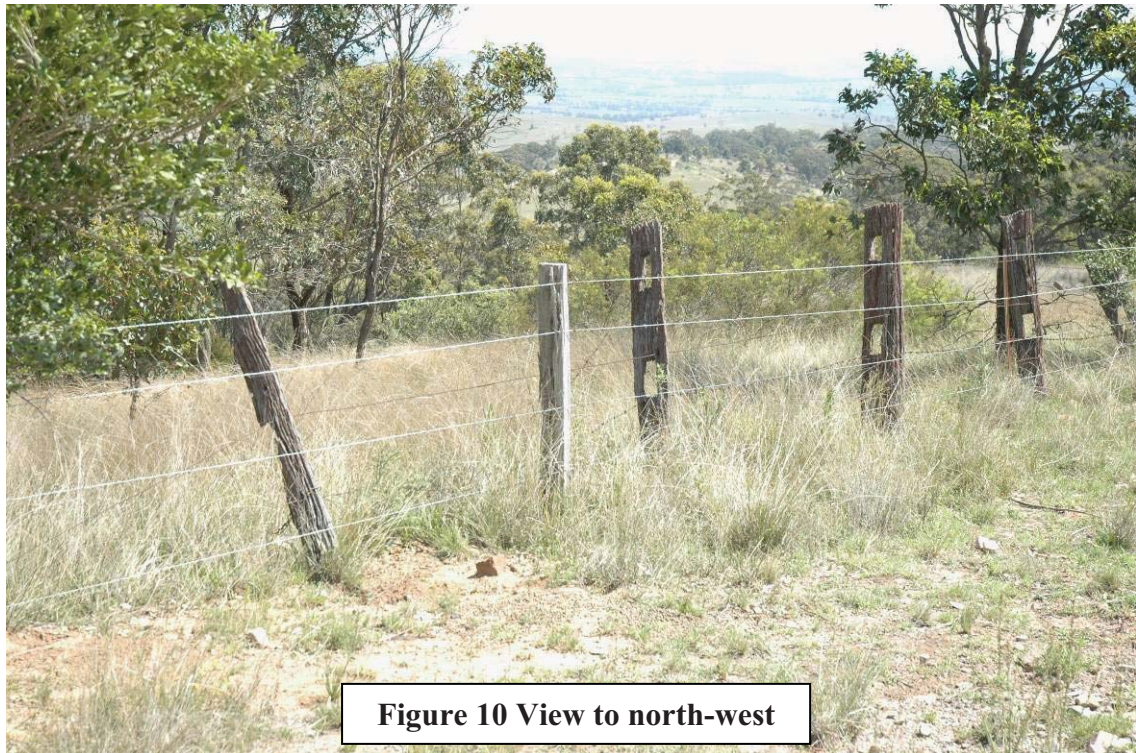
**Archaeological potential:** Nil.

**Impact:** The fence and yards are located in an area that will not be disturbed as a result of the Project (see **Figure 3**) and as such, no impacts to this site shall occur.

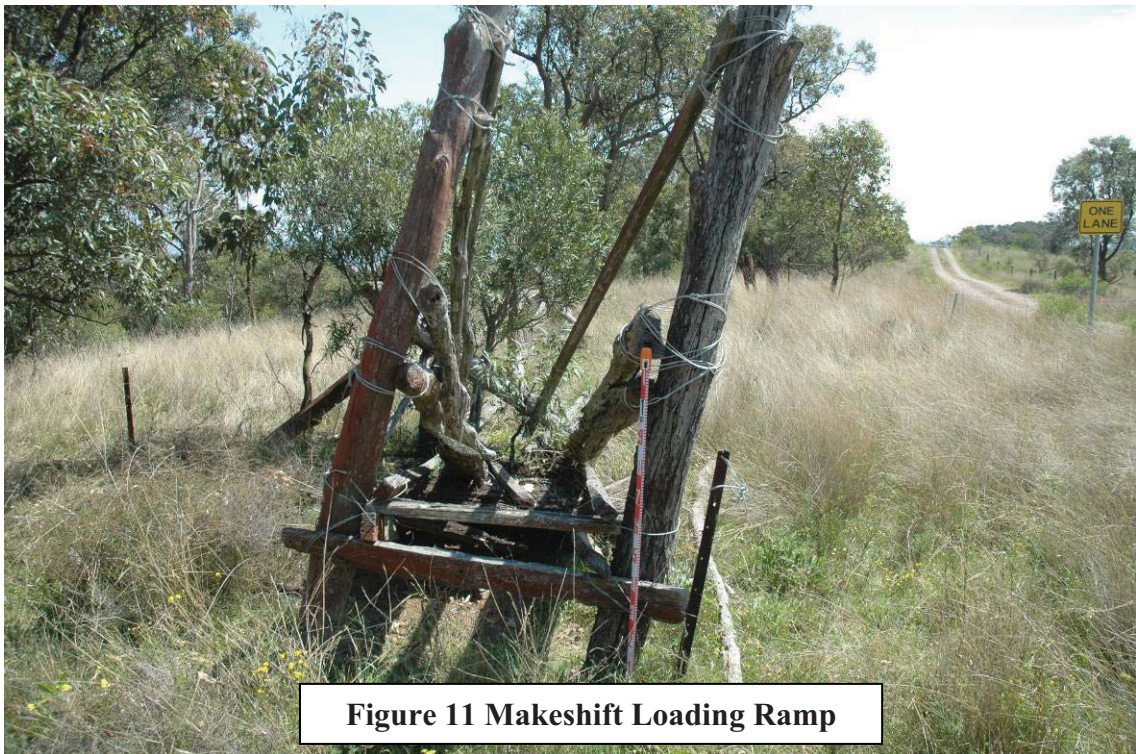


**Figure 9 View to south – Mount Arthur in background**





**Figure 10 View to north-west**



**Figure 11 Makeshift Loading Ramp**



## **7 POTENTIAL IMPACTS OF THE PROJECT ON HERITAGE ITEMS**

This section outlines the potential impacts on the heritage items identified in the areas surrounding the Project.

### **7.1 Project Disturbance Impacts**

#### **7.1.1 Edinglassie Homestead**

Edinglassie Homestead is located outside of the Mine Extension Areas and will therefore not be disturbed by the Project. The potential for blasting associated with the Project to create additional impacts to this site is discussed below in Section 7.2.

#### **7.1.2 Bengalla Homestead**

Bengalla Homestead is located outside of the Mine Extension Areas and will therefore not be disturbed by mining operations. The potential for blasting associated with the Project to create additional impacts to this site is discussed below in Section 7.2.

#### **7.1.3 Overdene Homestead**

Overdene Homestead is located outside of the Mine Extension Areas and will therefore not be disturbed by mining operations. The potential for blasting associated with the Project to create additional impacts to this site is discussed below in Section 7.2.

#### **7.1.4 Balmoral Homestead**

Balmoral Homestead is located outside of the Mine Extension Areas and will therefore not be disturbed by mining operations. The potential for blasting associated with the Project to create additional impacts to this site is discussed below in Section 7.2.

#### **7.1.5 Rous Lench Homestead**

Rous Lench Homestead is located outside of the Mine Extension Areas and will therefore not be disturbed by mining operations. The potential for blasting associated with the Project to create additional impacts to this site is discussed below in Section 7.2.

#### **7.1.6 Edderton Homestead Complex**

The Edderton Homestead Complex is located outside of the Mine Extension Areas, but within the area surveyed for the Mt Arthur Underground Project. This site was assessed to be impacted by subsidence caused by the Mt Arthur Underground Project. In accordance with Project Approval (PA) 06\_0091 granted for the Mt Arthur Underground Project Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording of potentially affected heritage items prior to carrying out any operations which may affect identified heritage items.

A baseline dilapidation survey will also be undertaken for the site. Where any significant structural impacts occur as a result of subsidence, the structure(s) of the Edderton Homestead Complex will be demolished (Umwelt 2007).

#### **7.1.7 Edderton Catena Heritage Site**

The Edderton Catena Heritage Site is located adjacent to the boundary of the Mine Extension Area 5 proposed for the Project (see **Figure 3**) and within the area surveyed for the Mt Arthur Underground Project. This item was previously assessed to be impacted by subsidence caused by underground mining in the Mt Arthur Underground Project Environmental Assessment (EA). In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken.

This site is to be destroyed in the event that any predicted subsidence remediation works required for the underground mining operation are carried out at that location (Umwelt 2007).

#### **7.1.8 Mills Cottage**

The Mills Cottage site is located outside of the Mine Extension Areas, but within the area surveyed for the Mt Arthur Underground Project. This item was assessed to be impacted by subsidence caused by underground mining for the Mt Arthur Underground Project. In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken.

If the site is assessed to be structurally unstable following subsidence impacts, then the Mills Cottage site will be demolished (Umwelt 2007).

#### **7.1.9 ‘Ruins’ Site**

The ‘Ruins’ Site is located outside of the Mine Extension Areas, but within the area surveyed for the Mt Arthur Underground Project. As can be seen in **Figure 3**, the ‘Ruins’ Site is also located within the proposed Edderton Road realignment corridor. The construction works associated with the realignment of Edderton Road proposed by the Project will not impact on the ‘Ruins’ Site as the disturbance corridor allows for flexibilities in road design that will allow this item to be avoided.

This item was assessed as being likely to be destroyed in the event that any predicted subsidence remediation works required for the underground mining operation are carried out at that location. In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken.

### **7.1.10 Hospital Building**

The Hospital Building site is located outside of the Mine Extension Areas, but within the area surveyed for the Bayswater No. 3 open cut mining area. The site will therefore be impacted by approved open cut mining operations. In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken.

Prior to being disturbed by open cut mining, Mt Arthur Coal will relocate the Hospital Building to a secure area (preferably in an urban context) that is not planned for any open cut or underground mining development. In accordance with PA 06\_0091, the details of the Hospital Building relocation will be discussed in the revised Mt Arthur Coal Non-Aboriginal Heritage Management Plan (Umwelt 2007).

### **7.1.11 Belmont Homestead Complex**

The Belmont Homestead Complex is located within Mine Extension Area 5 proposed for the Project and the lands surveyed for the Mt Arthur Underground Project. In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken. Where any significant structural impacts are found to occur as a result of subsidence, the structure(s) of the Belmont Homestead Complex will be demolished (Umwelt 2007).

The development of Mine Extension Area 5 for the Project will result in the destruction of the Belmont Homestead Complex. The site has been previously assessed to be of local heritage significance (Umwelt 2007), however consent has been granted to demolish the site if significant structural impacts are found to have occurred. Approval will be sought under Part 3A of the EP&A Act to destroy this site as part of the Project.

### **7.1.12 Beer Homestead – Slab Hut**

The Beer Homestead slab hut is located within Mine Extension Area 5 proposed for the Project and the lands surveyed for the Mt Arthur Underground Project. In accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken.

Prior to being disturbed by open cut mining, Mt Arthur Coal will relocate the Beer Homestead to an appropriate location that is not planned for any open cut or underground mining development. In accordance with PA 06\_0091, the details of the Beer Homestead relocation will be discussed in the revised Mt Arthur Coal Non-Aboriginal Heritage Management Plan (Umwelt 2007). As it has already been moved from its original context (Umwelt 2007) it has been determined to be potentially relocatable.



### **7.1.13 Farm and Farmhouse – 550 Edderton Road**

This item was assessed to be impacted by subsidence caused by underground mining and in accordance with PA 06\_0091, Schedule 3, Condition 12, Mt Arthur Coal will complete a program of photographic and archival recording prior to carrying out any operations that could affect identified heritage items. A baseline dilapidation survey will also be undertaken. Where any significant structural impacts occur as a result of subsidence, the structure(s) of the Farm and Farmhouse site will be demolished (Umwelt 2007). The Farm and Farmhouse site is located outside of the Mine Extension Areas, but within the area surveyed for the Mt Arthur Underground Project. As can be seen in **Figure 3**, the Farm and Farmhouse site is also located within the proposed Edderton Road realignment corridor. The construction works associated with the realignment of Edderton Road proposed by the Project will not impact on the Farm and Farmhouse site as the disturbance corridor allows for flexibilities in road design that will allow this item to be avoided.

### **7.1.14 Windmill, tank-stand and trough**

The construction of Edderton Road on a new alignment as proposed for the Project will not impact on the Windmill, tank-stand and trough site identified by this assessment as the corridor shown on **Figure 3** provides for flexibilities in the final road design that will allow this item to be avoided.

### **7.1.15 Fence and yards**

The currently approved disturbance at The Mt Arthur Coal Complex and the proposed Mine Extension Areas will not occur at the location of the Fence and yards site identified by this assessment. Therefore, no impacts to this site will occur.

## **7.2 Project Blasting Impacts**

Blasting required for the mining activities for the Project and the associated levels of overpressure and ground vibration has the potential to impact on the structural integrity of a number of heritage items in the vicinity of The Mt Arthur Coal Complex. In particular, these impacts may affect the homestead items located to the north of the Project as shown on **Figure 3**.

The Mt Arthur Coal Consolidation Project Noise and Blasting Impact Assessment (Wilkinson Murray 2009) provides relevant blasting impact assessment for the Project which considers the potential impacts to items of European Heritage in the vicinity of the Project.

In support of this assessment, a blast vibration vulnerability assessment of the Edinglassie and Rous Lench heritage structures was undertaken (Bill Jordan and Associates 2009) to determine if criteria of peak particle vibration velocity of up to 10 mm/sec and overpressure of up to 133 dBL could be successfully applied to the Project to limit impacts to the structural integrity of these buildings. The assessment concluded that blasting activities at these levels could be undertaken safely. Further these criteria are considered conservative and that these heritage structures should not suffer damage even at even higher levels.

Wilkinson Murray (2009) concluded that all relevant criteria (including the criteria assessed in Bill Jordan and Associates (2009)) could be met by implementing management techniques in the most sensitive area as required.

## 8 SIGNIFICANCE ASSESSMENT

### 8.1 Criteria

The Heritage Council of NSW and Department of Planning have defined a set of criteria and methodology for the assessment of cultural heritage significance for items and places, where these do not include Aboriginal heritage from the pre-contact period (NSW Heritage Office & Department of Urban Affairs and Planning (DUAP) 1996, NSW Heritage Office 2000).

The assessments provided in this report follow the Heritage Office methodology.

The following heritage assessment criteria are those set out for Listing on the State Heritage Register. In many cases items will be significant under only one or two criteria. The State Heritage Register was established under Part 3A of the Heritage Act (as amended in 1999) for listing of items of environmental heritage which are of State heritage significance. Environmental heritage means those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance (Section 4, Heritage Act).

An item will be considered to be of State (or local) heritage significance if, in the opinion of the Heritage Council of NSW, it meets one or more of the following criteria:

1. An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
2. An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
3. An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
4. An item has a strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
5. An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
6. An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area); and
7. An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).

An item is not to be excluded from the Register on the grounds that items with similar characteristics have already been listed on the Register. Only particularly complex items or places will be significant under all or many criteria.

In using these criteria it is important to assess the values first, then the local or State context in which they may be significant. Different components of a place may make a different relative contribution to its heritage value. For example, loss of integrity or condition may diminish significance. In some cases it is constructive to note the relative contribution of an item or its components. **Table 4** provides a guide to ascribing relative values.

**Table 4**  
**Heritage Significance Grading**

| Grading     | Justification                                                                                                                              | Status                                               |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Exceptional | Rare or outstanding item of local or State significance.<br>High degree of intactness<br>Item can be interpreted relatively easily.        | Fulfil criteria for local or State listing.          |
| High        | High degree of original fabric.<br>Demonstrates a key element of the item's significance.<br>Alterations do not detract from significance. | Fulfil criteria for local or State listing.          |
| Moderate    | Altered or modified elements.<br>Elements with little heritage value, but which contribute to the overall significance of the item.        | Fulfil criteria for local or State listing.          |
| Little      | Alterations detract from significance.<br>Difficult to interpret.                                                                          | Does not fulfil criteria for local or State listing. |
| Intrusive   | Damaging to the item's heritage significance.                                                                                              | Does not fulfil criteria for local or State listing. |

Source: NSW Heritage Office & DUAP, 1996

## 8.2 Significance Assessment

**Table 5** below summarises the assessed significance of each relic located within the area surveyed for this assessment in October 2008 that had not been previously identified.

**Table 5**  
**Significance Assessment**

| Heritage Item                   | Relevant Heritage Criteria*                                                                                                                                                                                                                                                                                                                                | Heritage Significance                                             |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Windmill, tank-stand and trough | (3) The item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area); and<br><br>(5) An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area). | Little significance within a local context due to poor condition. |
| Fence & yards                   | (3) The item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area); and<br><br>(5) An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area). | Little significance within a local context due to poor condition  |

\*Source: NSW Heritage Office & DUAP, 1996



### **8.3 Other Heritage Items**

Overall, analysis of the evidence indicates that the heritage items located within the survey area are of little significance.

Heritage items located within 5 km of the survey area of local and regional significance include:

- Edinglassie Homestead;
- Rous Lench Homestead;
- Bengalla Homestead;
- Overdene Homestead;
- Balmoral Homestead;
- Edderton Homestead Complex;
- 'Ruins' Site;
- Mills Cottage;
- Hospital Building;
- Belmont Homestead Complex;
- Beer Homestead; and
- Edderton Catena Site.

## 9 MANAGEMENT AND MITIGATION STRATEGIES

As outlined in **Section 3.1.2**, the Heritage Act provides the legislative framework for protecting and maintaining the historic heritage of NSW. The Heritage Act is concerned with all aspects of the protection and conservation of environmental heritage, including buildings, works, places or relics that are over 50 years of age and are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance to the State of NSW (but not being related to Aboriginal settlement). Section 4(1) of the Heritage Act defines a 'relic' as 'any deposit, object or material evidence relating to the settlement of the area that comprises NSW, not being Aboriginal settlement and which is fifty or more years old'.

To allow for any disturbance to heritage items required for the Project, approval will be sought under Part 3A of the EP&A Act, which replaces the need to gain excavation permits under the Heritage Act.

Two new heritage items have been identified by this assessment within the survey area for the Project that will not be impacted upon by the works proposed. The Fence and Yards site is located in an area which will not be disturbed and the Windmill, tank-stand and trough is located within the proposed Edderton Road realignment corridor. The corridors of the proposed Edderton Road realignment are such that flexibilities in road design are allowed for and any construction impacts to the Windmill, tank-stand and trough heritage item will be avoided. This site will be clearly marked and fenced to prevent any inadvertent impacts during road construction activities.

Those heritage items which have previously been identified and are located within the Mine Extension Areas or Edderton Road Realignment corridors proposed for the Project are the:

- Farm and farmhouse – 550 Edderton Road;
- 'Ruins' Site;
- Beer Homestead - slab hut; and the
- Belmont Homestead Complex.

The Farm and farmhouse site and 'Ruins' Site are located within the corridors of the proposed Edderton Road realignment options 1 and 2, respectively (**Figure 3**). As per the Windmill, tank-stand and trough site identified by this assessment, flexibilities in road design within the nominated corridors will allow for and any potential construction impacts to be avoided. These sites will be clearly marked and fenced to prevent any inadvertent impacts during road construction activities.

The Conservation Management Plan to be developed for the Beer Homestead (under PA 06\_0091) is required to consider the potential for relocation of the site. Given that the site will be destroyed by the Mt Arthur Underground Project and that the item has previously been moved from its original context, the Beer Homestead will be relocated to a suitable location outside of the impact area.

The Project will result in the destruction of the Belmont Homestead Complex. The site has been previously assessed to be of local heritage significance (Umwelt, 2007) and therefore, approval will be sought by Mt Arthur Coal under Part 3A of the EP&A Act to allow the Belmont Homestead Complex to be destroyed as part of the Project. It should also be noted that the heritage assessment completed for the Mt Arthur Underground Project concluded that the Belmont Homestead Complex should be destroyed in the event that significant structural impacts to the site occur (provided archival recording is been completed in accordance with PA 06\_0091).

Those items that are located beyond the boundaries of the survey area may be impacted upon by blasting and/or construction activities as the work proceeds. A discussion of measures to be implemented for the management of blasting associated with the Project is provided below in **Section 9.2**.

It is likely that previously unidentified sites or relics of heritage significance could be located within the survey area. As such, staff involved in the planning and development of the proposed works should be made aware of:

- The location and nature of known heritage items;
- Measures to minimise impact on known items;
- The potential of the existence of previously unknown heritage items;
- The nature of such items;
- Protection afforded these items by the Heritage Act; and
- Appropriate action if any items of potential heritage value are located.

## **9.2 Blasting Mitigation and Management**

Mt Arthur Coal has a program of planning, monitoring and measuring blasts in place to minimise disturbance to neighbours and ensure compliance to regulatory blast criteria.

As explained in Section 7.2, an assessment of blast vibration vulnerability was undertaken to confirm that criteria to avoid structural damage as specified in *Australian Standard 2187.2 2006 Explosives – Storage and Use Explosives - Storage and Use. Part 2 Use of explosives (Appendix J)* can be applied to operations to limit potential impacts to the structural integrity of these heritage items.

To ensure that the potential for structural damage to the heritage homesteads in the vicinity of Mt Arthur Coal continues to be minimised, it is recommended that the management programs are revised to implement the revised criteria for these properties. These revised programs will consider the additional Mine Extension Areas proposed for the Project and ensure that blasts are designed to meet the adopted impact criteria proposed by Bill Jordan & Associates (2009).

Revision to the programs will continue to enforce the following management measures for heritage items:

- Apply a blast design restriction which allows a maximum ground vibration level of 10 mm/s at the heritage homestead sites of Edinglassie and Rous Lench, in accordance with the Bill Jordan and Associates (2009) recommendation;
- As Balmoral homestead is in private ownership, amenity criteria will continue to be applied (vibration of 5mm/s);
- Pre-blasting structural surveys of each homestead site to document their condition; and
- Ongoing structural surveys on risk based frequency to ensure that the condition of each site is assessed in an ongoing manner and that any remedial measures can be carried out where blasting impacts are shown to be the cause.



## **10 CONCLUSIONS AND RECOMMENDATIONS**

In consideration of the results of the survey of the area of the proposed works by Mt Arthur Coal for the Project, historical research and investigation documented above, the following conclusions and recommendations are presented.

### **10.1 Conclusions**

It is concluded that the two newly identified heritage items located within the area proposed for disturbance by the Project are of little significance but will not be disturbed by the Project. The Farm and Farmhouse of 550 Edderton Road previously assessed to be of low local significance (Umwelt 2007) is located within the area proposed Edderton Realignment Corridor Option 1, while the 'Ruins' Site previously assessed to be of low local significance (Umwelt 2007) is located within the area proposed Edderton Realignment Corridor Option 2. Both of these sites will, however, be avoided by the Project.

The Belmont Homestead Complex and the Beer Homestead slab hut are located within Mine Extension Area 5 proposed for the Project. Disturbance associated with the activities proposed for the Project will require the relocation of the Beer Homestead and the destruction of the Belmont Homestead Complex.

A number of heritage items of high significance are located outside of the survey area, but within five km of the Project. The management measures in place for these sites should be revised to ensure that they are sufficient to cover any additional impacts that may result from the Project. In addition, the management plans should be revised to incorporate the blasting criteria as recommended in Bill Jordan and Associates (2009).

### **10.2 Recommendations**

It is recommended that:

- The Beer Homestead slab hut be relocated in consultation with the NSW Heritage Office prior to disturbance by the Project as recommended by the Mt Arthur Underground Project assessment (Umwelt 2007) and approved by PA 06\_0091;
- Prior to the construction of the nominated Edderton Road realignment, the Farm and Farmhouse site or 'Ruins' Site and the newly identified Windmill, tank-stand and trough site should be clearly delineated to prevent any damage;
- All employees and contractors associated with construction of Edderton Road realignment should be made aware of the nature of potential heritage evidence, including the definition of a relic, the provisions of the Heritage Act, when to request the assistance of a qualified archaeologist and other issues as relevant; and
- The existing Mt Arthur Coal documents and programs in place for the management of blasting and identified heritage items are revised to incorporate the blasting criteria recommended by Bill Jordan & Associates (2009) and any additional measures required to minimise the impacts associated with the Mine Extension Areas proposed for the Project.

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