



Hansen Bailey Environmental Consultants
24-Mar-2015

Drayton South Coal Project

Non-Aboriginal Heritage Impact Assessment



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Non-Aboriginal Heritage Impact Assessment

Client: Hansen Bailey Environmental Consultants

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Executive Summary

AECOM Australia Pty Ltd (AECOM) has been commissioned by Hansen Bailey Environmental Consultants (Hansen Bailey) on behalf of Anglo American Coal (Anglo American) to undertake a non-Aboriginal Heritage Impact Assessment for the Drayton South Coal Project (the Project). The assessment forms part of an Environmental Impact Statement (EIS) being prepared by Hansen Bailey to support an application for Development Consent under Part 4 Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Project, to allow for the continuation of the existing Drayton Mine for up to 15 years.

This assessment report has been modified from the original report prepared for the previous application which was refused by NSW Planning Assessment Commission (PAC) on 17 October 2014 and has been prepared in accordance with the *NSW Heritage Manual* (NSW Heritage Office & NSW Department of Urban Affairs and Planning, 1996) and with reference to the Burra Charter (the Australia ICOMOS Charter for Places of Cultural Significance) (ICOMOS (Australia), 2013).

The study area for this assessment comprises an area encompassing the previous mine plan disturbance footprint (1,928 ha) and areas adjacent to the Project Boundary where known historic heritage items occur. In accordance with the 'Drayton South Coal Project PAC Review Report' issued in December 2013, significant modifications were made to the Project's proposed mine plans resulting in overall reduction in the mine disturbance footprint from 1,928 ha to 1,441 meaning 487 ha (25%) of land would no longer be impacted by the proposal. While the study area for this assessment remains the same, the impact assessment considers impacts to historic heritage items from the revised mine Disturbance Boundary.

There are no heritage items or sites within the Project Boundary on statutory UNESCO, Commonwealth or NSW State or Local Government Lists, Registers or Schedules. One item, the Muswellbrook Landscape Conservation Area (MLCA), partially located within the Project Boundary, is listed on the non-statutory National Trust (NSW) Register. A further two items assessed as having local significance were identified within the Project Boundary during survey undertaken for the Project – a fence line and the Nissan Hut with Stockyard. A cultural landscape assessment was also undertaken that identified historical and aesthetic values of land within the Project Boundary.

The impact assessment undertaken for Project concluded that the fenceline and Nissan Hut with Stockyard will be destroyed as a result of the Project and that with proposed mitigation measures these impacts are considered 'minor negative' in accordance with Heritage Branch guidelines, that is where there is a 'reversible loss of local significance fabric or where mitigation retrieves some value of significance' (NSW Heritage Office, 2002). In addition, two landscape areas will be partially impacted, the Muswellbrook Landscape Conservation Area (MLCA) listed on the non-statutory National Trust (NSW) Register and the Drayton South Cultural Landscape.

In order to retain heritage information about the role and contribution of these items and landscapes to the history and development of the local area recommendations are made within this report (Section 9.0) that their heritage value(s) be documented, including photographic records of the landscape areas and archival recordings of the fence line and Nissan Hut with Stockyard prior to impacts. The mitigation measures will be carried out by the Applicant in accordance with Heritage Division guidelines *How to Prepare Archival Records of Heritage Items* (1998) and *Photographic Recording of Heritage Items using Film or Digital Capture* (2006) and are to form part of the Statement of Commitments within the EIS.

1.0 Introduction and Background

1.1 Introduction

AECOM has been commissioned by Hansen Bailey on behalf of Anglo American to undertake a non-Aboriginal Heritage Impact Assessment for the Drayton South Coal Project ('the Project'). The assessment forms part of an EIS being prepared by Hansen Bailey to support an application for Development Consent under Part 4 Division 4.1 of the EP&A Act for the Project, to allow for the continuation of the existing Drayton Mine for up to 15 years.

This assessment report has been modified from the original report prepared for the previous application which was refused by NSW PAC on 17 October 2014 and has been prepared in accordance with the *NSW Heritage Manual* (NSW Heritage Office & NSW Department of Urban Affairs and Planning, 1996) and with reference to the Burra Charter (the Australia ICOMOS Charter for Places of Cultural Significance) (ICOMOS (Australia), 2013).

1.2 Study Area

The study area for this assessment, shown on Figure 3, comprises the original area assessed as part of the previous Drayton South mine application refused by NSW Planning Assessment Commission (PAC). This included an area of approximately 4,597 ha encompassing the previous mine plan disturbance footprint (1,928 ha) and areas adjacent to the Project Boundary where known historic heritage items occur. In accordance with the 'Drayton South Coal Project PAC Review Report' issued in December 2013, significant modifications have been made to the Project's proposed mine plans resulting in overall reduction in the mine disturbance footprint from 1,928 ha to 1,441 meaning 487 ha (25%) of land would no longer be impacted by the proposal. While the study area for this assessment remains the same, the impact assessment considers impacts to historic heritage items from the revised mine Disturbance Boundary.

1.3 Assessment Objectives

The overarching objectives of the assessment undertaken were as follows:

- to identify, through background research and targeted archaeological investigations, the historical heritage values of land within the study area;
- to assess the significance of identified historic heritage items in accordance with the New South Wales (NSW) Heritage Branch's guidelines: *Assessing Heritage Significance* (NSW Heritage Office, 2001) and *Levels of Heritage Significance* (NSW Heritage Office, 2008);
- to prepare a Statements of Heritage Impact (SoHI) for all identified heritage items within the study area in accordance with the NSW Heritage Branch's guidelines: *Statements of Heritage Impact* (NSW Heritage Office, 2002); and
- to provide, on the basis of significance assessments and SoHIs, appropriate management and mitigation strategies for all identified and potential historic heritage items.

1.4 Project Description

Drayton Mine is located approximately 13 km south of the township of Muswellbrook in the Upper Hunter Valley of NSW (Figure 1). Drayton Mine has been operating in the Muswellbrook community for over 30 years and runs out of coal in 2015. The Project will allow for the continuation of the existing Drayton Mine for up to 15 years, by developing an open cut mining area within EL 5460. The Project will extract up to 6.4 Million tonnes per annum (Mtpa) of export quality thermal coal by utilising existing Drayton Mine assets and infrastructure.

The current Project application addresses the reasons provided by the NSW Planning Assessment Commission (PAC) for the refusal of the previous application. The mine plan and Project boundary are defined by ridgelines nominated in the 'Drayton South Coal Project PAC Review Report' issued in December 2013. The Project will remain behind the ridgelines nominated by the PAC. This at least doubles the buffer setback distance from the Coolmore and Woodlands thoroughbred horse studs and is at least 2 kilometres (km) from the horse stud operational areas. Figure 2 shows the conceptual layout of the Project.

1.5 Secretary's Environmental Assessment Requirements

The Secretary of the NSW Department of Planning and Environment (DP&E) issued the Secretary's Environmental Assessment Requirements (SEARs) for the Project on 19 December 2014. For non-Aboriginal heritage, the SEARs included the following:

- an assessment of the likely impacts of the development on non-Aboriginal heritage, paying particular attention to its settlement by Europeans and pastoral history; and
- evidence of consultation, noting that consultation carried out for the original Drayton South Coal Project may be relied upon, but should be augmented with further consultation for this project.

Attachment A (Guidance Material) of the SEARs lists OEH's non-Aboriginal Cultural Heritage requirements for the Project. These include:

The EIS must provide a heritage assessment including but not limited to an assessment of impacts to *State and local heritage* including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees, should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:

- a) outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996);
- b) be undertaken by a suitably qualified heritage consultant (s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria);
- c) include a statement of heritage impact for all heritage items (including significance assessment);
- d) consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscapes and vistas, and architectural noise treatment (as relevant); and
- e) where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavation (terrestrial and marine as relevant) and include the results of these test excavations.

1.6 Project Team

The Project was managed by Dr Susan Lampard (AECOM Archaeologist). Susan coordinated project logistics and authored the original version of this report. Geordie Oakes (AECOM Archaeologist) updated this report for the modified Project. Ruth Baker (AECOM Associate Director - Environment) provided technical and QA review. Tim Osborne prepared all figures within this report.

1.7 Limitations

Within this report predictions have been made about the probability of subsurface archaeological materials occurring within the study area based on surface indications and environmental contexts. However, it is possible that materials may occur in areas without surface indications and in any environmental context.

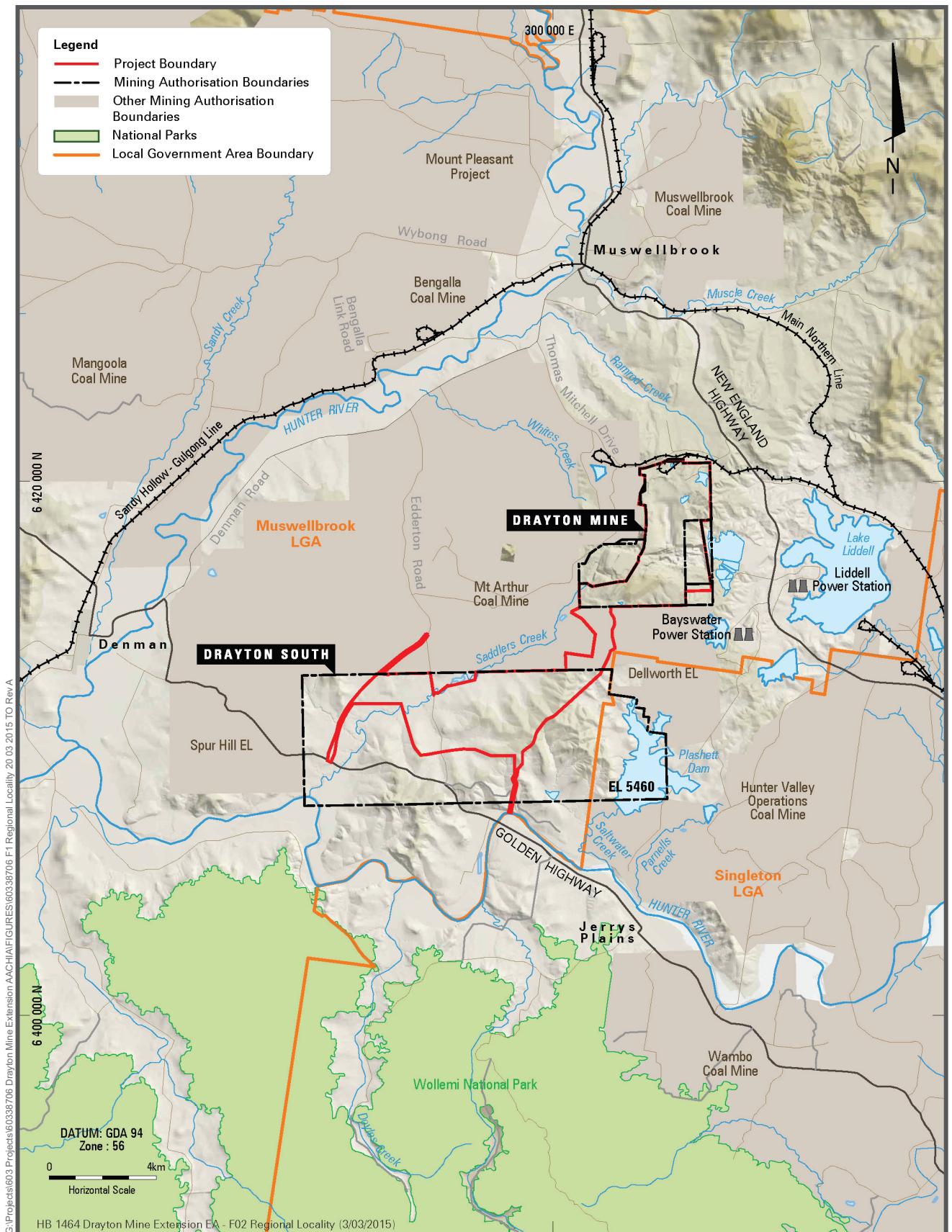
A summary of the statutory requirements regarding non-Aboriginal heritage is provided in Section 2.0. This is provided based on experience with the heritage system in New South Wales (NSW) and does not purport to be legal advice. It should be noted that legislation, regulations and guidelines change over time and users of the report should satisfy themselves that the statutory requirements have not changed since the report was written.

This assessment does not address areas within or adjacent to Drayton Mine as Veritas Service Archaeology and History (2005) previously undertook a non-Aboriginal heritage assessment as part of the Drayton Mine Extension EA.

1.8 Report Structure

This report contains nine sections. This section - **Section 1.0** - has provided background information on the Project and the assessment undertaken. The remainder of the report is structured as follows:

- **Section 2.0** outlines the statutory framework within which this assessment has been undertaken.
- **Section 3.0** provides the historical context of land within the Project Boundary.
- **Section 4.0** provides the results of the historic heritage register/list searches.
- **Section 5.0** provides a cultural heritage landscape assessment for land within the study area.
- **Section 6.0** provides significance assessments of identified heritage items.
- **Section 7.0** provides an assessment of the potential impacts of the Project on identified heritage items.
- **Section 8.0** details a comprehensive management and mitigation strategies for identified heritage items.
- **Section 9.0** lists the references cited in-text.



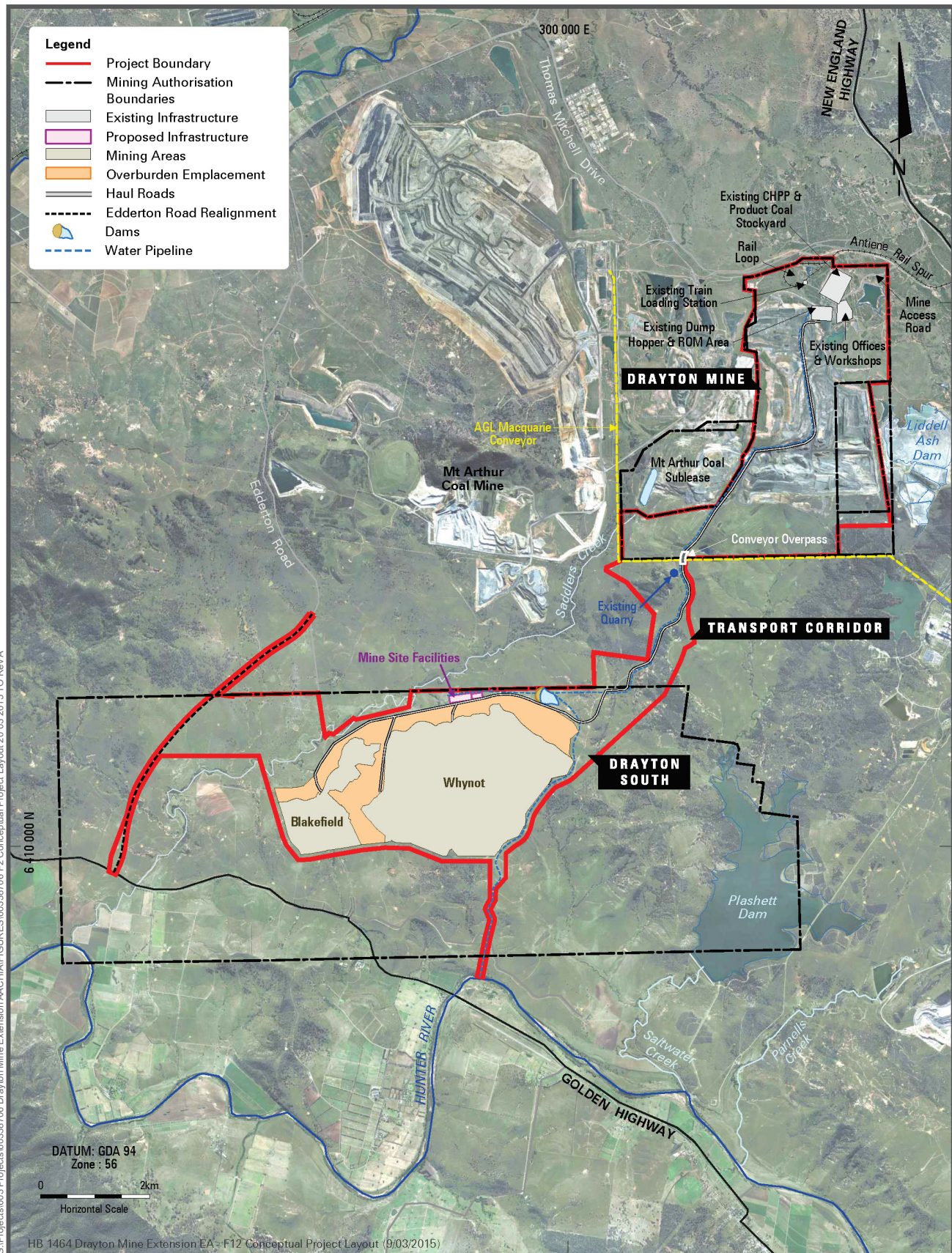
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REGIONAL LOCALITY

Drayton South Coal Project
Non-Aboriginal Archaeological and Cultural Heritage Impact Assessment
New South Wales

Source: Hansen Bailey (2015)

FIGURE 1



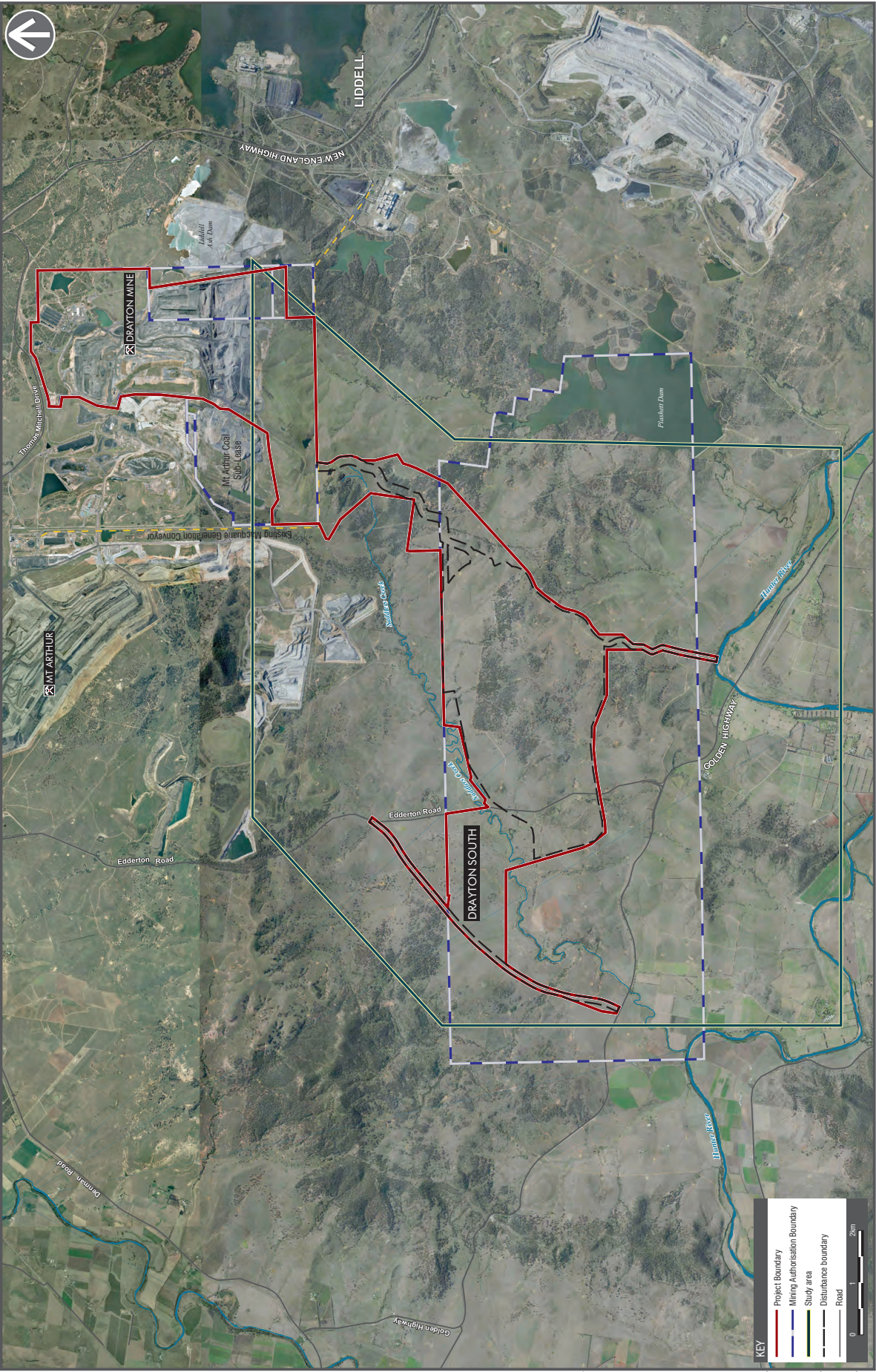
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CONCEPTUAL PROJECT LAYOUT

Drayton South Coal Project
 Non-Aboriginal Archaeological and Cultural Heritage Impact Assessment
 New South Wales

Source: Hansen Bailey (2015)

FIGURE 2



STUDY AREA
Drayton South Coal Project
Non-Aboriginal Archaeological and Cultural Heritage Impact Assessment
New South Wales

FIGURE 3

2.0 Applicable Policy and Legislation

2.1 Introduction

A number of planning, legislative and other documents govern how heritage is managed in NSW and Australia. The following section provides an overview of the requirements under each as they apply to the Project.

2.2 Federal Controls

2.2.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) took effect on 16 July 2000.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (known as a controlled action under the Act), may only progress with approval of the Commonwealth Minister for the Department of the Environment (DoE). An action is defined as a project, development, undertaking, activity (or series of activities), or alteration. An action will also require approval if:

- It is undertaken on Commonwealth land and will have or is likely to have a significant impact on the environment on Commonwealth land; and
- It is undertaken by the Commonwealth and will have or is likely to have a significant impact.

The EPBC Act defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and historic cultural heritage sites. Under the Act, protected heritage sites are listed on the National Heritage List (sites of significance to the nation) or the Commonwealth Heritage List (sites belonging to the Commonwealth or its agencies). These two lists replaced the Register of the National Estate (RNE). While the RNE has been suspended and is no longer a statutory list, Section 391A of the Act requires the Minister to consider RNE listing if a referral is made. This requirement expired in 2012, by which time all RNE listings were to be transferred to a relevant heritage register. Sites on the RNE can have a variety of statuses, including Registered (it is inscribed on the Register) and Indicative (it is in the database, but no formal nomination has been received or an assessment has not been completed).

The heritage registers mandated by the EPBC Act have been consulted and there are no historic sites within the study area on these registers. Accordingly, the sections of the EPBC Act in relation to heritage are not relevant to the Project.

2.3 State Controls

2.3.1 Environmental Planning and Assessment Act 1979

The EP&A Act allows for the preparation of planning instruments to direct development within NSW. This includes Local Environment Plans (LEPs), which are administered by local government, and principally determine land use and the process for development applications. LEPs usually include clauses requiring that heritage be considered during development applications and a schedule of identified heritage sites be provided. The Muswellbrook Local Environment Plan 2009 applies to the Project and is discussed further in Section 2.3.3.

Upon repeal of Part 3A of the EP&A Act on 1 October 2011, the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* inserted a new Division 4.1 in Part 4 of the EP&A Act. Division 4.1 provides for a new planning assessment and determination regime for State Significant Development (SSD). Section 89C of the EP&A Act stipulates that a development will be considered SSD if it declared to be such by the new *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD).

Under Clause 8(1) of SEPP SRD, a development is declared to be SSD if:

- The development on the land concerned is, by the operation of an environmental planning instrument, is permissible only with development consent under Part 4 of the EP&A Act, and
- The development is specified in Schedule 1 or 2.

The Project has been declared a SSD as it meets both of these criteria.

Section 89J of the EP&A Act provides that for projects approved as SSD under Part 4, an excavation permit under Section 140 of the *Heritage Act 1977* is not required.

2.3.2 The Heritage Act 1977

The *Heritage Act 1977* (as amended) was enacted to conserve the environmental heritage of NSW. Under Section 32, places, buildings, works, relics, moveable objects or precincts of heritage significance are protected by means of either Interim Heritage Orders (IHO) or by listing on the NSW State Heritage Register (SHR). Sites that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the NSW Heritage Council.

Archaeological relics (any relics that are buried) are protected by the provisions of Section 139. Under this section it is illegal to disturb or excavate any land knowing or suspecting that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. In such cases an excavation permit under Section 140 is required. Note that no formal listing is required for archaeological relics; they are automatically protected if they are of local significance or higher.

Proposals to alter, damage, move or destroy places, buildings, works, relics, moveable objects or precincts protected by an IHO or listed on the SHR require an approval under Section 60. Demolition of whole buildings will not normally be approved except under certain conditions (Section 63). Some of the sites listed on the SHR or on LEPs may either be 'relics' or have relics associated with them. In such cases, a Section 60 approval is also required for any disturbance to relics associated with a listed site.

Under Section 170 of the *Heritage Act 1977*, NSW Government agencies are required to maintain a register of heritage assets. The Register places obligations on the agencies, but not on non-government proponents, beyond their responsibility to assess the impact on surrounding heritage sites.

AECOM searched the SHR and Section 170 registers to determine whether there are listed heritage sites within the Project Boundary. No sites were identified listed under the *Heritage Act 1977*.

2.3.3 Muswellbrook Local Environmental Plan (2009)

The Muswellbrook LEP 2009 controls development in relation to heritage items within the Muswellbrook Shire boundary. As the current proposal will be assessed under Part 4.1 of the EP&A Act, the LEP will not be applicable. Schedule 5 of the LEP provides a list of identified heritage items, which has been examined to determine whether the items could potentially be impacted by the Project. The findings from the review of the Muswellbrook LEP are presented in Section 4.0.

2.3.4 Singleton Local Environmental Plan (2013)

The Singleton LEP 2013 controls development in relation to heritage items within the Singleton Shire boundary. As the current proposal will be assessed under Part 4.1 of the EP&A Act, the LEP will not be applicable. Schedule 5 of the LEP, however, provides a list of identified heritage items, which has been examined to determine whether the items could potentially be impacted by the Project. The findings from review of the Singleton LEP are presented in Section 4.0.

2.3.5 Hunter Regional Environmental Plan (Heritage) (1989)

The Hunter REP was deemed a *State Environmental Planning Policy* (SEPP) on 1 July 2009. The aims of the Hunter REP are threefold:

- To conserve the heritage of the Hunter Region;
- To promote the appreciation and understanding of the variety of items; and
- To encourage the conservation of townscapes that are desirable to conserve.

To this end, Schedule 1 lists items of State significance, Schedule 2 items of regional significance and Schedule 3 items of local significance within the Hunter Region.

Clause 6 requires LGAs to include provisions for significant items within LEPs, while Clause 7 provides for development of heritage items. It requires that applications to alter, damage, remove or construct in the vicinity, be accompanied by a Statement of Heritage Impact, which addresses the impact to the significance of the item.

3.0 Methodology

This assessment was undertaken in accordance with the *NSW Heritage Manual* (NSW Heritage Office & NSW Department of Urban Affairs and Planning, 1996) and with reference to the Burra Charter (the Australia ICOMOS Charter for Places of Cultural Significance) (ICOMOS (Australia), 2013). Key tasks have been:

- To search relevant historic heritage registers and lists including the:
 - Register of the National Estate (non-statutory);
 - National Heritage List;
 - Commonwealth Heritage List;
 - NSW State Heritage Register;
 - National Trust of Australia;
 - Schedule 5 of the Muswellbrook Regional Local Environment Plan 2012 (Muswellbrook Regional LEP 2012); and
 - Schedule 5 of the Singleton Local Environmental Plan (Singleton LEP);
- To undertake background research of land within the study area so as to identify historic heritage items, including areas of archaeological sensitivity;
- To liaise with the local historic societies to identify historic heritage items including areas of archaeological sensitivity;
- To undertake archaeological survey of land within the study area and report on its findings. This was completed over five days in May 2011; and
- To prepare and finalise a historic heritage impact assessment report for the Project (this report).

3.1.1 Field Survey Methodology

Historical research prior to the fieldwork had not identified any areas of interest other than the items listed on the SHR, Schedule 5 of the Muswellbrook LEP and Schedule 3 of the Singleton LEP (see Section 4 for the findings of these searches).

The objective of the field survey was to assess the area within the study area and to determine if there were any sites of heritage significance present. The field survey involved coverage of the area within the study area via vehicle, where feasible.

The following method was undertaken at each site:

- The tenant was located and permission was sought to access their property, where appropriate;
- Tenants were asked for information regarding the age and history of the structure or feature and if they were aware of any other known features of historical interest in the area;
- The structures and/or features at the site were identified and recorded;
- The structures/features were assessed for historical significance;
- Photographs of the structures/features were captured and details were recorded in a photo log; and
- The position of the item was recorded with a Global Positioning System (GPS).

3.1.2 Analysis Method

The GPS data was provided to AECOM's Geographic Information System analyst for mapping. The physical evidence was then analysed in light of the item's historical context to determine its significance. The process of determining significance is described further in Section 7.0. Based on the significance and impact of the Project on each item, management recommendations were developed.

3.1.3 Significance Assessment Criteria

In order to understand how development will impact on a heritage item, it is essential to understand why an item is significant. An assessment of significance is undertaken to explain why a particular site is important and to enable the appropriate site management and curtilage to be determined. Cultural significance is defined in the Australia

ICOMOS Charter for the conservation of places of cultural significance (the Burra Charter) as meaning "aesthetic, historic, scientific or social value for past, present or future generations" (Article 1.1). Cultural significance may be derived from a place's fabric, association with a person or event, or for its research potential. The significance of a place is not fixed for all time, and what is of significance to us now may change as similar items are located, more historical research is undertaken and community tastes change.

The process of linking this assessment with a site's historical context has been developed through the NSW Heritage Management System and is outlined in the guideline *Assessing Heritage Significance* (2001), part of the NSW Heritage Manual (Heritage Office 1996). The *Assessing Heritage Significance* guidelines establish seven evaluation criteria (which reflect four categories of significance and whether a place is rare or representative) under which a place can be evaluated in the context of State or local historical themes. Similarly, a heritage item can be significant at a local level (i.e. to the people living in the vicinity of the item), at a State level (i.e. to all people living within NSW) or be significant to the country as a whole and be of National or Commonwealth significance.

In accordance with in the guideline *Assessing Heritage Significance*, an item will be considered to be of State or local heritage significance if it meets one or more of the following criteria:

Criterion (a) – 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).

The site must show evidence of significant human activity or maintains or shows the continuity of historical process or activity. An item is excluded if it has been so altered that it can no longer provide evidence of association.

Criterion (b) – an item has 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).

The site must show evidence of significant human occupation. An item is excluded if it has been so altered that it can no longer provide evidence of association.

Criterion (c) – an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).

An item can be excluded on the grounds that it has lost its design or technical integrity or its landmark qualities have been more than temporarily degraded.

Criterion (d) – an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.

This criterion does not cover importance for reasons of amenity or retention in preference to proposed alternative.

Criterion (e) – 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). Significance under this criterion must have the potential to yield new or further substantial information.

Under the guideline, an item can be excluded if the information would be irrelevant or if it only contains information available in other sources.

Criterion (f) – 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). The site must show evidence of the element/function etc. proposed to be rare.

Criterion (g) – an item is important in demonstrating the principal characteristics of a class of NSW's:

- cultural or natural places; or
- cultural or natural environments.

An item is excluded under this criterion if it is a poor example or has lost the range of characteristics of a type.

The Heritage Council requires the summation of the significance assessment into a succinct paragraph, known as a Statement of Significance. The Statement of Significance is the foundation for future management and impact assessment.

4.0 Historical Context

4.1 Introduction

The historical context of an area is important to understand the type of sites likely to be identified and their potential locations. The following section provides a brief overview of the history of the Hunter Valley, before focusing on the properties within the study area.

4.2 Early European Exploration

The Hunter region was initially identified as an area of rich resources in 1797 when Lieutenant John Shortland found coal at the mouth of the Hunter's River, as it was then known. A convict settlement was established at the mouth of the River in 1801 to gather coal and timber and burn shells for lime (Hunter, 2010: 6).

The 1810s saw increased pressure on land around Sydney, especially following several years of drought. The farmers on the Hawkesbury River around Windsor petitioned Governor Macquarie to allow exploration inland. In 1819, Macquarie authorised men to find an overland route into what is now the Hunter Valley. The leader of this party, Windsor chief constable John Howe, exclaimed it was the best pasture he had seen since leaving England. Confirmation of the overland route was undertaken in 1820 (Hunter 2010:7). Macquarie rewarded the men in this second party with land grants around what is today Singleton.

Land was quickly surveyed and by 1823 grants along rivers and creeks had been issued. Settlement, however, seems to have been of a slower pace. A traveller in 1827 said that the area was inhabited by single shepherds with their flocks (Hunter 2010:8).

In 1829, Jerrys Plains was surveyed as a town, although it had been a campsite for travellers for some years previous. The town was not proclaimed until 1840 and official grants were not given until several years later. Despite the absence of official land ownership, development of the town continued.

Muswellbrook was proclaimed in 1833, although again, there had been earlier settlement in the vicinity. The surrounding area was largely used for grazing and cropping, with an increasing focus on dairying. Coal mining began in the 1890s, but did not become prolific until more recently.

4.3 Land Settlement and Development

The majority of the area within Drayton South was originally part of the Plashett Estate, first granted to James Robertson. Surrounding estates included Bowfield, Arrowfield, Strowan and Edderton. The history of Plashett and each of the surrounding estates is summarised below and is indicative of the development of the area.

4.3.1 Plashett Estate

Plashett was granted to James Robertson, of Renfrew, Scotland, in 1827. Robertson had arrived in the colony in 1822 accompanied by his wife, Anna Maria and six children. In London, Robertson had been a watch and mathematical instrument maker for Grimaldi and Johnson of The Strand. In this capacity, Robertson had made friends with Thomas Brisbane, who was a keen astronomer. When Brisbane was appointed Governor of NSW he encouraged Robertson to immigrate to the colony.

On arrival, Robertson and his family lived in George Street, Sydney, and James established a jewellery and watchmaking business. Prior to his arrival in the colony, Brisbane had arranged with Governor Macquarie that Robertson be given a 500 acre grant, which Brisbane increased to 1,000 acres. Robertson took half of this at Baulkham Hills and the other at Broken Bay. He made substantial improvements to the Baulkham Hills property and it was stocked with sheep and cattle. He had just begun building a house for his family on his Broken Bay property when the 1826/7 drought began. Robertson's Baulkham Hills property did not have sufficient pasture to support his livestock. On 24 August 1824, Robertson applied for an additional grant, which he was entitled to for completing a specified amount of improvements to his current land holdings. On 19 November, Governor Brisbane authorised a grant of 1,000 acres and reserved a further 1,000 acres as a purchase. James Robertson took up his 1,000 acre grant on the northern side of the Hunter River at Jerrys Plains in early 1827, naming the property Plashett after his father-in-laws property in Essex, England. The 1828 census lists Robertson as holding 2,000 acres of land (Plashett), on which 170 acres were cleared and 80 acres cultivated, with 5 horses, 250 cattle, and 800 sheep.

A map of the Hunter River Land Grants produced in October 1829, shows the Robertson 1,000 acres with a house built on it. This house is thought to be the slab cottage which remained standing until 1993, when it was reportedly demolished. On 15 September 1854, Plashett was advertised for sale in the Maitland Mercury, and was described as being “*an excellent Stone House, not finished inside, which was located near to where the old homestead stood.*” Plashett was purchased from Robertson in November 1854 by Joseph Pearse, who in turn transferred ownership to his son William Pearse in 1864. William Pearse married Catherine Langley in 1866. By the 1890s, the property was supplying sheep and cattle for both Sydney and Hunter Valley abattoirs. Cattle were sent to the Hunter from the Pearse properties in Queensland to be fattened up for the Sydney market. Corn, horse breeding, and shearing also took place at the property. By 1910, Plashett was producing milk from a herd of approximately 100 cows for the Jerrys Plains butter factory.

When William Pearse died in 1927, a probate valuation describes the property as pastoral, with 18 grazing paddocks, three for cultivation, and a few others as well. Timber had been left in the paddocks to provide shade for the cattle, and this included kurrajong and box species.

Plashett remained in the Pearse family for 117 years, until 1971, when a portion of the property was transferred to Caroon Pty Ltd. In 1982, this portion was transferred to the Electricity Commission of New South Wales (Pacific Power). In that same year, Lot 2 DP 616024, which comprised half of the land owned by Pacific Power, was transferred to Mount Arthur Coal Pty Ltd. In 2000 the property was purchased by Anglo American. Plashett remains a pastoral property, managed now on behalf of Anglo American.

4.3.2 Bowfield Estate

Bowfield comprises part of George Blaxland's land grant, later part of W.H. White's property, while the Saddlers Creek portion is part of the grant to George Bowman, of Arrowfield (approximately 2,600 acres in 1832). The total area is approximately 5,000 acres. W.H. White sold his portion to Squire Bowman (of Balmoral) which he occupied, and the property subsequently became known as Bowfield. The property was later acquired by 'Mac' Bowman.

The original Bowfield Homestead was built c.1928. Allegedly there was also an old weatherboard house in the vicinity of the Bowfield Homestead.

Bowfield has since been purchased by Anglo American and is currently leased as a working pastoral property primarily for cattle grazing.

4.3.3 Arrowfield Estate

Richmond inn keeper and landholder, George Bowman, arrived in Sydney in 1798 at three years of age. His father John had immigrated to Australia on the recommendation of Sir Joseph Banks. George Bowman settled in the Hawkesbury.

In August 1824, George Bowman was granted 250 acres in the Hunter Valley. He then purchased a further 800 acres to make 'Archerfield'. In 1820, he married Eliza Pearce, and together they had 11 children. George continued to live at Richmond while his sons, George and William, managed his holdings in the Hunter Valley.

Arrowfield consists of the majority of three portions in the Parish of Wynn, which Bowman had acquired by 1841. His son John Woodward Bowman was his tenant. The land had originally been granted to Crawford Logan Browne, an immigrant who had arrived in Australia in 1827 at the age of twenty-two. Soon after, he was granted 1,280 acres in the Hunter Valley. In the 1828 census, Browne was farming at 'Black Field', Patrick's Plains (possibly 'Blakefield') when the property was obtained by Bowman.

Browne had interests at Williams River, Dungog, also in the Hunter Valley, and so concentrated his efforts there, selling 'Blakefield' to George Bowman on the 20 April 1837. In 1825, Bowman had been given the right to buy 2,000 acres and had taken 1,120 acres next to Browne's grant. While the deed was not issued until 1834, he was paying rent on the property from 1820. By 1837, Bowman owned Browne's land as well as the purchased section.

In 1841, Bowman bought 1,274 acres to the north. This essentially comprised the land which would come to be known as Arrowfield, with the exception of some purchases north of 'the road' (possibly the Golden Highway). By 1842, the property was known as 'Arrowfield'.

John Woodward was the second son of George Bowman, and in 1844 the Browne portion of the property was transferred to him. George's other son James managed 'Strowan'. John subsequently bought his own portions of land to the north of Arrowfield as well, and on the death of George, James became the owner of the entirety of Arrowfield and 2,560 acres adjacent to Bowfield. By the 1850s, James was living at Arrowfield, and in July 1852

he married Jane Alexandria, the daughter of John Johnston of Clydesdale, Singleton. John ran cattle and sheep, and farmed feed and cash crops at Arrowfield.

Arrowfield was later sold to William Rupert Raleigh, who had been leasing and working the property. Raleigh then sold the property to brothers William and Frederick Albert Moses in April 1912. They operated it as an outstandingly successful thoroughbred stud, and it was put up for auction on the 12 April 1924. The horses were sold and new records were set for the prices that they fetched on the market. As the Moses brothers were getting on in age, the property was predominantly managed by Jack Honnery.

In July 1925, Arrowfield was purchased by William Pearce Bowman in the name of two of his underage sons – Major Millington and Ray Millington Bowman; however, it was his third son, Tristan, who eventually became the sole owner. The property was then used as a jersey stud, for dairy and sheep grazing. A piggery was also established, and during World War II (WWII) an airstrip was built on the property. In 1946, Tristan sold the property to John Norman Lawson of Muswellbrook. Lawson was a member of the House of Representatives for the United Australia Party from 1931-1940, and was the Minister for Trade and Customs for the last two years of this term before losing his seat. Lawson also kept racehorses on the property.

When Lawson died in 1956, his sons John Gordon and Rodney Beaumont inherited the property, which they used for dairying, cattle breeding, and ewes for meat.

In the 1970s, vines were planted on the property and it appears that Carpenter's Ltd acquired the land and set about planting the grapes in partnership with Penfold Wines through Francis Investments Pty Ltd. Carpenter's Ltd eventually bought out Francis Investments Pty Ltd and established their own winery, as opposed to just selling grapes. The wine, however, was not of good quality and there was not a strong market for red wine at the time. As they were not profitable, the focus was changed to white wine production, and the property was taken over once again, this time by Griffin Holdings.

In the meantime, John Messara had been building the Australian Racing and Breeding Stables Ltd (ARABS). In 1986, Griffin Holdings sold to ARABS and in 1987 changed their name to the Arrowfield Group. They also purchased Oak Range, Strowan and Riverview in the local area, and the focus of the property once again returned to operating as a horse stud (Driscoll 1989). A portion of the property was later sold in 1989 to the Whitlam, Simon and Gilbert Group, which was led by Nick Whitlam, a merchant banker. At the time, wine was distributed under the Mount Arrow label as the group did not hold the rights to the Arrowfield brand.

In 1991, the property was acquired by the Inagaki family; the controlling interest in the Hokuriku Coca Cola Bottling Co Ltd. The Arrowfield viticulture operations went on to be owned and operated by The InWine Group Australia Ltd of which Hokuriku Coca Cola Bottling Co Ltd was the leading stakeholder. The property was subsequently purchased by Holydene and following this was acquired by Coolmore stud.

4.3.4 Strowan Estate

The estate on which Strowan Homestead sits was originally two portions of land located on the southern side of the Hunter River. The first portion of land was granted to John Hosking in 1820, and became known as Hosking Park. Hosking was an absentee owner, and in 1836 he sold the land to George Bowman. The second portion of land was granted to James Robertson, the father of Sir John Robertson, in 1825. This land grant comprised 1,000 acres, and Robertson subsequently purchased a further 1,000 acres. The 1,280 acres situated on the southern bank of the Hunter River became Strowan, so named after the ancient barony of Clan Robertson. The land on the northern bank became Plashett. Strowan remained in Robertson hands for 30 years.

In 1840, James Robertson transferred Strowan to his son John, who had joined his father on the property in 1835. John was a victim of The Depression and in 1843 was declared bankrupt and Strowan was sequestered. Eventually the property reverted to James and his wife. They then sold it to George Bowman in 1854. George made his sixth son, James, manager of Strowan. James would later become the owner of this property as well. The property was subsequently passed to Walter Bowman, and on his death, it was inherited by his nephews, brothers Robert and Mackenzie. On dissolution of the partnership, Robert Bowman became the sole owner of the property. The 'chief glory' of Strowan during the Bowman years was its Clydesdale stud. Strowan remained in the Bowman family for more than 130 years, until it was purchased by the Arrowfield Group Ltd in 1986 (Driscoll, 1989).

In 1985, John Messara gained controlling interest in ARABS. He later purchased Arrowfield and the adjacent properties, including Strowan, for the establishment of what is now a leading horse stud. The property is now owned and operated by Calogo Bloodstock Ag trading as Coolmore Australia.

4.3.5 Edderton Estate

Edderton was originally part of the historic Arrowfield estate. The lands upon which the Edderton Homestead is situated were formally granted to George Bowman as part of a land grant of 2,560 acres. The property was subsequently purchased by a Mr Ryder, and the Edderton Homestead was then built in 1908. Ryder named the property after the Edderton Meat Works in Brisbane, one of his business interests. It was then acquired by a Mr Osborne.

The property was acquired by the McDonald family c. 1910 and increased in acreage. It was purchased by Hector Cameron McDonald and then passed on to his son Douglas. When first purchased by McDonald, the property was approximately 4,000 acres. Over a period of 25 years, McDonald consolidated Edderton with other lands into a large pastoral property, increasing it to about 13,000 acres. Originally, McDonald ran about 16,000 sheep and today a six stand galvanized iron shearing shed remains, together with the old shearers quarters. After some time, sheep were replaced by cattle as a result of the damage caused to the land. The homestead was extended by the McDonalds from its original four rooms. The building is of quite unusual detail and is in excellent condition.

Following WWII, the Edderton property steadily became less economically viable and was gradually broken up. Edderton has since been acquired by Mt Arthur Coal and is currently leased as a working pastoral property primarily for cattle grazing.

The Estate is currently owned by Hunter Valley Energy Coal.

5.0 Heritage Register/List Searches

As discussed in Section 2.0, Commonwealth, State and Local governments maintain inventories of items of historical significance within each jurisdiction. The following section discusses listed heritage items within the study area.

5.1 Heritage Inventories

AECOM undertook a search of relevant heritage inventories on 13 February 2015. The inventories searched were:

- World Heritage List;
- Commonwealth Heritage List;
- National Heritage List;
- Register of the National Estate;
- NSW State Heritage Register;
- Section 170 Registers of relevant Government Agencies;
- Schedule 5 of the Muswellbrook LEP;
- Schedule 5 of the Singleton LEP; and
- Schedule 1 of the Hunter Regional Environmental Plan.

5.2 Heritage Inventory Searches

Table 1 summarises the heritage items identified on heritage inventories.

Table 1 Heritage Items Identified on Heritage Inventories

Register	Items within the Drayton South study area	Items Adjacent to Drayton South	Location
Statutory			
World Heritage List (WHL)	Nil	Nil	
Commonwealth Heritage List (CHL)	Nil	Nil	
State Heritage Register (SHR)	Nil	Nil	
Section 170 Registers	Nil	Nil	
Muswellbrook LEP	Nil	Edderton Homestead Plashett Homestead Woodlands Homestead	1 km north of Disturbance Boundary 3.5 km south of main Disturbance Boundary 5.5 km south of main Disturbance Boundary
Singleton LEP	Nil	Arrowfield Cottage Strowan Homestead	4.5 km south of main Disturbance Boundary 4.1 km south of main Disturbance Boundary
Hunter Regional Environmental Plan (HREP)	Nil	Woodlands Homestead	5.5 km south of main Disturbance Boundary

Register	Items within the Drayton South study area	Items Adjacent to Drayton South	Location
Non-Statutory			
National Trust of Australia (NSW Branch)	Muswellbrook – Jerrys Plains Landscape Conservation Area	Muswellbrook- Jerrys Plains Landscape Conservation Area	Within the Disturbance Boundary
National Heritage List	Nil	Nil	
Register of the National Estate (non-statutory archive)	Nil	Strowan Homestead	4.1 km south of main Disturbance Boundary

*Main Disturbance Boundary does not include the water pipeline corridor to Hunter River

The non-statutorily listed Muswellbrook-Jerrys Plains Landscape Conservation Area (MJPLCA) comprises a large area of land centred on the Hunter River south of Muswellbrook and extending approximately 25 km to the junction of the Goulburn River at Denman. It includes the Hunter River and lower Goulbourn River, associated alluvial flats, escarpments of the Wollemi National Park and views and vistas of these features. Approximately 353 ha of the MJPLCA is located within the Project Disturbance Boundary.

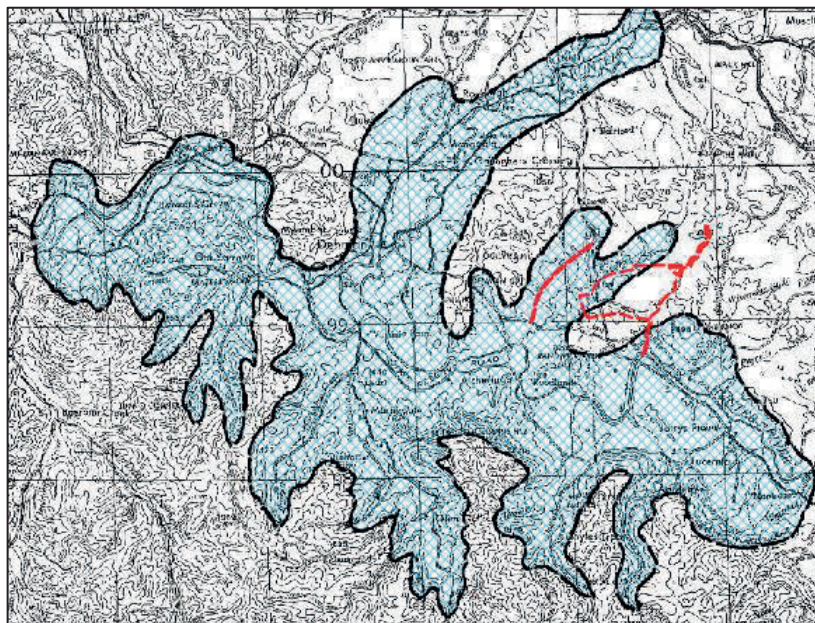


Figure 4 Boundary of MJPLCA (Source: National Trust) (blue) & Project Disturbance Boundary (red)

6.0 Drayton South Cultural Landscape Assessment

A cultural landscape is a geographic area that reflects the interaction between humans and the natural environment. As such, a cultural landscape assessment requires a review of geographical information, historical textual information, cultural heritage items and an understanding of the interaction of these features. For this non-Aboriginal heritage assessment, a cultural landscape assessment has been undertaken of land within the study area. In completing the assessment reference was made to the following guidelines: *NSW Heritage Manual* (Heritage Office, 1996); and *Cultural Landscapes: A Practical Guide for Park Management* (NSW Department of Environment Climate Change and Water, 2010).

6.1 Historical Themes

Table 2 lists the historic themes associated with land within the study area and includes a list of landscapes, features and cultural values connected with each theme.

Table 2 Historical themes associated with land within the study area

Historic Theme	Landscape	Place/feature	Cultural value
Natural features	Landscape associated with natural features occurring independent of human intervention	Hunter River and tributaries (Saddlers Creek); alluvial flats of the Hunter River; views and vistas of the rivers flats, surrounding hills, and bluffs of the Wollemi National Park; undulating rolling hills	Spiritual Aesthetic
Aboriginal culture	Landscape associated with Aboriginal occupation	Evidence of Aboriginal use of the study area is found in its rich archaeological record including campsites, scarred trees, open artefact sites, grinding grooves and quarries	Spiritual Social Historic Scientific
Early settlement: exploration, land grants and early settlement	Landscape associated with early exploration and settlement activities	Plashett, Bowfield, Arrowfield, Strowan and Edderton Estates	Historic Social Scientific
Working the land: grazing, dairying and cropping (pastoralism)	Landscape associated with farming plant and animals for commercial purposes	Plashett, Bowfield, Edderton, Strowan, Arrowfield, Woodlands, and Randwick Estates	Historic Social Scientific Aesthetic
Horse breeding and racing	Landscape associated with breeding and racing horses	Strowan, Arrowfield and Woodlands	Historic Social Scientific Aesthetic
Coal mining	Landscapes associated with mining activities	Drayton and Mt Arthur Mines	Historic

6.2 Natural Features

Natural features within the study area include the Hunter River and its tributaries such as Saddlers Creek, associated rich alluvial soils, and views and vistas which are tied to the areas pastoral use and horse breeding. The Hunter River is the most significant watercourse in the area and as such was important to early settlement and agriculture. The rich fertile soils are clearly linked to its early settlement and pastoral development. Other natural features in the area include the Wollemi National Park and Goulbourn River. Land use in the area is sympathetic to these natural features with farms being located within close proximity to watercourses and locations with idyllic views.

6.3 Aboriginal Culture

According to Tindale's (1974) oft-cited tribal map, the current study area is located towards the northern portion of Wonnarua territory. Tindale (1974) describes the territory of the Wonnarua as a 5,200 km² area stretching from "a

few miles" above Maitland west to the Dividing Range and south to the divide north of Wollombi. Evidence of past Aboriginal activity is demonstrated by the identification of hundreds of Aboriginal archaeological sites including open artefact sites containing evidence of the production of stone tools, scarred trees, grinding grooves and stone quarries the majority of which likely date to the mid-to-late Holocene. In addition to these archaeological sites, Aboriginal stakeholders consulted for the Project (see AECOM Australia Pty Ltd (2012)) identified Saddlers Creek and Mt Arthur as culturally significant landscape features in the area.

6.4 Early Settlement

The majority of the study area was originally part of the Plashett Estate, first granted to James Robertson of Renfrew, Scotland, in 1827. James Robertson took up his 1,000 acre grant on the northern side of the Hunter River at Jerrys Plains in early 1827, naming the property Plashett after his father-in-laws property in Essex, England. The 1828 census lists Robertson as holding 2,000 acres of land (Plashett), on which 170 acres were cleared and 80 acres cultivated, with 5 horses, 250 cattle, and 800 sheep. Physical historical remains of this early settlement are found south of the Project Disturbance Boundary in the form of the homestead, a small residence and slab garage, a manager's residence, stables group, dairy group, a hayshed and the remains of a bridge.

6.5 Living and Working on the Land

Land within the study area has primarily been used for pastoral activities since European settlement and has included sheep, cattle and horse grazing and breeding. The availability of rich fertile alluvial soils of the Hunter River and associated tributaries would have been key determinants in the early settlement and use of the area. Historical homesteads and associated farmland still evident in the area are physical remnants of its early uptake and reflect its charge and development. Key sheep and cattle properties include the Plashett, Edderton, Strowan, Randwick and Bowfield Estates, all of which have local historical significance. Important horse breeding properties include Strowan, Arrowfield and Woodlands and are considered to have both local and state historical significance.

6.6 Horse Breeding

A cultural landscape assessment for the thoroughbred horse studs, located on the southern side of the Golden Highway, opposite the Project Boundary was undertaken by Godden Mackay Logan Heritage Consultants (GML) 2013). The assessment identified land within the study area as forming part of a broader historic thoroughbred horse breeding landscape dating to the mid-late nineteenth century that is significant to the course and pattern of the history of NSW. The properties of Strowan, Arrowfield and Woodlands are key features of the thoroughbred cultural landscape and reflect the historical evolution and change in agriculture in the Hunter Valley in addition to being associated with prominent individuals of historical importance including James Arndell (son of First Fleet surgeon Thomas Arndell), H C White and George Bowman. The values of the thoroughbred cultural landscape are seen as not only tied to the properties themselves but to the surrounding topography, natural landforms, environmental conditions and perhaps most importantly the aesthetic, scenic and visual qualities of the landscape.

6.7 Mining

Coal mining has a long history in the Hunter Valley with coal having been identified at the mouth of the Hunter River in 1797. Mining within the Muswellbrook area has been active for over a century and evolved from small scale underground operations to large scale open cut operations. The development of coal mining in the area was tied to the construction of the Main Northern railway line and Muswellbrook rail station in 1869 which made it viable to exploit coal resources from the area. While small-scale operations were active during this time, mining began in earnest in Muswellbrook with the formation of Muswellbrook Coal Company and the discovery of the Greta Coal Measures in 1907 (Turner, 1995). Adjacent to the study area, coal mining has been active at Bayswater Colliery since the 1960s, at Drayton Mine for the past 30 years and at Mt Arthur since 2008. These operations form part of a broader mining cultural landscape extending throughout the Hunter Valley.

6.8 Statement of Cultural Significance

The Drayton South Cultural Landscape reflects the physical and cultural character of both Aboriginal and European land use. Natural and man-made elements within the landscape are of cultural significance for their aesthetic, historical, social and scientific values. Natural elements present in the area are of distinctive aesthetic

value due to their picturesque views of fertile pastoral lands associated with the Hunter River and its valley setting. The area has a cultural history which dates to the early period of European settlement and is intrinsically tied to its ongoing use for both pastoral and mining related activities. The landscape has a distinct pastoral character which is reflected in its natural and man-made features such as homesteads, stables, farm land and views and vistas. At the same time, the landscape has an industrial character evidenced by the presence of two existing mining complexes i.e., Drayton and Mt Arthur. The varying qualities of these historic land uses create an uneasy contrast due to their hugely differing aesthetic qualities. However, both land uses have their place in the cultural history of the Drayton South Cultural Landscape and the Hunter Valley more broadly.

7.0 Significance Assessments

During the background research and field survey 10 items (labelled 1 to 10 on Figure 5) were identified including the five items listed on the heritage registers (Plashett Homestead, Edderton Homestead, Arrowfield Cottage, Strowan Homestead and Woodlands Homestead), and five items not currently listed on any heritage registers (i.e., stockyard, Nissan hut with stockyard, fence, Bowfield Homestead and Randwick Homestead). In addition, one landscape area, the MJPLC was identified as partially occurring in the study area.

A significance assessment for all identified historic heritage items and landscape areas within and directly adjacent to the study area is presented below. The assessment was undertaken in accordance with the NSW Heritage Division guidelines *Assessing Heritage Significance* (NSW Heritage Office, 2001). Within the guidelines, an item is considered of State or local heritage significance, in the opinion of the Heritage Council of NSW, if it meets one of more of the six criteria that have been developed for completing significance assessments in NSW. The criteria encompass the four heritage values identified in the *Burra Charter* – historic, aesthetic, scientific and social. The 'Inclusion' and 'Exclusion' guidelines for each criterion provide the measures for assessing significance at the State or local level.

The location of the items identified is shown on Figure 5. Further information on identified items, including images, can be found in Appendix A.

7.1 Fence

7.1.1 Description

This item consists of a post and rail fence, located within the transport corridor area. The fence is not listed on a heritage inventory. The fence originally had two rails; however, these have subsequently been replaced by barbed and plain wire. There is evidence of a tree having been cut down to create either the posts for the fence or for a former slab hut, although the former is more likely. The fence terminates at what appears to be a property boundary and a stockyard of dimensions 10 m x 15 m. There are no internal divisions within the stockyard; it has a simple rectangular form. The post and rail fence forms the western side of the stockyard. The section of the fence to the south of the starting point has more replacement star pickets than the rest of its length.

7.1.2 Historical Context

There is no specific historical information available pertaining to this site; however, there is information available which pertains to post and rail fencing more generally.

Post and rail fencing was the most popular type of fence used in the early days of farming. This fencing method was characterised, as the name suggests, by the use of split posts and wooden rails. Much preparation work was needed prior to constructing a fence of this type. Logs were cut to a length of approximately 6 ft. (1.8 m) for the posts and 9 ft. (2.7 m) for the rails. They were then split into radial segments using steel wedges and may have required some shaping and trimming. The ends of the rails had to be shaped to fit the posts, probably with an adze. Posts were morticed (holes cut through them) to support the rails. This was done with a mortice axe or an auger. Fences usually had either two or three rails, depending on the type of animal to be restrained.

7.1.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of low historical significance on a local level as it provides an example of a popular type of fencing employed in the early, formative years of farming and settlement in the Upper Hunter region. Farming and agriculture are highly significant activities which have contributed greatly to defining the character of the local region, from the settlement of the area in the 1800s, through to the present day.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics and/or a high degree of technical achievement in the state or the local area.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance on a state or local level as it does not possess the potential to yield information that will contribute to or enhance our understanding of state or local cultural history.
Rarity SHR criteria (f)	This item does not possess uncommon, rare, or endangered aspects of state or local cultural history and so does not qualify as significant under this criterion.
Representativeness SHR criteria (g)	This item is not of representativeness significance as it is not important in demonstrating the principal characteristics of a class of state or local places or environments.

7.1.4 Statement of Significance

This fence is of local historical significance as it provides an example of a popular fencing style employed in the early, formative years of farming and settlement in the Upper Hunter region. Farming and agriculture are highly significant activities which have contributed greatly to defining the character of the local region, from the settlement of the area in the 1800s, through to the present day. It provides physical evidence of the former land use patterns.

7.2 Nissan Hut with Stockyard

7.2.1 Description

This site consists of one galvanised iron Nissan hut set on wooden stumps. The site is located within the proposed mining area and is not listed on a heritage schedule. It has an elevated wooden floor at the rear (south east) end, whilst the front section has no floor, and is more like a verandah. The rear of the hut has a weatherboard facing. There is a square, galvanised iron lean-to also at the rear of the hut which has a brick fireplace/barbeque with a rusted fire box. The floor of this lean-to is composed of rough rocks and blue metal.

There is evidence that water was once supplied to the internal sink of the Nissan hut. A pressure tank located in the south west corner may also have had a shower underneath. There are two in-ground tanks present at the site, both of which are concrete lined. The hut has double opening doors in front, and may also have been used for storage.

The hut may have been used as short term accommodation, but it does not appear to have been lived in long term.

A sheep shower – Sunbeam Cooper HH model – is located to the north east of the Nissan hut with associated runs. There are small yards present with link fencing.

7.2.2 Historical Context

In *The History of the Bowman Family* (2000), Stanley Mackenzie Bowman (known as Mac) states that he and his brother Robert built the Nissan hut with stockyard in 1950.

7.2.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of historical significance on a local level as it provides evidence of the rural development and use of the area. The adaptation of the Nissan hut form for use in farming life further contributes to the item's significance, demonstrating how a widespread architectural innovation was able to be modified and adapted to address the specific needs of the local area.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics and/or a high degree of creative or technical achievement in the state or local area.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance as it does not possess the potential to yield information that could contribute to or enhance our understanding of state or local cultural history.
Rarity SHR criteria (f)	This item does not possess uncommon, rare or endangered aspects of state or local cultural history and so does not qualify as significant under this criterion.
Representativeness SHR criteria (g)	This item does not demonstrate the principal characteristics of a class of state or local cultural place or environment.
Integrity	This item is in quite poor condition and the Nissan hut specifically, whilst still standing, has fallen into a state of disrepair. However, the item does still retain a moderate to high level of integrity.

7.2.4 Statement of Significance

The Nissan hut with stockyard is of local historical significance as it provides evidence of the rural development and use of the area. The association of the Nissan hut and stockyards and the farming context of the item further contribute to its significance, demonstrating how a widespread architectural innovation was able to be modified and adapted to address the needs of the local area.

7.3 Bowfield

7.3.1 Description

The site consists of a homestead, and three archaeological sites situated on the former Bowfield property. The archaeological sites are a c.1970s rubbish dump, the former site of the shearing shed complex and the site of a former house/cottage.

Homestead

A c.1928 house composed of Besser-type blocks and painted white with a red tile roof was erected on the property. The homestead is rectangular in form and has an internal organisation of rooms opening off either side of a central corridor. A verandah extends along the front (southern) side of the house and is supported on cast iron pillars with Corinthian capitals. The western elevation of the house has a brick chimney, which services a large fireplace in what is now a sitting room. The wooden floor boards are in excellent condition and of a very high quality dark wood. Approximately 5 m north west of the house is a brick foundation of a small room said to have been constructed of bottles laid on their side with the bases facing outwards.

c.1970s Dump

The c. 1970s dump predominantly consists of bottles, wire and other common household and farm refuse. The dump is located in the erosion gullies associated with Saddlers Creek. The dump is not considered to be of heritage significance, but is noted as being in the vicinity of the former shearing shed site.

Former Shearing Shed Site

In the vicinity of the dump there is an avenue of peppercorn trees, a concrete slab approximately 1.2 m x 2 m, local stone slabs and a sizable brick scatter. A concrete drain, not dissimilar to the sheep dip at the Nissan hut and an introduced hawthorn tree/shrub are also present. There is evidence of a sewer/water pipe in situ. To the south west is a concrete, rectangular slab, approximately 1.2 m x 2.5 m, with an outline of a square room evident. This could possibly indicate the previous presence of a slab building at this location. To the north west is a Neem tree.

Former House/Cottage

The site consists of a concrete foundation slab, approximately 8 m x 11 m. A pile of cream bricks is located to the south west. A small pressure tank is located in the north western area of the site.

7.3.2 Historical Context

Bowfield comprises part of George Blaxland's land grant, later part of W.H. White's property, while the Saddlers Creek portion is part of the grant of Arrowfield (approximately 2,600 acres in 1832) to George Bowman. The total area is approximately 5,000 acres. W.H. White sold his portion to Squire Bowman (of Balmoral) which he occupied, and the property subsequently became known as Bowfield. The property was later acquired by 'Mac' Bowman.

The original Bowfield Homestead was built c.1928. Allegedly there was also an old weatherboard house in the vicinity of the Bowfield Homestead.

Bowfield has since been purchased by Anglo American and is currently leased as a working pastoral property primarily for cattle grazing.

7.3.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	Bowfield is of local significance as a modest homestead of the late 1920s, indicating the continued development of the rural industry during the period.
Historical association significance SHR criteria (b)	This item is not of historical associative significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics or a high degree of creative or technical achievement.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of local research significance as it has the potential to yield information that could contribute to or enhance our understanding of local farming practices, in particular the construction and operation of a shearing shed considered in its time to be state of the art. The c.1970s rubbish dump is not considered to be of research significance.
Rarity SHR criteria (f)	This item does not qualify as significant under this criterion as it is not rare.
Representativeness SHR criteria (g)	This item is not of representative significance as it does not demonstrate the principal characteristics of a class of state or local cultural places or environments.

7.3.4 Statement of Significance

Bowfield Homestead is of local historical and research significance. The homestead is evidence of the continuing development of the rural economy during the 1920s. The former shearing shed and former house/cottage site is of archaeological research interest, having the potential to answer questions regarding shearing technology of the 1930s.

7.4 Plashett

7.4.1 Description

Plashett includes a homestead, a small residence and slab garage, a manager's residence, stables group, dairy group, a hayshed and the remains of a bridge. A comprehensive physical description of the elements is provided by Anne Bickford & Associates (1994) in the Conservation Management Plan for the property. A brief overview is provided below. Plashett is located between Drayton South and the Golden Highway.

Homestead

Plashett Homestead is a single storey ashlar sandstone building, constructed in a simplified Victorian Regency style in the late 1860s. It appears to have been built in two key phases, with the first being the construction of a sandstone house with attached kitchen wing (c. 1866), and the second being the addition of a large timber frame extension to the north west (twentieth century). While minor modifications and verandah infill additions have occurred, the main body of the house retains a good level of integrity.

The main house is simple and symmetrical in form, with a hipped corrugated iron roof, although there is evidence to suggest it was originally shingle-clad. An original kitchen wing, of similar construction, connects to the main house at the northern corner. The main body of the homestead is almost square in shape and is oriented towards the Golden Highway and the Hunter River, roughly to the south. The original kitchen was semi-detached on the north west corner of the house. An underground water reservoir is located in the L-shape formed by the main house and the kitchen. The house has two sandstone chimneys; one being located in the kitchen wing. A L-shaped verandah addresses the courtyard and well. The c.1866 house and kitchen wing have direct access to this.

Various additions have been made to the homestead, as detailed by Anne Bickford and Associates (1994). The large timber framed addition is clad in weatherboards and has a 'colorbond' corrugated steel roof with a lower pitch than the main house. There are two additional brick chimneys in this addition, and the exterior walls display a variety of different weatherboard profiles.

The interior of the homestead has a central, dual chamber hallway extending from the front verandah to the rear courtyard. The main rooms of the house lead from this hallway. The entry hall is divided by a semi-circular arch with decorative plaster mouldings. The formal end of the hall at the south west end of the house is wider whereas it becomes narrower and more informal to the rear (north east) of the house. The attached kitchen wing contemporary with the main house, is connected by a hallway. Most of the internal surfaces of the homestead are rendered and plastered. Ceilings are generally lath and plaster with decorative cornices and ceiling roses to the two front rooms. The floors are all hardwood boards and joinery is clear finished cedar, although some joinery has been painted over. All of the original fireplaces and their surrounds remain intact and in good condition. It is not difficult to determine the original paint schemes from the damaged areas of plastered wall. No original freestanding furniture is apparent inside the homestead.

The homestead is situated above a cellar. This cellar is stone-walled and accessed from the north west verandah of the homestead by a single run of well-worn stone steps. It is a coursed stone room comprising two chambers. The innermost section has no direct access to the outside, and is divided by a vertical timber slab wall with a door. It is entered through a doorway from the main chamber and receives indirect ventilation through an iron barred 'window'. The floors are red sandstone brick laid in a herringbone pattern and is generally in good condition. Significant deterioration of the face of the stone walls to a height of approximately 1,200 mm suggests flooding occurred. Several meat hooks hang from the beams of the ceiling.

The general layout of the homestead and garden, portray characteristics of the major garden style of the mid-nineteenth century.

Meat Shed

The Plashett meat shed consists of a vertical timber slab shed, approximately 5 m x 4 m, with a corrugated iron roof. It is situated approximately 52 m east of Plashett Homestead.

The wall of the shed consists of squared posts with infill vertical timber slabs. The slabs are axed split logs, butt jointed, end chamfered, dropped into a sleeper at the base and nailed to top plates. The door is on the western elevation and is constructed of tongue and groove boards screwed to a frame. While the door threshold is sandstone blocks, the floor itself is concrete (possibly render on bricks) inside perimeter sleepers. There is a series of c.1920-1950s fridges inside the meat shed. In the south east corner is an enclosed area with hooks and

a refrigerated section. A workbench is built into one corner, around which sheet iron is nailed across the joints between the slabs. Iron hooks with sheet iron 'rodent caps' also hang from the ceiling joists.

Since 1994, the shed has developed a significant lean to the south and it is currently structurally unsound; although this can be rectified. During the field survey, the shed was observed to be surrounded by farm equipment, including ploughs, farrows, and a windmill head. The former cottage site, located between the meat shed and Plashett Homestead, is believed to be the former structure seen in photographic records from 1975. The south western area is demarcated by sandstone worked blocks, while along the eastern side is a rough, sandstone cobbled area. Behind this lies an evident square depression. To the south east, a single post exhibiting the same joinery style as the 'Stockyard' assessed in Section 7.6 was identified. Farther to the south east is a sewerage outlet. Farther to the south east again are located gallows for meat slaughter and a small holding pen.

The overall condition of this building is fairly poor. In addition to the significant lean, there is evidence of termite attack to some of the remaining slabs and weatherboards. A ceiling joist has also collapsed.

Stockyards and Barns

To the north west, a sandstone and brick fireplace, two concrete slabs and two standing dressed poles with nails and joinery for fitting of crossbeams. There are two sets of concrete 'rails', the first just under 1 m high, set 800 mm apart and 1.2 m long. There is a second set similar in form but higher and set further apart. A brick path leads back to a stockyard, which has a small hut on the northern side. This may possibly have been a blacksmiths.

There is also a vertical slab barn with a corrugated iron loft accessed via external stairs. It has a pitched roof with a gable at loft access. There is a lean-to section on the northern and southern elevations. The southern section is divided into two compartments, which are open on the western side as a result of some slabs falling out. The floors are composed of a timber slab, with sandstone footings in some sections. There is a newer extension which forms a T-shape to the east. The concrete floor has been poured in sections with incised squares. The central section of the structure appears to have been used as a poultry house for a time. Each corner appears to be a stall of approximately 2 m x 2 m, with a trough built into the diagonal.

There is also a complex of yards built of bush timber located to the north, with some more recent fixes in dressed timber and galvanised iron. There is a stock shed to the west of the barn, which has a pitched roof, and is oriented east/west and open to the barn on the eastern side.

Dairy Complex

This item consists of a rectangular building, approximately 10 m long x 11 m wide. This structure is roofed with a centre gable which changes pitch to skillions on either side.

The dairy building has two distinct sections. One section contains 12 milking stalls, and the other an open area with two stalls, the purpose of which is unclear. The dairy can be entered from either the north or south through open paling gates. The structure of the building is a combination of round and squared posts, with rough sawn beams and rafters. Fixings include iron straps and bolts, wire and nails. In the dairy, the stalls are separated by split rails rather than being either tenoned and tied to the posts by wire, or housed into or bolted to the posts. There are large wooden troughs on the northern side, and metal on the south of the dairy building. No machinery is present. There is also an annex on the southern side of the structure, which may possibly have been used for storage purposes. The building overall is in quite poor condition.

To the south of the dairy building is a large pit, which is filled with metal, wire, machinery and car parts, c. 1970s/80s and later washers, dryers, fridges and other electronic appliances. Building debris is also present including blocks of sandstone. To the south west there is a partially in-ground concrete tank. To the west there is a concrete slab and a peppercorn tree. To the south west and in the next paddock is a 3 m x 3 m feed shed with a food trough on the eastern wall. This has a flat roof and a wood log foundation. It has the same concrete slabs with incised squares as barn extension.

The building is in poor condition; the bottom plate sleepers are rotten, and many slabs are missing or loose.

Hayshed

This structure has a pitched roof with a lean-to to the south. It has been constructed of dressed bush timber, and is essentially a high hayshed. It is structurally unsound, and has mostly collapsed. The roof is remnant in only a small portion. A wagon and plough was observed to have once been stored inside.

Workers Cottages Sites

At the workers cottage sites, a roughly rectangular formation of peppercorn trees was observed. A surface scatter comprising brown and clear moulded glass and refined earthenware was identified. One earthenware fragment had a green vine leaf pattern. Vertically embossed on the side of an intact bottle from the site was the: 'H. Jones and Co. Sydney' – 'Pick me up' registered trademark. This bottle is the property of //Pick me up condiment// Co Ltd. AGM on base. Brick and metal fragments were also noted in the vicinity. The scatter appears to continue into the adjacent horse paddock. The site is located to the north of a dam and the current manager's house.

7.4.2 Historical Context

Plashett was granted to James Robertson, of Renfrew, Scotland, in 1827. Robertson had arrived in the colony in 1822 accompanied by his wife, Anna Maria and six children.

On arrival, Robertson and his family lived in George Street, Sydney, and James established a jewellery and watchmaking business. On 24 August 1824, Robertson applied for an additional grant, which he was entitled to for completing a specified amount of improvements to his current land holdings. On 19 November, Governor Brisbane authorised a grant of 1,000 acres and reserved a further 1,000 acres as a purchase. James Robertson took up his 1,000 acre grant on the northern side of the Hunter River at Jerrys Plains in early 1827, naming the property Plashett after his father-in-laws property in Essex, England. The 1828 census lists Robertson as holding 2,000 acres of land (Plashett), on which 170 acres were cleared and 80 acres cultivated, with 5 horses, 250 cattle, and 800 sheep.

A map of the Hunter River Land Grants produced in October 1829 shows the Robertson 1,000 acres with a house built on it. This house is thought to be the slab cottage which remained standing until 1993, when it was reportedly demolished. On 15 September 1854, Plashett was advertised for sale in the Maitland Mercury, and was described as being "*an excellent Stone House, not finished inside, which was located near to where the old homestead stood.*" Plashett was purchased from Robertson in November 1854 by Joseph Pearse, who in turn transferred ownership to his son William Pearse in 1864.

When William Pearse died in 1927, a probate valuation describes the property as pastoral, with 18 grazing paddocks, three for cultivation, and a few others as well. Timber had been left in the paddocks to provide shade for the cattle, and this included kurrajong and box species.

Plashett remained in the Pearse family for 117 years, until 1971, when a portion of the property was transferred to Caroon Pty Ltd. In 1982, this portion was transferred to the Electricity Commission of New South Wales (Pacific Power). In that same year, Lot 2 DP 616024, which comprised half of the land owned by Pacific Power, was transferred to Hunter Valley Energy Coal Pty Ltd. The property was purchased in 2000 by Anglo American. Plashett remains a pastoral property, managed now on behalf of Anglo American.

7.4.3 Significance Assessment

The significance assessment undertaken by Anne Bickford & Associates (1994) determined the homestead was of regional significance. As this level of significance was abolished with changes to the Heritage Act 1977 in 1998 it is necessary to reassess the significance of Plashett Homestead as either of local or State significance. Developing a significance assessment for a State significant item is an extensive process, which is considered to be beyond the scope of this assessment as Plashett Homestead is not directly impacted by the Project. The significance assessment below is an indication of the significance when applying the SHR Criteria.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is likely of State historical significance as it is an almost intact farming complex of the mid-nineteenth century period in the region.
Historical association significance SHR criteria (b)	This item is of local historical associative significance due to its association with the eminent local pioneering Robertson and Pearse families.
Aesthetic significance SHR criteria (c)	This item is of aesthetic significance on a local level, as the homestead has a sophisticated building design set in a carefully conceived garden. It is also of potential State significance, however, further comparative research would be required to confirm this.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item has excellent research potential at a State level, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived at that time.
Rarity SHR criteria (f)	This item is rare on a State level, being an intact example of a rural 1860s homestead.
Representativeness SHR criteria (g)	This item is of local representative significance as it demonstrates the principal characteristics of a mid-nineteenth century farm complex. It is potentially of State significance, however further comparative research would be required to confirm this.

7.4.4 Statement of Significance

Plashett Homestead is likely of state historical significance as it is a rare, almost intact survivor of the mid-19th century period in the region. The item is also of aesthetic significance, as the homestead has a sophisticated building design set in a carefully conceived garden. The property is of local significance thanks to its association with the eminent local pioneering Robertson and Pearse families. The property has excellent research potential, as it is likely to be able to reveal information which could contribute to an understanding of the conduct of a major mid-19th century pastoral property and of the manner in which wealthy pastoralists lived at that time.

7.5 Edderton

7.5.1 Description

Edderton is located on Edderton Road and the north bank of Saddlers Creek. The homestead is located 1 km north of the Project Disturbance Boundary. Edderton consists of a large homestead, two weatherboard houses, farm buildings, tank stand, meat house and a small hut. These are discussed below. Edderton Homestead is listed on the Muswellbrook LEP and is owned by Hunter Valley Energy Coal (HVEC).

Edderton Homestead

The homestead is a substantial single storey, timber framed, Federation style bungalow, with weatherboard cladding and a corrugated iron roof. The homestead was constructed in the early twentieth century, c. 1908, and is today set in a curtilage that is enhanced by a number of associated extant outbuildings and a garden.

The homestead has a T-shaped floor plan, and the structure has a complex roofline of double pitch with a separate verandah. The apex has a circular air vent and is filled with painted shingles. Together with the complex roofline, these elements are suggestive of the 'Arts and Crafts' style, common during the late nineteenth and early twentieth century, around the time the homestead was built.

The front elevation of the structure has a centred, double arched door and two symmetrical bay windows. These are possibly later additions, as there is another door with an arched fan light located to the left of the main, central door. This door is not consistent with the symmetry of the rest of the facade of the house, indicating that the layout has been modified over time.

The verandah may also be a later addition to the homestead, as it is constructed on a base support of red brick. Furthermore, the U-shaped rear of the residence has an enclosed verandah, which was renovated during the

1970s. It would appear that there were also other, earlier renovations to the residence, as the current tenants located a fireplace inside that does not align with the chimneys of the north western room.

Outbuildings

The outbuildings of the Edderton Homestead Complex include a weatherboard meat shed, a rubble tank stand with wooden storage underneath, and three weatherboard farm storage sheds with associated stockyards.

A weatherboard house situated on the hill behind Edderton Homestead over looks Saddlers Creek, the proposed mine site, and Bowfield. This house is currently being renovated for occupation.

7.5.2 Historical Context

Edderton property was originally part of the historic Arrowfield estate. The property was subsequently purchased by a Mr Ryder, and the Edderton Homestead was built in 1908. Ryder named the property after the Edderton Meat Works in Brisbane, one of his business interests. It was then acquired by a Mr Osborne.

The property was later purchased by Hector Cameron McDonald in around 1910 and then passed on to his son Douglas. Originally McDonald ran about 16,000 sheep and today a six stand galvanized iron shearing shed remains, together with the old shearers quarters. After some time sheep were replaced by cattle as a result of the damage caused to the land. The homestead was extended by the McDonalds from its original four rooms. Following WWII, the Edderton property steadily became less economically viable and was gradually broken up.

Further historical details are provided in Section 4.3.5.

7.5.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the area. The item is important in the course of local history, as farming and agricultural activities were highly significant in defining the growth and development of the local area from the nineteenth century through to the present day.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a local or state level as it does not demonstrate a strong or special association with the life or works of a person, or group of persons, of significance in the course of local or state history.
Aesthetic significance SHR criteria (c)	This item is of local aesthetic significance as it demonstrates the aesthetic characteristics of the 'Arts and Crafts' style of the late nineteenth and early twentieth century incorporated into a rural residential structure.
Social significance SHR criteria (d)	This item is not of social significance on a local or state level as it does not possess a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of research significance on a local level as it possesses the potential to yield information that may contribute to an understanding of rural farming life in the local area in the early twentieth century, and how it has evolved over the decades through to the present day.
Rarity SHR criteria (f)	This item is not considered to be rare as it does not demonstrate uncommon, rare or endangered aspects of local or state cultural history.
Representativeness SHR criteria (g)	This item is of representative significance on a local level as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the area.

7.5.4 Statement of Significance

The Edderton Homestead Complex is of local historical and representative significance as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the local area. It is also historically significant for its association with the expansion of the wool industry in the Upper Hunter, and it has a strong association with pastoralism and the growth of sheep farming in the Muswellbrook area. Furthermore, the Edderton Homestead Complex is of research significance on

a local level as it possesses the potential to yield information that may contribute to an understanding of the scale and nature of wool growing carried out on a major regional property around the turn of the century.

The Edderton Homestead itself is also of local aesthetic significance, as its design is unique in the region employing a range of details from different architectural styles in a most accomplished way.

7.6 Stockyard

7.6.1 Description

The stockyard is located 2.3 km from proposed mining area. It is not listed on a heritage schedule. The stockyard consists of a stock run constructed from bush timbers with cut-in joints. The stock run is L-shaped in plan. Telephone insulators have been re-used as electrical fence insulators.

7.6.2 Historical Context

There is no specific historical information available for this site.

7.6.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance as it is associated with farming activities which have defined the development of the local area over an extended period of time.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a local or state level as it does not possess a strong or special association with the life or works of a person, or group of persons, of importance in local or state cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a local or state level as it does not demonstrate aesthetic characteristics and/or a high degree of creative or technical accomplishment on a local or state level.
Social significance SHR criteria (d)	This item is not of social significance on a local or state level as it does not possess a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance on a local or state level as it does not possess the potential to yield information that could contribute to or enhance our understanding of local or state cultural history.
Rarity SHR criteria (f)	This item is not considered to be rare as it does not possess uncommon, rare or endangered aspects of local or state cultural history.
Representativeness SHR criteria (g)	This item is of local representative significance as it is a good, largely intact example of a stockyard which demonstrates the key characteristics of a stock run typical of those used in the local area.

7.6.4 Statement of Significance

The stockyard is of local historical significance as it is associated with farming activities which have defined the development of the local area over an extended period of time. It is also of local representative significance as it is a good, largely intact example of a stockyard which demonstrates the key characteristics of a stock run typical of those used in the local area.

7.7 Strowan

7.7.1 Description

Strowan is located on the southern side of the Golden Highway, opposite Plashett Homestead and is approximately 4 km south of the proposed mining areas. Strowan Homestead is listed on the RNE and the Singleton LEP.

Strowan Homestead was designed by O.H. Lewis, the son of Mortimer Lewis, and was built in 1860 in an early Victorian style (Driscoll 1989:33). It consists of a single storey main section constructed from rendered handmade

bricks, shuttered French windows, flagged verandah, cast iron columns and trellis, corrugated galvanised iron roof (originally a shingled roof), a rear, two storied sandstone kitchen and loft (for storage).

Strowan Homestead is of similar symmetrical design to Plashett Homestead, with a central door flanked by side lights and two sets of French doors. The windows and French doors have arched tops. The French doors were also observed to have shutters on them. The house has a simple, pitched roof with a separate verandah. It is missing the gable over the front entry that Plashett Homestead has. The sandstone verandah pairing is in quite poor condition. The house is painted white and has ornate, metal verandah supports.

Internally the homestead is more resolved than Plashett Homestead, mainly due to a lack of unsympathetic additions. All of the rooms have fireplaces. The entry hall is tiled in marble and slate diamonds. These are probably a later insertion over floorboards. Multi-coloured diamond side lights around the windows are also probably later insertions. There is evidence of a rear addition to the house that has been recently removed. In the rear room a bathroom/toilet has been inserted. This is entirely contained and could be removed without damage to the fabric of the homestead. While in relatively good condition, there is evidence internally of rising damp.

Outbuildings associated with the homestead in 1980 included stables, a hayshed, a buggy shed, and a workman's cottage. These structures were of ironbark slab construction.

There was also said to be another structure, similar to the Arrowfield Cottage, situated behind Strowan Homestead that has since been relocated to Pokolbin as a church. To the south west is a stable/barn, constructed from well-dressed vertical slabs, with original feed troughs and a wooden floor. The over-loft of the barn can be accessed via external stairs on the northern side. During the field inspection the loft area was not inspected as the stairs were deemed to be unsafe. Despite this, this structure is overall in very good condition.

7.7.2 Historical Context

The land was originally granted to James Robertson in 1825, which he named Strowan after the ancient barony of Clan Robertson. Strowan remained in Robertson hands for 30 years.

In 1840, James Robertson transferred Strowan to his son John, who had joined his father on the property in 1835. John was a victim of The Depression and in 1843 was declared bankrupt and Strowan was sequestered. Eventually the property reverted to James and his wife. They then sold it to George Bowman in 1854. George made his sixth son, James, manager of Strowan. James would later become the owner of this property as well. The property was subsequently passed to Walter Bowman, and on his death, it was inherited by his nephews, brothers Robert and Mackenzie. On dissolution of the partnership, Robert Bowman became the sole owner of the property. The 'chief glory' of Strowan during the Bowman years was its Clydesdale stud. Strowan remained in the Bowman family for more than 130 years, until it was purchased by the Arrowfield Group Ltd in 1986.

Strowan was listed on the Register of the National Estate in 1978.

Further historical details are provided in Section 4.3.4.

7.7.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of national historical significance as is a rare, almost intact surviving homestead of a mid-nineteenth century in the region.
Historical association significance SHR criteria (b)	This item is of local historical associative significance due to its association with eminent local pioneering and business families, including the Bowman family.
Aesthetic significance SHR criteria (c)	This item is of local aesthetic significance, being a well-proportioned and elegantly executed house of the 1860s.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item has very good research potential, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived at that time.
Rarity SHR criteria (f)	This item does not meet this criterion as it is not rare.
Representativeness SHR criteria (g)	This item is of local representative significance as it provides a largely intact, early Victorian style homestead in a regional context.

7.7.4 Statement of Significance

Strowan Homestead is of national historical significance as a rare, almost intact surviving homestead of a mid-nineteenth century in the region. The property is also of local historical associative significance due to its association with eminent local pioneering and business families in the Upper Hunter region. Strowan Homestead has very good research potential, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived during that time. Furthermore, the homestead is of local representative and aesthetic significance as it provides a largely intact, early Victorian style homestead in a regional context and retains a high level of integrity.

7.8 Arrowfield Cottage

7.8.1 Description

Arrowfield is located south of the Golden Highway and 4.4 km south of proposed mining areas. The historical component of Arrowfield consists of a two storey sandstone cottage, which has been renovated for use as a guest house. The structure is not the original homestead, and may originally have been used as the stables. There is a cellar underneath the building, with chains on the walls. These do not appear to be substantial enough to restrain convicts though, as has been suggested.

The original Arrowfield Homestead is said to have been located behind (to the south) this cottage. A memorial in the form of a bathtub with a plaque marks the location of the former homestead. The view from the cottage and former homestead site to the mine location is limited by local trees and the range.

Note: The former winery named Arrowfield on the Golden Highway does not have heritage buildings associated with it.

7.8.2 Historical Context

Arrowfield was acquired by George Bowman in 1841. His son John Woodward Bowman was his tenant. John ran cattle and sheep, and farmed feed and cash crops at Arrowfield (Driscoll 1989).

Arrowfield was later sold to William Rupert Raleigh, who had been leasing and working the property. Raleigh then sold the property to brothers William and Frederick Albert Moses in April 1912. They operated it as an outstandingly successful thoroughbred stud, and it was put up for auction on the 12 April 1924.

In July 1925, Arrowfield was purchased by William Pearce Bowman in the name of two of his underage sons – Major Millington and Ray Millington Bowman, however it was his third son, Tristan, who eventually became the sole owner. In 1946, Tristan sold the property to John Norman Lawson of Muswellbrook.

When Lawson died in 1956, his sons John Gordon and Rodney Beaumont inherited the property, which they used for dairying, cattle breeding, and ewes for meat.

In the 1970s, vines were planted on the property and it appears that Carpenter's Ltd acquired and set about planting the grapes in partnership with Penfold Wines through Francis Investments Pty Ltd. Carpenter's Ltd eventually bought out Francis Investments Pty Ltd and established their own winery, as opposed to just selling grapes. As they were not profitable, the focus was changed to white wine production, and the property was taken over once again, this time by Griffin Holdings.

Further historical details are provided in Section 4.3.3.

7.8.4 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance due to its strong association with the history and development of pastoralism and particularly horse breeding in the Upper Hunter region.
Historical association significance SHR criteria (b)	This item is of historical association significance on a local due to its association with the eminent local pioneering Bowman family, and other key influential pastoral and business families in the region.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it is not an important demonstration of aesthetic achievements and/or a high degree of creative or technical achievement.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area.
Technical/Research significance SHR criteria (e)	This item is of technical/research significance on a local level as it possesses the potential to contribute to and enhance our understanding of the nature and history of pastoralism, and its development and evolution in the Muswellbrook area from the nineteenth century through to the present day.
Rarity SHR criteria (f)	This item does not meet this criterion as it is not rare.
Representativeness SHR criteria (g)	This item is not of representative significance on a state or local level as it does not demonstrate the principal characteristics of a class of cultural place in the state or region.

7.8.5 Statement of Significance

Arrowfield Cottage is of local historical significance due to its strong association with the history and development of pastoralism and particularly horse breeding in the Upper Hunter Region. This item is further of historical association significance on a local level due to its association with the eminent local pioneering family of the Bowmans, and other key influential pastoral and business families and figures in the region. This item is also of technical/research significance on a local level as the house and former homestead site retain a good level of integrity and possess the potential to contribute to and enhance our understanding of the nature and history of pastoralism and horse breeding, and their development and evolution in the Upper Hunter region from the nineteenth century through to the present day.

7.9 Woodlands Homestead

7.9.1 Description

Woodlands is located south of the Golden Highway, approximately 5.5 km south of proposed mining areas. The homestead sits behind a ridge, which prevents views towards the Project area.

The item consists of a dressed sandstone house in Colonial Georgian style, oriented to the south. The exterior consists of stone walls with metal roofing. Simple sandstone columns support the older, front verandah, whilst timber columns support those of a subsequent extension. There are seven symmetrical French doors across the front of the residence, with the central door being flanked by two small rectangular windows. To the north west side of the house is a sandstone set of outbuildings, which form part of an L-shape design. Behind the main house is a small, square kitchen, which was renovated in 2009. Today, there are no original internal fittings in the main building.

7.9.2 Historical Context

Woodlands was the name of a small land grant of 960 acres on the Goulburn River given to James Arndell, the son of First Fleet surgeon Thomas Arndell, in 1824. The property was held by the Arndells until c. 1860, when it was bought from them by James White, who passed it on to his son H.C. White in 1868. It was used by the Whites as a Shorthorn cattle stud, but was also used for thoroughbred horses. In 1908, the property was subdivided and the homestead lot passed to E.G. Blume, who made it famous as a thoroughbred stud. He subsequently sold it to A.E. Grace of Grace Bros., and it then passed from him to E. McManamin who ran sheep in the area.

From 1971, when Lord Derby bought it, Woodlands was developed as part of the largest private racing enterprise in Australasia according to its then owners, Inghams Enterprises. The homestead is said to date from the early decades of the nineteenth century.

The item is currently owned by Darley Australia – HH Sheikh Mohammed bin Rashid Al Maktoum's global horse breeding operation.

7.9.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of historical significance on a state level, as the substantial 1830s dwelling sits in outstanding condition alongside the later residence, indicating the earliest phase of Hunter Region development.
Historical association significance SHR criteria (b)	This item is of associative significance on a local scale as it is associated with eminent pioneering and business families of the Muswellbrook area.
Aesthetic significance SHR criteria (c)	This item is of State significant aesthetic value. It is a superbly sited and proportioned building with unique and unequalled views of the Hunter River. The renovations undertaken are sympathetic and do not detract from the significance of the item.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of scientific significance as the property has unique potential to contribute to and enhance our understanding of thoroughbred horse breeding and cattle raising over a period of a hundred and fifty years, and to the lifestyle of the wealthy initial settlers of the Hunter Region land.
Rarity SHR criteria (f)	This item is rare on a regional level.
Representativeness SHR criteria (g)	This item does not meet this criterion as it does not demonstrate the principal characteristics of a class of cultural places or environments.

7.9.4 Statement of Significance

Woodlands Homestead is of historical and aesthetic significance at State level, as the substantial 1830s dwelling sits in outstanding condition alongside the later residence, indicating the earliest phase of Hunter Region development. The item is also of associative significance on a local scale as it is associated with eminent pioneering and business families of the Muswellbrook area. Scientifically, the property is also of State significance for its rare potential to reveal information which could contribute both to an understanding of thoroughbred horse breeding and cattle raising over a period of a hundred and fifty years, and to the lifestyle of the wealthy initial settlers of the Hunter Region.

7.10 Randwick Homestead

7.10.1 Description

Randwick Homestead is located on the Woodlands Estate and is approximately 3.2 km south of proposed mining areas. Randwick Homestead consists of a weatherboard house oriented to the west. The main house has a brick chimney and semi-circular roof vents. The front door has lead-light side windows. Extensions to the west and north forms a T-shaped plan.

7.10.2 Historical Context

There is no specific historical information available pertaining to this item.

7.10.3 Significance Assessment

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Historical association significance SHR criteria (b)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Aesthetic significance SHR criteria (c)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Social significance SHR criteria (d)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Technical/Research significance SHR criteria (e)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Rarity SHR criteria (f)	There is currently insufficient information to assess Randwick Homestead against this criterion.
Representativeness SHR criteria (g)	There is currently insufficient information to assess Randwick Homestead against this criterion.

7.10.4 Statement of Significance

There is currently insufficient information to accurately assess Randwick Homestead.

7.11 Muswellbrook - Jerrys Plains Landscape Conservation Area (MJPLCA)

The National Trust of Australia is a community based non-government organisation. It commenced listing Landscape Conservation Areas on its register in 1975 and there are now over 120 such listings on the Trust Register. Landscape Conservation Areas are selected on the basis of displaying exceptional natural and cultural values. The MJPLCA was listed on the National Trust Register in August, 1984.

The following description and assessment for the MJPLCA is taken from the National Trust Register listing (Appendix B).

7.11.1 Description

“The area begins along the Hunter River a short distance south of Muswellbrook and comprises the long sweep of valley floor extending south-westerly some 25 km to the junction of the Goulburn River at Denman. The section of the Goulburn River Valley below Sandy Hollow is included. The area extends some 25 km south-easterly down the Hunter Valley to Jerrys Plain Ridge. In this lower section, the valley widens and embraces several major tributaries. The escarpment of Wollemi National Park comprises the southern boundary of the area.”

7.11.2 Values

“Aesthetic: the lush cultivated alluvial flats of the central Hunter and lower Goulburn Rivers present a magnificent view, with the wide valley floor of majestic scale bounded low hills to the east and west and rugged escarpments of Wollemi National Park to the south.

Social: the area contains many of the high quality properties and large pastoral estates which contribute to the great rural wealth of the Hunter Valley.”

7.11.3 Statement of Significance

A statement of significance is not provided with the National Trust Register listing.

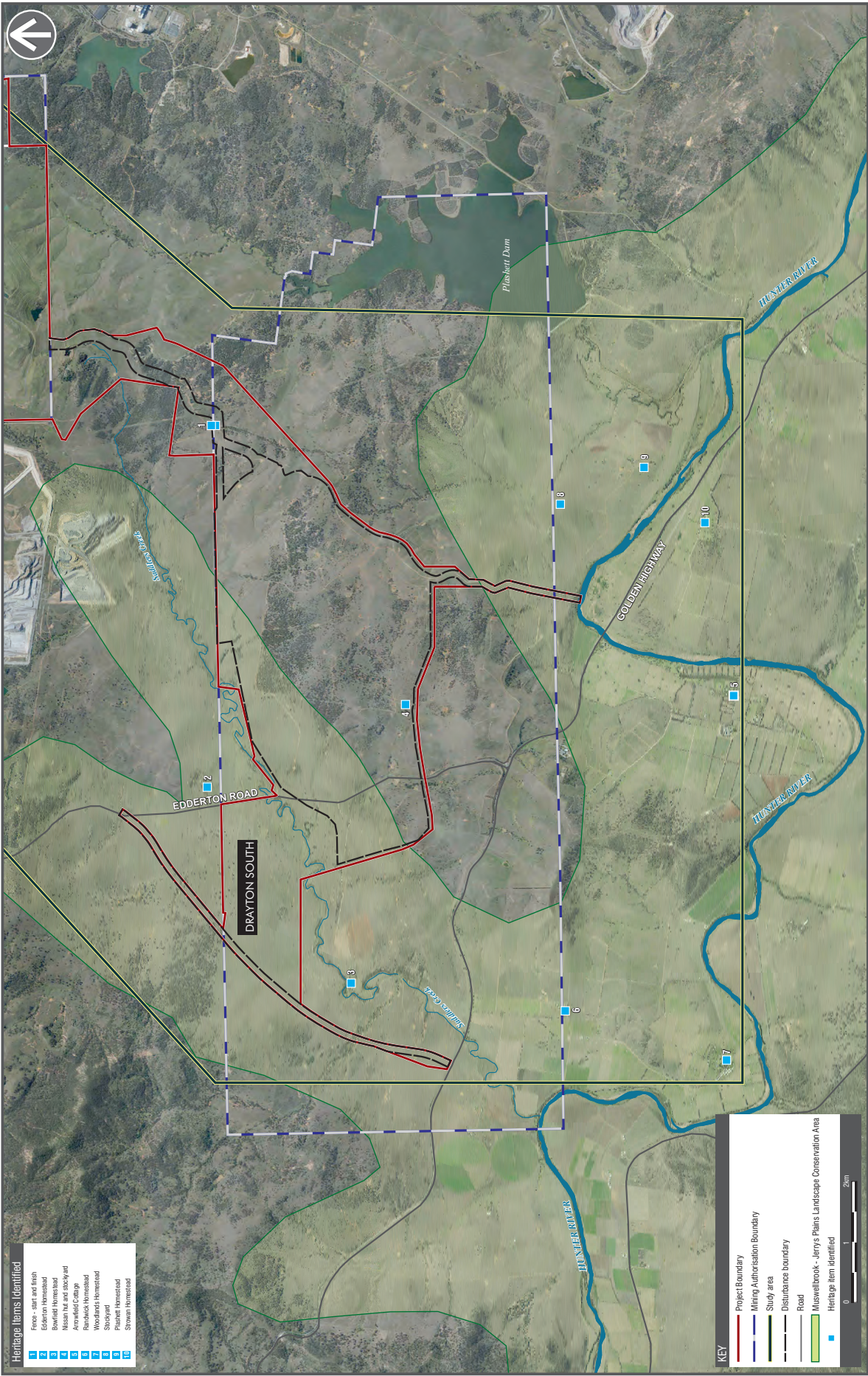


FIGURE 5

8.0 Impact Assessment

8.1 Project Construction Details and Impacts

As outlined in Section 1.0, Anglo American is seeking Development Consent to enable mining to continue at Drayton Mine through the development of open cut mining within Drayton South area while continuing to utilise the existing infrastructure, equipment and workforce from Drayton Mine.

In addition to areas of open cut mining, surface infrastructure consisting of a transport corridor, mine site facilities, water management infrastructure, and the realignment of Edderton Road will be undertaken. Below is a discussion of each proposed activity and its impact on historic heritage items and landscapes within the study area.

8.2 Direct Impacts

8.2.1 Open Cut Mining and Project Infrastructure

The Project seeks approval for open cut mining, overburden emplacement areas and the construction of infrastructure. Historic heritage items located within the proposed open cut disturbance boundaries, overburden emplacement areas and infrastructure areas will be directly impacted by mining-related earthworks.

Two historic heritage items assessed as of local significance and portions of two landscape areas will be impacted by the Project. These include:

- the fence;
- the Nissan hut with stockyard;
- a portion of the Muswellbrook Landscape Conservation Area; and
- a portion the Drayton South Cultural Landscape.

8.2.1.1 Fence

The fence is situated within the proposed Transport Corridor which will include construction of a haul road. The construction of this infrastructure will result in the destruction of this item. However, as it only meets one significance criteria at a local level, the significance of the impact is considered 'minor negative' in accordance with Heritage Branch guidelines (NSW Heritage Office, 2002).

8.2.1.2 Nissan Hut with Stockyard

The Nissan hut with stockyard is situated within the proposed open cut Whynot pit. Open cut mining within this area will result in the destruction of this item. Similar to the fence, the Nissan hut with stockyard only meets one significance criteria at a local level suggesting that the significance of the impact is considered 'minor negative'.

8.2.1.3 Muswellbrook-Jerrys Plains Landscape Conservation Area (MJPLCA)

A small portion of the non-statutory listed MJPLCA located adjacent to Saddlers Creek will be directly impacted by the Project. As discussed in Section 7.11, the Conservation Area is listed for historical and social reasons, as well as for its aesthetic values. The impacted area comprises a small, approximately 353 ha, portion of the overall 67,447 ha MJPLCA representing approximately 0.5% of its total area (Figure 5). Topographically, the impacted portion is located in an area that is not readily visible from vantage points within the other sections of the MJPLCA due to natural ridgelines. Furthermore, the impacted portion is not directly associated with any of the key features identified in the listing as having social or aesthetic values i.e., the alluvial flats of the Hunter and Goulburn Rivers, Wollemi National Park or specifically mentioned large pastoral estates.

Management recommendations provided within the listing recommend '*Open cut mining of the alluvial river flats should not be permitted. Should it be necessary for open-cut mining of the non-alluvial lands, the aesthetic and social values of the Classified area should be recognised in the mining operation and the rehabilitation programme*'. The Project abides by these recommendations in that there will be no mining on the Hunter River or Goulburn River alluvial flats and recommendations are made within this report that the mine rehabilitation strategy considers reinstatement of the impacted portions of the landscapes to its existing character post-mining. In addition, the aesthetic and social values of the area have been recognised and the reduced disturbance footprint of the Project, which now sits behind natural ridgelines, ensures the Project is not visible from the south and south-east where the key values of the MJPLCA have been identified.

8.2.1.4 Drayton South Cultural Landscape

The cultural landscape assessment completed in Section 6.0 identified that land within the Disturbance Boundary has historical and aesthetic values. The historical values are related to pastoralism and the long-term use of the land for grazing cattle while it was part of the Plashett estate and later (though no specific built heritage items have been identified within it related to Plashett estate). The area's aesthetic values are related to its views of rolling hills and Saddlers Creek. Both these historic and aesthetic values will be partially impacted by the Project where they are associated with land within Project Disturbance Boundary. When assessing the degree of impact to these values from the Project, the broader environmental context of the area should be considered. Large areas of intact pastureland are found adjacent to the Project Disturbance Boundary, with particularly high quality lands found to the south associated with the Hunter River and the Coolmore and Woodland Horse Studs, themselves part of the thoroughbred horsebreeding cultural landscape identified by GML (2013). These pasturelands will not be directly impacted by the Project which suggests that the area's historic pastoral values will be retained in these areas. Nonetheless, impacts to the disturbance area's aesthetic values i.e., views of rolling hills within the Saddlers Creek setting will occur as a result of the Project, though these are now reduced due to the modified mine plans. Finally, the existence of two large coal mines, Drayton and Mt Arthur, adjacent to the northern Disturbance Boundary attest to mining being a long-term historic land use in the region, suggesting that mining within the Project Boundary would largely be consistent with past and present local land use.

8.3 Indirect Impacts

8.3.1 Blasting

Blasting will be undertaken as part of the operation of the mine. As a result of this activity, associated ground vibrations and overpressure have the potential to impact the structural integrity of select heritage items identified within and surrounding the study area.

The acoustic impact assessment undertaken by Bridges Acoustics (2015) provides a blasting impact assessment for heritage items identified within and surrounding the study area. The impact assessment reported the recommended vibration and overpressure criteria as outlined in the *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (Blasting Guideline) (ANZECC, 1990) for each item identified but not directly impacted (Table 3).

Table 3 Recommended vibration criteria

Heritage Item	Recommended Vibration Criteria (mm/s)	Recommended Overpressure Criteria (dBL)
Strowan Homestead	5	115
Arrowfield Cottage	5	115
Woodlands Homestead	5	115
Randwick Homestead	5	115
Bowfield Homestead	10*	120*
Plashett Homestead	10*	120*
Edderton Homestead	10*	120*

*Criteria agreed to with land owner

Bridges Acoustics (2015) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria at any identified heritage items. Table 4 outlines the predicted blasting impacts at each heritage item.

Table 4 Predicted blasting impacts

Heritage Item	Distance to Heritage Item (km)	Ground Vibration (mm/s)				Overpressure (dBL)			
		Maximum Instantaneous Charge (MIC) kg				Maximum Instantaneous Charge (MIC) kg			
Strowan Homestead	4.1	0.2	0.4	0.5	0.7	95	98	99	100
Arrowfield Cottage	4.5	0.2	0.3	0.5	0.6	94	96	98	99
Woodlands Homestead	5.5	0.1	0.2	0.3	0.4	90	93	95	96
Randwick Homestead	3.3	0.2	0.4	0.6	0.7	95	98	100	101
Bowfield Homestead	1.8	0.9	1.6	2.2	2.8	106	109	110	112
Plashett Homestead	3.5	0.3	0.5	0.7	0.9	97	100	101	103
Edderton Homestead	1.0	1.7	3.0	4.2	5.3	111	114	115	117

8.3.2 Visual

The Project will modify the existing visual environment and potentially the visual aesthetics of the landscape surrounding identified heritage items. The visual impact assessment undertaken for the Project by JVP Visual Planning and Design (2015) for the Project assessed the likely visual impacts to the landscape as a result of the Project. As part of the assessment, the visual study area for the Project was divided into four main sectors being the Northern, Eastern, Southern and Western Sectors, with the visual impacts of each sector assessed separately. Each of these sectors is reviewed below considering potential impacts to identified heritage items (Table 5).

It should be noted that the mine plan and Project Disturbance Boundary are defined by ridgelines nominated in the 'Drayton South Coal Project PAC Review Report' issued in December 2013 and the Project will remain behind these ridgelines. This at least doubles the buffer setback distance from the Coolmore and Woodlands thoroughbred horse studs and is at least 2 km from the horse stud operational areas. It also ensures that mining is restricted to the north of two significant ridgelines which will prevent any direct views to the Project from the horse studs primary areas of operations.

Table 5 Visual impact assessment

Item	Location	Viewing Sector	Comment	Impact
Strowan Homestead	4.1 km south of main Disturbance Boundary	Southern	Views of the proposed mine from the Strowan property will not be available due to mine being set behind the PAC nominated ridgeline.	None
Arrowfield Homestead	4.5 km south of main Disturbance Boundary	Southern	Views of the proposed mine from the Arrowfield property will not be available due to mine being set behind the PAC nominated ridgeline.	None
Woodlands Homestead	5.5 km south of main Disturbance Boundary	Southern	Views of the proposed mine from the Woodlands property will not be available due to mine being set behind the PAC nominated ridgeline.	None
Randwick Homestead	3.3 south of main Disturbance Boundary	Southern	Views of the proposed mine from the Randwick property will not be available due to mine being set behind the PAC nominated ridgeline.	None
Plashett	3.5 km south of main	Southern	Views of the proposed mine from	None

Item	Location	Viewing Sector	Comment	Impact
Homestead	Disturbance Boundary		the Plashett property will not be available due to mine being set behind the PAC nominated ridgeline.	
Bowfield Homestead	1.8 km west of Disturbance Boundary	Western	Views of the proposed mine will be available from the Bowfield property	Views from Anglo-American owned Bowfield property will be impacted
Edderton Homestead	1 km north of Disturbance Boundary	Northern	Viewing locations within the Northern Sector have been identified as having outlooks over the northern overburden emplacement area and the mine site facilities	Views from Edderton property will be impacted
Muswellbrook Landscape Conservation Area	Within the Disturbance Boundary	Northern	Views of the proposed mine will be available from some locations within the Muswellbrook Landscape Conservation Area	View to and from the Muswellbrook Landscape Conservation Area will be partially impacted.
Drayton South Cultural Landscape	With the Disturbance Boundary	All sectors	Views of the proposed mine will be available from some locations within the Drayton South Cultural Landscape	View to and from the Drayton South Cultural Landscape will be partially impacted

Key points from the visual impact assessment:

- There will be no visual impacts to Strowan and Plashett Homesteads.
- There will be no visual impacts to the Woodlands Homestead and Arrowfield Cottage as the Project is now screened entirely behind natural ridgelines;
- There will be no visual impacts to the Thoroughbred Cultural Landscape identified by GML (2013) associated with the Coolmore (Strowan) and Darley (Woodlands) studs as the Project is now screened entirely behind natural ridgelines.
- There will be some visual impacts to the Edderton Homestead (HVEC owned) and Bowfield Homestead (Anglo American owned) as a result of the Project. These visual impacts will be reduced as rehabilitation is completed; and
- Views to and from parts of the MJPLCA and the Drayton South Cultural Landscape will be impacted by the Project. These visual impacts will be reduced as rehabilitation is completed.

8.4 Avoidance

The following heritage items will not be impacted, either directly or indirectly, by the Project, including:

- The stockyard, which is situated outside and to the south of the Project Disturbance Boundary;
- Strowan, Woodlands, Arrowfield, Plashett Homesteads, which are situated outside and to the south west of the Project Disturbance Boundary; and
- Randwick Homestead, which is located outside and to the south west of the Disturbance Boundary.

There will be no direct or indirect impacts to the heritage items outlined above and therefore no impact on their significance. As such no mitigation or management measures have been proposed in Section 9.3.

8.5 Project Impact Summary

A summary of impacted heritage items is provided in Table 6.

Table 6 Summary of impacted heritage items

Item name	Significance	Location	Summary of impact(s)
Items to be demolished/destroyed			
Fence line	Local	Within the proposed transport corridor	Fence line would be demolished
Nissan Hut and Stockyard	Local	Within the proposed Whynot pit	Nissan Hut and Stockyard would be demolished
Items partially impacted			
Edderton Homestead	Local	1 km north of the overburden emplacement area	Visual impacts during mining. Reduced following rehabilitation
Bowfield Homestead	Local	1.8 km from proposed Blakefield pit and overburden emplacement area.	Visual impacts during mining. Reduced following rehabilitation
Muswellbrook Landscape Conservation Area	N/A	Within Project Disturbance Boundary	Direct and visual impacts
Drayton South Cultural Landscape	N/A	Within Project Disturbance Boundary	Direct and visual impacts

9.0 Management and Mitigation

9.1 Statutory Requirements

As indicated in Section 1.0 this non-Aboriginal heritage assessment forms part of an EIS being prepared by Hansen Bailey to support an application for Development Consent under Division 4.1, Part 4 of the EP&A Act.

As an SSD Project, impacts to historic heritage items are managed under Section 89C of the EP&A Act. For these developments, Section 89J of the Act specifies an approval is not required to interfere with places or buildings protected by a heritage protection order or excavation permit under Section 139 of the *Heritage Act 1977*.

9.2 Management Principles

Where feasible, engineering design measures have been incorporated to avoid impacts, however, where these are unavoidable, mitigation and management measures for each impact are proposed to reduce the magnitude of the impacts as far as practicable.

9.3 Management Recommendations

9.3.1 Directly Impacted Items

The fence and Nissan hut with stockyard are located within the Project Disturbance Boundary. Impacts to these items are considered unavoidable due to the nature of the Project. As such, given their age and limited historical significance, it is recommended that a photographic archival recording be undertaken prior to impacts. In addition, it is recommended that the Nissan hut with stockyard site be recorded through scaled drawings prior to destruction or removal. The recordings should comply with the Heritage Branch guidelines *How to Prepare Archival Records of Heritage Items* (1998) and *Photographic Recording of Heritage Items using Film or Digital Capture* (2006).

Portions of the MJPLCA and the Drayton South Cultural Landscape will be directly impacted by the Project. It is recommended that a photographic record of the impacted portions be undertaken prior to impacts. In addition, it is recommended that the Project rehabilitation strategy consider reinstating existing natural elements of the landscapes post-mining.

9.3.2 Indirectly Impacted Items

9.3.2.1 Blasting

The acoustic impact assessment (Bridges Acoustics, 2015) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria at any heritage items. However, if requested by the landowner, the following precautionary measures may be adopted:

- Pre-blasting structural survey / dilapidation survey of heritage items may be undertaken to document current conditions and that ongoing structural surveys are conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause
- A qualified geotechnical, building or engineering expert will inspect and assess identified buildings or structures of heritage, to determine appropriate ground vibration and overpressure limits. Confirmation of appropriate vibration and overpressure limits for each building or structure would be included in the blast management plan; and
- Blast monitoring at receiver locations or alternative representative locations, including heritage items, to confirm acceptable blast impacts and to assist in predicting future blast effects as the blast sites approach sensitive receivers.

Any future conservation or development efforts specific to Plashett Homestead should be undertaken in accordance with the principles of the Burra Charter and the existing conservation plan (Anne Bickford and Associates, 1995) prepared for Pacific Power.

9.3.2.2 Visual

As outlined in the visual impact assessment (JVP Visual Planning & Design, 2015), several mitigation measures to reduce visual impacts at sensitive viewing locations, including heritage items, have been incorporated into the design and operation of the Project, including:

- The Project is located behind the two ridgelines recommended by the PAC;
- Maintaining existing topography (i.e. southern ridgeline);
- Tree screening; and
- Progressive rehabilitation of overburden emplacement areas and disturbed areas.

9.4 Summary

Table 7 provides a summary of the proposed mitigation measures for heritage items and landscapes impacted by the Project.

Table 7 Summary of impacts and mitigation measures

Item Name	Impact	Mitigation Measure
Items to be demolished/destroyed		
Fence line	Direct/ Demolition	- A photographic archival recording should be undertaken of the fenceline prior to impacts in accordance with Heritage Branch guidelines <i>Photographic Recording of Heritage Items using Film or Digital Capture</i> (2006).
Nissan Hut and Stockyard	Direct/ Destroyed	- Full archival recording (including scale drawing and photography) of Nissan Hut and Stockyard should be undertaken prior to demolition in accordance with Heritage Branch guidelines <i>How to Prepare Archival Records of Heritage Items</i> (1998) and <i>Photographic Recording of Heritage Items using Film or Digital Capture</i> (2006).
Items indirectly impacted		
Edderton Homestead	Visual impacts	- Mitigation measures outlined in the visual impact assessment JVP (2015) should be implemented at sensitive viewing locations to reduce visual impacts to the Edderton Homestead. These should include consideration of tree screening and a rehabilitation plan that considers the existing views & vistas.
Bowfield Homestead	Visual impacts	- Mitigation measures outlined in the visual impact assessment JVP (2015) should be implemented at sensitive viewing locations to reduce visual impacts to the Bowfield Homestead. These should include consideration of tree screening and a rehabilitation plan that considers the existing views & vistas.
MJPLCA	Direct / Visual impacts	- Documentation, including photographic record of the portion of the MJPLCA within the Project Disturbance Boundary should be undertaken prior to impacts. - It is recommended the Project Rehabilitation Strategy consider reinstating existing natural elements of the MJPLCA landscape post-mining.
Drayton South Cultural Landscape	Direct / Visual impacts	- Documentation, including photographic record of the portion of the Drayton South Cultural Landscape within the Project Disturbance Boundary should be undertaken prior to impacts. - It is recommended the Project Rehabilitation Strategy consider reinstating existing natural elements of the cultural landscape post-mining.

9.5 Historical Heritage Management Plan

Details for the management of the historical heritage potentially impacted by the Project should be detailed in a Historical Heritage Management Plan (HHMP). The Plan should be prepared in advance of construction work and should include, but should not be limited to, the following:

- A list and map indicating the location of heritage items identified within the Project Boundary and relevant adjacent heritage items;
- A significance assessment and Statement of Significance for each item (taken from this assessment and updated as necessary);
- Details for carrying photographic records and archival recordings;

- Management and mitigation measures for the visual and blasting impacts, including risk-based frequency dilapidation surveys (if deemed necessary); and
- Unexpected finds procedure, including a specific procedure for human remains.

9.6 Effectiveness and Reliability

The SEARs for the historical impact assessment require the effectiveness and reliability of the proposed mitigation measures to be evaluated. The proposed archival recording and archaeological investigation of the directly impacted sites is considered to be an effective and reliable mitigation measure as heritage and archaeological information will be gathered and preserved.

The details regarding the management of the heritage items within the Project Boundary during construction and operation will be detailed in the HHMP. These management documents are commonly used as heritage management tools, their effectiveness and reliability is supported by Heritage Council advocacy.

10.0 Conclusion

The Project will not result in any direct impacts to statutory listed heritage items.

Two items, assessed as having local historical significance, will be demolished/destroyed as a result of Project – the fence and the Nissan Hut and Stockyard. The significance of the impact is considered 'minor negative' for both items in accordance with Heritage Branch guidelines (NSW Heritage Office, 2002). To mitigate these impacts, recommendations are made within this assessment for the completion of a photographic record and archival recording for these items.

The Project will result in direct impact to a portion (approximately 0.5%) of the non-statutory National Trust Register listed MJPLCA. Topographically, the impacted portion is located in an area that is not readily visible from vantage points within the other sections of the Conservation Area. Furthermore, the impacted portion is not directly associated with key features identified in the listing as having social or aesthetic values i.e., the alluvial flats of the Hunter and Goulburn Rivers, Wollemi National Park or specifically mentioned large pastoral estates. The aesthetic and social values of the area have been recognised and the reduced Project Disturbance Boundary, which now sits behind natural ridgelines, ensures the Project is not visible from the south and south-east where the key values of the Conservation Area have been identified. To mitigate these impacts, recommendations are made within this assessment that the rehabilitation strategy considers reinstatement of the natural elements of the landscape post-mining.

The Project will result in direct impacts to a portion of the Drayton South Cultural Landscape. The cultural landscape assessment completed in Section 6.0 has identified that land within the Disturbance Boundary has historical and aesthetic values. The historical values are related to pastoralism and the long-term use of the land for grazing cattle and the aesthetic values are related to its views of rolling hills and Saddlers Creek. Both these historical and aesthetic values will be impacted by the Project. To mitigate these impacts, recommendations are made within this assessment that the rehabilitation strategy considers reinstatement of the natural elements of the landscape post-mining.

The Project will result in visual impacts to Edderton and Bowfield Homesteads, in addition to the MJPLCA and the Drayton South Cultural Landscape. To mitigate these impacts, recommendations are made that the rehabilitation strategy considers reinstatement of the natural elements of the landscape to its existing character post-mining and strategies such as tree screening be implemented where necessary.

The Project Disturbance Boundary has been reduced so that the proposed mine is now screened entirely behind natural ridgelines and will not be visible from Woodlands (Darley), Strowan (Coolmore), Plashett and Arrowfield Homesteads. In addition, the proposed mine will not be visible from the Thoroughbred Cultural Landscape identified by GML (2013) associated with the Coolmore and Darley studs south of the Project.

Changes to the Project as a result of the PAC recommendations, specifically a reduction in the size of the Disturbance Boundary, will result in an overall reduction in impacts to identified heritage values, including cultural landscapes, than the previous Drayton South application.

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Appendix A

Heritage Inventory Sheets

Heritage Data Form

ITEM DETAILS						
Name of Item	Fence					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number						
Street name						
Suburb/town	Muswellbrook				Postcode	2333
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	300906	Northing	6412958
Owner	Unspecified					
Current use	Fence					
Former Use	Fence					
Statement of significance	This fence is of limited historical significance on a local level as it provides an example of a popular fencing style employed in the early, formative years of farming and settlement in the Upper Hunter region. Farming and agriculture are highly significant activities which have contributed greatly to defining the character of the local region, from the settlement of the area in the 1800s, through to the present day. It provides physical evidence of the former land use patterns.					
Level of Significance	State ☐			Local ☐		

DESCRIPTION						
Designer	Unknown					
Builder/ maker	Unknown					
Physical Description	This item consists of a post and rail fence, located to the west of the ROM hopper, crusher and stockpile area. The fence is not listed on a heritage inventory. The fence originally had two rails; however, these have subsequently been replaced by barbed and plain wire. There is evidence of a tree having been cut down to create either the posts for the fence or for a former slab hut, although the former is more likely. The fence terminates at what appears to be a property boundary and a stockyard of dimensions 10 m x 15 m. There are no internal divisions within the stockyard; it has a simple rectangular form. The post and rail fence forms the western side of the stockyard. The section of the fence to the south of the starting point has more replacement star pickets than the rest of its length.					
Physical condition and Archaeological potential	The item is in a reasonable physical condition. It possesses limited archaeological potential.					
Construction years	Start year		Finish year		Circa	☐
Modifications and dates	Unknown					
Further comments	NA					

Heritage Data Form

HISTORY	
Historical notes	There is no specific historical information available pertaining to this site; however, there is information available which pertains to post and rail fencing more generally. Post and rail fencing was the most popular type of fence used in the early days of farming. This fencing method was characterised, as the name suggests, by the use of split posts and wooden rails. Much preparation work was needed prior to constructing a fence of this type. Logs were cut to a length of approximately 6 ft (1.8 m) for the posts and 9 ft (2.7 m) for the rails. They were then split into radial segments using steel wedges and may have required some shaping and trimming. The ends of the rails had to be shaped to fit the posts, probably with an adze. Posts were morticed (holes cut through them) to support the rails. This was done with a mortice axe or an auger. Fences usually had either two or three rails, depending on the type of animal to be restrained.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of limited historical significance on a local level as it provides an example of a popular type of fencing employed in the early, formative years of farming and settlement in the Upper Hunter region. Farming and agriculture are highly significant activities which have contributed greatly to defining the character of the local region, from the settlement of the area in the 1800s, through to the present day.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics and/or a high degree of technical achievement in the state or the local area.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance on a state or local level as it does not possess the potential to yield information that will contribute to or enhance our understanding of state or local cultural history.
Rarity SHR criteria (f)	This item does not possess uncommon, rare, or endangered aspects of state or local cultural history and so does not qualify as significant under this criterion.
Representativeness SHR criteria (g)	This item is not of representativeness significance as it is not important in demonstrating the principal characteristics of a class of state or local places or environments.
Integrity	This item has undergone modifications, including the replacement of the original rails with barbed and plain wire, which have compromised the items integrity. It can be said to possess only limited archaeological integrity.

HERITAGE LISTINGS	
Heritage listing/s	NA

RECOMMENDATIONS	
Impact	The fence is in the vicinity of the ROM hopper, crusher and stockpile area. It is likely that the fence will be removed.
Recommendations	It is recommended that a brief photographic archival recording be undertaken prior to removal. This mitigation is considered adequate given the limited historical significance of the fence.

Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Fence, view south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Fence – yard at southern end. View south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

ITEM DETAILS						
Name of Item	Nissan Hut with stockyard					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number						
Street name						
Suburb/town	Muswellbrook				Postcode	2333
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	296856	Northing	6410145
Owner	Unspecified					
Current use	Unused stockyard and Nissan Hut					
Former Use	Potential stockyard and storage/shearing shed					
Statement of significance	This item is of historical significance on a local level as it provides evidence of the rural development and use of the area. The association of the Nissan hut and stockyards and the farming context of the item further contributes to its significance, demonstrating how a widespread architectural innovation was able to be modified and adapted to address the needs of the local area.					
Level of Significance	State ☐			Local ☒		

DESCRIPTION						
Designer	Nissan Hut based on the original design of Peter Norman Nissan(1871-1930), British army officer and mining engineer.					
Builder/ maker	Stanley Mackenzie and Robert Bowman					
Physical Description	This site consists of one galvanised iron Nissan hut set on wooden stumps. The site is located central to the Project, within the proposed mining area and is not listed on a heritage schedule. It has an elevated wooden floor at the rear (south-east) end, whilst the front section has no floor, and is more like a verandah. The rear of the hut has a weatherboard facing. There is a square, galvanised iron lean-to also at the rear of the hut which has a brick fireplace/barbeque with a rusted fire box. The floor of this lean-to is composed of rough rocks and blue metal. There is evidence that water was once supplied to the internal sink of the Nissan hut. A pressure tank located in the south-west corner may also have had a shower underneath. There are two in-ground tanks present at the site, both of which are concrete lined. The hut has double opening doors in front, and may also have been used for storage. The hut may have been used as short term accommodation, but it does not appear to have been lived in long term. A sheep shower – Sunbeam Cooper HH model – is located to the north-east of the Nissan hut with associated runs. There are small yards present with link fencing.					
Physical condition and Archaeological potential	The Nissan Hut and Stockyard are in quite poor condition, the Nissan Hut in particular having fallen into a state of disrepair. The items possess limited archaeological potential.					
Construction years	Start year	1950	Finish year	1950	Circa	☐

Heritage Data Form

Modifications and dates	NA
Further comments	NA

HISTORY	
Historical notes	In 'The History of the Bowman Family' (2000:50) Stanley Mackenzie Bowman (known as Mac) states that he and his brother Robert built the stockyard and Nissan Hut in 1950.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of historical significance on a local level as it provides evidence of the rural development and use of the area. The adaptation of the Nissan Hut form for use in farming life further contributes to the items significance, demonstrating how a widespread architectural innovation was able to be modified and adapted to address the specific needs of the local area.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics and/or a high degree of creative or technical achievement in the state or local area.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group in the state or local area for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance as it does not possess the potential to yield information that could contribute to or enhance our understanding of state or local cultural history.
Rarity SHR criteria (f)	This item does not possess uncommon, rare or endangered aspects of state or local cultural history and so does not qualify as significant under this criterion.
Representativeness SHR criteria (g)	This item does not demonstrate the principal characteristics of a class of state or local cultural place or environment.
Integrity	This item is in quite poor condition and the Nissan Hut specifically, whilst still standing, has fallen into a state of disrepair. However, the item does still retain a moderate to high level of integrity.

HERITAGE LISTINGS	
Heritage listing/s	NA

RECOMMENDATIONS	
Impact	The Nissan Hut and Stockyard sit inside the potential Whynot mining area. Mining will require the removal of the site. Given the age and significance of the site, removal is acceptable, following the completion of the mitigation measures provided below.
Recommendations	It is recommended the Nissan Hut and Stockyard site be archivally recorded, with both photographic and scale drawings, prior to removal. The recording must comply with the Heritage Branch, Office of Environment and Heritage guidelines <i>How to Prepare Archival Records of Heritage Items</i> (1996) and <i>Photographic Recording of Heritage Items using Film or Digital Capture</i> (2006).

Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Nissan Hut, front elevation, view south east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Rear view of Nissan Hut, view north west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Sheep dip associated with Nissan Hut. View east.				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS						
Name of Item	Bowfield					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name						
Street number						
Street name						
Suburb/town	Jerrys Plains				Postcode	2330
Local Government Area/s	Singleton					
Property description						
Location - AMG (if no street address)	Zone	56	Easting		Northing	
Owner	Anglo American					
Current use	Homestead, farm and archaeological site.					
Former Use	Homestead, farm, shearing shed					
Statement of significance	Bowfield is of local historical and research significance. The homestead is evidence of the continuing development of the rural economy during the 1920s. The former shearing shed and former house/cottage site is of archaeological research interest, having the potential to answer questions regarding shearing technology of the 1930s.					
Level of Significance	State ☐			Local ☒		

DESCRIPTION	
Designer	NA
Builder/ maker	NA
Physical Description	The site consists of a homestead, and three archaeological sites situated on the former Bowfield property. The archaeological sites are a c.1970s rubbish dump, the former site of the shearing shed complex and the site of a former house/cottage. Homestead A c.1928 house composed of Besser-type blocks and painted white with a red tile roof was erected on the property. The homestead is rectangular in form and has an internal organisation of rooms opening off either side of a central corridor. A verandah extends along the front (southern) side of the house and is supported on cast iron pillars with Corinthian capitals. The western elevation of the house has a brick chimney, which services a large fireplace in what is now a sitting room. The wooden floor boards are in excellent condition and of a very high quality dark wood. Approximately 5 m north-west of the house is a brick foundation of a small room said to have been constructed of bottles laid on their side with the bases facing outwards. c.1970s Dump The c. 1970s dump predominantly consists of bottles, wire and other common household and farm refuse. The dump is located in the erosion gullies associated with Saddlers Creek. The dump is not considered to be of heritage significance, but is noted as being in the vicinity of the former shearing shed site. Former Shearing Shed Site In the vicinity of the dump there is an avenue of peppercorn trees, a concrete slab approximately 1.2 m x 2 m, local stone slabs and a sizable brick scatter. A concrete drain, not dissimilar to the sheep dip at the Nissan hut and an introduced hawthorn tree/shrub are also present. There is evidence of a sewer/water pipe in situ. To the south-west is a concrete, rectangular slab, approximately 1.2 m x 2.5 m, with an outline of a square room evident. This could possibly indicate the previous presence of a slab building at this location. To the north-west is a Neem tree. Former House/Cottage The site consists of a concrete foundation slab, approximately 8 m x 11 m. A pile of cream bricks is located to the south-west. A small pressure tank is located in the north-western area of the site.
Physical condition	The physical condition of the Homestead is good. The archaeological potential of the shearing shed area is high.

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and Archaeological potential	The archaeological potential of the Former House/Cottage is moderate, potentially having been disturbed during demolition. The c.1970s dump has high archaeological potential, but not of heritage significance					
Construction years	Start year	1928	Finish year		Circa	☒
Modifications and dates	NA					
Further comments	NA					

HISTORY	
Historical notes	Bowfield comprises part of George Blaxland's land grant, later part of W.H. White's property, while the Saddlers Creek portion is part of the grant to George Bowman, of Arrowfield (approximately 2,600 acres in 1832). The total area is approximately 5,000 acres. W.H. White sold his portion to Squire Bowman (of Balmoral) which he occupied, and the property subsequently became known as Bowfield. The property was later acquired by 'Mac' Bowman. The original Bowfield Homestead was built c.1928. Allegedly there was also an old weatherboard house in the vicinity of the Bowfield Homestead. Bowfield has since been purchased by Anglo American and is currently leased as a working pastoral property primarily for cattle grazing. An article in the Muswellbrook Chronicle on 14 October 1938 (p.88) exclaims over the recently completed shearing shed on Bowfield that it was "believed to be the largest shed of its kind in the district." The shed was said to be 80 by 24 feet (24 by 7 m), which provided enough space to house 800 sheep underneath in the event of wet weather during shearing. The shearing equipment was powered by electricity from the Muswellbrook Coal Co – a first for the district. In the vicinity were new shearer's quarters of six bedrooms each with two beds. The Former House/Cottage site is not large enough to have contained six

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	Bowfield is of local significance as a modest homestead of the late 1920s, indicating the continued development of the rural industry during the period.
Historical association significance SHR criteria (b)	This item is not of historical associative significance on a state or local level as it does not have a strong or special association with the life or works of a person, or group of persons, of importance in state or local cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a state or local level as it does not demonstrate aesthetic characteristics or a high degree of creative or technical achievement.
Social significance SHR criteria (d)	This item is not of social significance on a state or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of local research significance as it has the potential to yield information that could contribute to or enhance our understanding of local farming practices, in particular the construction and operation of a shearing shed considered in its time to be state of the art. The c.1970s rubbish dump is not considered to be of research significance.
Rarity SHR criteria (f)	This item does not qualify as significance under this criterion as it is not rare.
Representativeness SHR criteria (g)	This item is not of representative significance as it does not demonstrate the principal characteristics of a class of state or local cultural places or environments.
Integrity	This item appears to retain limited integrity.

HERITAGE LISTINGS	
Heritage listing/s	NA

Heritage Data Form

RECOMMENDATIONS	
Impact	Due to the proximity of Bowfield Homestead to the Project, it will experience high visual impacts until approximately Year 10 when the visual impact will be gradually reduced to moderate and then low by Year 20 with the completion of mining and progressive rehabilitation in the Blakefield area.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (10 mm/s and 120 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause. As outlined in the visual impact assessment (JVP, 2012), several mitigation measures to reduce visual impacts have been incorporated into the design and operation of the Project, including: • Tree screening; and • Progressive rehabilitation of overburden emplacement areas and disturbed areas. If required, offsite mitigation measures, such as tree screening or plantings, can be implemented to reduce the visual impact to landscapes surrounding heritage items further.

Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Front elevation of Bowfield Homestead. View north west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Former shearing shed site, Bowfield. View south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Site of Former House/Cottage. View north east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

ITEM DETAILS						
Name of Item	Plashett Homestead					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number						
Street name	Golden Highway					
Suburb/town	Jerrys Plains				Postcode	2330
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	300292	Northing	6406687
Owner	Unspecified					
Current use	Vacant House and farm					
Former Use	House and farm					
Statement of significance	Plashett Homestead is of state historical significance as it is a rare, almost intact survivor of the mid-19 th century period in the region. The item is also of aesthetic significance, as the homestead has a sophisticated building design set in a carefully conceived garden. The property is of local significance thanks to its association with the eminent local pioneering Robertson and Pearse families. The property has excellent research potential, as it is likely to be able to reveal information which could contribute to an understanding of the conduct of a major mid-19 th century pastoral property and of the manner in which wealthy pastoralists lived at that time.					
Level of Significance	State ☒				Local ☐	

DESCRIPTION	
Designer	Bickford & Associates believe the homestead was designed by an architect, however, the architect is unknown
Builder/ maker	
Physical Description	Plashett includes a homestead, a small residence and slab garage, a manager's residence, stables group, dairy group, a hayshed and the remains of a bridge. A comprehensive physical description of the elements is provided by Anne Bickford & Associates (1994) in the Conservation Management Plan for the property. A brief overview is provided below. Homestead (Easting: 300292 Northing: 6406 687) Plashett Homestead is a single storey ashlar sandstone building, constructed in a simplified Victorian Regency style in the late 1860s. It appears to have been built in two key phases, with the first being the construction of a sandstone house with attached kitchen wing (c1866), and the second being the addition of a large timber frames extension to the north-west (20th century). While minor modifications and verandah infill additions have occurred, the main body of the house retains a good level of integrity. The main house is simple and symmetrical in form, with a hipped corrugated iron roof, although there is evidence to suggest it was originally shingle-clad. An original kitchen wing, of similar construction, connects to the main house at the northern corner. The main body of the homestead is almost square in shape and is oriented towards the Golden Highway and the Hunter River, roughly to the south. The original kitchen was semi-detached on the north west corner of the house. In the 'L' shape formed by the Main house and the Kitchen is located an underground water reservoir. The house has two sandstone chimneys and the kitchen wing has one. An L shaped courtyard verandah addresses the courtyard and well. The c. 1866 house and kitchen wing have direct access to this. Various additions have been made to the homestead, as detailed by Anne Bickford and Associates (1994). The large timber framed addition is clad in weatherboards and has a 'colorbond' corrugated steel roof with a lower pitch than the main house. There are two additional brick chimneys in this addition, and the exterior walls display a variety of different

Heritage Data Form

weatherboard profiles.

The interior of the homestead has a central, dual chamber hallway extending from the front verandah to the rear courtyard. The main rooms of the house lead from this hallway. The entry hall is divided by a semi-circular arch with decorative plaster mouldings. The formal end of the hall at the SW end of the house is wider, it is narrower and more informal to the rear (NE) of the house. The attached kitchen wing contemporary with the main house, is connected by a hallway. Most of the internal surfaces of the homestead are rendered and plastered. Ceilings are generally lath and plaster with decorative cornices and ceiling roses to the two front rooms. The floors are all hardwood boards and joinery is clear finished cedar, although some joinery has been painted over. All of the original fireplaces and their surrounds remain intact and in good condition. It is not difficult to determine the original paint schemes from the damaged areas of plastered wall. No original freestanding furniture is apparent inside the homestead.

The homestead is situated above a cellar. This cellar is stone walled and accessed from the NW verandah of the homestead by a single run of well worn stone steps. It is a coursed stone room comprising two chambers. The innermost section has no direct access to the outside, and is divided by a vertical timber slab wall with a door. It is entered through a doorway from the main chamber and receives indirect ventilation through an iron barred 'window'. The floors are red sandstone brick laid in a herringbone pattern and is generally in good condition. Significant deterioration of the face of the stone walls to a height of approximately 1,200mm suggests deterioration due to the effects of flooding. Several meathooks hang from the beams of the ceiling.

The general layout of the homestead buildings and garden exhibit characteristics of the major garden styles of the mid-19th century.

Meat Shed

(Easting: 300350 Northing: 6406712) (GDA94)

The Plashett Meat Shed consists of a vertical timber slab shed, approximately 5m x 4m, with a corrugated iron roof. It is situated approximately 52m east of Plashett house.

The wall structure of the shed consists of squared posts with infill vertical timber slabs. The slabs are axed split logs, butt jointed, end chamfered, dropped into sleeper at base and nailed to top plates. The door is on the western elevation and is constructed of tongue and groove boards screwed to a frame. While the door threshold is sandstone blocks, the floor itself is concrete (possibly render on bricks) inside perimeter sleepers. Door threshold of sandstone blocks. There is a series of c.1920-1950s fridges inside the meatshed. In the south-east corner is an enclosed section with hooks and a refrigerated section. A workbench is built into one corner, around which sheet iron is nailed across the joints between the slabs. Iron hooks with sheet iron 'rodent caps' also hang from the ceiling joists.

Since 1994 the shed has developed a significant lean to the south and it is currently structurally unsound, although this can be rectified. During the field inspection the shed was observed to be surrounded by farm equipment, including ploughs, farrows, and a windmill head. The former cottage site, located between the meat shed and Plashett house, is believed to be the former structure seen in photographic records from 1975. The south-western area is demarcated by sandstone worked blocks, while along the eastern side is a rough, sandstone cobbled area. Behind this is evident a square depression. To the south-east a single post exhibiting the same joinery style as 'Stockyard 1' was identified. Farther to the south-east is a sewerage outlet. Farther to the south-east again are located gallows for meat slaughter and a small holding pen.

The overall condition of this building is fairly poor. In addition to the significant lean, there is evidence of termite attack to some of the remaining slabs and weatherboards, and a ceiling joist has also collapsed.

Stockyards and Barns

(Easting: 300411 Northing: 6406810)

To the north-west is located a sandstone and brick fireplace, two concrete slabs and two standing dressed poles with nails and joinery for fitting of crossbeams. There are two sets of concrete 'rails', the first just under 1m high and set 800mm apart and 1.2m long. There is a second set similar in form but higher and set further apart. Brick path leads back to a stockyard, which has a small hut on the northern side, which may possibly have been a blacksmiths.

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	There is also a vertical slab barn with a corrugated iron loft accessed via external stairs. It has a pitched roof with a gable at loft access. There is a lean-to section on the northern and southern elevations. The southern section is divided into two compartments, which are open on the western side as some slabs have fallen out. The floors are timber slab, with sandstone footings in some sections. There is a newer extension which forms a T shape to the east. The concrete floor has been poured in sections with incised squares. The central section of the structure appears to have been used as a poultry house for a time. Each corner appears to be a stall of approximately 2m x 2m, with a trough built into the diagonal. There is also a complex of yards built of bush timber located to the north, with some more recent fixes in dressed timber and galvanised iron, and there is a stock shed to the west of the barn, which has a pitched roof, and is oriented east/west and open to the barn on the eastern side. Dairy Complex (Easting: 300463 Northing: 6406453) This item consists of a rectangular building, approximately 10m long x 11m wide. This structure is roofed with a centre gable which changes pitch to skillions on either side. The dairy building has two distinct sections. One contains 12 milking stalls, and the other an open area with two stalls, the purpose of which is unclear. The dairy can be entered from either the north or south through open paling gates. The structure of the building is a combination of round and squared posts, with rough sawn beams and rafters. Fixings include iron straps and bolts, wire and nails. In the dairy, the stalls are separated by split rails rather than being either tenoned and tied to the posts by wire, or housed into or bolted to the posts. There are large wooden troughs on the northern side, and metal on the south of the dairy building. No machinery is present. There is also an annex on the southern side of the structure, which may possibly have been used for storage purposes. The building overall is in quite poor condition. To the south of the dairy building is located a large, which is filled with metal, wire, machinery and car parts, c. 1970s/80s and later washers, dryers, fridges and other electronic appliances. Building debris is also present and includes blocks of sandstone. To the south-west there is a partially in-ground concrete tank. To the west there is a concrete slab and a peppercorn tree. To the south-west in the next paddock is located a 3m x3m feed shed with a food trough on the eastern wall. This has a flat roof and a wood log foundation. It has the same concrete slabs with incised squares as barn extension. The building is in poor condition; the bottom plate sleepers are rotten, and many slabs are missing or loose. Hayshed (Easting: 300792 Northing: 6406074) This structure has a pitched roof with a lean-to to the south. It has been constructed of dressed bush timber, and is essentially a high hayshed. It is structurally unsound, and has mostly collapsed. The roof is remnant in only a small portion. A wagon and plough was observed to have once been stored inside. Workers Cottages Sites (Easting: 300222 Northing: 6407114) At the workers cottage sites was observed a roughly rectangular formation of peppercorn trees. A surface scatter comprising brown and clear moulded glass and refined earthenware was identified. One earthenware fragment had a green vine leaf pattern. Vertically embossed on the side of an intact bottle from the site was the: 'H. Jones and Co. Sydney' – 'Pick me up' registered trademark. This bottle is the property of //Pick me up condiment// Co Ltd. AGM on base. Brick and metal fragments were also noted in the vicinity. The scatter appears to continue into the adjacent horse paddock. The site is located to the north of a dam and the current manager's house.					
Physical condition and Archaeological potential	Plashett Homestead itself is in excellent physical condition and retains a high degree of integrity and archaeological potential. The physical condition of the other items comprising the Plashett Homestead complex is variable, however the overall archaeological potential is high.					
Construction years	Start year	Main House c. 1866	Finish year		Circa	☐

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Modifications and dates	The modifications have been discussed in the physical description.
Further comments	All of the co-ordinates provided above are in GDA94.

HISTORY	
Historical notes	Plashett was granted to James Robertson, of Renfrew, Scotland, in 1827. Robertson had arrived in the colony in 1822 accompanied by his wife, Anna Maria and six children. In London Robertson had been a watch and mathematical instrument maker for Grimaldi and Johnson of The Strand. In this capacity Robertson had made friends with Thomas Brisbane, who was a keen astronomer. When Brisbane was appointed Governor of NSW he encouraged Robertson to immigrate too. On arrival, Robertson and his family lived in George Street, Sydney, and James established a jewellery and watchmaking business. Prior to his arrival in the colony, Brisbane had arranged with Governor Macquarie that Robertson be given a 500 acre grant, which Brisbane increased to 1000 acres. Robertson took half of this at Baulkham Hills and the other at Broken Bay. He made substantial improvements to the Baulkham Hills property and it was stocked with sheep and cattle. He had just begun building a house for his family on his Broken Bay property when the 1826/7 drought began. Robertson's Baulkham Hills property did not have sufficient pasture to support his livestock. On 24 August 1824 Robertson applied for an additional grant, which he was entitled to for completing a specified amount of improvements to his current land holdings, and on the 19 November Governor Brisbane authorised a grant of 1000 acres and reserved a further 1000 acres as a purchase. James Robertson took up his 1000 acre grant on the northern side of the Hunter River at Jerry's Plains in early 1827, naming the property Plashett after his father-in-laws property in Essex, England. The 1828 Census lists Robertson as holding 2,000 acres of land (Plashett), on which 170 acres were cleared, 80 cultivated, with 5 horses, 250 cattle, and 800 sheep. A map of the Hunter River Land Grants produced in October 1829 shows the Robertson 1000 acres with a house built on it. This house is thought to be the slab cottage which remained standing until 1993, when it was reportedly demolished. On the 15 September 1854, Plashett was advertised for sale in the Maitland Mercury, and was described as being "an excellent Stone House, not finished inside, which was located near to where the old homestead stood." Plashett was purchased from Robertson in November 1854 by Joseph Pearse, who in turn transferred ownership to his son William Pearse in 1864. William Pearse married Catherine Langley in 1866. By the 1890s, the property was supplying sheep and cattle for both Sydney and Hunter Valley abattoirs. Cattle were sent to the Hunter from the Pearse properties in Queensland to be fattened up for the Sydney market. Corn, horse breeding, and shearing also took place at the property. By 1910 Plashett was producing milk from a herd of approximately 100 cows for the Jerry's Plains butter factory. When William Pearse died in 1927 a probate valuation describes the property as pastoral, with 18 grazing paddocks, 3 for cultivation, and a few others as well. Timber had been left in the paddocks to provide shade for the cattle, and this included kurrajong and box species. Plashett remained in the Pearse family for 117 years, until 1971, when a portion of the property was transferred to Caroon Pty Ltd. In 1982, this portion was transferred to the Electricity Commission of New South Wales (Pacific Power). In that same year, Lot 2 DP 616024, which comprised half of the land owned by Pacific Power, was transferred to Mount Arthur Coal Pty Ltd. In 2000 the property was purchased by Anglo American. Plashett remains a pastoral property, managed now on behalf of Anglo American.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of State historical significance as it is an almost intact farming complex of the mid-nineteenth century period in the region.
Historical association significance SHR criteria (b)	This item is of local historical associative significance due to its association with the eminent local pioneering Robertson and Pearse families.
Aesthetic	This item is of aesthetic significance on a local level, as the homestead has a

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significance SHR criteria (c)	sophisticated building design set in a carefully conceived garden. It is also of potential State significance, however, further comparative research would be required to confirm this.
Social significance SHR criteria (d)	This item is not of social significance on a State or local level as it does not have a strong or special association with a particular community or cultural group in the State or local area for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item has excellent research potential at a State level, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived at that time.
Rarity SHR criteria (f)	This item is rare on a State level, being an intact example of a rural 1860s homestead.
Representativeness SHR criteria (g)	This item is of local representative significance as it demonstrates the principal characteristics of a mid-nineteenth century farm complex. It is potentially of State significance, however further comparative research would be required to confirm this.
Integrity	The integrity of Plashett Homestead itself is quite good, although the integrity of other items within the property is highly variable.

HERITAGE LISTINGS

Heritage listing/s	Register of National Trust (NSW); Muswellbrook LEP 2009.
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RECOMMENDATIONS

Impact	The Plashett Homestead falls outside of the Project Boundary and will not experience direct or indirect impacts.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (10 mm/s and 120 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause.

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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett Homestead, front elevation. View north				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett Homestead, rear. View south				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett Homestead – entrance hall.				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett Homestead, sandstone fireplace				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett meat shed. View north east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett barn, view north east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Plashett – workers cottage site. View south				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS							
Name of Item	Edderton Homestead Complex						
Other Name/s Former Name/s	NA						
Area, Group, or Collection Name	NA						
Street number	1477						
Street name	Edderton Road						
Suburb/town	Muswellbrook					Postcode	2333
Local Government Area/s	Muswellbrook						
Property description							
Location - AMG (if no street address)	Zone	56	Easting	295664	Northing	6413020	
Owner	Mt Arthur Coal						
Current use	Rural residential						
Former Use	Rural residential						
Statement of significance	The Edderton Homestead Complex is of local historical and representative significance as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the local area. It is also historically significant for its association with the expansion of the wool industry in the Upper Hunter, and it has a strong association with pastoralism and the growth of sheep farming in the Muswellbrook area. Furthermore, the Edderton Homestead Complex is of research significance on a local level as it possesses the potential to yield information that may contribute to an understanding of the scale and nature of wool growing carried out on a major regional property around the turn of the century. The Edderton Homestead itself is also of local aesthetic significance, as its design is unique in the region employing a range of details from different architectural styles in a most accomplished way.						
Level of Significance	State ☐			Local ☒			

DESCRIPTION	
Designer	Unknown
Builder/ maker	Unknown
Physical Description	Edderton Homestead The homestead is a substantial single storey, timber framed, Federation style bungalow, with weatherboard cladding and a corrugated iron roof. The homestead was constructed in the early twentieth century, c. 1908, and is today set in a curtilage that is enhanced by a number of associated extant outbuildings and a garden. The homestead has a T-shaped floor plan, and the structure has a complex roofline of double pitch with a separate verandah. The apex has a circular air vent and is filled with painted shingles. Together with the complex roofline, these elements are suggestive of the 'Arts and Crafts' style, common during the late nineteenth and early twentieth century's, around the time the homestead was built. The front elevation of the structure has a centred, double arched door and two symmetrical bay windows. These are possibly later additions, as there is another door with an arched fan light located to the left of the main, central door. This door is not consistent with the symmetry of the rest of the facade of the house, indicating that the layout has been

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	modified over time. The verandah may also be a later addition to the homestead, as it is constructed on a base support of red brick. Furthermore, the U shaped rear of the residence has an enclosed verandah which was renovated during the 1970s. It would appear that there were also other, earlier renovations to the residence, as the current tenants located a fireplace inside that does not align with the chimneys of the north-western room. Outbuildings The outbuildings of the Edderton Homestead Complex include a weatherboard meat shed, a rubble tank stand with wooden storage underneath, and three weatherboard farm storage sheds with associated stockyards. There is also a weatherboard house situated on the hill behind Edderton homestead. This house looks out over Saddlers Creek and the proposed mine site, and also has view over Bowfields. This house is currently being renovated for occupation.					
Physical condition and Archaeological potential	Edderton homestead is good physical condition, whilst the physical condition of the outbuildings associated with the homestead varies considerably. The Edderton Homestead Complex overall possesses good archaeological potential.					
Construction years	Start year	1908	Finish year	NA	Circa	☒
Modifications and dates	The modifications have been discussed in the physical description.					
Further comments	The original holding was built up buying out numerous small holdings and selectors. The homestead portion was made up of a large area which originally had been part of 'Arrowfield'. It joined the 'Saddlers Creek', 'Bowfield', 'Plashett' and the back of 'Edinglassie' properties. Hector McDonald moved to Edderton in 1913 from Cessnock where he had been since 1902 where he arrived droving bullocks from Southern Queensland for his father. The bullocks were put on land belonging to the Bells of 'Pickering' and later he purchased the land from the Bells. Edderton was a large property until in 1958 a large area was sold off. Together with Bowfield, Saddlers Creek, Edderton and Plashett were taken over by the Mount Arthur South Coal Company in 1980.					

HISTORY	
Historical notes	Edderton was originally part of the historic Arrowfield estate. The lands upon which the Edderton Homestead is situated were formally granted to George Bowman as part of a land grant of 2,560 acres. The property was subsequently purchased by a Mr Ryder, and Edderton Homestead was then built in 1908. Ryder named the property after the Edderton Meat Works in Brisbane, one of his business interests. The property was later acquired by the Hector Cameron McDonald c. 1910 and then passed on to his son Douglas. When first purchased by McDonald, the property was approximately 4,000 acres. Over a period of 25 years, McDonald consolidated Edderton with other lands into a large pastoral property, increasing it to about 13,000 acres. Originally, McDonald ran about 16,000 sheep and today a six stand galvanized iron shearing shed remains, together with the old shearers quarters. After some time, sheep were replaced by cattle as a result of the damage caused to the land. The homestead was extended by the McDonalds from its original four rooms. The building is of quite unusual detail and is in excellent condition. Following WWII, the Edderton property steadily became less economically viable and was gradually broken up. Edderton has since been acquired by Mt Arthur Coal and is currently leased as a working pastoral property primarily for cattle grazing. The homestead was originally a four room house, and was progressively enlarged over the years by Hector McDonald, although it retained the strong Federation lines of the original extension of c1910.

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APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the area. The item is important in the course of local history, as farming and agricultural activities were highly significant in defining the growth and development of the local area from the nineteenth century through to the present day.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a local or State level as it does not demonstrate a strong or special association with the life or works of a person, or group of persons, of significance in the course of local or State history.
Aesthetic significance SHR criteria (c)	This item is of local aesthetic significance as it demonstrates the aesthetic characteristics of the 'Arts and Crafts' style of the late nineteenth and early twentieth century incorporated into a rural residential structure.
Social significance SHR criteria (d)	This item is not of social significance on a local or State level as it does not possess a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of research significance on a local level as it possesses the potential to yield information that may contribute to an understanding of rural farming life in the local area in the early twentieth century, and how it has evolved over the decades through to the present day.
Rarity SHR criteria (f)	This item is not considered to be rare as it does not demonstrate uncommon, rare or endangered aspects of local or State cultural history.
Representativeness SHR criteria (g)	This item is of representative significance on a local level as it provides a good example of an early twentieth century rural homestead and associated farming complex, which would once have been characteristic of the area.
Integrity	Whilst Edderton homestead has undergone a number of modifications over the years, it retains much of its original form and fabric, and so retains a moderate to high level of integrity, as do the associated outbuildings.

HERITAGE LISTINGS	
Heritage listing/s	Muswellbrook LEP 2009 (RO57)

RECOMMENDATIONS	
Impact	Due to the proximity of Edderton Homestead to the Project Boundary, it will experience high visual impacts during the early stages of the Project. From Year 10 and for the remainder of the Project life, the visual impact will be reduced to moderate and then low, with the northern extent of the overburden emplacement areas rehabilitated and mining advancing further south.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (10 mm/s and 120 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause. As outlined in the visual impact assessment (JVP, 2012), several mitigation measures to reduce visual impacts have been incorporated into the design and operation of the Project, including: • Tree screening; and • Progressive rehabilitation of overburden emplacement areas and disturbed areas. If required, offsite mitigation measures, such as tree screening or plantings, can be implemented to reduce the visual impact to landscapes surrounding heritage items further.

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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Edderton Homestead, front elevation. View east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Edderton Homestead, rear. View south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Edderton Barn, view south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Edderton – hut. This hut will have a direct view of the open pit. View south				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Weatherboard house associated with Edderton Homestead				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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Please supply images of each elevation, the interior and the setting.

Image caption	A second house associated with Edderton. View north west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS						
Name of Item	Stockyard					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number	132					
Street name						
Suburb/town	Muswellbrook				Postcode	2333
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	299756	Northing	6407897
Owner	Anglo American					
Current use	Stockyard					
Former Use	Stockyard					
Statement of significance	This item is of local historical significance as it is associated with farming activities which have defined the development of the local area over an extended period of time. It is also of local representative significance as it is a good, largely intact example of a stockyard which demonstrates the key characteristics of a stock run typical of those used in the local area.					
Level of Significance	State ☐			Local ☒		

DESCRIPTION						
Designer	Unspecified					
Builder/ maker	Unspecified					
Physical Description	The Stockyard consists of a stock run constructed from bush timbers with cut-in joints. The stock run is L-shaped in plan. Telephone insulators have been re-used as electrical fence insulators.					
Physical condition and Archaeological potential	The item is in fairly good physical condition. It possesses limited to low archaeological potential.					
Construction years	Start year		Finish year		Circa	☐
Modifications and dates	Unknown					
Further comments	NA					

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HISTORY	
Historical notes	There is no specific historical information available for this site.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance as it is associated with farming activities which have defined the development of the local area over an extended period of time.
Historical association significance SHR criteria (b)	This item is not of historical association significance on a local or State level as it does not possess a strong or special association with the life or works of a person, or group of persons, of importance in local or State cultural history.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a local or State level as it does not demonstrate aesthetic characteristics and/or a high degree of creative or technical accomplishment on a local or State level.
Social significance SHR criteria (d)	This item is not of social significance on a local or State level as it does not possess a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is not of technical/research significance on a local or State level as it does not possess the potential to yield information that could contribute to or enhance our understanding of local or State cultural history.
Rarity SHR criteria (f)	This item is not considered to be rare as it does not possess uncommon, rare or endangered aspects of local or State cultural history.
Representativeness SHR criteria (g)	This item is of local representative significance as it is a good, largely intact example of a stockyard which demonstrates the key characteristics of a stock run typical of those used in the local area.
Integrity	This item is in good physical condition and appears to possess a moderate to high level of archaeological integrity.

HERITAGE LISTINGS	
Heritage listing/s	NA

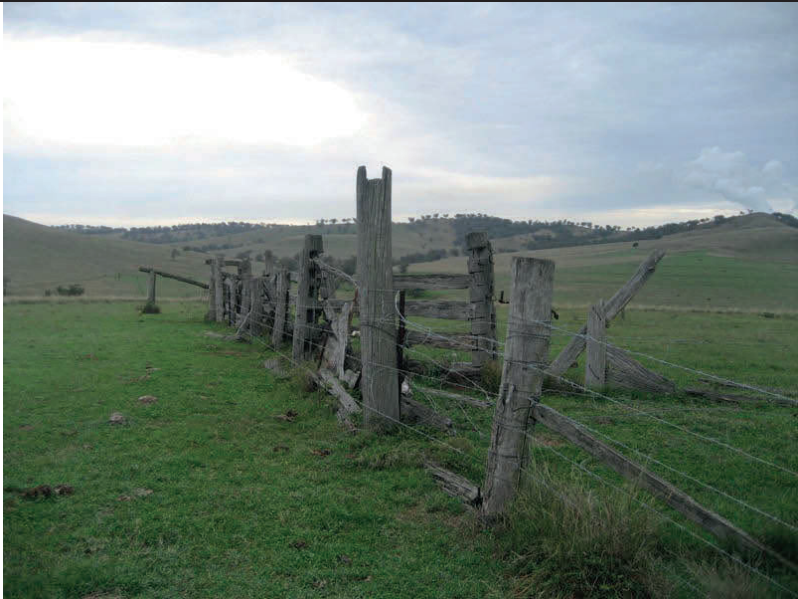
RECOMMENDATIONS	
Impact	The stockyard falls outside of the Project Boundary and will not experience direct or indirect impacts.
Recommendations	No mitigation or management recommendations are required.

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Please supply images of each elevation, the interior and the setting.

Image caption	Stockyard, view east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS						
Name of Item	Strowan					
Other Name/s Former Name/s	Strachan; Straun					
Area, Group, or Collection Name	NA					
Street number						
Street name	Denman Road					
Suburb/town	Jerrys Plains		Postcode	2330		
Local Government Area/s	Singleton					
Property description						
Location - AMG (if no street address)	Zone	56	Easting		Northing	
Owner	Coolmore Australia					
Current use						
Former Use	Homestead					
Statement of significance	Strowan Homestead is of national historical significance as is a rare, almost intact surviving homestead of a mid-nineteenth century in the region. The property is also of local historical associative significance due to its association with eminent local pioneering and business families in the Upper Hunter region. Strowan Homestead has very good research potential, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived during that time. Furthermore, the homestead is of local representative and aesthetic significance as it provides a largely intact, early Victorian style homestead in a regional context and retains a high level of integrity.					
Level of Significance	State ☒			Local ☐		

DESCRIPTION	
Designer	O.H Lewis (son of Mortimer Lewis)
Builder/ maker	Unspecified
Physical Description	Strowan Homestead was designed by O.H Lewis, the son of Mortimer Lewis, and was built in 1860 in an early Victorian style. It consists of a single storey main section constructed from rendered handmade bricks, shuttered French windows, flagged verandah, cast iron columns and trellis and originally with a shingled roof, since replaced by corrugated galvanised iron, and a rear, two storied sandstone kitchen and loft (for storage) section Strowan Homestead is of similar symmetrical design to Plashett, with a central door flanked by side lights and two sets of French doors. The windows and French doors have arched tops. The French doors were also observed to have shutters on them. The house has a simple, pitched roof with a separate verandah. It is missing the gable over the front entry that Plashett has. The sandstone verandah pairing is in quite poor condition. The house is painted white and has ornate, metal verandah supports. Internally the homestead is more resolved than Plashett, mainly due to a lack of unsympathetic additions. All of the rooms have fireplaces. The entry hall is tiled in marble and slate diamonds. These are probably a later insertion over floorboards. Multi-coloured diamond side lights around the windows are also probably later insertions. There is evidence of a rear addition to the house that has been recently removed. In the rear room a bathroom/toilet has been inserted. This is entirely contained and could be removed without damage to the fabric of the homestead. While in relatively good condition, there is evidence internally of rising damp. Outbuildings associated with the homestead in 1980 were observed to be of ironbark slab construction, and include stables, a hayshed, a buggy shed, and a workman's cottage. There was also said to be another structure, similar to the Arrowfield cottage, situated behind Strowan, that has since been relocated to Pokolbin as a church. To the south-west is

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	located a stable/barn, constructed from well dressed vertical slabs, with original feed troughs and a wooden floor. The over-loft of the barn can be accessed via external stairs on the northern side. During the field inspection the loft area was not inspected as the stairs were deemed to be unsafe. Despite this, this structure is overall in very good condition.				
Physical condition and Archaeological potential	This item is in relatively good condition and possesses moderate to high archaeological potential.				
Construction years	Start year		Finish year		Circa ☐
Modifications and dates	Unspecified				
Further comments	NA				

HISTORY	
Historical notes	The property on which Strowan Homestead sites was originally two portions of land located on the southern side of the Hunter River. The first portion of land was granted to John Hosking in 1820, and became known as Hosking Park. Hosking was an absentee owner, and in 1836 he sold the land to George Bowman. The second portion of land was granted to James Robertson, the father of Sir John Robertson, in 1825. This land grant comprised 1000 acres, and Robertson subsequently purchased a further 1,000 acres. The 1,280 acres situated on the southern bank of the Hunter River became Strowan, so named after the ancient barony of Clan Robertson. The land on the northern bank became Plashett. Strowan remained in Robertson hands for 30 years. In 1840 James Robertson transferred Strowan to his son John, who had joined his father on the property in 1835. John was a victim of the Great Depression, and in 1843 was declared bankrupt and Strowan was sequestered. Eventually the property reverted to James and his wife. They then sold it to George Bowman in 1854. George made his sixth son, James, manager of Strowan. James would later become the owner of this property as well. The property subsequently passed to Walter Bowman, and on his death, it was inherited by his nephews, brothers Robert and Mackenzie. On dissolution of the partnership, Robert Bowman became the sole owner of the property. The 'chief glory' of Strowan during the Bowman Years was its Clydesdale Stud. Strowan remained in the Bowman family for more than 130 years, until it was purchased by the Arrowfield Group Ltd in 1986. In 1985, John Messara gained controlling interest in ARABS. He later purchased Arrowfield and the adjacent properties, including Strowan, for the establishment of what is now a leading horse stud. The property is now owned and operated by Calogo Bloodstock Ag trading as Coolmore Australia.

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APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of national historical significance as is a rare, almost intact surviving homestead of a mid-nineteenth century in the region.
Historical association significance SHR criteria (b)	This item is of local historical associative significance due to its association with eminent local pioneering and business families, including the Bowman family.
Aesthetic significance SHR criteria (c)	This item is of local aesthetic significance, being a well-proportioned and elegantly executed house of the 1860s.
Social significance SHR criteria (d)	This item is not of social significance on a State or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural, or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item has very good research potential, as it has the potential to contribute to an understanding of the conduct of a major mid-nineteenth century pastoral property and of the manner in which wealthy pastoralists lived at that time.
Rarity SHR criteria (f)	This item does not meet this criterion as it is not rare.
Representativeness SHR criteria (g)	This item is of local representative significance as it provides a largely intact, early Victorian style homestead in a regional context.
Integrity	This item retains a high level of integrity.

HERITAGE LISTINGS	
Heritage listing/s	Register of the National Estate (place ID 1395); Singleton LEP 1996

RECOMMENDATIONS	
Impact	The construction of the Houston visual bund will have a high visual impact on the front elevation of Strowan Homestead between Year 3 and Year 5. This visual impact will be reduced to moderate and then low as progressive rehabilitation is completed and the bund is integrated with the surrounding landscape.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (5 mm/s and 115 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause. As outlined in the visual impact assessment (JVP, 2012), several mitigation measures to reduce visual impacts have been incorporated into the design and operation of the Project, including: • Tree screening; and • Progressive rehabilitation of overburden emplacement areas and disturbed areas. If required, offsite mitigation measures, such as tree screening or plantings, can be implemented to reduce the visual impact to landscapes surrounding heritage items further.

Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Strowan – front elevation. View south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Strowan – barn. View south west				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

ITEM DETAILS						
Name of Item	Arrowfield					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number						
Street name	Golden Highway					
Suburb/town	Jerrys Plains				Postcode	2330
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting		Northing	
Owner						
Current use	Guest House					
Former Use	Residence					
Statement of significance	Arrowfield is of local historical significance due to its strong association with the history and development of pastoralism and particularly horse breeding in the Upper Hunter Region. This item is further of historical association significance on a local level due to its association with the eminent local pioneering family of the Bowmans, and other key influential pastoral and business families and figures in the region. This item is also of technical/research significance on a local level as the house and former homestead site retain a good level of integrity and possess the potential to contribute to and enhance our understanding of the nature and history of pastoralism and horse breeding, and their development and evolution in the Upper Hunter Region from the nineteenth century through to the present day.					
Level of Significance	State ☐			Local ☒		

DESCRIPTION						
Designer	Unknown					
Builder/ maker	Unknown					
Physical Description	The location of Arrowfield consists of a two storey sandstone cottage, which has been renovated for use as a guest house. The structure is not the original homestead, and may originally have been used as the stables. There is a cellar underneath the building, with chains on the walls. These do not appear to be substantial enough to restrain convicts though, as has been suggested. The original Arrowfield homestead is said to have been located behind (to the south) this cottage. A memorial in the form of a bathtub with a plaque marks the location of the former homestead. The view from the cottage and former homestead site to the mine location is limited by local trees and the range.					
Physical condition and Archaeological potential	The cottage and former cottage site are in quite good condition. They possess moderate to high archaeological potential.					
Construction years	Start year	1840	Finish year		Circa	☒
Modifications and dates	The Stone Cottage has been renovated as a guest house within the last 5 years.					
Further comments	NA					

HISTORY	
Historical notes	Richmond Inn Keeper and landholder George Bowman arrived in Sydney in 1798 at three years of age. His father John had immigrated to Australia on the recommendation of Sir Joseph Banks. George Bowman settled in the Hawkesbury. In August 1824 George Bowman was granted 250 acres in the Hunter Valley. He then purchased a further 800 acres to make 'Archerfield'. In 1820 he married Eliza Pearce, and together they had 11 children. George continued to live at Richmond while his sons George and William managed his holdings in the Hunter Valley. Arrowfield consists of the majority of 3 portions in the Parish of Wynn, which Bowman had acquired by 1841. His son John Woodward Bowman was his tenant. The land had originally been granted to Crawford Logan Browne, an immigrant who had arrived in Australia in 1827 at the age of twenty-two. Soon after, he

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	was granted 1,280 acres in the Hunter Valley. In the 1828 census Browne was farming at 'Black Field', Patrick's Plains (probably 'Blakefield') when the property was obtained by Bowman. Browne had interests at Williams River, Dungog, also in the Hunter Valley, and so concentrated his efforts there, selling 'Blakefield' to George Bowman on the 20 April 1837. In 1825 Bowman had been given the right to buy 2,000 acres, and had taken 1,120 acres next to Brownes grant. While the deed was not issued until 1834, he was paying rent on the property from 1820. By 1837 Bowman owned Brownes land as well as the purchased section. In 1841 Bowman bought 1,274 acres to the north. This essentially comprised the land which would come to be known as Arrowfield, with the exception of some purchases north of 'the road' (possibly the Golden Highway). By 1842 the property was known as 'Arrowfield'. John Woodward was the second son of George Bowman, and in 1844 the Browne portion was transferred to him. George's other son James managed 'Strowan'. John subsequently bought his own portions of land to the north of Arrowfield as well, and on the death of George, James became the owner of the entirety of Arrowfield and 2,560 acres adjacent to Bowfield. By the 1850s he was living at Arrowfield, and in July 1852 he married Jane Alexandria, the daughter of John Johnston of Clydesdale, Singleton. John ran cattle and sheep, and farmed feed and cash crops at Arrowfield. Arrowfield was later sold to William Rupert Raleigh, who had been leasing and working the property. Raleigh then sold the property to brothers William and Frederick Albert Moses in April 1912. They operated it as an outstandingly successful thoroughbred stud, and it was put up for auction on the 12 April 1924. The horses were sold and new records were set for the prices that they fetched on the market. As the Moses brothers were getting on in age, the property was predominantly managed by Jack Honnery. In July 1925 Arrowfield was purchased by William Pearce Bowman in the name of two of his underage sons – Major Millington and Ray Millington Bowman. His third son, Tristan, eventually became the sole owner, however. The property was then used as Jersey Stud, for dairy and sheep grazing. A piggery was also established, and during World War II an airstrip was built on the property. In 1946 Tristan sold the property to John Norman Lawson of Muswellbrook. Lawson was a member of the House of Representatives for the United Australia Party from 1931-1940, and was the Minister for Trade and Customs for the last two years of this term before losing his seat. Lawson also kept racehorses on the property. When Lawson dies in 1956 his sons John Gordon and Rodney Beaumont inherited the property, which they used for dairying, cattle breeding, and ewes for meat. In the 1970s vines were planted on the property and it appears that Carpenter's Ltd acquired and set about planting the grapes in partnership with Penfold Wines through Francis Investments Pty Ltd. Carpenter's eventually bought out Francis and established their own winery, as opposed to just selling grapes. The quality of the wine produced, however, was not good and there was not a strong market for red wine at the time. As they were not profitable, the focus was changed to white wine production, and the property was taken over once again, this time by Griffin Holdings. In the meantime, John Messara had been building the Australian Racing and Breeding Stables Ltd (ARABS). In 1986, Griffin Holdings sold to ARABS and in 1987 changed their name to the Arrowfield Group. They also purchased Oak Range, Strowan and Riverview in the local area, and the focus of the property once again returned to operating as a horse stud (Driscoll 1989). A portion of the property was later sold in 1989 to the Whitlam, Simon and Gilbert Group, which was led by Nick Whitlam, a merchant banker. At the time, wine was distributed under the Mount Arrow label as the group did not hold the rights to the Arrowfield brand. In 1991, the property was acquired by the Inagaki family; the controlling interest in the Hokuiku Coca Cola Bottling Co Ltd. The Arrowfield viticulture operations went on to be owned and operated by The InWine Group Australia Ltd of which Hokuiku Coca Cola Bottling Co Ltd was the leading stakeholder. The property has since been listed on the market for private sale.
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APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of local historical significance due to its strong association with the history and development of pastoralism and particularly horse breeding in the Upper Hunter region.
Historical association significance SHR criteria (b)	This item is of historical association significance on a local due to its association with the eminent local pioneering Bowman family and other key influential pastoral and business families in the region.
Aesthetic significance SHR criteria (c)	This item is not of aesthetic significance on a State or local level as it is not an important demonstration of aesthetic achievements and/or a high degree of creative or technical achievement.
Social significance SHR criteria (d)	This item is not of social significance on a State or local level as it does not have a strong or special association with a particular community or cultural group in the State or local area.
Technical/Research significance SHR criteria (e)	This item is of technical/research significance on a local level as it possesses the potential to contribute to and enhance our understanding of the nature and history of pastoralism, and its development and evolution in the Muswellbrook area from the nineteenth century through to the present day.
Rarity	This item does not meet this criterion as it is not rare.

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SHR criteria (f)	
Representativeness SHR criteria (g)	This item is not of representative significance on a State or local level as it does not demonstrate the principal characteristics of a class of cultural place in the State or region.
Integrity	The cottage and former homestead site retain a good level of integrity.

HERITAGE LISTINGS	
Heritage listing/s	NA

RECOMMENDATIONS	
Impact	The Arrowfield Homestead falls outside of the Project Boundary and will not experience direct or indirect impacts.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (5 mm/s and 115 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause.

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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Arrowfield Cottage, view north				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Arrowfield homestead bath, now set up as a memorial. View south.				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Arrowfield homestead bath plaque.				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS						
Name of Item	Woodlands Stud					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number	3933					
Street name	Golden Highway					
Suburb/town	DENMAN				Postcode	2328
Local Government Area/s	Muswellbrook					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	291702	Northing	6405496
Owner	Darley					
Current use	Horse Stud – Offices					
Former Use	Horse Stud – Home					
Statement of significance	Woodlands Homestead is of historical and aesthetic significance at State level, as the substantial 1830s dwelling sits in outstanding condition alongside the later residence, indicating the earliest phase of Hunter region development. The item is also of associative significance on a local scale as it is associated with eminent pioneering and business families of the Muswellbrook area. Scientifically, the property is also of State significance for its rare potential to reveal information which could contribute both to an understanding of thoroughbred horse breeding and cattle raising over a period of a hundred and fifty years, and to the lifestyle of the wealthy initial settlers of the Hunter region.					
Level of Significance	State ☒				Local ☐	

DESCRIPTION						
Designer	Unknown					
Builder/ maker	Unknown					
Physical Description	The item consists of a dressed sandstone house in Colonial Georgian style, oriented to the south. The exterior consists of stone walls with metal roofing. Simple sandstone columns support the older, front verandah, whilst timber columns support those of a subsequent extension. There are seven symmetrical French doors across the front of the residence, with the central door being flanked by two small rectangular windows. To the north-west side of the house is located a sandstone set of outbuildings, which form part of an L shape. Behind the main house is located a small, square kitchen, which was renovated two years ago in 2009. There are limited to no original internal fittings extant in the main building.					
Physical condition and Archaeological potential	The item is in excellent physical condition and is well maintained as it is currently used by Darley as the main offices in the Hunter Region for their horse stud. Overall the homestead possesses excellent archaeological potential.					
Construction years	Start year	1830/1860	Finish year		Circa	☒
Modifications and dates	There are c. 2009 extensive internal modifications with some external as well, with evidence existing of a new window in the western wall of the kitchen, and a new opening central east wall of out buildings.					

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	The rear extensions and glass doors to the patio were added in 1986.
Further comments	The item is situated on the southern face of an incline on the lower third of the hill.

HISTORY	
Historical notes	Woodlands was the name of a small land grant of 960 acres on the Goulburn River given to James Arndell, the son of First Fleet surgeon Thomas Arndell, in 1824. The property was held by the Arndells until c. 1860, when it was bought from them by James White, who passed it on to his son H.C White in 1868. It was used by the White's as a Shorthorn cattle stud, but also used for thoroughbred horses. In 1908 the property was subdivided and the homestead lot passed to E.G Blume, who made it famous as a thoroughbred stud. He subsequently sold it to A.E Grace of Grace Bros., and it then passed from him to E. McManamin who ran sheep there. From 1971, when Lord Derby bought it, Woodlands was developed as part of the largest private racing enterprise in Australasia according to its then owners, Inghams Enterprises. The homestead is said to date from the early decades of the nineteenth century. The item is currently owned by Darley – HH Sheikh Mohammed bin Rashid Al Maktoum's global horse breeding operation.

APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	This item is of historical significance on a State level, as the substantial 1830s dwelling sits in outstanding condition alongside the later residence, indicating the earliest phase of Hunter region development.
Historical association significance SHR criteria (b)	This item is of associative significance on a local scale as it is associated with eminent pioneering and business families of the Muswellbrook area.
Aesthetic significance SHR criteria (c)	This item is of State significant aesthetic value. It is a superbly sited and proportioned building with unique and unequalled views of the Hunter River. The renovations undertaken are sympathetic and do not detract from the significance of the item.
Social significance SHR criteria (d)	This item is not of social significance on a State or local level as it does not have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
Technical/Research significance SHR criteria (e)	This item is of scientific significance as the property has unique potential to contribute to and enhance our understanding of thoroughbred horse breeding and cattle raising over a period of a hundred and fifty years, and to the lifestyle of the wealthy initial settlers of the Hunter region land.
Rarity SHR criteria (f)	This item is rare on a regional level.
Representativeness SHR criteria (g)	This item does not meet this criterion as it does not demonstrate the principal characteristics of a class of cultural places or environments.
Integrity	This item retains a moderate to high level of integrity.

HERITAGE LISTINGS	
Heritage listing/s	Hunter REP; Muswellbrook LEP.

RECOMMENDATIONS	
Impact	The Woodlands Homestead falls outside of the Project Boundary and will not experience direct or indirect impacts.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (5 mm/s and 115 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause.

Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Woodlands, front/side elevation. View south east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	View from Woodlands to Project. View north.				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



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ITEM DETAILS						
Name of Item	Randwick					
Other Name/s Former Name/s	NA					
Area, Group, or Collection Name	NA					
Street number						
Street name	Golden Highway					
Suburb/town	Jerrys Plains				Postcode	2330
Local Government Area/s	Singleton					
Property description						
Location - AMG (if no street address)	Zone	56	Easting	292420	Northing	6407834
Owner	Darley					
Current use	House					
Former Use	House					
Statement of significance	There is currently insufficient information to accurately assess the item according to the NSW Heritage Office <i>Assessing Heritage Significance</i> criteria.					
Level of Significance	State ☐			Local ☐		

DESCRIPTION						
Designer	Unknown					
Builder/ maker	Unknown					
Physical Description	'Randwick' house consists of a weatherboard house oriented to the south. The main house has a brick chimney and semi-circular roof vents. The front door has lead-light side windows. Extensions to the west and north forms a T-shaped plan.					
Physical condition and Archaeological potential	This item is in fair physical condition. It possesses limited archaeological potential.					
Construction years	Start year		Finish year		Circa	☐
Modifications and dates	Unspecified					
Further comments	NA					

HISTORY	
Historical notes	There is no specific historical information available pertaining to this item.

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APPLICATION OF CRITERIA	
Historical significance SHR criteria (a)	There is currently insufficient information to assess Randwick against this criterion.
Historical association significance SHR criteria (b)	There is currently insufficient information to assess Randwick against this criterion.
Aesthetic significance SHR criteria (c)	There is currently insufficient information to assess Randwick against this criterion.
Social significance SHR criteria (d)	There is currently insufficient information to assess Randwick against this criterion.
Technical/Research significance SHR criteria (e)	There is currently insufficient information to assess Randwick against this criterion.
Rarity SHR criteria (f)	There is currently insufficient information to assess Randwick against this criterion.
Representativeness SHR criteria (g)	There is currently insufficient information to assess Randwick against this criterion.
Integrity	There is currently insufficient information to assess Randwick against this criterion.

HERITAGE LISTINGS	
Heritage listing/s	NA

RECOMMENDATIONS	
Impact	The Randwick Homestead falls outside of the Project Boundary and will not experience direct or indirect impacts.
Recommendations	Bridges Acoustics (2012) concluded that the blast vibrations generated by the Project will not exceed the recommended vibration and overpressure criteria (5 mm/s and 115 dBL). However, it is recommended that a pre-blasting structural survey / dilapidation survey of the heritage item be undertaken to document current conditions and that ongoing structural surveys be conducted on a risk-based frequency to monitor the item's condition over time. Remedial measures should be implemented, where necessary, when blasting impacts are shown to be the underlying cause.

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IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	View from Randwick Park to project area				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Heritage Data Form

IMAGES - 1 per page

Please supply images of each elevation, the interior and the setting.

Image caption	Randwick front elevation, view east				
Image year	2011	Image by	Susan Lampard	Image copyright holder	AECOM



Appendix B

Muswellbrook Landscape Conservation Area

DENMAN		LANDSCAPE CONSERVATION AREA		HUNTER	
Location		Name or identification of listing		Region	
Proposer	A.M. WARD R.MCDOUGALL	Crown land	Freehold	Map reference	
		X	X	Singleton	
Date of Proposal	16.8.84	Local Govt Area/s		1 : 250 000	
Suggested Listing Category	CLASSIFIED	MUSWELLBROOK SHIRE		Owner/s	
Committee (Trust use)	LANDSCAPE CONSERVATION			PRIVATE/VARIOUS	
Council (Trust use)	21.1.85				
Reasons for Listing					
Aesthetic: The lush cultivated alluvial flats of the central Hunter and lower Goulburn Rivers present a magnificent view, with the wide valley floor of majestic scale bounded by low hills to the east and west and the rugged escarpment of Wollemi National Park to the south (Appendix A). Social: This area contains many of the high quality properties and large pastoral estates which contribute to the great rural wealth of the Hunter Valley (Appendix B).					
Description					
The area begins along the Hunter River a short distance below Muswellbrook and comprises the long sweep of valley floor extending south-westerly some 25 km to the junction of the Goulburn River at Denman. The section of the Goulburn River Valley below Sandy Hollow is included. The area then extends some 25 km south-easterly down the Hunter Valley to Jerrys Plains Ridge. In this lower section, the valley widens and embraces several major tributaries. The escarpment of Wollemi National Park comprises the southern boundary of the area. Geology and Landform - (Appendix C)					
Recommendations					
The high scenic and cultural qualities of the listed area should be protected through appropriate Environmental Protection zonings under a Local Environmental Plan. Open cut mining of the alluvial river flats should not be permitted. Should it be necessary for open-cut mining of the non-alluvial lands, the aesthetic and social values of the Classified area should be recognised in the mining operation and the rehabilitation programme.					
Bibliography					
W. Allan Wood : Dawn in the Valley : Wentworth Books 1972 C.S.I.R.O. : General Report on the Lands of the Hunter Valley 1963					

MUSWELLBROOK-JERRYS PLAINS

APPENDIX AScenic Values

The upper section of the area comprises a flat alluvial flood plain contained on each side by low rolling hills. The land has been cleared for intensive farming - crops, dairy farming and vineyards - on the floodplain and grazing on the foothills.

The area has an air of rural prosperity, many large holdings with magnificent historic homesteads contributing to this atmosphere.

The lower Goulburn River Valley also comprises flat valley floor, much narrower than the Hunter, and contained between the foothills. Mount Dangar stands dominant over the western end of the area, marking the eastern end of the Goulburn River National Park.

Below the Goulburn River junction, the Hunter flows south-easterly. The valley floor widens and the listed area embraces several major tributaries. The valleys of the creeks which enter from the north are wide and mostly cleared; those entering from the south are narrower and more rugged, with rough sandstone escarpments.

Throughout the whole area there are extensive views of the river flats, the enclosing hills and distant ranges. The colourful bluffs of Wollemi National Park dominate to the south, contrasting with the rolling hills which form the other boundaries. Overall the area provides continuous vistas of pleasant landscapes, with no intrusive elements.

MUSWELLBROOK-JERRYS PLAINS

APPENDIX BHistorical and Social Values

John Howe, Chief Constable of Windsor, was the first white man to see the Upper Hunter, when he led a small party to the crest of the Hunter Range and looked down over the Hunter Valley at what is now Jerrys Plains, but which he called Coomery Roy, in November, 1819. He travelled down Doyles Creek to reach the Hunter and was greatly impressed with the quality of the country. He remarked, "It is the finest sheep land I have seen since I left England and will grow as good a swath"

Five years later Henry Dangar completed the discovery of the Upper Hunter. In August, 1824, he proceeded westward from Foy Brook, crossed the watershed between Saltwater Creek and Muscle Brook, and entered the valley of the Upper Hunter - the first white man to do so.

In October of the same year he left Jerrys Plains, (then the limit of settlement) and proceeded westward up the unexplored section of the Hunter River beyond the limit discovered by John Howe five years earlier. Reaching the junction of the Goulburn and Hunter Rivers, he decided to follow up the latter, and eventually came to the area he had found earlier near Muscle Brook.

Dangar named the alluvial flats of the Hunter upstream from the junction of the Goulburn "Twickenham Meadows". Surgeon Peter Cunningham (brother of the explorer, Allen) described these meadows thus : "One of the finest natural prospects that can be witnessed The flat alluvial lands spread out before you are matted with luxuriant herbage. Branching evergreens are scattered singly or in clumps, with the river winding through the midst; its steep and grassy banks bordered with a deep green fringe of dark-foliaged swamp oaks. The gently rising hills beyond, thinly clothed with wide-spreading forest trees, extend in diversified magnificence as far as the eye can reach."

Following Dangar's expedition, there was a scramble for land in the area and all river frontages were soon taken. The beginnings of large pastoral estates were strung along the river upstream from Merton, the original village of the town of Denman.

- 2 -

MUSWELLBROOK-JERRYS PLAINS

APPENDIX B (CONTINUED)

Many of the grants were made to Civil Servants and retired Navy and Army Officers. Two people who came to the colony on the same ship in 1825 applied for grants adjoining each other on the Upper Hunter. Surgeon Peter Cunningham located his grant at the confluence of the Hunter and Goulburn Rivers, and named his farm "Dalswinton" after his family's estate in Dumfriesshire. William Ogilvie, Lieut. R.N., selected the land immediately upstream on the Junter and named his farm "Merton" after a village in Surrey. The village of Merton developed in this area and soon became the regional centre of administration, and the mother village of the town of Denman.

"Piercefield" was originally a grant of 2,030 acres, in 1824, to William Carter, Master in Chancery in the Colony. The area of the property was increased to 9,000 acres in a few years, but Carter became disastrously involved in land and stock deals and mortgages, and his estate passed into the hands of James Bettington.

Captain John Pike of 73rd Regiment secured a grant of 2,000 acres and purchased a further 4,000 acres, to establish "Pickering" in 1825. He was the first man to take a dray to that part of the country, and his track, which others followed, became known as Captain Pike's Road. His wife Justine and daughter Mary Elizabeth were the first white women to go to the Upper Hunter.

Two of the most prominent properties in the area were those of the Hon. Francis Forbes, Chief Justice, and his brother, George. The former named his estate "Skellator" after a Forbes Estate near Aberdeen, Scotland, and the latter, "Edinglassie" after the ancestral home in Aberdeenshire.

Most of the large estates established in this era played a leading part in the development of the substantial rural wealth of the Hunter Valley.

MUSWELLBROOK-JERRYS PLAINS

APPENDIX CGeology and Land Form

The area includes a large part of the floodplain surrounding the Goulburn and Hunter Rivers and as such it consists mainly of sandy alluvial terraces (Quaternary age) within which the River follows a meandering course. A wide range of fertile soils occur and are extensively cultivated. The system of alluvial terraces is well developed with local relief up to 10 m.

On either side of the floodplain, rocks of the Singleton Coal Measures (Permian age) occur. These include sandstone, shale, conglomerate and coal seams and give rise to the gently undulating land surface which adjoins the flat alluvial plain.

