AN ASSESSMENT OF THE CULTURAL HERITAGE VAUES OF THE PROPOSED CAVAL RIDGE MINE AREA, BMA BOWEN BASIN COAL GROWTH PROJECT,

prepared by

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1. INTRODUCTION

This report contains an assessment of the cultural heritage values of the area which will be impacted by a proposed new open cut mine at Caval Ridge in the Isaac Regional Shire, Central Queensland highlands (Figure 1).

This project is part of an expansion of coal mining operations by the proponent BM Alliance Coal Operations Pty Ltd ("BMA") in the Moranbah section of the northern Bowen Basin, Queensland. This project is entitled *The BMA Bowen Basin Coal Growth Project*. BM Alliance Coal Operations Pty Ltd is manager and agent on behalf of the Central Queensland Coal Associates Joint Venture governed by an overarching strategic alliance between BHP Billiton and Mitsubishi Corporation known as BHP Billiton Mitsubishi Alliance (BMA).

This cultural heritage study lies within the area which is under a registered Native Title Claim on behalf of the Barna/Barada/Kabelbara/Yetimarala (BBKY) people (BBKY#4, National Native Title Tribunal No. QC01/25; Federal Court No. QG6230/98)

The proposed Caval Ridge mine and infrastructure are located on the 1:100 000 Topographic Mapsheet of Grosvenor (Ed. 1) 8554. The study area extends from 3km south of Moranbah township to Harrow Creek in the existing Peak Downs Coal mine.

Northern Archaeology Consultancies Pty Ltd was commissioned to undertake the cultural heritage assessment with representatives of BBKY#4 (project archaeologist Elizabeth Hatte). The cultural heritage fieldwork was undertaken over several fieldwork sessions between July and November 2008 by the project archaeologist and an average of four BBKY representatives (see Appendix 2 for list of field personnel).

This cultural heritage study was undertaken under the provisions of *The Aboriginal Cultural Heritage Act 2003* (for pre-contact Indigenous cultural heritage) and *The Queensland Cultural Heritage Act 1992* (for non-Indigenous and post-contact Indigenous cultural heritage).

1.1 Project Description

The Bowen Basin Coal Growth Project will involve the following proposed developments:-

- production of an additional 20 million tonnes per annum (Mt/a) of coal products through the development of two new coal mining operations (Daunia and Caval Ridge Mines);
- an expansion of the existing Goonyella Riverside Mine;
- the development of associated mine infrastructure for each of these operations;
- the possible development of a new, larger capacity airport near Moranbah to accommodate increased travel to and from the area.

The Caval Ridge Mine will lie partly on an existing mine lease ML1775 which also encompasses the existing Peak Downs Mine. A new mining lease will also be required, to run along the western side of ML1775 to accommodate infrastructure out of pit spoil dumps, etc.

The following details are provided in the IAS:-

- production of 5.5 Mtpa of coal products;
- a construction workforce of approximately 1200 people, with an estimated operating workforce of 340 people;
- dragline and truck and shovel mining;
- development of associated infrastructure including a new 8Mtpa CHPP, a new connection to the power grid, a new water pipeline connection;
- export of coal via the existing Hay Point and/or Dalrymple Bay coal terminals, with potential to export via Abbot Point coal terminal following construction of the Northern Missing Link rail line, the requirement for a rail loop from the project area to the existing rail line that passes to the west of the project area
- rehabilitation of the site by re-shaping the waste rock dumps, topsoiling and revegetation using native vegetation.
- a new connection to power grid will be required, with the possibility of supplementary on-site diesel generation;
- water might be supplied from a range of sources including the Burdekin River (Burdekin to Moranbah Pipeline), Eungella Dam (Eungella Pipeline), Bingegang Weir and Braeside Bore Field, and on-site groundwater and surface water capture. Preliminary investigations show that the Daunia and Caval Ridge Mines are likely to require a total 2400ML/yr, and the Goonyella Riverside expansion will require 4000ML/yr. All water requirements can be met by the abovementioned sources and connections to existing water infrastructure;

- road network: general access to the sites for material and workforce transportation will require new connections to the network, in particular the Peak Downs Highway.

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1.2 Cultural Heritage Terms of Reference

The Terms of Reference for this project called for a cultural heritage study that will:-

1. describe Indigenous and non-Indigenous cultural heritage sites and places, and their values.
2. be conducted by an appropriately qualified cultural heritage practitioner in association with the relevant Indigenous community
3. undertake a systematic survey of the proposed development area that will include the following:-
   - location and recording of Indigenous and non-Indigenous cultural heritage places;
   - description of the environmental values of the cultural landscapes of the affected area in terms of the physical and cultural integrity of the landforms;
   - significance assessment of any cultural heritage sites/places located;
   - assessment of the impact of the proposed development on cultural heritage values;
   - a report of work done which includes background research, relevant environmental data and methodology, as well as results of field surveys, significance assessment and recommendations.

It is noted that a permit to survey is no longer required under *The Aboriginal Cultural Heritage Act 2003.* The requirement for a permit to survey operated under the provisions of the previous Act (*Landscapes Qld and Queensland Estate Act 1987)* but it has been replaced by agreement-based arrangements including Cultural Heritage Management Plans (CHMPs) which may be formally reviewed by the State. Wherever an Environmental Impact Statement is undertaken, a cultural heritage management plan is mandatory. This means that high-impact developments can go ahead only when an effective CHMP has been agreed between the proponent and Native Title Party/ies, and the CHMP registered with the State Authority.

The Terms of Reference also call for a project-specific cultural heritage management plan (CHMP) which will manage the environmental harm to cultural heritage values in the vicinity of the project. The CHMP will provide a process for the management of cultural heritage places both identified and sub-surface at the project sites. It is usual practice for the CHMP to be based on information contained in archaeological and/or

anthropological reports on the survey area and cultural reports and/or information from affiliated traditional owners. The CHMP should address and include the following: It is understood that the proponents and the BBKY#4 via Woora Consulting will be negotiating a CHMP.

1.3 Consultative Framework

The BBKY Traditional Owners have been involved in the Caval Ridge Project from the very beginning. Consultation between BMA (Shaun Ferris Project Manager) and Woora Consulting (Frank Budby [Elder cultural heritage advisor], Stacey Budby and Graham Budby cultural heritage Managers]) has been ongoing, throughout the project.

Several meetings have been held in 2008 regarding, among other things, the arrangements and dates for cultural heritage fieldwork. Woora Consulting Pty Ltd has been the project manager for the Indigenous cultural heritage study. The cultural heritage field surveys have been undertaken in several sessions between 10th August and 19th October 2008 by a team comprising myself or Emma Oliver as project archaeologist and an average of four BBKY representatives for each day of fieldwork (see Appendix 2: list of field survey personnel).

Recommendations regarding appropriate protection of sites, features and values have been formulated both on site at the time of the find and in association with the BBKY representatives. Management strategies for the protection of cultural heritage within the study area have been formulated both during and since the field survey (see Section 9).

2. CULTURAL HERITAGE LEGISLATION

Cultural Heritage' can be defined as:

> ...all places, items and values of archaeological, traditional, historical or contemporary significance within Australian territory…[It] refers to items, places and values of both Indigenous and non-Indigenous origin [and] components of the natural landscape which are regarded by Aboriginal Traditional Owners as living parts of their cultural heritage (Hatte 2004: 3).

Cultural Heritage Management involves:

- the identification of Cultural Heritage objects or places;
- an assessment of their significance; and
- the development and implementation of management procedures in order to maintain Cultural Heritage significance.

2.1 Burra Charter

Indigenous Cultural Heritage in Queensland is protected by *The Aboriginal Cultural Heritage Act* (*2003*). Like all Australian states and territories, Queensland legislation derives its philosophical principles from *The ICOMOS Charter for the Conservation of Places of Cultural Significance (The Burra Charter) 1977.* The following definitions are Central to the Charter:-

- 'Conservation' means all the processes of looking after a place so as to retain its *cultural significance*' (Article 1.4).
- Cultural significance is defined as meaning '*aesthetic, historic, scientific or social value for past, present or future generations*' (Article 1.2).

The Burra Charter recognises that cultural significance can be based on one or more values: aesthetic, historic, scientific and social but it notes that other categories of cultural significance may be developed as understanding of a particular place increases (Article 2.6). Article 5 states that '*Conservation of a place should take into consideration all aspects of its cultural significance without unwarranted emphasis on any one aspect at the expense of others*'.

The Burra Charter has not always been found appropriate for places of significance to Aboriginal people. For this reason Australia ICOMOS in 2001 adopted a *Statement on Indigenous Cultural Heritage* as its guiding principle.

- Indigenous people of Australia have a unique status as the original owners and custodians of their traditional lands. The traditional rights and knowledge of Aboriginal people and Torres Strait Islanders are recognised and respected. The relationship of Indigenous people to their land is the essence of their cultural heritage, and therefore, of their survival.

- Indigenous cultural heritage is a fundamental and inseparable part of the cultural heritage of all Australians.

- Indigenous cultural perspectives require an integrated view of heritage which includes social significance and natural features and landscapes, which are given meaning through culture.

- Indigenous cultural heritage is expressed in many ways and in many kinds of places – such as places with contemporary community associations; places and landscapes which hold strong spiritual meaning; places that tell the story of conflict and survival; places with archaeological material remaining from Indigenous use and occupation of the land; places where community life has flourished; and places that reflect the political struggle of Indigenous people for social justice.

- Indigenous cultural heritage has significance for Indigenous people and communities for social, spiritual and historical reasons, and may also have significance for non-Indigenous people and communities. Places with shared heritage values should be managed to conserve and enhance them all, and involve all associated communities – Indigenous and non-Indigenous.

- The Indigenous cultural heritage significance of places can only be determined by the Indigenous communities themselves.

- Indigenous people must be effectively involved in decisions affecting their heritage, and in managing places significant to them. Land managers must respect the rights of Indigenous people to make decisions about their own heritage.

- Indigenous communities need to have control over information about their heritage. There may be instances where Indigenous communities do not want information about their cultural heritage to be generally available.

2.2 State Legislation

2.2.1 The Aboriginal Cultural Heritage Act 2003 (Queensland)

Under this Act 'Cultural Heritage' is defined as anything that is:-

(a) a significant Aboriginal area in Queensland; or
(b) a significant Aboriginal object; or,
(c) evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland (Section 8).

Aboriginal Cultural Heritage includes:-

- archaeological sites (such as artefact scatters, hearths, stone tool knapping areas, scarred trees and stone arrangements);
- places that have traditional stories or traditional knowledge associated with them;
- historically important places (such as old stockmen's' camps or tracks); and,
- places that are important today (such as food or ochre-getting places or places used for recreational purposes).

The Queensland Department of Natural Resources and Water (DNR&W) is the administering and compliance authority of *The Aboriginal Cultural Heritage Act*. The following principles are fundamental to its operation:

- recognition, protection and conservation of Aboriginal cultural heritage should be based on respect for Aboriginal, cultural and traditional practices;
- Aboriginal people should be recognised as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage;
- it is important to respect, preserve and maintain knowledge, innovations and practices of Aboriginal communities and to promote understanding of Aboriginal cultural heritage;
- activities involved in recognition, protection and conservation of Aboriginal cultural heritage are important because they allow Aboriginal people to reaffirm their obligations to "law and country";
- there is a need to establish timely and efficient processes for the management of activities that may harm Aboriginal cultural heritage.

The accent of this legislation is on *the protection of areas of cultural significance whether or not they actually contain physical evidence of the past (Section 12(2)t,* rather than just significant objects or items.

Under The Act, a significant Aboriginal area or object must be significant to Aboriginal people because of either or both of the following:

(d) Aboriginal tradition;

(e) the history, including contemporary history, of any Aboriginal party for the area (Sections 9, 10).

Section 11 of the Act stipulates that *if a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding that object etc is also evidence of Aboriginal occupation…the object or structure cannot be separated from its context without destroying or diminishing the object or structure's significance as evidence of Aboriginal occupation.*

Section 12 provides information about identifying significant Aboriginal areas. It is not necessary for an area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise, eg. the area might be a ceremonial place, a birthing place, a burial place or the site of a massacre. If significant objects exist in the area and their significance is intrinsically linked to the location, then the objects themselves make the place significant and if appropriate both the area and objects become significant. In identifying a significant area, authoritative information may be had from anthropological, biogeographical, historical and archaeological sources.

2.2.1.1 Extent of Protection

The Act exerts blanket protection over *all* Indigenous cultural heritage in Queensland regardless of the Native Title status of that land. Cultural Heritage items and place of significance to Aboriginal people may exist in areas where Native Title has been extinguished, eg. freehold land.

2.2.1.2 Duty of Care Guidelines

The Act contains a general Duty of Care to take all reasonable and practical steps to be aware of, and to avoid harming, Aboriginal cultural heritage. Section 23(1) requires that a person must exercise due diligence and reasonable precaution before undertaking an activity that may harm Aboriginal heritage. Everyone has a responsibility to exercise Duty of Care. Duty of Care Guidelines attached to The Act set out key indicators of compliance which include, but are not limited to, the following:-

- proof of consultation with the registered native title applicants,

- cultural heritage studies undertaken in association with the registered native title applicants,
- searches of cultural heritage information contained in the cultural heritage register and database held by the Cultural Heritage Coordination Unit within DNR&W,
- a Cultural Heritage Management Plan (CHMP) or other agreement with the registered native title applicants.

2.2.1.3 Penalties

There are substantial penalties for failing to safeguard the Aboriginal cultural heritage values of Queensland. These penalties consist of:

Monetary penalties:

- $75,000 for an individual
- $750,000 for a corporation;

Injunctions, issued by the Land and Resources Tribunal;

Stop orders, issued by The Minister, for an activity that is harming or is likely to harm Aboriginal cultural heritage objects or values.

A cultural heritage study is mandatory in relation to high impact activities that require Environmental Impact Statements.

2.2.1.4 Cultural Heritage Management Plan

The previous state permitting system for cultural heritage studies has been replaced by agreement-based arrangements including Cultural Heritage Management Plans (CHMP) which may be formally reviewed by the State. The CHMP is now a key tool in the process of heritage management. Management plans describe the heritage significance of a place and the policies, agreed by all parties, required to retain these values.

Wherever an Environmental Impact Statement (EIS) is undertaken, a cultural heritage management plan is mandatory if the project requires some form of permit, approval or licence. This means that high-impact developments will be able to go ahead only when an effective CHMP (containing the results of a cultural heritage study) has been

agreed between the proponent and Native Title Party/ies, and the CHMP is registered with the State Authority.

Where the legislation does not automatically require a mandatory cultural heritage management plan, the legislation allows for the development of voluntary CHMPs as a measure to encourage industry to adopt best practice. Any activity undertaken in accordance with a cultural heritage management plan approved under the legislation satisfies the Duty of Care requirement.

2.2.1.5 The Register and Site Database

A register of Aboriginal Cultural Heritage is maintained within the Cultural Heritage Unit, Department of Natural Resources and Water (DNR&W). This register contains information that has been collated by the Environmental Protection Agency between the 1930s and the commencement of the Act in early 2004. This information is confidential and basic details will be provided to authorised persons on an 'as needs' basis. A database of Aboriginal Cultural Heritage consisting of information collected since the Aboriginal Cultural Heritage Act commenced is also being maintained within this Unit.

2.2.1.6 Indigenous Cultural Heritage (CH) Bodies

An Aboriginal CH Body is a corporation that has been approved by the Minister of the DNR & W as an approved CH body for an area. The CH Body is the initial contact point for cultural heritage issues within a Native Title area and it represents the registered Native Title claimant group for that area.

The function of this body is to identify the Native Title Parties for an area. A CH body must have the written support of a significant proportion of the Native Title Applicants of an area. Woora Consulting (based in Mackay and Nebo) is the CH body for land within the BBKY#4 registered Native Title claim area.

2.2.2 The Queensland Heritage Act 1992

This Act provides for the conservation and protection of places and items of non-Indigenous origin and of Indigenous origin that derive from the post-European contact history of Queensland. Under this Act, places and items must be entered into a Queensland Heritage Register in order to be protected. Substantial penalties may apply for damage to a place or items that has been entered on the Register. From 2005 the Queensland Heritage Council has adopted the revised Burra Charter

(Walker and Marquis-Kyle 2004) as a guideline for making decisions under *The Queensland Heritage Act 1992.*

In order for a place to be entered onto the Queensland Heritage Register (Section 23 [1]) it must satisfy at least one of the following significance criteria:

- important in demonstrating the evolution or pattern of Queensland's history;
- important in demonstrating rare, uncommon or endangered aspects of Queensland's heritage;
- has potential to yield information that will contribute to an understanding of Queensland's history;
- important in demonstrating the principal characteristics of a particular class of cultural places;
- important in exhibiting particular aesthetic characteristics valued by the community or a particular cultural group;
- important in demonstrating a high degree of creative or technical achievement at a particular period;
- has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- the place has a special association with the life or work of a particular person, group or community of importance in Queensland's history.

2.3 Federal Legislation

Three pieces of relevant Federal legislation on cultural heritage issues are *Environment Conservation and Biodiversity Conservation Act 1999 (EPBC Act),*
The *Australian Heritage Commission Act 1975-1990* and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1986*.

2.3.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

A new Federal heritage system came into effect on 1 January 2004 to protect Australia's national heritage places. Nationally important heritage values will have legal protection under *The Environment Conservation and Biodiversity Conservation Act 1999.*

Under the new system, national heritage joins six other matters of national environmental significance (NES matters) already specifically protected under the EPBC Act. By law, no one can take any action that has, will have, or is likely to have, a significant impact on any of these matters without approval from the Australian Government Minister for the Environment and Heritage. There are severe penalties for those who do. An action includes a project, development, undertaking, an activity, or series of activities.

If the Minister decides that the action is likely to have a significant impact on a matter of national environmental significance, then the action requires approval under the EPBC Act. If the Minister decides that the action is not likely to have a significant impact on a matter of national environmental significance, then the action does not require approval under the Act. If the Minister's decision is that an action does not require approval, a person will not contravene the Act if the action is taken in accordance with that decision. If the Minister's decision is that an action requires approval, then an environmental assessment of the action must be carried out. The Minister decides whether to approve the action, and what conditions (if any) to impose, after considering the environmental assessment.

The main elements of the new heritage system include:-

- the creation of a new advisory body, the Australian Heritage Council;
- the creation of both a National Heritage List and a Commonwealth Heritage List;
- retention of the existing Register of the National Estate.

The National Heritage List records places with outstanding natural and cultural heritage values that contribute to Australia's national identity.

The Commonwealth Heritage List will comprise natural, Indigenous and historic heritage places owned or managed by the Australian Government. These include places connected to defence, communications, customs and other government activities that also reflect Australia's development as a nation.

The new laws also established the Australian Heritage Council, which replaces the Australian Heritage Commission as the Australian Government's independent expert advisory panel on heritage matters. The Australian Heritage Council consists of a Chair and six members, including two Indigenous people with appropriate heritage experience or expertise.

When a place that may have Indigenous heritage values is nominated to the National or Commonwealth Heritage Lists, the Australian Heritage Council must seek the views of Indigenous people with rights or interests in the place as part of its assessment. The Council must present these Indigenous views to the Minister so he/she can take these into account when making decisions as to the listing of the place.

Under the new laws there are penalties for anyone who takes an action that results, or will result in, a significant impact on the national heritage values, to the extent they are Indigenous heritage values, of a place. The laws also enable Indigenous people to seek Federal Court injunctions against any activities that have a significant impact on the national Indigenous heritage values of a listed place. Indigenous people will be involved in developing management plans for places with Indigenous heritage significance on the National or Commonwealth Heritage List. National heritage places on Indigenous land will be managed through conservation agreements, which will operate in the same way as Indigenous Protected Areas.

2.3.2 Australian Heritage Commission Act 1975-1990

This Act is comprehensive in its approach, covering a wide range of culturally significant places. Classes of items which might be placed on the Register of the National Estate include those of the historic environment (including buildings and structures, modified landscapes and archaeological sites); the natural environment; and items from the Aboriginal environment (both archaeological sites and unmodified natural features such as story places and sacred sites). Section 30 provisions protect items on the Register from unnecessary destruction by actions of Federal Government Departments, agencies and instrumentalities. State Governments and private developers are not constrained by the provisions of this Act unless Federal funding is involved. However, the Register provides guidance to the value of places.

2.3.3 Aboriginal and Torres Strait Islander (ATSI) Heritage Protection Act 1986

The purpose of the Aboriginal and Torres Strait Islander (ATSI) Heritage Protection Act 1986 is to preserve and protect areas and objects of particular significance to Aboriginal Australians from injury or desecration. This legislation can provide particular protection for sacred sites. Any steps necessary for the protection of a threatened place are outlined in a gazetted Ministerial Declaration (Sections 9 and 10), and this can include the prevention of development. As well as providing

protection to areas, it can also protect objects by Declaration, and in particular Aboriginal skeletal remains (Section 12). Heavy penalties may be levied in the case of contravention of provisions of a Declaration (Section 22). Although this is a Federal Act, it can be invoked in a State if the State is unwilling or unable to provide protection for such sites or objects.

2.4 Cultural Significance Assessment

The assessment of significance forms an integral part of cultural heritage studies. According to Bowdler (1984:1) "…an assessment of the significance of a place or a site is necessary to decide what should be done with it, and if some form of conservation or protection is indicated, a clear statement of significance should indicate how that preservation should be carried out".

The Burra Charter defines 'significance' as 'aesthetic, historic, scientific or social value for past, present or future generations' (Guidelines to *The Burra Charter* Section 2.1). It is important to note that the concept of significance is multi-faceted, and any one cultural heritage site may have different kinds of significance at different times and to different interest groups.

In making an assessment of significance the following steps need to be taken:-

- to understand the nature of the 'fabric' or all the physical material of the place (*Burra Charter 1999: Definitions, Article 1*);
- to make a close, systematic examination of the fabric to understand its significance; this examination should be supplemented by other information about the place;
- to understand that the focus of both research potential and representativeness change over time. As research interests, archaeological methods and techniques change through time, or as sites become rarer in an area that has been subject to major physical disturbance of one form or another, the criteria for assessing site significance must be re-evaluated. Consequently, as many sites as possible should be conserved to account for these changing values.

This Act acknowledges that the Australian Aboriginal cultural record can generally be divided into two sections:

- physically identifiable objects (archaeological sites), and

- objects/places that are not physically identifiable (sites sacred or significant to Aboriginal people which can be unmodified features of the landscape).

2.4.1 Scientific (archaeological) Significance Assessment

The scientific significance of a place is assessed according to its:-

- research potential, and
- representativeness.

'Archaeological Research potential' refers to a site's ability to provide unique information on past human activities particularly everyday life, which more often than not is not available in documentary sources (Bickford and Sullivan 1984). Specifically, archaeological sites can supplement other information on local histories by identifying physical relics of human activities, past climates and vegetation patterns by analysis of pollen grains, and past diets and resources by the identification and analysis of plant, shell and bone remains. Such information may relate to questions of local culture history spanning tens or even thousands of years or to even more general questions relating to the evolution of cultures.

'Representativeness' refers to the ability of one site or a sample of sites to represent as accurately as possible the range and frequency of site types in a particular area. The notion of representativeness is also related to the maintenance of site diversity. The rarer a site, the greater its significance. In areas not well represented by physical, archaeological remains, all sites must be considered significant until proven otherwise. Older sites, those that contain particular attributes, or a mixture thereof, that are not found elsewhere, or those in which the archaeological material is unusually well preserved would potentially fall within the category of unique.

The scientific significance of a site generally increases as its potential to provide information increases. For any given place the significance will be greater where evidence of its association or the event that created it survives *in situ* than where it has been changed or evidence of context does not survive.

2.4.2 Sites/Places of Significance to Traditional Owners

Indigenous people are the primary sources of information on the value of Indigenous heritage places and how they are best conserved. This principle underlies Queensland's *Aboriginal Cultural Heritage Act 2003*.

The criteria used by Aboriginal people to assess cultural significance may be quite different from those used to make assessments of scientific significance. Significance assessments by Aboriginal people may be based on traditional, historical, contemporary and other cultural values. Criteria such as rarity, uniqueness and representativeness are often not relevant in this type of assessment. Such places may be significant because of a past event, because of association with a story or because of an inherent spiritual quality associated with the place. Such places may not exhibit any visible indicator of their significance. As stated in *The Aboriginal Cultural Heritage Act* 2003:-

> *For an area to be a significant Aboriginal area, it is not necessary for the area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise denoting the area's significance (Section 12).*

Significant cultural places are not restricted to the period prior to contact with Europeans. Often events from the contact period and the more recent past may be so important to the local Aboriginal communities that they become significant and this is reinforced in Sections 9 and 10 of *The Aboriginal Cultural Heritage Act 2003* (see Section 2.2 above). If these events relate to a specific place in the landscape, then that place (i.e. the site) may become sacred or highly significant to the local Aboriginal communities.

Scientific significance assessment is not necessarily consistent with Aboriginal people's cultural evaluations, but the Aboriginal cultural values of a site or place may, under *The Aboriginal Cultural Heritage Act,* override other forms of significance assessment.

3. THE STUDY AREA AND EXISTING DISTURBANCE

The study area lies in the Northern Bowen Basin province of the Brigalow Belt Bioregion. It lies within the northern Isaac/Connors catchment of the Fitzroy River Basin, approximately 220 to 280 metres above sea level and about 140 kilometres west of the coast. It runs north from the northern end of Peak Downs mine and it is bisected by the Peak Downs Highway just to the west of its junction with the Dysart Road.

The entire project area consists of an approximate polygon measuring roughly 17km (N/S) x 2-3km (E/W). Not all of the project area was surveyed in this study as several sections have been completed previously:-

- The entire section east of Horse Creek north of the Peak Downs Highway. This had been the subject of a previous field survey by BBKY personnel and archaeologist Dr Pavel Gorecki (see Gorecki 2006b).
- The section south of Cherwell Creek and east of the existing Peak Downs Mine, excluding the southern bank of Cherwell Creek and a previously undisturbed forested section of the eastern side south of the creek. Stone artefacts along the eastern side of the Peak Downs pits have already been salvaged in the past few years to make way for the extension of the mine and a variety of infrastructure (eg. an eastern bypass road, powerlines etc.).

The project area is divided into two by the Peak Downs Highway though the larger section lies north of the highway. As well as this main section, the project area also includes two long narrow strips of land, one in the extreme south west, one in the north west. The southern one runs for about 3km along the western side of the Peak Downs mine west of the pit and the haul road. It is proposed that a coal conveyor will be constructed to carry coal between Peak Downs mine and the Caval Ridge wash plant which is proposed for western corner south of the Peak Downs Highway. The northern one is approximately 6-7km long and is for the extension of the rail line.

The project area covers two pastoral properties, Buffel Park, part of which already overlies Peak Downs Mine, and Horse Creek in the north. It is understood that both of these properties are owned by BMA and are leased back to the former owners to run cattle. The rail line in the north west corner of the project area runs through a short section of an adjoining property to meet the existing Blair Athol line.

There is an intimate association between the environment and Aboriginal cultural heritage and patterns in the distribution of cultural sites are influenced by environmental factors such as topography, geology, soils and vegetation. The preservation of cultural heritage is both linked to, and dependent upon, the preservation of the landscape; thus cultural heritage studies always describe factors such as climate, rainfall, geomorphology, geology, and vegetation.

The region has a tropical to sub-tropical climate with variable annual rainfall, high summer temperatures and high rates of evaporation. The mean temperature range west of the coastal ranges in January is ca. 25˚C to 35˚C and ca. 10˚C to 25˚C in July. Most rainfall tends to occur in the summer months from November to March. Moranbah records an annual mean of 580mm (Elders weather.com.au), of which over 50% falls in the summer months of December to February, but the region may experience dramatic fluctuations in annual rainfall from year to year. The usual pattern of rainfall consists of thunderstorms of high intensity and often short duration from September to December followed by a general wet as happened in early 2008. The intensity of these summer storms is sometimes such that they may exceed the capacity of clay soils to absorb the water, resulting in significant runoff which tends to encourage erosion and sedimentation in the watercourses. Droughts are also common. In these periods moisture loss through evaporation significantly exceeds moisture gained through rainfall.

3.1 Geology

The surface stone in the study area consists of Cainozoic alluvium (mainly clay, silt, sand and gravel) and sediments (soil, alluvium, gravel, scree, sand and duricrust) (Olgers 1983).

The southern end of the project area lies to the east of a raised sedimentary escarpment that overlies the coal deposits. As one goes further north the landscape consists mainly of undulating downs which are susceptible to erosion. There are several exposures of basalt from a tertiary basalt flow towards the northern end of the project area, visible as low, cleared ridges. The soil includes black and brown cracking clays and red duplex sandy soil. The duplex soils occur mainly on the ridge tops and sides, while the black cracking clays are generally predominant on valley floors and plains.

3.2 Water

Access to water has always been a major determining factor in human settlement patterns, and settlement density has always tended to be greater in proximity to water. Watercourse corridors have often, though not always, been protected from clearing throughout much of Queensland's pastoral history, so the retention of cultural heritage has been greater in these areas.

This region is part of the Isaac/Connors catchment draining into the huge Fitzroy River system. The Isaac River drains southerly several kilometres to the east of the Caval Ridge study area. The study area contains two separate minor watersheds divided by a relatively indistinct ridgeline:-

- the northern watershed which includes Horse Creek, Grosvenor Creek and tributaries. Horse Creek joins Grosvenor Creek downstream of the Caval Ridge Mine area and thence into the Isaac River. The extreme western end of the rail line extension crosses Grosvenor before it loops to the north around the southern end of Moranbah township;
- the southern watershed includes Nine Mile Creek, Cherwell Creek, Harrow Creek and tributaries. Nine Mile Creek joins Cherwell Creek east (downstream) of the study area, thence into the Isaac River several kilometres downstream of the Grosvenor Creek junction. The southern boundary of the study area is Harrow Creek, part of which has been dammed on the western side of the Haul road west of the mine pits. Harrow meets Cherwell Creek just to the west of the Dysart Road.

All of the above contain sections that have suffered extreme disturbance. Cherwell and Nine Mile Creeks are filled with deep sandy sediments. Near the junction of the two, Cherwell Creek has been diverted to make way for the northern end of Heyford pit in Peak Downs Mine. This section of the old course has been obliterated by the mine pit On the northeastern side of the pit, a short section of the old course runs through land that has been extremely disturbed from digging and which is being prepared for expansion of the pit. Harrow Creek, the southern boundary of the study area, still follows its pre-mining course and mining has been undertaken around it. Its drainage pattern has been altered by the construction of a dam across it on the western side of the haul road.

Plate 1. Dammed section of Harrow Creek

In the northern watershed most of the former vegetation round Horse Creek has been totally cleared for pastoral purposes, resulting in considerable degradation or disappearance of the entire riparian area, with resultant erosion. The area now appears virtually sterile. At times the course of the creek is hard to distinguish from the surrounding cleared landscape.

Plate 2. View of Horse Creek among rgrowth

Several other water sources were observed in the project area. Several property dams have been constructed, mainly in the northern section. The remains of a large area with gilgai formation were also observed, mainly on the western side of the northern section. This area would originally have been covered in Brigalow forest

which has been cleared. Several oral sources mention the importance of the gilgai to Aboriginal people in the region. Prior to the destruction of the Brigalow forests the gilgai areas were sources of semi-permanent water and food in the form of animals, birds and edible plants.

Also noted were areas surrounding Peak Downs mine pits where water has collected and has created large waterbodies. The most obvious one was a large body of water several hundred metres long, along on the western side of Heyford pit. During the survey the team observed a large number of birds (pelicans, swans, ducks, plovers, hawks) either utilising, or in the vicinity of, this facility. Doubtless it would have supported a variety of native land animals on the site also.

Plate 3. Waterbody west of Heyford Pit.

3.3 Vegetation

Traditionally most plant species found in the region had some practical or ritual use for food, medicine, implements or weapons etc. to Aboriginal people.

The Northern Brigalow Belt Bioregion is described as being made up of "[w]oodlands of ironbarks (*E. melanophloia, E. crebra*), poplar box and Brown's box (*E. populnea, E. brownii*) and brigalow (*Acacia harpophylla*), blackwood (*A. argyrodendron*) and gidgee (*A. cambagei*)" (Sattler and Williams: Section 11). Within this region, the Brigalow Ecological Community (*Acacia harpophylla* dominant and co-dominant) is listed as threatened and endangered under the *Environmental Protection and Biodiversity Conservation Act 1999.* Due to the extensive clearing of this region for cattle grazing and, more recently, mining purposes, this ecological community has

been reduced to less than 10% of its original area (Department of Environment and Heritage 2006). Brigalow is now protected under this legislation. The other associated Acacia species are not protected though they have been destroyed along with the Brigalow.

Clearing of vegetation south of the highway has been mainly mine related while north of the highway it has been generally for pastoral purposes. The south retains much of its original vegetation where mining activities do not require clearing, the northern section has been subject to broad scale clearing of the former Acacia forests (*Acacia harpophylla* [brigalow], *Acacia shirleyi* [lancewood], *Acacia rhodoxylon* [rosewood] and *Acacia cambageana* [bendee]), and replanted with mainly exotic pastures. This appears to have resulted in significant degradation of the general landscape and significant widespread destruction of the context of the cultural record.

Plate 4. Four view of cleared landscape north of Peak Downs Highway

A number of exotic species, including weeds, were observed in areas of previous disturbance throughout the study area. These include Harrisia cactus, Prickly pear,

Mexican poppy, Mimosa bush, Parthenium weed, and buffel grass. Buffel grass is the dominant grass found in the under storey. Parthenium weed and *Harrisia* cactus

occur along many tracks, in open paddocks and occasionally in woodland throughout the area.

The following table provides a brief summary of the types of vegetation with cultural uses that existed in the local area. All of these species were recorded during the field survey, either in mature forest or as regrowth. This vegetation is culturally significant as it was widely used traditionally for food, medicine and for various types of implements and BBKY people continue this usage for various reasons. Some species also had symbolic or ritual significance.

Botanical name	Local name	Traditional use/s
Acacia cambageana	Bendee	Implements, fire
Acacia harpophylla	Brigalow	Implements, fire, medicine
Acacia rhodoxylon	Rosewood	Implements, medicine
Acacia salicina	Black wattle	Food, implements
Acacia shirleyi	Lancewood	implements
Archidendropsis basaltica	Dead finish	implements
Alphitonia excelsa	White myrtle, soap tree	soap
Bauhinia spp.	Bauhinia	implements
Brachychiton populneus	kurrajong	food, water, implements, string
Capparis cansecens	Wild orange	food
Capparis lasiantha	Split Jack, wait a while	food
Carissa ovata	Native currant bush or 'burrum'	food
Cassia brewsteri	Leichhardt bean	medicine
Cymbidium canaliculatum	Black orchid or wild arrowroot	food, medicine
Eremocitrus glauca	Native limebush	food, medicine
Eremophila mitchelii	False sandalwood	fuel, medicine, ceremonial
Erythroxylum australe	Native cherry	Food, medicine
Erythrophleum sp.	Ironwood	implements
Eucalyptus populnea	Poplar box	implements
Corymbia sp.	Bloodwood	Implements, medicine
Geijera parviflora	Wilga	implements
Grewia retusifolia	Emu berries, dog balls	food
Owenia acidula	Emu apple	food, implements
Petalostigma pubescens	Quinine	Medicine, implements
Santalum lanceolatum (true sandalwood)	True or commercial sandalwood	Medicine
Terminalia oblongata	Yellowwood	implements
Unknown	Possumberry	food
Enchylaena tomentosa	Ruby saltbush	food
Zehneria cunninghamii	Native cucumber	food
Heteropogon sp.	White spear grass	food

Table 1. List of vegetation species in the study area with known traditional uses.

3.4 Animals

Though it has been subject to considerable modification, disturbance and degradation from more than 150 years of European land practices, recent ecological studies indicate that the Peak Downs mine area contains a variety of regional ecosystems (Agnew et al.). The local region also supported a range of native animals (mammals, birds, reptiles, amphibians and fish) that would have provided a significant proportion of the local traditional diet. Different species had (and still have) symbolic associations with Traditional Owners.

The more common species that were utilised by Aboriginal people in the region are Eastern grey and Red kangaroos (*Macropus rufus and M. giganteus*), possums (*Tricihosaurus sp*.), wallabies (*Petrogale and Macropus spp*.), emus (*dromaius sp*.), scrub turkeys (*Alectura sp.),* bustards or plains turkeys (*Ardeotis sp*.), flying foxes and bats (*Pteropodidae* sp.), bandicoots (*Isoodon sp.),* goannas (*varanidae* family) and echidnas, porcupines (*Tachyglossidae family*), pythons (*Boidae family*) and other snakes, freshwater crayfish in the gilgai, turtles, blue tongue and other edible lizards, and brolgas, ducks, geese and black swans (*Anatidae family*), curlews, plovers, parrots, doves and pigeons. At certain times of the year certain species were not eaten (F. Budby and C. McLennan pers. comm.2006).

Europeans animals were first introduced on a large scale into the area with the first Europeans in the early 1860s when they drove their mobs of sheep into the region; however, cattle grazing has been the predominant pastoral industry in the region for most of the twentieth century. Both sheep and cattle have had a detrimental effect on cultural site preservation in the region, more so cattle as their hooves trample sites and exacerbate erosion. Other introduced species such as rabbits and pigs have also had a negative effect on archaeological sites. The former excavate burrows through buried sites, in the process destroying the stratigraphy of the buried layers. Pigs are also destructive of buried cultural sites.

The first coal mines in the northern Bowen Basin began operations at Goonyella and Peak Downs in the 1970s. Since that time coal mining has become progressively more important to the economy of the region. The townships of Moranbah, Glenden and Dysart all owe their existence to coal mining.

4. HISTORICAL BACKGROUND

Historical sources for this region include primary and secondary sources as well as other documentary material relevant to both the Indigenous and non-Indigenous past, for example:

- ethnographic and linguistic sources on the Traditional Aboriginal people in the region (eg. Curr 1887; Tindale 1974);
- journals and diaries of European explorers and settlers in the region (eg. De Satge, O. (1901). Fetherstonhaugh, C. 1917. Leichhardt 1847; Murray 1860, 1863; Ling Roth 1908; Johnstone 1903-1905);
- historical studies relevant to this area (e.g. Brayshaw 1977; 1990; Breslin 1992; Elder 1999; O'Donnell 1989, MacLean 1988, Mayes 1991, Wright 1984).

Tindale's detailed interpretation of traditional tribal estates and boundaries in particular has long been used as an important information source. Since the introduction of Native Title legislation this information has been subject to scrutiny, criticism and re-interpretation but it still remains the primary source of information, and his description of traditional estates and boundaries is reproduced here for the ethno-historical record. Tindale recorded the area as being in the traditional lands of the Barna (cf. Barada) people. He described the Barna territories as the '…*headwaters of the Isaac River, west to the Denham Range; south to Cotherstone at Grosvenor Downs…*' (Tindale 1974:165).

A large amount of data has been collected by and on behalf of the BBKY people in the course of their native title research. This data contains what is currently known of the pre-contact Aboriginal history, as well as the links between the contemporary families and their traditional past. Some 'first contact' information is available from the observations made by the earliest European observers as they traversed the area (see journals and diaries above). First among these was Ludwig Leichhardt who, in traversing this region, generally came upon people suddenly as they were going about their everyday activities (see below).

Leichhardt's expedition was the first of several early exploratory parties to pass through this region in the middle of the 19th century. Departing from the Darling Downs in October 1844 in search of an overland route to Port Essington on the north coast of Australia. Leichhardt traveled north-west across the Dawson and Mackenzie River valleys and upstream along a river he named after one F. Isaacs of the Darling

Downs. Leichhardt's journal (1847) provides a valuable record of the physical and cultural landscape along the course of this river for some 70 miles. Various entries from February 15 to early March 1845 describe the landforms, geology, soils, flora and fauna as well as numerous encounters with Aboriginal people and/or observations of their material culture. Some of his entries are relevant to the study area and are quoted here.

Leichhardt described local Aboriginal material culture as a result of a visit he made to a camp in the bed of the Isaac river near the junction with Cherwell Creek, several kilometres east of the Caval Ridge boundary and to the south of present day Moranbah, when the party came suddenly upon a group of people who fled at their approach:-

> *24th Feb.-… Towards sunset we heard the noisy jabbering of natives, which promised the neighbourhood of water. I dismounted and cooeed; they answered; but when they saw me , they took such of their things as they could and crossed to the opposite side of the river in great hurry and confusion….they were unwilling to approach us. Their camp was in the bed of the river amongst some small Casuarinas. Their numerous tracks… soon led me to two wells, surrounded by high reeds, where we quenched our thirst. After filling our calabash, we returned to the camp of the natives, and examined the things they left behind; we found a shield, four calabashes, of which I took two, leaving in their place a bright penny, for payment; there were also, a small water-tight basket containing acacia gum; some unraveled fibrous bark, used for straining honey; a fire-stick, neatly tied up in tea tree bark; a kangaroo net;* ***and two tomahawks, one of stone, and a smaller one of iron, made apparently of the head of a hammer: a proof they had some communication with the sea coast…*** *(Leichhardt 1847:162-3).*

This incident is remarkable if, as early as 1847, Aboriginal people in the Moranbah area were not only acquainted with iron (the hammer head had probably been traded either from the coast or from the south), but had already leant how to work it. It also indicates that maybe the Aboriginal people had heard about white people from their trading partners. This extract also indicates exploitation of several types of trees, acacia ('acacia gum'), the kurrajong or bottle tree (for the string to make nets) and the tea tree (for fibrous bark wrapping).

On 27th February while Leichhardt was absent some members of the party were visited in their camp by the same Aboriginal people:-

> *Feb 27th.-…the natives had, in my absence, visited my companions, and behaved very quietly, making them presents of emu feathers, boomerangs, and waddies. Mr Phillips gave them a medal of her majesty Queen Victoria, which they seemed to prize very highly. They were fine, stout, well made people and most of them were young; but a few old women with white circles painted on their faces, kept in the back ground. They were much struck by the white skin of my companions, and repeatedly patted them in admiration. Their replies to inquiries respecting water were not understood; but they seemed very anxious to induce us to go down the river…' Leichhardt 1847:166).*

Leichhardt was reconnoitering along the section of the 'Isaac River several kilometers north of Moranbah township when he came upon a human skull at a creek which he named 'Skull Creek' (now Skeleton Creek), on the eastern side of the Isaac River (Leichhardt 1847: 165):-

> *…another deep scrub creek was found, full of water. Its bed was overgrown with reeds, and full of pebbles of concretions of limestone, and curious fossil trunks of trees, and on its bank a loose sandstone cropped out. Here we found a skull of a native, the first time that we had seen the remains of a human body during our journey. Near the scrub, and probably in old camping places of the natives, we frequently saw the bones of kangaroos and emus.*

Charlie, one of the two Aboriginal members of the team was also approached in this area when he was alone, by:-

> *'…the natives, who made him several presents, among which were two fine calabashes which they had cleaned and used for carrying water; the larger one was pear shaped, about a foot in length, and nine inches in diameter in the broadest part and held about three pints. The natives patted his head, and hair, and clothing…' (Leichhardt 1847:159).*

Leichhardt undertook this trip in the middle of a severe drought and he often mentioned in his journal that the party sometimes suffered badly from thirst. It is recorded that one of the dogs died of thirst. It is therefore interesting to note that there were still deep pools of water in several creeks in the region and that the Aboriginal people had fenced waterholes and dug wells in the bed of the Isaac River.

Leichhardt's glowing reports of the pastoral possibilities for the area resulted in land being tendered for, and runs first leased in about 1854. Prior to the creation of Queensland as a state, the *New South Wales Land Act* allowed hundreds of square miles to be taken up on a single tender and left unoccupied and unstocked. The journal of Andrew Murray who came up in John McKay's party to seek out land near the coast criticized this practice:-

> *This was one of the abuses under the N.S.W. system of applying for land. Those who never saw nor marked country could by Leichhardt's or any other available map as information, apply for runs, and provided the marks were put on the trees prior to the crown lands commissioners inspection which might not be for years after the application was put in, that land was shut up against those who actually went and marked it… (Murray Wed June 19th 1860).*

This Act operated in Queensland until April 1863 when the new Queensland Government made it compulsory for anyone taking up land to stock and occupy it. In the intervening period several individual land speculators had taken up vast tracts of country in this region and had proceeded to sell them.

As was customary in newly settled districts, units of Native Mounted Police were installed in strategic locations to 'protect' white settlement by 'dispersing' (shooting)

Aborigines who resisted the invasion. Native police troopers were brought into this area with George Elphinstone Dalrymple in June 1862 and by mid 1860s a police barracks had been established at Fort Cooper station north of Nebo as a protective force for Europeans, at North Creek and according to oral accounts, on the Isaac River within the present Goonyella/Riverside mine lease. It is recorded that in four months in mid-1865 there were nine separate clashes between Native Troopers and Aboriginal people and 'dispersals' of the latter.

Relatively one-sided versions of the conflict were documented by new settlers De Satge (1901) in the Clermont/Peak Downs/Moranbah region; Fetherstonhaugh (1907) in the Moranbah/Suttor River area; Andrew Murray (1860, 1863) between Rockhampton and in the Mt Coolon area. More recent studies of this frontier period have been documented by Evans (1971) and Wright (1981).

Aboriginal resistance in the general region peaked dramatically with massacres of white settlers at Hornet Bank (1957) and Cullin-la-Ringo (1861) in central Queensland to the south of here. These acts resulted in police and settlers undertaking massive retaliation against Aborigines. At the very least there was exclusion from the runs, at the worst they were shot in numbers and on sight.

In 1860 Andrew Murray was one of the aspiring squatters who journeyed from New South Wales in search of pastoral land. Near the Isaacs River his journey was hampered by thick brigalow and fear of Aboriginal attack. As with Leichhardt in the 1840s, Murray observed much evidence of Aboriginal subsistence activities around the creeks and streams ('blacks fires still burning near the bank of the creek, harvested yams and lily tubers, kangaroo net, old camps with 'numerous' mussel shells). At one point Murray (2/6/1860) noted the land management practice of firing the grass:-

> *'The blacks set fire to the grass in different places in a line from the ridges. I think they may have been trying to burn patches for game, or they may have been trying to burn us out!'*

Murray's diary of his second journey to the area in 1863 in search of land to farm sheep indicates that fierce conflict between Aborigines and new settlers had not abated in the region. Andrew Murray recorded that in retaliation for the murder of a cook on Conway station, Fred Murray (of the Native mounted Police) tracked down and 'shot eight of them (Aborigines)' (A. Murray 1863 11). When Andrew Murray's camp was raided by Aborigines 'Fred Murray (of the Native Mounted Police) came up and lessened their number quite a bit'. As a general comment Murray (1863:12) recalled that 'a good few of them (Aborigines) were shot when seen'.

Sub-Inspector R A Johnstone of the Native mounted Police who wrote a memoir of his experiences in this region, noted the presence of two groups of Aboriginal people, the 'North Creek tribe' and 'the Phillips Creek tribe' (Johnstone 1903-5:173-4, quoted in Hatte 2003). Like Leichhardt and Murray, Johnstone records the presence of Aboriginal people around local waterways: '*Followed the tracks which led us out to a small plain in which was a lily lagoon, and here the blacks were camped, and evidently not expecting any danger all were centred round the lagoon and the camp fires'.*

There were close connections in the 1860s between the Hornet Bank massacre near Taroom, and the first European land holders in the Moranbah area. In 1860, Andrew Scott, the owner of Hornet Bank station when the Fraser family was massacred, took up 'Broadlee' station on the northern side of the present Peak Downs Highway, north east of this project area. The eldest Fraser boy, William (Billy), accompanied Andrew Scott on the initial reconnaissance trip to this area. Their trip is recorded in the diary of Andrew Murray who was a member of the John McKay party. They met Andrew Scott and Billy (Willie) Fraser at Denison Creek near present day Nebo while waiting for a member of their party to recover from an illness, and were with them from 19th to 25th June 1860. Murray recorded *that:*

> *'Willie Frazer was one of a family that had been nearly all killed by the blacks at Hornet Bank. About 4 or 5 years before one of his brothers escaped by crawling under the bed. His mother and sister were killed and the place robbed of all stores the blacks could carry away. He told me he had shot 70 blacks up to date of travelling with us. He used a double barrel shot gun, cut down to carbine length and was a good shot (Thurs. 20th June 1860).*

Willie subsequently took up Picardy station on the Isaac River near present day Moranbah, several kilometers north of this project area. Judith Wright's grandfather, Albert, (1984:140) indicates that 'Will' who had been absent at the time of the massacre spent some time in the Native Police in this area, with a virtual 'licence to kill' (McDonald 1995:187). She described both Billy and the younger son 'West' or 'Wessie' who had survived the massacre as '…a terror to all Aborigines…'

Elder indicates that Billy Fraser became a legendary character at the time and "…*a symbol for all the misguided frontier animosity which whites felt towards Aboriginal people".* The legend included the killing of at least one hundred, almost certainly innocent, Aboriginal men, women and children, making him possibly the largest mass murderer in Australian history (1999:135). West Fraser is described by Wright as:-

> *"…unpredictable even to his own kind, and had been known to pick up a gun and shoot unoffending old black women on his friends' own doorsteps. It was said by some that that blow from a waddy had left poor West 'short of a sheet of bark', but*

> *awestruck compassion always ensured him some sort of welcome and a job or a meal…".*

Cuthbert Fetherstonhaugh owned Burton Downs in the early to mid 1860s (Fetherstonhaugh 1917). In 1863 while attempting to bring cattle to Burton Downs from Rockhampton, Fetherstonhaugh encountered flooded rivers, and, in order to get home he rode up the sandy banks of the Isaac River from near Logan Downs station to Burton Downs as they were the only place where his horse could get a footing in the wet. His horse, Loadstone, 'caved in' and he had to lead it eight miles to Picardy station, where he stayed the night with the owner, 'Mr Frazer'(*sic*). Fetherstonhaugh stated that he did not touch on the massacre that evening but '*…it was currently believed that he never lost an opportunity of shooting a wild blackfellow as long as he lived*' (Fetherstonhaugh 1917:240).

Fetherstonhaugh described the Isaac River as being in the middle of '...an immense brigalow scrub...and full of wild blacks.' (Fetherstonhaugh 1917:226). While Fetherstonhaugh always saw threats from 'the wild blackfellows' within the Isaac scrubs, Leichhardt about eighteen years earlier appears to have had no such trepidation as he reported on meetings they had with Aboriginal people.

The attrition rate in these years is not documented but some evidence was supplied by George Bridgeman, manager of Fort Cooper Station from the early 1860s. He reported to Curr (1887: Vol iii: 44) that during the first 10 years of white occupation in the greater Nebo area alone *'...about one half of the Aboriginal population was either shot down or perished from loathsome diseases... the black troopers, however, being the chief destroyers...'* (Evans 1971:27). Other local squatters also wrote of massacres, mass poisonings and dispersals in which they had participated. Bridgeman is recorded as incurring the displeasure of the squatters by protecting Aboriginal people on Fort Cooper station in the 1860s. A report in the Mackay Mercury in 1869 stated that Bridgeman had allowed 90 Aborigines to shelter on Fort Cooper and had '...engaged 40 males, mostly boys, to clear the scrub, ringbark and cut wood in return for an occasional sheep, a plug of tobacco or some other trifling article' (Evans 1971:28). This arrangement had probably been in practice for some time before it was reported to the paper and it has been corroborated by Judith Wright (Wright 1981:152).

The policy of 'dispersal' was strongly opposed by social reformers, squatters who had cultivated and maintained good relations with Aboriginal groups, and those who wanted to employ Aboriginal people on the stations. By 1867 several enquiries had been held to investigate the activities of the Native Police and as the frontier moved north the Native Police were relocated. Aboriginal people who remained in their

traditional lands tended to be employed on the stations or occupied fringe camps on the outskirts of towns.

In summary, there is evidence of a large population of Aboriginal people who lived in the area prior to European contact and before the frontier wars. This appears to be reflected in both the archaeological and the historical record. Bridgeman's estimate of a 50% attrition rate may be an understatement.

The *Aborigines Protection and Restriction of the Sales of Opium Act* of 1897 resulted in a policy of forcible removals of many Aboriginal people into Reserves and strict regulation of employment. Subsequent forcible removals continued more or less until the late 1960s and many people were removed to Taroom, Cherbourg, Woorabinda and Palm Island Aboriginal Reserves, causing a long and severe process of dislocation of people from their country. In this area, however, a number of Aboriginal people remained working on properties within the traditional lands. There are examples also of people 'under the Act' returning from the Reserves to work in their traditional lands, thus retaining their ties with their traditional lands. Many Aboriginal people are recorded as having worked on the stations in this area until very recently.

The region round the present township of Moranbah has been devoted to pastoralism from the earliest days of European arrival, about 140 years. The present township and the study area lies in part of the original Grosvenor Downs. This vast property had come into existence in 1885 when A.B. McDonald consolidated a number of properties he had acquired in 1873-74. These properties were:-

- *Teviot Bank* (27 sq. miles)
- *Broad Meadow* (25 sq. Miles) [first leased to James Jardine on January 1, 1861],
- Broadlee [first leased to Andrew Scott, former owner of Hornet Bank station, on January 1, 1863],
- *Grosvenor, Grosvenor North* and *Grosvenor East* (together totalling 125 sq. miles).

The continuing use of this area for cattle grazing indicates that any identified old European places which may have heritage significance would most likely be related to the pastoral industry. Apart from the more obvious old homesteads and surrounds, physical evidence which might be encountered in the study area might include old fences and huts, stock camps, stockyards and station tracks.

5. ARCHAEOLOGICAL BACKGROUND

This section consists of a review of background regional and local archaeological information to provide a context for the cultural heritage information presented in this report. This information is derived from two main sources:-

- previous academic archaeological research. Some academic archaeological research has been undertaken in this and adjacent regions (eg. Brayshaw 1977; Knight 1990 and 1993) but it still remains comparatively unstudied from an archaeological perspective.
- cultural heritage assessment reports on mining projects and infrastructure such as roads, pipelines and powerlines. These reports extend back more than 30 years.

5.1 Research and Carbon dates

Some of the earliest research in Queensland was undertaken in the southern portion of the Queensland Central Highlands about 200km south of here where an extensive system of sandstone rock shelters and rock art has provided an important focus for research on the complex stenciled art and on the deposits in the floors of several large rockshelters (e.g. see Beaton 1977; Quinnell 1979; Morwood 1981; Morwood and Godwin 1982). In the early 1960s, excavations at Kenniff Cave on Mt. Moffatt Station revealed a stratified sequence of Aboriginal occupation extending back some 19,000 years (Mulvaney and Joyce 1965). Within the cultural sequence two broad phases of stone artefact use were identified. In the later phase, from 5000 years ago, a variety of new stone artefacts appeared, many of which would have been hafted e.g. backed blades, points, adzes and axes. Morwood (1981) identified similar artefacts and patterns in his excavations. Beaton (1977) identified large scale consumption of cycad nuts from around 5,000 years ago. The preparation of the nuts for consumption involved labour intensive activities and large scale ceremonial gatherings.

The depth of known Aboriginal occupation in the region is generally defined by radiocarbon C^{14} dates from these areas. C^{14} dates which provide a great time depth of Aboriginal occupation in central and north central Queensland are limited to a very few so far, so the main ones will be mentioned here. Dates from the Carnarvon Ranges region are the oldest so far known in the wider region. The closest dates to the northwest are from the Hughenden area to the north west (approximately 350-400 km from the study area), where Morwood and Godwin (1982) conducted excavations

at Mickey Springs on the upper Flinders River revealing a number of calibrated basal dates of around 10,000 years BP (with a maximum basal date 12,350±120 BP) for the Aboriginal occupation of the area, all dates derived from charcoal (Morwood 1990).

Research in the Whitsunday region on the coast about 200km north east of here (Barker 1989, 1991, 1992) has investigated prehistoric island use by Aboriginal people. Barker's research indicated a relatively uninterrupted occupation depth of some 8,500 years BP (before present, approximated to 1950), through to the recent past. The archaeological data provided evidence that this site was occupied well before the sea levels rose to form the Whitsunday Islands. In spite of the flooding of the landscape, there is clear evidence for uninterrupted Aboriginal occupation here until the arrival of Europeans.

A programme of dating of Aboriginal hearths is also being undertaken in the local region (Hatte and Oliver in prep). While most are less than 1,000 years old, several hearths on Poitrel coal mine near Coppabella are far older. A date of 5240+/-40 BP (Beta-225497) from fireplace charcoal at a depth of 7cm is the oldest date for an open site in Queensland, while two others from the same mine, from 10cm below the surface (3cm below a broken stone artefact) are dated at 2860+/-40BP (beta 244151) and 2110+/-50 BP (Beta-225496). These are the second and third oldest dates for open sites in the inland region of Central Queensland. On the southern bank of Grosvenor Creek in Grosvenor Station, several fireplace features were found while monitoring the installation of a buried water pipeline by SunWater. Two fireplaces were found to contain charcoal, one in sufficient quantities for standard radiometric analysis. The charcoal sample, from 8cm below the surface of the hearth provided a conventional date of 280±60BP (Beta-223869).

On Goonyella Riverside coal mine two C^{14} dates have been derived. One from the basal layer (depth 15.5cm) of an excavation in a high terrace above a tributary of the Isaac River provided a conventional radiocarbon age of 390+ 40BP (Beta—216546). The other (Beta-216547) from a depth of 5cm in one of the fireplaces returned a date of 520+/-40 BP.

The table below summarises all radiocarbon dates derived so far in the triangle between Moranbah, Poitrel Mine and Glenden.

Site Name	Conventional Radiocarbon Age	Site Type
Poitrel P11 Fireplace	5240±40BP	Open
Poitrel NCCD fireplace 9	2860±40BP	Open

Poitrel NCCD Fireplace 6	2110+-50BP	Open
Poitrel NCCD Fireplace 4	1240±40BP	Open
Suttor Creek fireplace 1	690±40BP	Open
Suttor Creek fireplace 7	690± 40BP	Open
Goonyella/Riverside 2	520±40BP	Open
Goonyella/Riverside 1	390± 40BP	Open
Suttor Creek fireplace 6	360±80BP	Open
Grosvenor Creek	280±60BP	Open
Suttor Creek Sth fireplace 1	210±40BP	Open
Suttor Creek fireplace 2	125±0.9pMC	Open
South Walker Creek 1	120±40 BP	Open
Eastern Creek 2	1190±40BP	Open
Eastern Creek 3	1440±60BP	Open

Table 2. Radiocarbon dates in the Moranbah/Coppabella/Glenden region.

5.2 Consultancy reports

Most of the cultural heritage information derived from the local region can be found in consultancy reports undertaken for EIS-related assessments for coal mines and mine-related infrastructure such as roads, transmission and power lines, dams and dragline transportation paths, water and gas pipeline and optic fibre cables. The greatest concentration of these is in the Isaac River catchment area, where most of the Bowen Basin coal mines are located.

Cultural Heritage (previously archaeological) reports extend back more than 30 years and provide a broad and valuable database for the Isaac catchment area (eg. Brayshaw 1976; Hill 1980, 1982). This work was continued by Alfredson in the 1990s (1990, 1991, 1992, 1994a, 1995) followed more recently by Hatte (1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008), Gorecki (2005, 2006, 2007) and Oliver (2006, 2008). These studies also tend to reflect the changes in legislation and changing archaeological approaches that have been adopted in dealing with cultural heritage in this period.

Cultural heritage consultancy reports are held under the provisions of the *Aboriginal Cultural Heritage Act 2003* within the Aboriginal Cultural Heritage Unit, Qld DNR&W. As a result of numerous cultural heritage studies in the region a number of patterns have been identified and it is possible to make some relatively detailed statements about traditional Aboriginal settlement patterns and behaviour (eg. usage of natural resources, seasonal patterns of settlement) and well informed predictive statements on the archaeological potential of particular landscape types (see Predictive Statement below).

5.2.1 Previous archaeological work in adjacent areas

The coal mines are so plentiful in the local region that this project area is surrounded on three sides by other mines or proposed mines, for some of which multiple cultural heritage studies have been undertaken:-

- Peak Downs, Eagle Downs, Moranbah South, Isaac Plains, Poitrel, Millennium, Carborough and Goonyella Riverside mines on the north,
- Burton, Broadlea, Isaac Plains, Poitrel, Millennium and Carborough mines within 50km on the east;
- Goonyella Riverside and Moranbah North mines, and Grosvenor proposed underground mine on the north;
- Saraji and Norwich Park mines to the south.

The cultural heritage information from the closer mines (or proposed mines on which cultural heritage studies have been undertaken) will be discussed in this section to provide a context for, and to make predictive statements about, the Caval Ridge study. The mines discussed below consist of Peak Downs, Goonyella Riverside, Grosvenor and Moranbah South, Isaac Plains, Eagle Downs and Saraji

5.2.1.1 Peak Downs

The Peak Downs mine was one of the first mines to begin operations in this area in the 1970s. As far as can be ascertained, only one full scale archaeological assessment was carried out on the Peak Downs mining lease (Brayshaw 1976) prior to the start of operations by Utah Development Company. The original study was undertaken in association with similar investigations at Goonyella, Norwich Park and Blackwater under the provisions of early cultural heritage legislation in Qld (Brayshaw 1976). The field investigations were all undertaken by the archaeologist alone (no traditional owners were involved in cultural heritage in Queensland at that stage), who did foot and vehicle traverses of the proposed mine leases. She identified scattered cores, flakes and other worked stone and occasional grindstones. They were found mainly along the margins of watercourses and eroding gullies, and often in association with false sandalwood groves. Seven scarred trees were recorded on the mine lease, on Blue gum and Poplar box trees. It was mentioned that rock paintings occur near Harrow Creek but it is not known whether they are within the mine lease. (Hatte 2005: 14)

In recent years a team of BBKY traditional representatives has undertaken a great amount of targeted cultural heritage survey, salvage and mitigation works on the mine lease.

Hatte and BBKY representatives undertook a survey of several small sites within the existing Peak Downs mine lease in 2005. They identified several isolated finds, low density artefact scatters and three scarred trees (one still living). Most of the artefacts are made from silcrete, chert, sandstone or petrified wood and all of the scatters were found within 100m of a creek bank in areas which have been disturbed by erosion. Activities such as grinding, scraping and artefact manufacture were also carried out in these areas. A piece of red ochre was also identified, suggesting a ceremonial tie to the area. One of the scarred trees was consistent with honey or possum extraction and the other two suggested that the bark was used for shields or containers.

5.2.1.2 Goonyella Riverside

Four major studies have been undertaken on the Goonyella/Riverside mine lease to the north of here (Brayshaw 1976 and Hatte 2000a and b, Hatte 2005) and a number of salvage operations have been conducted in the past few years. Brayshaw's study was undertaken prior to initial operations (Brayshaw 1976). While her study focused on the main coal seam it also included other areas such as the three major creeks. She recorded extensive artefact scatters along Eureka Creek and other tributaries, mainly on bare eroded banks and in association with false sandalwood groves. Four scarred *Euc. Populnea* (Poplar box) trees. were also recorded (Brayshaw 1976:8). Dimensions of the scars provided in her report indicate that they were all in excess of one metre long.

In a study undertaken in 2000 for the further development of Riverside mine (Hatte 2000a), twenty-two cultural heritage locations were recorded. Three trees were identified with possible cultural scars but it could not be confirmed that they were the same trees as those recorded by Brayshaw. Most cultural heritage evidence was found in the vicinity of the creek banks, notably Fisher Creek, as well as in the vicinity of the cattleyards, the water pipeline and north and south of the Mt Coolon Road. All artefact scatters were located in disturbed contexts, eg. in erosion gullies or along eroded watercourses.

The third study was undertaken along a preferred dragline transportation path between the Riverside/Goonyella mine lease boundary and South Walker Creek mine (Hatte 2000b). The transportation path passed through a section of the Goonyella/Riverside mine lease. The portion east of the Isaac River was found to

contain extensive and often dense but deflated artefact concentrations along the eroded banks and terraces associated with watercourses and gullies.

In 2004 a cultural heritage assessment was undertaken of the entire Goonyella/Riverside mine lease (ML3761), ie. all that land to the east of the present mine operations on both sides of the Isaac River, totaling just over 5,000 hectares. The landscape consisted mainly of river and creek flats and terraces between 240 and 280 metres asl., with open forest dominated by *Euc Populnea* (poplar box) and *Acacia Harpophylla* (brigalow), the latter having been mainly cleared. The land is currently given over to cattle grazing. As in previous studies, extensive and complex but disturbed artefact concentrations were found to occur mainly along the tributaries running into the Isaac River (Eureka Creek and Cleanskin Gully). Though disturbed, many still contained identifiable, specific use areas (eg., cooking, artefact knapping and axe resharpening) as well as twenty-six Aboriginal fireplaces. Large exposures of surface silcrete cobbles, among which were great numbers of worked cores, were also found along the terraces along the east of the Isaac River. Numerous scarred trees, some in excess of 2 metres, of likely cultural origin, were also recorded throughout the study area, again suggesting the use of the bark as canoes on the river. The possible remains of a Native Police Camp from the 1860s (unrecorded but orally reported) were recorded on the western bank of the Isaac River.

5.2.1.3 Grosvenor

Several cultural heritage studies have been undertaken in the last decade on land within the Grosvenor Mine lease to the north and east of Moranbah.

In 1998 a cultural heritage study was undertaken of approximately 3,000 hectares of the project area immediately to the north of Moranbah extending from the Isaac River west to the Goonyella/RIverside road. The southern boundary of the project was the rail line to Hay Point. Six scarred trees, extensive artefact scatters in erosion along the Isaac River and a virtually continuous scatter were identified. In 2007 a cultural heritage study was undertaken of the remainder of the Mine lease area, south of the previous area, east of Moranbah and extending across the Isaac River to the boundary of the Isaac Plains mine lease. Teviot Brook and Smoky Creek were also in the study area. The greatest concentrations were found in erosion exposures along the high banks and terraces of the Isaac River, Teviot Brook and Smoky Creek. Some sites were also associated with a swamp west of the Isaac River. Though the concentrations are all disturbed to some degree it was still possible to identify areas along the watercourses where people engaged in particular activities eg. stone

working. Small disturbed artefact concentrations and isolated artefacts were also found in the cleared *Brigalow* forests.

The range of artefact types was varied across the study area and consisted of cores, flakes (at primary, secondary and tertiary stages of reduction), broken and intact grindstones and mullers, blades, utilised scrapers of various kinds (including steep edge and tulas) and hammerstones. Up to one third of flaked artefacts exhibited some kind of usewear along the watercourses.

Thirty scarred trees were recorded with a total of thirty-two scars, twenty-seven Box trees, two blue gum and one Blackbutt. Sixteen of the total were still living.

From this evidence it appears that people established base camps along the permanent waterways, made and used stone artefacts in various ways (eg. for woodworking), processed food (probably seed), cooked and kept themselves warm in winter and utilised the resources of both the waterways and the open forests and the Brigalow scrubs.

5.2.1.4 Moranbah South

A study was undertaken for the Moranbah South project in 2007. Surveys covered Grosvenor, Coolibah, Winchester and part of Buffel Park stations directly to the east of the Caval Ridge project area. A general picture emerged that is very similar to this one. Wherever there was erosion along the watercourses, high densities of artefacts were found. Many fireplaces and other types of activity areas were also found on the banks and terraces of the watercourses. An extensive surface outcrop of silcrete cobbles utilised as a 'quarry' was found on the slopes between Moranbah township and Grosvenor Creek. Another lies on the black cracking clay soil plains extending from south of Grosvenor Creek across into Coolibah station to the immediate east of this study area. Hundreds of worked cores and artefacts were found at these two sources. Many scarred trees were found on Poplar box and Euc. Coolabah trees on the flats of the Isaac River and distributed throughout the forests in Grosvenor, Coolibah and Winchester stations. The section of Cherwell Creek inspected in Moranbah South survey begins at the boundary fence of the Peak Downs mine.

5.2.1.5 Isaac Plains

A survey of Isaac Plains Mining Lease was undertaken in 2005 by Cole and BBKY representatives (Cole 2005c). They identified a rich assemblage of stone artefacts, hearths, two scarred trees and natural resources, including watercourses, gilgai, supplies of suitable knapping stone and forest resources of trees and plants. Most of

the artefacts were found virtually continuously along Smoky Creek and another unnamed creek, mainly in the reddish brown clay creek terraces. Gorecki (2007) and BBKY representatives carried out a further survey of Isaac Plains South on Winchester Station, to the south of the existing Isaac Plains mine. They identified a total of 172 sites and isolated finds. These sites consisted of low, medium and high density artefact scatters which included general camping areas, often with fireplaces and artefacts, as well as areas with evidence of specialised activities such as silcrete extraction and grinding of food resources. These sites were predominantly (but not exclusively) found along Conrock and Cherwell creek and other gullies leading into the Isaac River. Gorecki suggests that people focused on the creeks for the establishment of base camp sites from which to exploit the surrounding environment. Some of these camps are likely to have been used repetitively for long periods of time. Two scarred trees were also identified.

5.2.1.6 Eagle Downs

A cultural heritage study was undertaken over approximately 2,000 hectares of mainly cleared (some blade ploughed) land directly east of the Caval Ridge study area, south of Cherwell Creek. It is noted that some remnant vegetation existed mainly along the creeks. Twenty-two artefact scatters, eighty-six isolated finds, three scarred trees, one flaking floor and a natural feature were identified during the surveys. The natural feature was a residual stand of brigalow with gilgai which was determined to have cultural values. Most of the cultural finds were concentrated in undisturbed areas, eg. along Ripple Stone Creek in the south-east and the undisturbed coolabah forest in the north. However, many isolated finds were identified throughout the project area, in regions which have been cleared or blade-ploughed. A serious constraint in the study was lack of visibility from high thick buffel grass and consequent danger from snakes. The pattern evident in other studies is evident in this one, viz., that most material is concentrated along the watercourses. Scarred trees are found, obviously in old forest.

5.2.1.7 Saraji

Three archaeological surveys have been carried out on the Saraji mine lease (Hatte and Birri Gubba Gutha Bimbi Aboriginal Corporation 1999). The first, by Hill (1977), examined the Luxor basalt deposit, identifying no artefacts. Hill suggests that this may be a ‘sacred site’, but, having failed to contact any traditional owners that may be able to confirm this, concludes that he can see no reason why the deposit should not be used for road construction material. The second, also by Hill in 1978, examined two ‘midden’ sites, labelled the Picardy and Dysart sites, which contained artefact scatters

and possible fireplaces. The Picardy site was determined to be a camp site and the other was apparently left undetermined.

Hatte and Birri Gubba Gutha Bimbi Aboriginal Corporation (1999) undertook a survey on a proposed mine expansion to the east of the existing mine. They identified four low density artefact scatters, all on the banks of eroding gullies, several isolated finds, and two scarred trees. The scarred trees were associated with artefact scatters and one consisted of two small holes, possibly for the extraction of something from inside the tree (honey or possums). The previous owner of Saraji Station, Jim Rankin, has also reported the existence of rock art within the property, towards the boundary with Luxor Station. At this stage, this information has not been investigated thoroughly (Gorecki 2006h).

5.2.2 Previous work in the Caval Ridge Mine Lease

Three sections of the Caval Ridge project area have been subject to previous cultural` heritage work::-

1. The proposed eastern extension of the Heyford Pit where widespread salvages of surface artefacts have been undertaken since late 2007. More than 2,8i00 artefacts have been progressively salvaged from this area prior to clearing and topsoil stripping (see Appendix 6);
2. the northeast corner of the Caval Ridge mine lease between Cherwell Creek and the Peak Downs Highway where a survey was undertaken by BBKY personnel in 2006 (see site data Appendix 7 and maps);
3. a survey of all of the mine lease area north of the Peak Downs Highway and east of Horse Creek was undertaken in 2006 by a BBKY team and archaeologist Dr Paul Gorecki (Gorecki 2006). A report of this study was forwarded to BMA in 2006 and the data will not be reproduced here but the results of the Horse Creek study have an intimate bearing on this present one and a short summary of these results follows in the next section.

5.3 Discussion and Predictions

A predictive statement provides an idea, based on what has already been found in a region, of what to expect at a similar location in the same region, eg., the types of cultural material that might exist, and where and under what conditions it might be found.

Stone artefact scatters or isolated occurrences of stone artefacts will be by far the most common site type encountered, but their dimensions and composition may differ quite considerably. Artefact scatters represent the remains of campsites or working areas and they range in size from several artefacts representing a short term, or 'dinner' camp to many thousands of artefacts extending up to several kilometres representing large scale and/or long term base camps. This latter type is usually very complex, and it would be expected to contain evidence of discrete activity areas such as food processing, cooking and eating, artefact flaking and maintenance components. All of these have been recorded at these large sites. Archaeologically there is a consistent pattern of larger complex artefact scatters to occur in terraces closer to larger watercourses which had permanent water in the past and for smaller, less complex scatters to lie along minor gullies or less permanent water sources such as gilgai.

Stone artefact types likely to be found in the area include flakes, cores, several types of scrapers, blades, points, adzes, hammerstones, mullers, grindstones and axes. The range of raw materials identified in artefact scatters is attributed to the availability of local stone. The most frequently occurring stone material in the archaeological record of the region is silcrete but other materials include petrified wood, chert, chalcedony, sandstone, basalt, jasper, mudstone, siltstone and ashstone, crystalline and milky quartz and sometimes glass. Silcrete and basalt surface outcrops have been identified in the area, mainly on ridge tops and slopes. Some silcrete cobbles are also found within brigalow/gilgai areas.

Less frequently occurring site types include scarred (culturally modified) trees, quarries or extraction sites, areas of source material such as ochre, axe grinding grooves in sandstone creek beds, fireplaces or axe grinding grooves in the sandstone beds of creeks. Rare site types in the region are rock shelters with art or cultural deposits and ceremonial or dance grounds. These are usually confined to sandstone mesas where the sandstone cliff lines contain eroded shelters. Though ceremonial grounds are considered to be the rarest site type, one has been found on Poitrel Mine lease and another (on the same hill) on Millennium mine lease. These grounds were originally situated in relatively rugged landscapes within dense scrub.

Patterns of site distribution identified in cultural heritage studies in this region may be attributed to several different possible factors. The patterns may reflect the actual distribution of cultural materials or they may result from taphonomic changes to the landscape and the sites over time, as the study area has been impacted by human activities as well as by natural weathering processes. On the other hand patterns may reflect trends in archaeological survey, the direction of which has mainly been

determined in this area by the development of the coal industry. It is possible that site types in association with more rugged, less developed locations such as the ranges may be under recorded. Other site types, namely scarred trees, are known to have been mainly destroyed by human agency in the last thirty or so years with the broadscale clearing of the landscape in the Central Highlands for pastoral purposes. It is estimated that well over 90% of scarred trees have been destroyed in this way.

Various cultural heritage studies in the Isaac catchment area cite the negative effects of vegetation clearing, cattle grazing and infrastructure construction on cultural heritage. The reports also note features such as gully and sheet erosion and sedimentation which are signs of land degradation. Although ethno-historic records make note of wooden and fibre artefacts, stone tools, marked trees, wells, etc., it is unlikely that organic materials (fibre, wood, skin, fur and feathers) would survive after prolonged exposure in open situations. Untended native wells are unlikely to have survived the impact of floods and erosion. In view of the extent of pastoral activities in the area (including land clearing), it is likely that many stone artefacts have been broken and/or scattered by machinery or cattle. Other material is likely to have been covered or moved as a result of various natural processes (floods, wind etc).

The recording of natural features with cultural associations is consistent with the provisions of The Aboriginal Cultural Heritage Act 2003, *Section 12(2)t* which refers to *areas of cultural significance whether or not they actually contain physical evidence of the past'.* Examples include plant and animal resources, natural outcrops of ochre and stone and groves of old trees that predate European arrival in central Queensland, and therefore are living associations with the traditional past.

Given this information it is predicted that cultural sites, objects and values will tend to concentrate to a great extent along the creek banks and terraces and that erosion will tend to expose them. More extensive finds will occur along larger watercourses, particularly where there are or were permanent waterholes or stony bars. Eroded clay creek terraces are particularly targeted for artefact scatters, stone tool knapping floors and hearths/fireplaces. Stony slopes and ridges are possible locations of extraction sites and working camps. Old Box and Coolabah forests are locations of culturally scarred trees and a variety of other natural resources. It is emphasised however, that these predictive statements do not eliminate the possibility that cultural material is not confined to these areas, other tree species may have cultural scars, large silcrete outcrops may be found in black cracking clays, etc. and fireplaces have been found on the sides and tops of slopes in stony ground.

6. FIELD SURVEY METHODOLOGY

6.1 Methodology

The cultural heritage field survey of the project area was undertaken over a period of twenty-five (25) days between August and November 2008. The field team consisted of an average of five members:- four Traditional Owner representatives and the project archaeologist (see Appendix 2).

Several sections of the project area were excluded from this field survey as they had already been the subject of a cultural heritage study:

- The entire section east of Horse Creek north of the Peak Downs Highway. This had been the subject of a previous field survey by BBKY personnel and archaeologist Dr Pavel Gorecki (see Gorecki 2007).
- The section south of Cherwell Creek and east of the existing Peak Downs Mine, excluding the southern bank of Cherwell Creek and a previously undisturbed forested section of the eastern side south of the creek. Stone artefacts along the eastern side of the Peak Downs pits have already been salvaged in the past few years to make way for the extension of the mine and a variety of infrastructure (eg. an eastern bypass road, powerlines etc.).

Thus the following areas were actually surveyed for this report:-

North of the Peak Downs highway the survey area consisted of:-

1. all land between Horse Creek and the western boundary (approximately 10km in length and between 1 and 1.5km in width),
2. a rail extension corridor extending west from the western boundary of the study area, approximately 6km in length and 300m in width.

South of the Peak Downs Highway the study area fell naturally into five sections:-

1. The narrow strip of land extending south from Harrow Creek on the western side of the mine,
2. All of the land on the western side of the mine pits between Harrow Creek in the south and the Cherwell Creek in the north,
3. All land north east of the Heyford Pit and south of Cherwell Creek that has not been subject to salvage. It consisted of a narrow strip along the southern

bank of Cherwell Creek to the eastern boundary and an area of old forest in the bend of Cherwell Creek,

4. The area between Cherwell Creek and the Peak Downs Highway, between the western boundary and a line between grid Reference on the east (E.611350/N.7549540 at Cherwell Creek, 611115.N.7550000 and E.609895/N.7551030 at the Peak Downs Highway),
5. The last area, defined as low priority, consists of all land to the east of the above, between Cherwell Creek and the Peak Downs highway and the eastern boundary.

Background information was provided to Woora by Shaun Ferris, project manager for BMA, prior to the commencement of the field survey. Prior to the survey the team underwent two separate inductions, the Peak Downs inductions for the area south of Cherwell Creek and the BMA exploration inductions for the area north of Cherwell Creek.

An initial vehicle reconnaissance was undertaken to enable the team to view the extent of the survey area and to plan logistical aspects of the foot survey (initially all points of access such as roads and tracks, fencelines, powerline corridors, creeks etc). The entire study area was covered systematically by the field team walking parallel in a series of transects. Transects covered the banks of watercourses, adjacent alluvial terraces, undulating plains, slopes and uncleared forest.

Field team members walked at regular intervals of between 5 and 20 metres with a total transect width of between average width 20 and 80 metres, depending on the type of landscape, ground surface visibility, predicted cultural potential, the presence or absence of stone, etc.

The field methodology recognised that patterns in the distribution of cultural sites in the archaeological record can be influenced by environmental factors such as topography, geology, soils and vegetation. The following were specifically targeted:-

- The banks and terraces of Harrow, Cherwell, Nine Mile, Horse and Grosvenor Creeks, and gullies, drainage lines and gilgai;
- tracks, animal pads, drill lines, eroded surfaces (where there is good ground visibility, and where sub-surface materials may have become exposed);
- outcrops of naturally occurring stone (sources of raw materials for stone extraction and knapping);

- mature (mainly *Euc. Populnea*) forest (for scars caused by cultural modification);
- rock surfaces in creek beds (for grinding grooves);
- salient features in the landscape.

Cultural finds were recorded in conjunction with the BBKY field officers. The location of each find was fixed with a Garmin 72 GPS receiver using Datum AGD84. Background data was recorded on the topography, vegetation and disturbance in the immediate vicinity of the find.

The criteria used for individual recording including type, dimensions, attributes, raw material, modification and use, special features such as usewear and breakage, existing and expected impacts. Where the scatter was particularly dense and there was insufficient time to record each artefact, tallies, densities and boundary points of the scatter might be recorded. Formal tool types eg. axes, grindstones and mullers, hammerstones, anvil stones and blades were always recorded separately.

Isolated find	**Low density artefact scatter**	**Medium/high density artefact scatter**
One or two artefacts lying 10 m or more from their nearest neighbours.	A concentration of 3-30 artefacts Site area usually less than 50 m² Maximum density usually 2 or < 2/m²	Concentration of >30 artefacts Site area usually > 50 m² Maximum artefact density >2/m² May contain discrete activity areas such as knapping floors, hearth features, native wells etc

Table 3. Classification of site types (after Hatte 2004).

Large mature trees were inspected for Aboriginal scarring. In the study area these trees consisted mainly of *Eucalyptus populnea.* Scars on a number of old trees were inspected but rejected by the team as being of doubtful origin. There were several reasons for this rejection:-

- poor preservation from the impacts of fire and insects which often results in the loss of features such as the original shape;
- uneven regrowth of the bark round the scar;
- total growth by the bark over a scar, disguising its features;

- scars thought to be the results of natural processes such as the tearing of limbs and branches, natural shedding of bark, natural splitting of the bark, the impacts of animals, fire, or insects.

Trees identified as having scars of Aboriginal origin were photographed and the following details recorded:- tree height and diameter, scar dimensions (length, width and bark overgrowth), direction in which scar faces and condition of both scar and tree.

All cultural finds were numbered in order of discovery. A photographic record was compiled of all cultural items and features. The recording was made in a format developed by Woora Consulting so that the presentation of the results could be compatible with those made during previous surveys. This format also allowed for an easy transfer into a database kept by Woora Consulting (Appendix 1).

6.2 Survey Constraints

The physical conditions of the landscape can have a significant effect on the effectiveness of a field survey. In this survey the following were observed to have a possible effect:-

- Archaeological (ground surface) visibility;
- Ground surface disturbance.

Ground surface visibility refers to the extent to which the ground surface is able to be seen (and hence the degree to which past human activity can be seen from observable archaeological remains). It is most often expressed in terms of the percentage of clear ground which is visible in a given area. Lack of ground surface visibility is a major constraint to the identification of archaeological remains.

Thick buffel grass was widespread south of the Peak Downs Highway and it was considered to have a detrimental effect on the ability of the team to see the ground or access certain areas. North of the highway old buffel grass was thick along much of the creek frontage in Buffel Park station. In Horse Creek station it had been eaten out to a great extent and did not present such a problem to the team.

Much of the northern area has also been disturbed by pastoral activities in particular by clearing and trampling of creek banks by cattle etc. It has been observed in many previous studies that broadscale clearing and the effects of cattle hooves are likely to

have destroyed a significant proportion of the cultural heritage in the northern section of the study area. Field observations suggest that where an area has been cleared of natural vegetation there is often extensive evidence of erosion of the creek banks, gullies and adjacent alluvial terraces.

Plate 5. Advanced erosion along Cherwell Creek

Various studies confirm that clearing of brigalow forest which has been a feature of land management has contributed to this type of erosion. Beds of watercourses tend to be filled with sediments, and adjacent flat areas indicate the effects of soil deposition from flooding as well as erosion.

Disturbance to waterways is seen as another factor that has had a significant effect on the cultural heritage, in particular, the effects of the Cherwell Creek diversion and by the total clearing of the riparian zone of Horse Creek. Considering the wealth of archaeological evidence that has been recorded in the disturbance along both of these Creeks, it is almost certain that they have had a major negative effect on other unrecorded cultural heritage in this area.

In summary, the above constraints suggest that cultural material might be subject to the following:-

- covered over by soil sediments;
- obscured by cleared vegetation (dead trees and branches);
- lost or buried by the creek diversion, creek bank disturbance by machinery and by the creation of breakaway gullies;
- scarred trees lost due to natural attrition or destruction,

- artefacts damaged or broken by machinery or cattle movements;
- artefacts exposed, dislocated and archaeological integrity destroyed by erosional processes resulting from creek bank disturbance.

7. CULTURAL HERITAGE RESULTS

Cultural heritage surveys of the Caval Ridge study area resulted in the identification of a wealth of cultural heritage sites, items and significant natural features of indigenous origin. A summary of the cultural heritage results is listed in Appendix 1 of this report and a fuller description of these results follows in this section. The locations of all sites/features, recorded in this and in previous studies in the project area are shown on the attached maps which were compiled by Graham Budby of Woora Consulting. (see Figures).

The cultural heritage field study resulted in the identification of the following cultural materials and features (see Appendix 1):

- More than 1,200 surface stone artefacts of various types and raw materials (in disturbed and/or deflated low to high density concentrations and isolated finds) occurring mainly in association with creek and river terraces, gullies and drainage lines (see Table 3);
- eleven scarred trees with a total of twelve scars of likely cultural origin,
- aboriginal fireplaces,
- artefact knapping floors,
- a silcrete extraction site,
- a cultural stone feature
- natural features with cultural significance
- a possible historic feature.

Cultural materials were identified in association with the following natural landforms and features:-

- banks and alluvial terraces associated with Cherwell, Harrow, Nine Mile, Horse and Grosvenor Creeks and associated gullies and drainage lines, either in alluvium or on older ground surfaces that have been exposed by sheet or gully erosion;
- the existing and cleared *Acacia* and *Eucalypt* dominant forests.

Certain natural resources that supported the economic and cultural systems of Aboriginal people who lived in this area were identified as follows:-

- a variety of native plants with documented or orally reported Aboriginal uses (see Table 3);
- documented and orally reported lists of native animals that either provided food or were intimately linked with Aboriginal people in other ways;
- Local supplies of silcrete, chert, sandstone, basalt and petrified wood and less commonly occurring raw materials such as rhyolite, chalcedony and quartz.

In spite of the sometimes intense disturbance to which parts of the study area have been subjected, it is obvious that site distribution was not random. There is a clear concentration of occupation along the creeks, and some of these creeks appear to have been more attractive prospects for living than others. Certainly though quite large artefact concentrations were found in erosion round the creeks just north of the Peak Downs Highway they do not appear to contain the same huge concentrations as found at Cherwell and Horse Creeks, though surface visibility was very similar. In spite of intensive surveys of the hillier country west of Horse Creek and the lengthy narrow strip west of the peak Downs mine, very little cultural material was found, though again there was ample erosion to assess the situation..

7.1 Stone Artefacts

This report has adopts the system of artefact classification provided in Section 6.1 (field methodology). The range of artefact types is varied across the study area and consists of cores, flakes (at primary, secondary and tertiary stages of reduction), broken and intact grindstones and mullers, blades, utilised scrapers of various kinds (including steep edge and tulas) and hammerstones (see plates at end of report). The greatest concentrations were found in erosion and mine related exposures along the high banks and terraces of Cherwell Creek, Harrow Creek and Horse Creek where artefact densities at times exceeded $10/m^2$ and were virtually continuous wherever there was erosion.

The area surrounding the Cherwell Creek diversion, a large dry dam north of the creek and diggings on the north eastern end of Heyford pit is also extremely rich in artefacts. It is likely that the intense disturbance has brought the material to the surface. Although a widespread salvage of artefacts has already been undertaken artefacts are still appearing and will probably continue to do so in the future

Though the concentrations are all disturbed to a less or greater degree, it was still possible to identify specific activity areas within the more extensive sites. The most outstanding example is the great concentration of no less than fifty three broken and intact grindstones and mullers within two kilometres along Horse Creek suggesting an intensive local food grinding industry. Sadly the team noted the great degree of destruction that been done to the grindstones by cattle trampling on them. A number of instances were photographed of large grindstones shattered into many pieces fairly recently. The team therefore decided to take the larger intact ones into the custody of the BBKY Traditional Owners (see Photos below).

Plate 6. Various recently broken grindstones and mullers in project area

Doubtless more artefacts will progressively appear if this destructive erosion is allowed to progress further. Since almost all of the native vegetation has been destroyed it is hard to say the type of food that people would have ground, but it was most likely seeds of various kinds. This great concentration of grindstones and

mullers is paralleled by similar finds on the other side of, and further up, Horse Creek where Gorecki (2006) observed:-

> *'No less than 55 locations had evidence of food grinding activities. This evidence included unbroken and fragments of tools used such as mullers and grinding slabs. The size of some of these slabs would have been quite substantial. On virtually all occasions these finds were made in proximity of watercourses, highlighting the well-known need to use water in the grinding process. This is a very high evidence of a specialised activity…'* *(Gorecki. 2006:28).*

A similar picture has also been observed along certain creeks to the east of here on the mine leases of Peak Downs, Millennium, Carborough, Burton and Broadlea. The finds made here broaden the extent of this potential regional industry and increase the possibilities for future research.

Along with the grinding implements along this section of Horse Creek are forty five (45) cores of mainly silcrete but also petrified wood, basalt and quartz. In spite of the intensive disturbance over much of the creek flat it is possible still to identify a particular concentration of these cores within a distance of two hundred metres (Sites 324-328).

Approximately 70% of all artefacts consisted of silcrete, thus confirming a regional and Australia-wide pattern. Petrified wood (approximately 150) and chert (approximately 80) were also relatively common materials for flaked artefacts while the least common materials were rhyolite (5 artefacts including a fragment of a finely ground axe) and crystal quartz (3 artefacts). Twelve basalt artefacts were found distributed very sparsely throughout the study area but their use as mullers, anvils and hammerstones is confined to the northern section along Horse Creek, closer to the source of natural basalt. Almost twenty percent of flaked artefacts exhibit some kind of usewear.

7.2 Knapping (flaking) floors

Within artefact scatters were several features identified as stone tool knapping floors (Sites 109, 146, 298), consisting of very small pieces of stone 'debitage' or rejected fragments in the process of knapping flakes from a core. These features are difficult to identify because of small size of the debitage (mainly <2cm). A concentration of

debitage fragments indicates the presence of a knapping floor. In an undisturbed state they might still contain the core and the hammerstone that was used to strike the core. The sites along Horse Creek contained large numbers of cores and hammerstones but the advanced disturbance from cattle trampling meant very little chance of identifying the knapping floors that would once have been there.

7.3 Scarred trees

Thirteen trees with fourteen scars of cultural origin were found throughout the study area. The last two o the list below are situated in the south eastern corner of the Caval Ridge Mine lease and were recorded in earlier fieldwork (Woora 2005). All but one were found on poplar box trees of which only four were living. The tenth was a coolabah tree, also dead. The scars on both living and dead trees were mainly subject to visible deterioration from the elements, insect activity or fire.

No.	Easting[1]	Northing	Dimensions (cm)	Tree Type	Description and Condition
5	Details Removed	Details Removed	132x9x12	Dead standing box	Scar faces SW, hollow, base to ground 62; ht >15m. Wood subject to deterioration
34	Details Removed	Details Removed	50x25x11 34x11x8	Dead standing box	faces E, base to ground 65; (2) faces W, base to ground 103 Diam 68cm, Height of tree 10m
38	Details Removed	Details Removed	103x 32xx11	Living box	Faces W, Base to ground 56cm, Diam 76cm, Height of tree 10m
51	Details Removed	Details Removed	107x28x17	Living box	new growth: , Diam. 73cm; Base to ground - 7cm; Ht 15m; Cond'n - scar wood partly intact, top rotted half way to base.
62	Details Removed	Details Removed	186x35x6	Dead standing box	Diam.61 cm; Base to ground 28cm; Height 10-15m. Condition. Scar wood intact, tree starting to deteriorate.
87	Details Removed	Details Removed	114x18x21	Living box	Diam.59 cm; Base to ground 37cm; Ht 10m; Faces N. Cond'n: hollow, trunk dead from drought, regrowing 2nd trunk from branch.
89	Details Removed	Details Removed	179x26x14	Dead standing	Diam. 62 cm; ht. 8m; Facing East. Condition: Top split, base of scar

[1] Please note that a copy of this report containing the Eastings and Northings has been submitted to the Department of Environment and Resource Management.

				box	wood rotting, Inner wood detached, held together by ant nest. A 2nd scar is natural.
90	Details Removed	Details Removed	80x13x10	Living box	living trunk (one of two). Base to ground 18cm; Diam. 42.5 cm; trunk height 6m. 2nd trunk 10m. Cond'n: scar wood starting to rot.
107	Details Removed	Details Removed	150x30x29	Dead standing box	base to ground 89cm; Tree ht 8-10m; diam 70cm; cond'n: entire back of tree gone, scar wood intact but split, tree split from top of scar
230	Details Removed	Details Removed	115x37x15	Dead Coolabah stump on ground	Scar base on ground; Ht of stump 250cm. Condition: stump broken, wood deteriorating, prob. pushed by dozer during clearing, some minor burning
18.7.05					
	Details Removed	Details Removed	61x24x9	Dead standing box	Base to Ground: 110cm, Height: 6-8m, Scar Faces: SE. Cond'n: hollow. Inner wood appears to be struck with an axe.
	Details Removed	Details Removed	119x29x13c	Dead standing box	Diam: 62cm, Scar Facing: NE, Height of Tree: 6-8m.
	Details Removed	Details Removed	150x15x20	Dead Box on ground	Diam: 70cm, Height: 6m. Cond'n hollow, deteriorating

Table 4. Scarred trees in the study area

The classic shape of a cultural scar on an old tree is oval and symmetrical. The ends are rounded and the base of the scar lies above the ground. They may show stone or old steel axe marks or other evidence of human activity. The tree would have to be of an age that could have accommodated a scar prior to European arrival in the district (ca. 1860) or up to several decades afterwards. It should also be one of the tree species that is suitable for bark removal, where the bark can be levered off in sufficiently large quantities to be useful for the intended purpose (eg. container, shield, canoe, shelter). However Traditional Owners also have a wealth of cultural knowledge about other ways in which Aboriginal people utilised bark in the past and this requires a broadening of expectations of what a cultural scar should look like.

The varied shapes of the scars recorded in this study suggest that bark was removed to make shelters, shields and/or coolamons (containers). Some small scars in hollow trees may suggest the removal of bark to gain access to possums or honey. The scars in this study area tend to cluster in the length range between one and two metres (18 of the total) suggesting a range of uses for the bark while the three scars that are two or more metres would most likely have been used as canoes.

Most scars are relatively small (ten of the fourteen are less than 1.5m long), probably reflecting the area in which they are found. Assemblages of scarred trees closer to major rivers usually include a greater percentage of large scars which would have been used as canoes. Similarly almost absence of very small scars indicates an absence holes that were cut into trees to extract honey or possums.

Scar length (m)	Number
0-0.5	1 (34cm)
0.5-1m	3
1-1.49	6
1.5-2	4
2-2.49	0

Table 5. Size range of scars.

Plate 7. Martin Budby measuring Scarred tree No 107.

7.4 Stone Extraction Site (quarry)

A large open area with an exposure of grey silcrete nodules was recorded on a gentle slope near a small gully about 600-700 metres west of Horse Creek. Many artefacts were found in a pre-form on site from where they were presumably taken to be finished off at a later stage (eg., see Site 270, 2 pre-form blades).

Plate 8. .Silcrete extractions site No. 270.

7.5 Fireplaces

Of the ten suspected Aboriginal fireplaces found in the study area, eight were concentrated in one short section of Horse Creek. All of these fireplaces are small (<50cm diameter). Some of these are particularly noteworthy as they contain burnt artefacts such as mullers and flakes (eg Site 302). According to oral information form Aboriginal Elders these types of fireplaces were for ritual purposes rather than for heating or cooking. They may therefore have a potentially different degree of significance to the Traditional Owners.

Plate 9. View of Aboriginal fireplace Site No. 322

Three main stages have been noted in the gradual process of deflation of these small fireplaces:-

- Initial exposure as small compacted mounds;
- Deflation of the mounds and the appearance of burnt stone and clay (as shown in above photo);
- Dispersal of the burnt stone and clay as a result of erosion and/or animal disturbance (eg. see Plates below).

Fireplaces are notoriously difficult to recognise, and once recognised they are well on the way to destruction. The best and only protection for them is protection and stabilisation of the surrounding environment from erosion. The discussion of fireplaces earlier in this report emphasised the invaluable contribution they can and

have made to our knowledge of the great time depth of Aboriginal settlement in the region.

7.6 Historic Feature

In the cleared northern section at Site NO. 262 (Grid Ref – Details Removed[2]) the team came upon a low basalt outcrop with an exposure of about 50x10 metres. Loose, naturally occurring basalt stones had been piled up on the eastern side to form a base filled with sand to a height of about 50 cm. The recent age of this feature was gauged when the team found a concrete besserblock and a piece of polythene water pipe. The team determined that this feature is probably a base for a tank and of relatively recent origin.

[2] Please note that a copy of this report containing the Eastings and Northings has been submitted to the Department of Environment and Resource Management.

Plate 10. Two view of basalt historic feature Site No.262

7.7 Information from State Site Register and Database

As part of this study a search was conducted of the register and database in the Department of Natural Resources and Water (DNRW) for the study area (see Appendix 5). The search identified artefact scatters, individual stone artefacts and three (3) scarred trees as detailed in Appendix 5. These artefact scatters have almost certainly been recorded by Woora Consulting in the course of cultural heritage recording or protection work.. Their locations have not been added to the maps of cultural heritage sites in this report so a record of their details should be maintained. They should be located on the ground as part of a follow up study.

7.8 Summary of Issues

The most dramatic examples of disturbance to waterways in this study area are the effects of the Cherwell Creek diversion and by the total clearing of the riparian zone of Horse Creek. Considering the wealth of archaeological evidence that has been recorded in various studies along both watercourses, it is almost certain that the diversions themselves and the continuing erosion have had a major negative effect on other unrecorded cultural heritage in this area.

It became increasingly obvious in the course of the survey, particularly along the creek systems, that in recording the spatial distribution of artefact scatters and isolated finds we were creating divisions where certainly none existed in the past. The artefact scatters as recorded by the team are partly defined by the spaces

between them, mainly for the convenience of systematic recording; they bear little if any resemblance to the reality of the past. Artefact densities were directly proportional to the degree of disturbance in these environments.

In contrast to the very high artefact densities in eroded sections of creek environments, very little surface material was found in similar and adjacent undisturbed locations along the same creeks. It therefore follows that the undisturbed, intact banks and terraces of the watercourses within the study area retain high cultural values (for their intact subsurface content) and disturbance should be kept to an absolute minimum. They are certainly not culturally sterile environments. The cultural picture should more exactly be described by saying that a rich cultural zone existed along all of the larger creeks in the project area. The sections between the creeks would have been exploitation zones where people may have camped for short periods when resources and water were available.

The protection of the area surrounding the artefacts is entirely consistent with provisions of *The Aboriginal Cultural Heritage Act* outlined earlier in this report (see Section 2), and in fact it is a course of action that from a best practice perspective is far preferable to salvages of individual objects that are then removed from their contexts and lose much of their cultural and scientific value. Likewise the landscape is deprived of its cultural content and thus becomes culturally sterile.

The environmental section of the Terms of Reference indicated that there would be "… *an impact on landform and drainage patterns associated with the mine development*.." and predicted "… *significant potential for soil erosion and sedimentation associated with mining activities and construction of associated infrastructure…*". Thus it would appear that there is also significant potential for the cultural values associated with the watercourses to be under considerable threat. It is vital, therefore, that procedures be put in place early in the planning stage to preserve these areas. Lastly, where it is proposed that a creek be diverted, planning should take into account the effect of the diversion on the cultural, as well as physical and ecological, condition of the banks.

8. SIGNIFICANCE ASSESSMENT

Discussions with experienced and knowledgeable BBKY members and with Senior BBKY representatives has provided an unequivocal assertion that this is a landscape with highly significant cultural attributes and values. It should be emphasised that the concept of cultural significance to Aboriginal people is essentially 'traditional estate' based, ie. the significance identified here applies to BBKY lands and does not regard comparisons with other areas outside BBKY lands as relevant. The comparisons with other regions presented in this report (eg. the comparison of radiocarbon dates in north Queensland) are a European construct and are drawn by the author.

The complex of sites (along the larger creeks and tributary gullies associated with Cherwell, Harrow and Horse Creeks) in the study area represents prolonged usage of the watercourses and the establishment of major base camps and activity sites along the creeks. Attributes of the sites indicate that there are distinct and specialised working areas (for the manufacture or rejuvenation of stone tools, food preparation areas, hearth/fireplace areas for cooking and heating or preparing implements or weapons) and a variety of implement types which would provide a wealth of information on past activities and stone tool technologies. The potential for subsurface cultural deposits within the terraces was assessed as highly likely. As stated previously, intact and less disturbed sections of these creek terraces are potential cultural treasure troves. Protection of these areas should be a top priority (see Recommendations below). Further archaeological research such as systematic excavation, radiocarbon and other dating of features, and artefact residue and usewear analysis could be warranted in the more disturbed sections. Protection of creek terraces from cattle, regardless of disturbance, should be regarded as a top priority.

The fireplaces within these sites have the potential to contain datable organic material (charcoal, burnt seeds, etc) which might throw light on the age of these campsites. The large old scarred trees are an increasingly rare cultural resource and the living ones are now the only direct, living link with the post-European contact past and with traditional people. They have been particularly hit by the extensive clearing which has been carried in the Central Highlands and elsewhere in the past thirty odd years. As well as being of high cultural significance to the Traditional Owners, their archaeological (scientific) significance is increasing by virtue of their increasing scarcity. It is of great importance the surviving trees are protected.

The cultural landscape includes the tangible archaeological remains such as stone artefacts and hearths, but it also includes the cultural and environmental context of

these sites, such as the creek channel itself, its riparian vegetation, stands of fruit and medicine trees, native wildlife (possums, native bees, macropods, reptiles, etc. and their habitats), and other natural resources.

The recognition of the local significance of sites to their Traditional Owners should be a major factor in determining the degree and type of protection that should be given to cultural places. Most Government agencies are becoming increasingly aware of the need and duty to protect the interests and property of the Traditional Owners in whose areas development projects are to take place. The recommendations made in the next section are consistent with the provisions of *The Aboriginal Cultural Heritage Act 2003* and its associated Duty of Care Guidelines. Specifically, it should be noted that, unlike the previous legislation which protected 'items of the Queensland Estate', the accent of the present legislation is on the protection of the Traditional Indigenous estate i.e. cultural areas.

Section 11 notes:-

If a particular object or structure is evidence of Aboriginal occupation, the area immediately surrounding that object or structure is also evidence of Aboriginal occupation to the extent the area cannot be separated from the object or structure without destroying or diminishing the object or structure¹s significance as evidence of Aboriginal occupation

Section 12 notes:-

For an area to be a significant Aboriginal area, it is not necessary for the area to contain markings or other physical evidence indicating Aboriginal occupation or otherwise denoting the area¹s significance.

9. RECOMMENDATIONS

9.1 Specific areas.

The wealth of cultural heritage values associated with the watercourses in the project area is under considerable threat from mining related activities. It is therefore recommended that procedures be put in place early in the planning stage to preserve and/or mitigate impact on these areas for the life of the mine.

It is therefore recommended that a buffer zone of at least 100m be established along both banks of the major creeks. All subsurface disturbance caused by activities within this zone should be monitored by Woora representatives.

Where it is proposed that creeks be diverted to make way for a mine pit, long term planning should take into account the effect of the diversion on the cultural, as well as the physical and ecological, effects on the banks. As part of the planning the option of preserving the cultural values of the creek by retaining a corridor as opposed to diverting should be seriously considered.

It is recommended that the identified isolated artefacts and low density scatters, apart from those within specifically defined or protected zones, be salvaged by Traditional Owner representatives prior to any development works;

The team was shocked and greatly saddened by the degree of damage done by cattle to cultural heritage along Horse Creek, particularly in view of the fact that broadscale clearing of protective vegetation has left it totally vulnerable to erosion and resulted in exposure of highly delicate cultural features to further destruction. It is recommended therefore that grazing stock be removed from the banks of Horse Creek as a matter of great urgency! This could be done by fencing a protective corridor along both banks at a suggested distance of 100m on each side. However, an experienced BBKY field team could plot the width and length of the corridor with greater accuracy to protect cultural material from exposure.

Thirteen old trees with fourteen cultural scars were recorded in the study area. Many of these will lie outside areas that will be disturbed but some will probably be in the path of disturbance. While the first preference is for protection from development impacts by avoidance, fencing etc., if this is impossible then procedures already in place by BBKY for dealing with scarred trees should be continued here.

Several possible fireplaces were identified in the study area. These fireplaces have the potential to provide valuable insights into past Aboriginal cultural practices by

radiocarbon (C^{14}) dating of burnt organic remains such as charcoal, wood and seeds. It is therefore recommended that further recording and research be undertaken at these and of other sites outside protected areas where disturbance is to take place from mine related activities. Such research could include archaeological excavations of any fireplaces if they are under direct threat of impact from mining or associated activity.

It is recommended that the large grove of Brigalow and Native Orange trees near the proposed rail extension (Site No. 294) and the Bower Bird nest (Site No. 284) be protected from all mine related impacts by total avoidance

On the rail extension it is recommended that topsoil stripping be monitored between the junction with existing rail line to the eastern side of the gully near (Grid Ref Removed[3]) (from sites 208 to 215 inclusive)

9.2 Cultural Heritage Management Plan

When the Traditional Owners and BMA are negotiating a cultural Heritage Management Plan it is recommended that the following items be taken into account, following the Terms of Reference:

- arrangements for the ongoing management and protection of cultural heritage after the mine is decommissioned;
- who will have responsibility for management measures and corrective action, to ensure that cultural values are included in the rehabilitation of creeks via plants and cultural items;
- associated with the above, a consideration of long term arrangements for the artefacts that will be salvaged from various areas and stored in preparation for their eventual return to the land. Consideration could be given in particular for their return to the approximate areas (ie. Grid Reference locations) from which they were collected (though that area may be a rehabilitated one dramatically altered in appearance);

[3] Please note that a copy of this report containing the Eastings and Northings has been submitted to the Department of Environment and Resource Management.

9.3 General Recommendations

In the event that unrecorded cultural heritage sites or materials are discovered in surface or sub-surface deposits during any future operations operations, it is recommended that work at that particular location should cease and continue in another location until senior members are contacted to provide advice on significance of the finds and management/mitigation options.

In the very unlikely event that skeletal material suspected of being of indigenous human origin is discovered during any work, it is recommended that all operations within 100 metres of the skeletal material cease immediately upon its discovery and procedures outlined in Appendix 9 of this report (*Human Remains Draft Burial Policy*) be followed.

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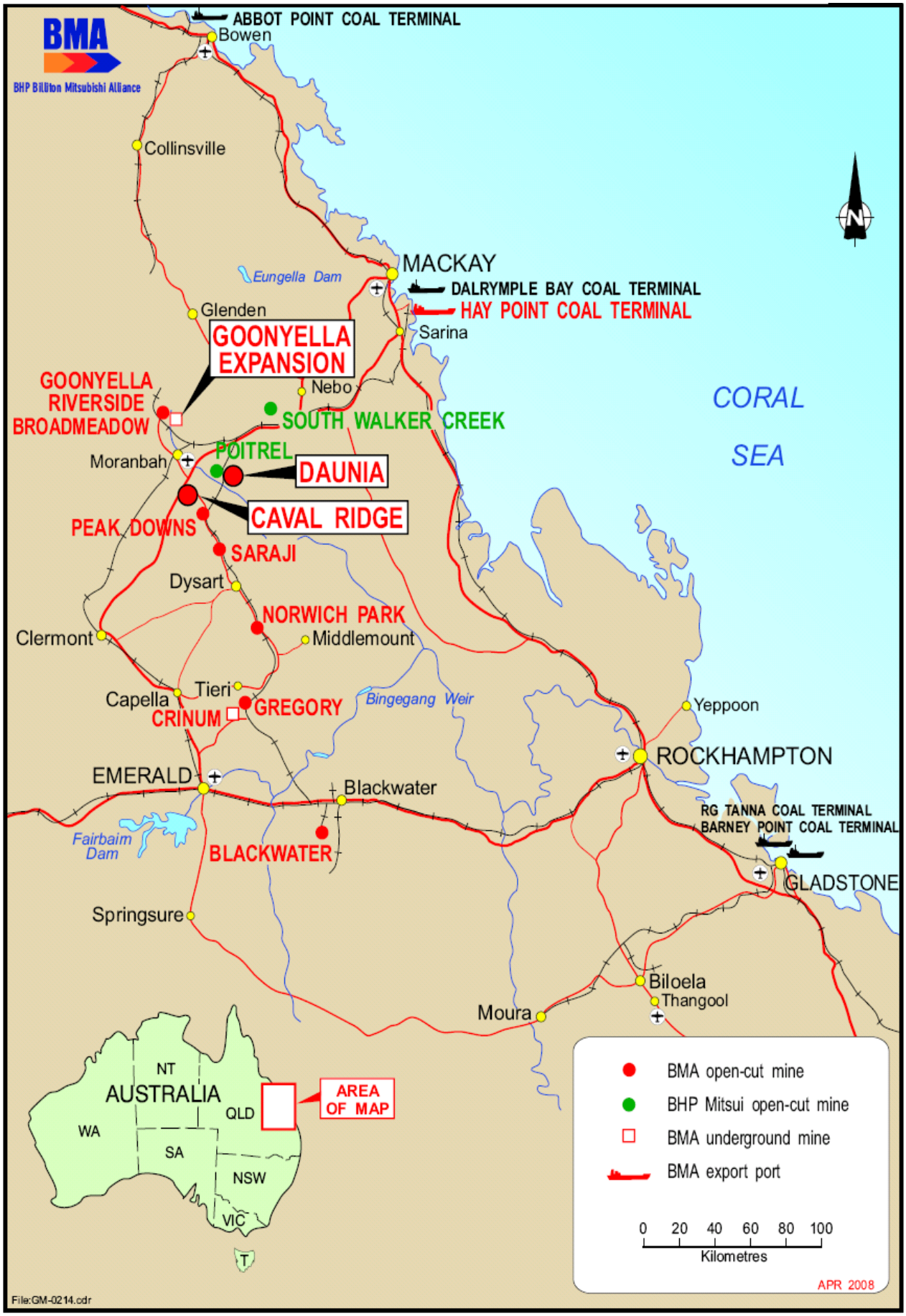


FIGURE 1 Project Location Plan (map courtesy BMA).

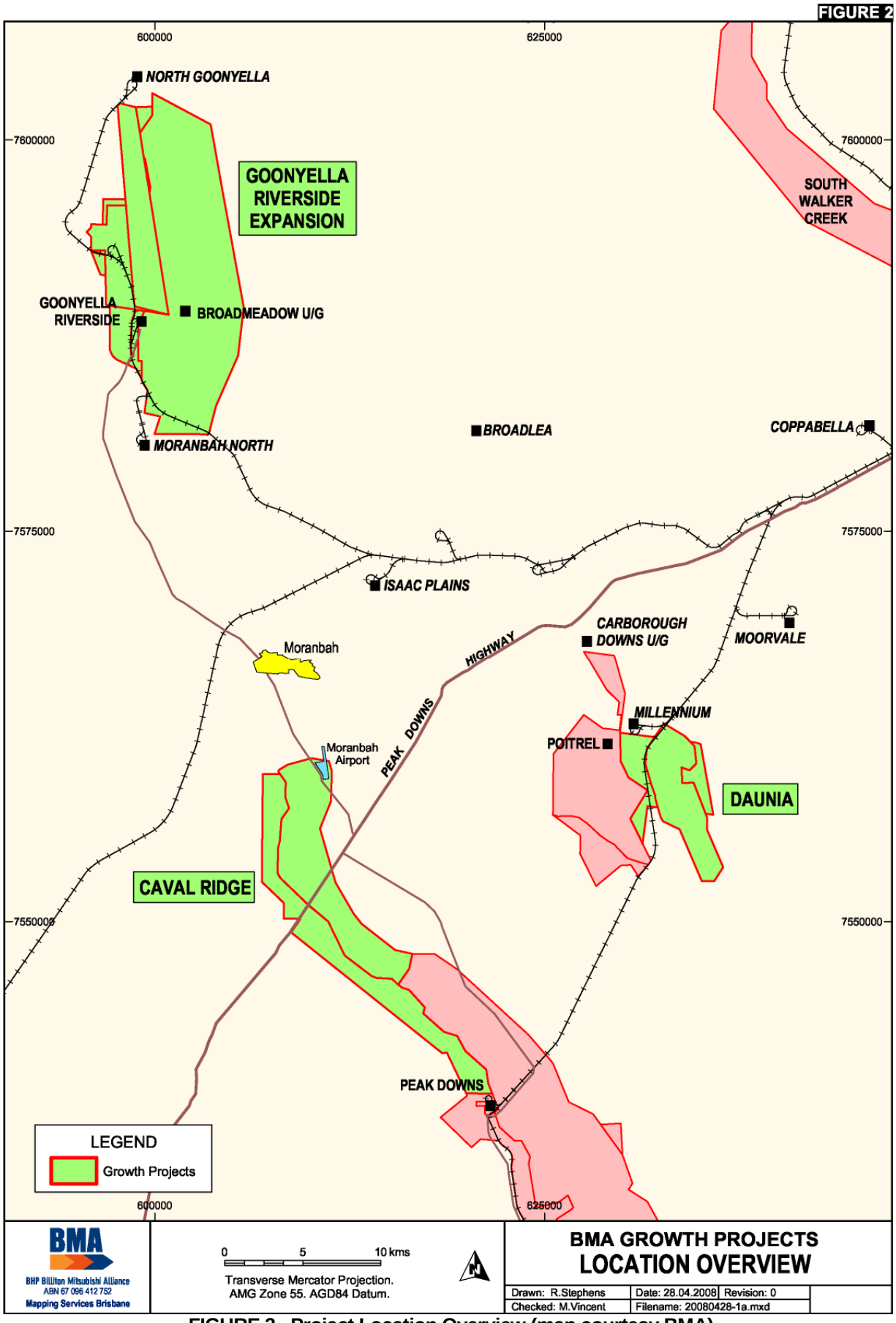


FIGURE 2. Project Location Overview (map courtesy BMA).

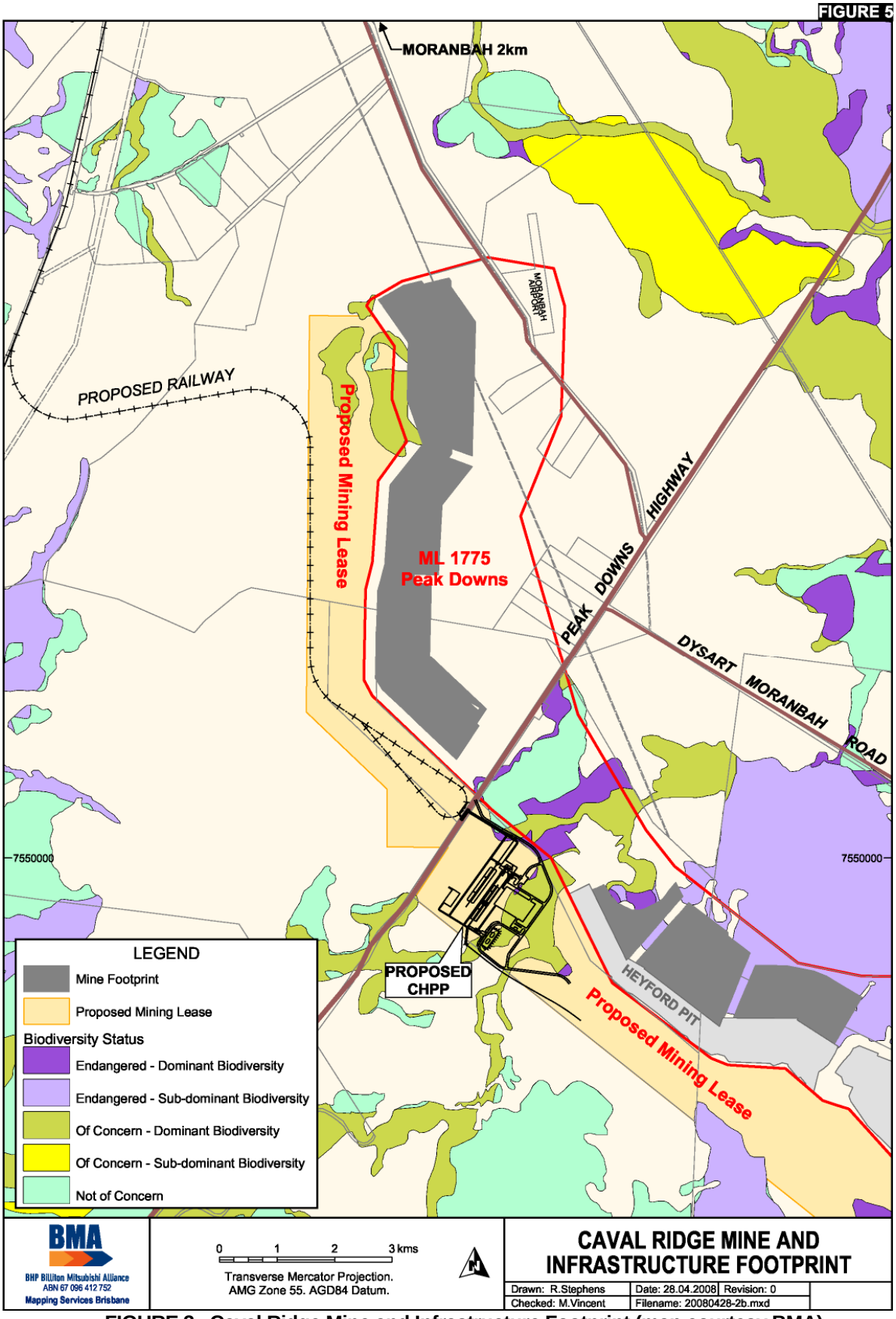


FIGURE 3. Caval Ridge Mine and Infrastructure Footprint (map courtesy BMA).

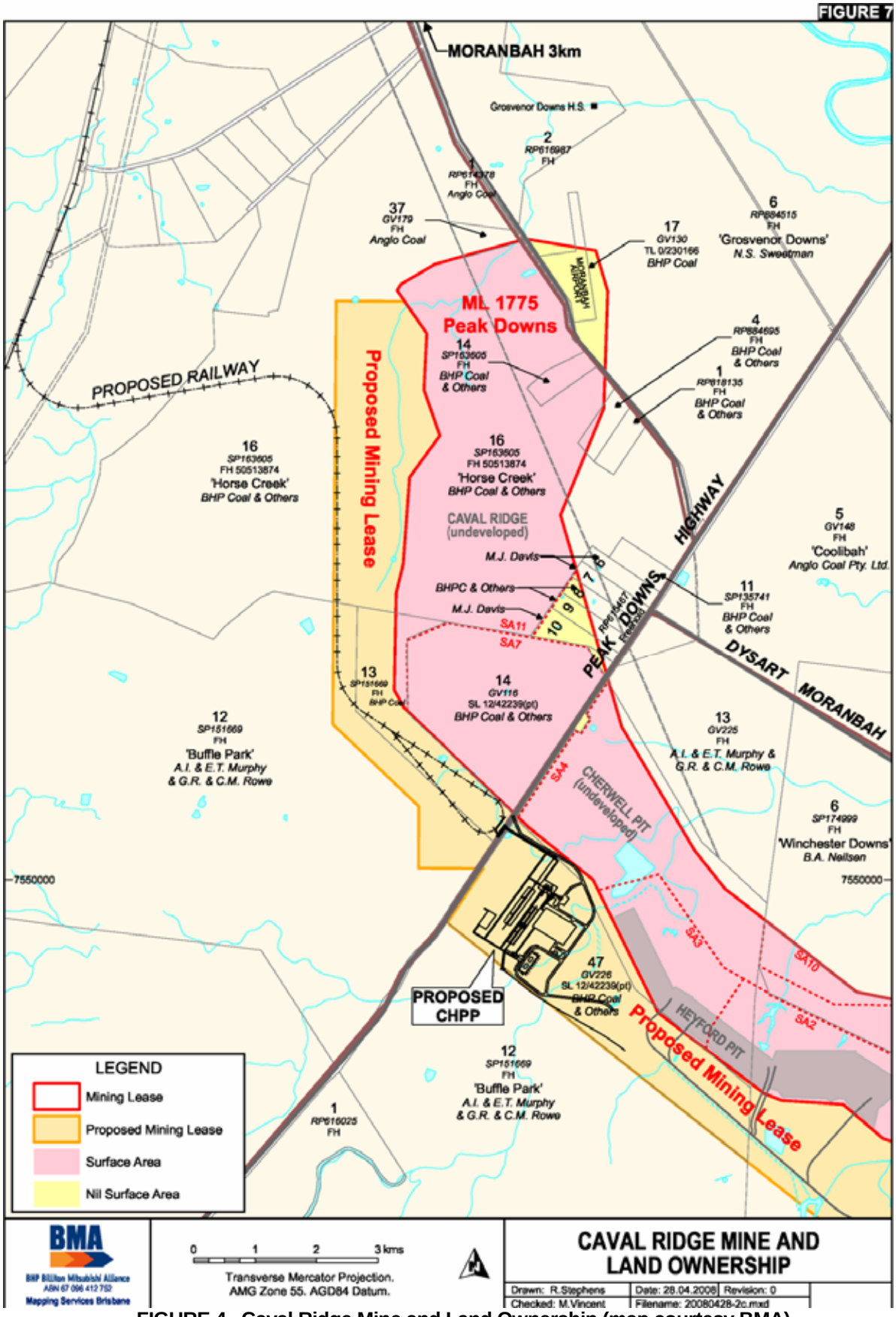


FIGURE 4. Caval Ridge Mine and Land Ownership (map courtesy BMA).

APPENDIX 1.

SUMMARY OF CULTURALHERITAGE RESULTS

NO	DATE	WPT	EASTING [4]	NORTHING	SITE	DESCRIPTION	COMMENTS	PHOTO
			(AGD84)			Key: primary=1ry; 2ry= 2ry; tertiary=3ry; pet. wood or p/w = petrified wood; silc. = silcrete; q=quartz; ch=chert; chal=chalcedony; g's=grindstone; s's or s'stone = sandstone; h'stone=hammer stone; SES= steep edge scraper; frag=fragment; IF= isolated find; LDAS= low density artefact scatter; ST=scarred tree; u/w=use wear; s/f=step fracturing; h/b=horizontal break; v/b=vertical break; plat=platform;		
1	10.8.08	400			LDAS	Intact g's & part s's muller (9 pieces, 2/3 complete) 8x7x1.5cm, polish 2, pitting on sides, anvilling & flattening on edge (anvil, muller, h'stone)	found beside fireplace	
2	10.8.08	401			LDAS/fireplace	fireplaces and grindstones; Fireplaces 2m apart: 1m down slope, 60x80cm dispersed; burnt stone;	Area 2x2m	
	10.8.08	402			LDAS	s's muller 2 frags, high polish 1 side, 9x7x2;	Area 1.5x1.5m;	
					LDAS cont'd	s's muller 5x3x1.5 (25% complete)	as above	
						br silc triangular scraper 4.5x5x1	as above	
3	10.8.08	403			LDAS	4 frags s's g's 8x7x4.5; 9x6x4.5; 7x8x4.5; 7x6x4.5;	Area 8x8m in clearing.	
						br silc pebble, flaked on end 6x6x4;	as above	
						flake core, full rotation 6x5x4;	as above	
						brown ch SES u/w 1 side 7x3x2;	as above	
						brown pet. wood 2ry 4x3.5x1;	as above	
						grey q. SES u/w 25% 5x5x2;	as above	
						red / brown pet. wood 3ry 3x2x0.5;	as above	

[4] Please note that a copy of this report containing the Eastings and Northings has been submitted to the Department of Environment and Resource Management.

						large broken cobble 10x10x7;	as above	
						brown pet. wood 1ry <3	as above	
4	10.8.08	404			IF	utilised piece grey pet. wood. u/w 1, 4x3.5x1.5		
5	10.8.08	405			Scarred tree	Scar on dead standing Box tree; Facing SW, 132x9x12; base to ground 62 cm; Diam. 43cm; Height >15m.	Scar weathered and deteriorating	
6	11.8.08	406			2IF	s's g's frag polish 1 side 8x6x3;	near brigalow	
						white striped ch 2ry 3x2.5x1		
7	11.8.08	407			LDAS	brown silc 3ry 3x2.5x0.5	beside track down dam fence	
						brown silc point 6x3x1.5;		
						brown silc 2ry 3.5x3x0.5;		
	11.8.08	407			LDAS cont'd	black pet. wood 3ry 3.5x2.5x1;		
						brown silc 2ry 3.5x2.5;		
8	11.8.08	408			2 IF	cream/brown pet. wood 2ry 3x3x0.5;	minor erosion slope, thick buffel grass	
						cream / grey silc 3ry h/b 2x3x0.5;		
9	11.8.08	409			LDAS	brown silc 3ry sf 4x3x0.5;		
						deep grey silc 3ry v/b. 3x2x0.5;		
						brown silc 2ry v/b. 3x1.5x0.5;		
10	11.8.08	410			LDAS	grey silc 3ry h/b	10x10m, sloping terrace, erosion	
						2 brown silc deb <2; cream silc deb <2;		
						brown silc 3ry 3x2x0.5;		
						red silc 3ry 2.5x3x0.5;		
						s's g's frag corner piece polish 1, 4.5x4x1.5;		
						grey silc backed blade u/w, 1 margin 5x2.5x1		
						brown silc blade 4.5x3x1;		
11	11.8.08	411			LDAS	pale brown 2ry silc 4.5x3.5x1.5;	sloping terrace, erosion, 12x10m; various broken stone	
						grey silc 2ry 3.5x3x0.5;		
						brown silc core 2 plats 6x5x4;		
						grey silc 3ry 4x5x1;		

						brown silc SES v/b 4x3x2;		
						pale grey 2ry silc 3.5x2x0.5;		
12	11.8.08	412			2 IF	brown silc 2ry 4.5x6.5x1;		
						grey silc SES u/w 1 v/b 5x3x2;		
13	11.8.08	413			Fireplace	possible fireplace; burnt stone and clay; 30x50 cm		photo
14	11.8.08	414			LDAS	br. silc 2ry 5.5x4x1;	Area 10x10m, erosion surrounded by buffel, connects to previous one;	
						s's g's frag polish 1 side 6x6.5x2;		photo
						black pet. wood blade 5x2.5x1;		
						black rhyolite core 1 plat, used as SES u/w 5x5x4;		photo
						red burnt ch 2ry 5x4x1;		
						red/grey silc 2ry 5x4x2;		
	11.8.08	414			LDAS cont.	grey silc 2ry 4x3x1		
						pale brown ch rectangular / 2ry flake 4x2.5x1;		photo
						brown silc 2ry 4.5x3x1;		
15	11.8.08	415			LDAS	grey silc 2ry 3x3x0.5;	erosion slope beside fence;	
						brown silc core 1 plat 5x4.5x4;		
						broken brown silc flaked piece 4x3.5x3;		
16	11.8.08	416			LDAS	white ch 1ry 3.5x4x1;	as above, approx. 5m from fence;	
						brown silc 2ry u/w 2 margins 3.5x3x1;		
17	11.8.08	417			LDAS	g's pebble muller h'stone, flattened sides, polish 1 side 7.5x6x4;	H'stone embedded in track under dozer tracks; LDAS near relocated muller; Area circa 8m. along fence;	
						red ch. deb <2;		
						brown silc 3ry 5x3x1; 4.5x3x1;		
						black pet. wood point 4x2x1;		
						black pet. wood 1ry 4x6x2;		
						brown rhyolite 3ry s/f 5x4x2;		
						several deb: silc, pet. wood, chal, ch;		
18	11.8.08	655			IF	brown silc SES u/w 40% 4x4.5x2	Veg: blackbuttt, Box wood, Salt Bush, Brigalow, Bauhinia, Buffel Grass	
19	11.8.08	656			IF	grey silc 3ry, 4.5x4x1	Found in buffel amongst dead Brigalow	

20	11.8.08	452			HDAS	Brown silc 2ry flake 5x6x1	Artefact scatter in cleared area beside eroded bank. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	0014 (Les)
						Red/grey basalt 3ry flake with s/f 6x5x1	TEAM - Liz, Les, Bonnie Gary, Steven	0014 (Les)
						Brown/grey silc 2ry flake 6x4x1.5		0014 (Les)
						Brown/cream chal 2ry flake <3		0014 (Les)
						Brown silc 2ry flake 3x2x1		0014 (Les)
						Brown silc scraper, u/w on 3 margins 3.5x3x2		0014 (Les)
						Brown/grey silc 2ry flake 4.5x4.5x1		0014 (Les)
						Brown/grey silc 2ry flake 6x4x1.5		0014 (Les)
						Brown silc 2ry flake with s/f 4.5x4x1		0014 (Les)
						Brown pet. wood scraper, u/w on 1 margin 7x5.5x2.5		0014 (Les)
						Grey silc 3ry flake 5x3x1		0014 (Les)
						Brown pet. wood blade, u/w on 1 margin 4x1.5x.5		0014 (Les)
						Brown silc 2ry flake <3		0014 (Les)
						Brown pet. wood 2ry flake <3		0014 (Les)
	11.8.08	452			HDAS cont.	Brown/black pet. wood 2ry flake 4x3.5x1.5		0014 (Les)
						Brown silc 2ry flake 3x3x1		0014 (Les)
						Brown silc 2ry flake 4x2.5x1		0014 (Les)
						Brown pet. wood 2ry flake <3		0014 (Les)
						Brown pet. wood 2ry flake 3.5x2x1		0014 (Les)
						Brown/grey silc core with 1 plat 3.5x2.5x3		0014 (Les)
						Brown silc 2ry flake 3.5x3.5x1		0014 (Les)
						Brown silc 2ry flake with s/f 4x3x1		0014 (Les)
						Cream silc 3ry flake 4x3x1		0014 (Les)
						Brown silc 2ry flake 4x3x1		0014 (Les)
						Grey silc 3ry flake, u/w on 1 margin		0014 (Les)

						5x3x1		
						Brown silc 3ry flake, u/w on 1 margin 4x2x.5		0014 (Les)
						Brown/grey pet. wood 2ry flake 4.5x3.5x1		0014 (Les)
						Brown/cream chal 3ry flake, u/w on 2 margins <3		0014 (Les)
						Brown/black pet. wood 3ry flake <3		0014 (Les)
						Brown silc 2ry flake with s/f 5x4x2		0014 (Les)
						Brown pet. wood primary flake 3x2.5x1		0014 (Les)
						Brown/black pet. wood core with 1 plat 6x5x4		0014 (Les)
						Cream/white silc 3ry flake 3x2.5x1		0014 (Les)
						Brown/white quartz 2ry flake 3x2.5x1		0014 (Les)
						Brown silc 2ry flake <3		0014 (Les)
						Grey silc 3ry flake, u/w on 1 margin 3.5x2.5x1		0014 (Les)
						Brown silc 2ry flake 3.5x2x2		0014 (Les)
						Black pet. wood 2ry flake <3		0014 (Les)
						Brown/red silc 2ry flake <3		0014 (Les)
						Brown/grey pet. wood 2ry flake 6x3.5x1.5		0014 (Les)
						Brown/grey silc 2ry flake 5x3x2		0014 (Les)
						Brown/grey silc 2ry flake with s/f 4.5x5x1.5		0014 (Les)
						Brown pet. wood 2ry flake 4.5x3x1.5		0014 (Les)
						Grey s's/g's frag polished on 1 side 5x4x2		0014 (Les)
						Brown/grey silc 2ry flake 5x4x2		0014 (Les)
						Brown/black riverstone/h'stone u/w on 1 margin 8x6x6		0014 (Les)
						Brown silc 2ry flake, u/w on 2 margins 5.5x4x1.5		0014 (Les)
						Brown/red silc 2ry flake 5x2.5x1.5		0014 (Les)
						Brown silc 2ry flake 4.5x3x1		0014 (Les)
						Brown silc 2ry flake 3.5x2.5x1		0014 (Les)
						Brown/white silc 2ry flake <3		0014 (Les)

						Brown pet. wood 2ry flake 3.5x2x1		0014 (Les)
		452			HDAS cont.	Brown silc 2ry flake 3.5x2x1		0014 (Les)
						Brown pet. wood core with 1 plat 6x5x3		0014 (Les)
	11.8.08	453			LDAS	Brown silc 2ry flake 6x3.5x2.5	Artefact scatter in cleared eroded area beside existing track. Area 5m x 5m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	0015 (Les)
						Brown silc 2ry flake, u/w on 2 margins 4.5x4x2		0015 (Les)
						Brown silc 2ry flake, u/w on 1 margin 4.5x4x1.5		0015 (Les)
						Brown/grey pet. wood 2ry flake <3		0015 (Les)
						Brown pet. wood scraper, u/w on 1 margin 5x3x.5		0015 (Les)
						Brown/grey silc 2ry flake, u/w on 1 margin 4.5x3x1		0015 (Les)
						Grey silc 2ry flake with s/f 3.5x3x1.5		0015 (Les)
						Broken grey silc point with u/w on 1 margin 3x3x.5		0015 (Les)
						Grey silc scraper, u/w on 1 margin 6x3.5x1.5		0015 (Les)
						Brown/grey silc core with 1 plat7.5x5x4		0015 (Les)
22	11.8.08	454			LDAS	Brown s's / g's frag polished on 1 side 6x4x1.5	Artefact scatter in cleared and eroded area, 50m off gully; Area 5m x 5m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	0016 (Les)
						Brown silc 2ry flake 3.5x2.5x1		0016 (Les)
						Brown silc 2ry flake 4x2.5x1		0016 (Les)
						Brown/grey pet. wood scraper, u/w on 2 margins 4x4x2		0016 (Les)
						Brown silc 2ry flake 3.5x2.5x1		0016 (Les)
						Brown silc 2ry flake 3x3x1		0016 (Les)

						Brown pet. wood 2ry flake <3		0016 (Les)
						Brown silc 2ry flake <3		0016 (Les)
23	11.8.08	455			MDAS	Brown silc ses, u/w on 1 margin and s/f 5x4x3.5	Artefact scatter in cleared & eroded area, 50m off gully; Area 5m x 8m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	0017 (Les)
						Brown/grey pet. wood scraper, u/w on 1 margin 5x4x1.5		0017 (Les)
						Brown pet. wood scraper, u/w on 1 margin 5x4.5x1.5		0017 (Les)
						Black/brown pet. wood scraper, u/w 1 margin 5.5x5.5x2.		0017 (Les)
						Red/brown pet. wood scraper, u/w 3 margins 4.5x2.5x1		0017 (Les)
						Black/red pet. wood 2ry flake 4.5x3x1		0017 (Les)
						Grey/purple silc 3ry flake 4.5x1.5x1		0017 (Les)
						Orange/grey silc 2ry flake, u/w 2 margins 5x4x2		0017 (Les)
						Grey silc 2ry flake, u/w 1 margin 4.5x2.5x1		0017 (Les)
	11.8.08	455			MDAS cont.	Brown silc 1ry flake 5x3.5x1.5		0017 (Les)
						Brown/grey silc 2ry flake with s/f 5x5x2		0017 (Les)
						Brown/grey silc 2ry flake, u/w 2 margins 4x5.5x1.5		0017 (Les)
						Grey/cream silc 2ry flake 3.5x3.5x1		0017 (Les)
						Brown/grey silc 2ry flake 5x4x1		0017 (Les)
						Brown silc scraper, u/w 1 margin 5x4x2		0017 (Les)
						Grey silc scraper, u/w 2 margins 3.5x4x1.5		0017 (Les)
						Grey silc scraper, u/w 2 margins 2.5x4x1.5		0017 (Les)
						Brown pet. wood 2ry flake 4.5x4.5x1		0017 (Les)
						brown silc 2ry flake 6x2.5x1.5		0017 (Les)
						Brown pet. wood scraper, u/w on 2 margins 5x3.5x4.5		0017 (Les)

						Brown silc 2ry flake, u/w 1 margin 4x3.5x1		0017 (Les)
						Grey/orange silc core, 1 plat <3		0017 (Les)
24	11.8.08	456			LDAS	Black/brown pet. wood scraper, u/w on 1 margin 6x2.5x2.5	Artefact scatter located on cleared eroded area, on the bank of the gully. Area 4m x 4m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	
						Brown/grey pet. wood scraper, u/w on 1 margin 7x4.5x2.5		
						Red/grey pet. wood 2ry flake 4.5x7x2		
						Brown silc 2ry flake 3x3x1		
25	12.8.08	457			LDAS	Brown/grey silc core with 1 platform 5.5x4x3	Artefacts located beside original track, 30m off gully, area 5m x 5m. Vegetation - buffel grass, bauhinia, burrum bush, box, blackbutt, brigalow, red sandy soil.	
						Brown silc 2ry flake, u/w on 1 margin 3.5x4x1	TEAM - Liz, Les, Bonnie Gary, Steven	
						Brown silc 2ry flake 4x2.5x1.5		
						Brown pet. wood 2ry flake 3.5x2.5x.5		
						Brown/grey pet. wood 3ry flake, u/w on 1 margin <3		
26	12.8.08	458			LDAS	Broken brown s'stone muller polished on 2 sides 9.5x9x1.5	30m off gully beside eroded pad. Vegetation - buffel grass, bauhinia, burrum bush, box, blackbutt, brigalow, red sandy soil.	Photo No 0018 (Les camera)
27	12.8.08	459			MDAS	Brown silc core with 1 plat 7x3.5x4.5	Artefacts located 5m on top of eroded gully on a bare patch of ground. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil. Area 7m x 8m.	
	12.8.08	459			MDAS cont.	Brown pet. wood scraper, u/w on 1 margin 5.5x5.5x2		

						Cream/white silc scraper, u/w on 1 margin 7x6x2.5		
						Brown silc 2ry flake with s/f 5x3.5x1.5		
						Brown silc scraper, u/w on 2 margins 4x4x2		
						Brown pet. wood 2ry flake 4x3.5x1.5		
						Brown pet. wood 2ry flake 5.5x4.5x2		
						Brown/red silc 2ry flake 4x2.5x1		
						Grey silc scraper, u/w on 1 margin 3x3x.5		
						Brown silc 2ry flake <3		
						Brown/grey pet. wood 2ry flake 3x2x.5		
						Brown silc 2ry flake 3x2x.5		
						Brown/cream silc 2ry flake <3		
28	12.8.08	460			HDAS	Brown silc scraper, u/w on 1 margin 6.5x3x2	Artefacts located 1m off existing track in a cleared and eroded area; Area is 10m x 10m, 50m off gully. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil.	
						Brown silc 3ry flake, u/w on 1 margin s/f 5.5x4x1.5		
						Brown silc 3ry flake with s/f 6x4x2		
						brown silc 2ry flake 6x4.5x2		
						Brown silc 2ry flake 6x3.5x1.5		
						Brown silc 2ry flake 4x4x1.5		
						Brown/red silc 3ry flake with s/f 5x3.5x1.5		
						Black silc scraper, u/w on 1 margin 6x2.5x1.5		
						Brown silc 3ry flake 4.5x3x1		
						Brown/cream silc 3ry flake 4x3x1.5		
						Brown/grey pet. wood 2ry flake 5x2x1		
						Brown/cream silc 3ry flake 4x3.5x1.5		
						Brown silc 3ry flake, u/w on 1 margin 3.5x2x1.5		
						Brown silc 2ry flake 3.5x3.5x.5		
						Grey silc 2ry flake 3.5x3.5x1		
						Brown silc 3ry flake, u/w on 1 margin 3.5x2.5x1		
						Grey silc 2ry flake <3		

						Brown pet. wood 2ry flake <3		
						Cream silc 3ry flake <3		
						Grey silc slug <3		
						Cream/red silc 3ry flake, u/w on 1 margin <3		
						Brown silc 2ry flake <3		
28	12.8.08	460			HDAS cont.	Brown pet. wood 2ry flake <3		
						Grey silc 3ry flake <3		
						Brown silc 2ry flake <3		
						Brown pet. wood 3ry flake <3		
						Brown/black pet. wood slug 3x1x1		
						Grey pet. wood 2ry flake <3		
						Red silc 2ry flake 3x2x.5		
						Grey silc 3ry flake, u/w on 1 margin <3		
						Brown/cream silc 2ry flake 4x3x1		
						Brown/cream silc 3ry flake with s/f 4.5x2.5x1.5		
						Brown/grey pet. wood core with 2 plats 4.5x3.5x2.5		
						Cream/red silc 2ry flake 4x2.5x2		
						Brown pet. wood 2ry flake 4x2.5x1.5		
						Brown silc scraper, u/w on 1 margin 3.5x2.5x1		
						Grey silc scraper, u/w on 1 margin 4x1.5x2		
						Brown/grey chal 2ry flake with s/f 3x2x1		
						Brown silc 3ry flake 4x2x1.5		
						Brown pet. wood 3ry flake, u/w on 1 margin 3x3x.5		
						Brown silc 2ry flake <3		
						Brown/black pet. wood 3ry flake 3.5x2x.5		
						Brown silc 3ry flake, u/w on 1 margin 3x3x.5		
						Brown silc 1ry flake <3		
29	12.8.08	461			MDAS	Brown/black silc 2ry flake 4x3x2	Artefacts located 15m off existing track and 40m off gully on a cleared eroded area, 5m x 5m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, red sandy soil,	

							sandalwood, iron bark, emu apple.	
						Brown/cream silc scraper, u/w on 1 margin 3.5x3x1.5		
						Grey silc 2ry flake 3x2.5x1		
						Cream silc 3ry flake 3x3.5		
						Brown/red silc 2ry flake 4x3x1		
						Brown/grey silc 2ry flake 4x3x1		
						Brown/cream silc 2ry flake with s/f 4x2x1		
						Cream silc 3ry flake <3		
						Red silc 2ry flake <3		
						Brown/red silc 2ry flake with s/f <3		
						Grey silc 3ry flake <3		
						Black silc 2ry flake <3		
	12.8.08	461			MDAS cont.	Brown/grey silc 3ry flake with s/f <3		
						Brown/grey silc 1ry flake <3		
						Brown/grey silc core with 1 plat 3x2x2		
30	12.8.08	462			MDAS	Brown basalt 2ry flake <3		
31	12.8.08	463			HDAS		Artefacts located 3m off existing track, 50m off gully and 40m off seismic line. On a cleared eroded area, 8m x 10m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, sandalwood, iron bark, emu apple, red sandy soil.	
		464			HDAS	Brown/grey pet. wood core with 1 plat 5x3x3		
		465			HDAS	Black/grey pet. wood core with 1 plat 4x3x3		
		466			HDAS	Brown silc core with 1 plat 3.5x3.5x2.5		
		467			HDAS	Brown/grey silc scraper, u/w on 1 margin 7x3x1.5		
		468			HDAS	Brown/grey silc scraper, u/w on 1 margin 6x3x2.5		

		469			HDAS	Brown/grey silc scraper, u/w on 2 margins 4.5x3.5x2.5		
		470			HDAS	Brown silc scraper, u/w on 2 margins 5.5x3.5x1.5		
		471			HDAS	Brown silc scraper, u/w on 2 margins 5x4x1.5		
		472			HDAS	Brown silc scraper, u/w on 2 margins 4x4x2		
		473			HDAS	Brown/grey silc scraper, u/w on 1 margin 4x3.5x1.5		
		474			HDAS	Brown silc scraper, u/w on 1 margin 6x3.5x1		
		475			HDAS	Red/grey silc 2ry flake, u/w on 2 margins 5x3.5x1		
		476			HDAS	Brown/grey silc 2ry flake 5x3.5x1		
		477			HDAS	Red silc 3ry flake, u/w on 2 margins 4x3.5x1		
		478			HDAS	Brown silc 2ry flake 4.5x3x1		
		479			HDAS	Brown/grey pet. wood 2ry flake 5x3x1		
		480			HDAS	Brown/grey pet. wood 2ry flake 5x3.5x1.5		
		481			HDAS	Brown silc 2ry flake, u/w on 1 margin 3.5x3.5x1		
		482			HDAS	Brown/cream silc 2ry flake 3.5x3.5x1		
		483			HDAS	Brown/white pet. wood 3ry flake, u/w on 1 margin and s/f 5x3x1		
		484			HDAS	Brown/grey silc 2ry flake 4x3x1.5		
		485			HDAS	Grey silc 3ry flake 4x3x1.5		
		486			HDAS	Brown/grey silc scraper, u/w on 2 margins 4.5x3x1		
		487			HDAS	Brown/red silc 2ry flake <3		
		488			HDAS	Grey silc 3ry flake <3		
		489			HDAS	White silc 3ry flake <3		
		490			HDAS	Grey silc 3ry flake <3		
	12.8.08	491			HDAS cont.	Red silc 2ry flake <3		
		492			HDAS	Grey silc 2ry flake, u/w on 1 margin <3		
		493			HDAS	Brown/cream silc scraper, u/w on 2 margins 3.5x2.5x1.5		
		494			HDAS	Brown/grey silc 2ry flake 4x3.5x.5		
		495			HDAS	Brown silc 3ry flake, u/w on 1 margin 3.5x2.5x.5		
		496			HDAS	Red/grey silc 2ry flake 4x3x1.5		

		497			HDAS	Grey silc 3ry flake 3x2.5x1		
		498			HDAS	Grey silc 3ry flake, u/w on 1 margin 3.5x3x1		
		499			HDAS	Brown silc 2ry flake 3.5x2.5x1		
		500			HDAS	Brown silc 2ry flake, u/w on 1 margin 3.5x2x.5		
		501			HDAS	Brown silc 2ry flake 3.5x2x.5		
		502			HDAS	Brown silc 2ry flake with s/f 3x2x1		
31	12.8.08	503			HDAS		Artefacts located 1m off existing track, on existing Seismic line, on a cleared eroded area, 50m from gully which is 3m x 5m. Vegetation - buffel grass, burrum bush, bauhinia, box, blackbutt, brigalow, sandalwood, iron bark, emu apple, red sandy soil.	
		504			HDAS	Broken brown s'stone muller polished on 2 sides 10x6x2		
		505			HDAS	white/cream silc 2ry flake with s/f 6.5x4.5x1.5		
		506			HDAS	Brown silc 3ry flake, u/w on 2 margins 5x3.5x.5		
		507			HDAS	Brown/black pet. Wood 3ry flake, u/w on 1 margin 4x4x1		
		508			HDAS	Brown silc 3ry flake 4x3x.5		
		509			HDAS	Brown/cream silc 3ry flake, u/w on 2 margins 3.5x2x.5		
		510			HDAS	Brown/black pet. wood 2ry flake 4x2x1		
		511			HDAS	Brown silc 2ry flake 4x3x1		
		512			HDAS	Brown/red silc 2ry flake with s/f 5x4x1.5		
		513			HDAS	Brown/grey silc 2ry flake 3.5x3x1		
		514			HDAS	Brown/black pet. wood 3ry flake 4x2x1		
32	12.8.08	515			HDAS		Artefact located 5m off existing track in partly cleared area. Vegetation - buffel grass, burrum bush, bauhinia, box, Blackbutt, iron bark, emu apple, brigalow, sandalwood, red sandy soil.	

		516			HDAS	Brown silc 2ry flake 4.5x5x1		
33	12.8.08	517			LDAS		Artefacts located in cleared area on eroded bank of gully, 20m off existing track. Vegetation - buffel grass, burrum bush, bauhinia, box, Blackbutt, iron bark, emu apple, brigalow, sandalwood, red sandy soil.	
		518			LDAS	Brown/grey silc scraper, u/w on 1 margin 5.5x4.5x2.5		
		519			LDAS	Grey silc 2ry flake, u/w on 1 margin and s/f 4x3.5x1.5		
		520			LDAS	Brown silc core with 1 plat 3.5x3x2		
		521			LDAS	Brown/black pet. wood scraper, u/w on 1 margin 4x2.5x1.5		
34	12.8.08	522			Scarred tree	Dead standing Box tree, 2 scars. Height 10m. Diam 68cm. (1) dimens. 50x25x11cm, facing east, base to ground 65cm, (2) dimens 34x11x8cm, facing west, base to ground 103cm.		0020 - 0021 (Les camera)
35	12.8.08	523			LDAS	Artefact scatter in cleared area on eroded bank of gully, 20m off existing track. Vegetation - buffel grass, burrum bush, bauhinia, box, Blackbutt, ironbark, emu apple, brigalow, sandalwood, red sandy soil.		
		524			LDAS	Brown silc 2ry flake 3.5x4x1.5		
36	12.8.08	525			LDAS	Artefacts located 20m from creek an cleared area of 10m x 10m. Vegetation - bean tree, brigalow, box, sandalwood, iron bark, red sandy soil.		
		526			LDAS	Brown s's / g's frag polished on 1 side 7.5x5x3		
		527			LDAS	Black s'stone muller polished on 1 side 10x8x2		
		528			LDAS	Brown/red silc 2ry flake 3.5x2.5x1		
		529			LDAS	Brown/grey silc 2ry flake 4x4x1.5		
		530			LDAS	Brown/cream silc 2ry flake, u/w on 1 margin 3.5x2.5x1		
		531			LDAS	Grey silc 3ry flake 3x2x1		

37	12.8.08	532			LDAS		Artefacts located 5m off existing track and 40m off gully in eroded area of 5m x 5m. Vegetation - bean tree, brigalow, box, sandalwood, iron bark, red sandy soil.	
		533			LDAS	Brown silc 3ry flake with s/f 7x6.5x1.5		
		534			LDAS	Brown/grey silc scraper, u/w on 3 margins 5x4.5x2		
		535			LDAS	Brown/grey quartz 2ry flake 4x2.5x1		
		536			LDAS	Black silc 2ry flake 3.5x3.5x1		
		537			LDAS	Brown silc 3ry flake 3x2x1		
38	12.8.08	538			Scarred tree	Living scarred Box tree; Height 10m; Diam 76cm; scar facing west; Dimens 103x32x11cm; Base to ground 56cm;	Tree located on edge of gully 5m from existing track.	23 (Les)
39	12.8.08	539			IF	brown s's g/s frag 1, 10x8.5x1.5		8840-39
40	12.8.08	540			LDAS	grey silc 2ry 4.5x3x1	Area 4x2m;	photo
						pale silc deb <2		
						brown silc point 5x3x1		
41	12.8.08	420			LDAS	3 frags s's g's v. weathered: (1) curved cnr piece, polish 1side 5x5x2.5; (2) possible polish 1 but v. weathered side w/ shallow groove 7x6x3; (3) small frag polish 1, 3x2x0.5;	relocated from wpt. 419. 611743 / 7550665	
42	12.8.08	421			LDAS	white chal utilised piece with grooves 4.5x2x1		
43	12.8.08	422			LDAS	brown silc core 12x10x7 w/ 50% rotation	Eastern edge of terrace	
						cream silc 3ry 6.5x4x1.5		
						brown silc core, 1 plat 11x8x5 w/ rotated 100%		
						black silc 1ry 5x5x1.5		
44	12.8.08	423			IF	frag of broken green rhyolite edge ground axe 5.5x3x1		
45	12.8.08	424			LDAS	grey / cream pet. wood round scraper u/w 2 margins 3.5x3x1	25 x 8m on cleared erosion slope:	
						grey silc deb <2		
						deep grey silc 3ry 5x4x1		
						brown silc 3ry 4x3x1		
46	12.8.08	425			LDAS	s's g's frag, h/b + v/b, v. shiny polish 1 side 10x5x4		

						brown silc 1ry triangular 5x4x1		
						grey silc SES v/b u/w 4x3x2		
						grey silc 2ry 5x3x1.5		
						brown silc deb <2		
						cream silc 3ry 5x4x1		
						grey silc SES u/w 1, 5x3.5x1.5		
47	12.8.08	426			LDAS	grey silc 1ry 4x2.5x1	Area 2x2m	
						brown silc 2ry 3x2.5x0.5		
						grey silc 3ry 3x3.5x0.5		
						grey silc deb <3		
						brown silc deb <2		
48	12.8.08	427			LDAS	brown /red silc triangular scraper u/w 2 margins 5x5x1	Area 2x2m:	
						black pet. wood tula 3.5x3.5x1		
						grey/red silc curved scraper, u/w margins 4.5x3x1		
49	12.8.08	428			LDAS	grey silc SES u/w 3 margins 4x3.5x1.5	Area approx.15x20m :broken natural stone including silc, ch, chal, clear q, pet. wood.	
						pale grey silc 3ry u/w 1 wide groove 3.5x2x1		
	12.8.08	428			LDAS (cont'd)	cream pet. wood blade curved end 5x2x1		
						pale brown silc 2ry 3x2.5x1		
						white striped ch deb <3		
						grey silc 1ry 2x3x0.5		
						cream silc blade u/w 1, 5x2x1		
						grey silc tula (1ry) 4x3x1		
						brown pet. wood 2ry 3x2x0.5 u/w 1 margin		
						deep/grey silc 3ry 5x4x0.5; 3x2x0.5		
						brown silc 3ry h/b 4x3.5x1		
						brown silc 3ry 5x4x1		
						deep / grey silc 2ry 4x3x1 s/f u/w 1		
						black silc 3ry 3x2x0.5		
						cream/grey silc blade 5x2x1		
						cream /grey silc 2ry v/b 3.5x2x0.5		

						cream silc 2ry h/b s/f 4x3x1;		
						rhyolite 1ry h/b v.patinated u/w 1margin 4x3x1		
50	12.8.08	429			MDAS	brown silc blade 4x1.5x0.5	All found in erosion at base of terrace; relocated to top of bank with previous wpt.	8864
						grey silc 2ry 5x3x1.5		
						brown silc SES u/w grooves on 75%, 3x3x1		
						brown ch blade u/w 1 margin, 4x2x1		
						grey ch. 3ry s/f		
						black pet. wood deb 3x3x0.5		
						brown silc 3ry h/b 3x3x0.5		
						4 silc deb <3		
						grey silc 3ry 5x4x1; grey silc 3ry large groove 5.5x4x1.5; grey silc 3ry 5x3x1;	From same core	
						s's g's frag 7x5x2.5 polish 1		
	12.8.08	429			MDAS cont.	brown silc h/b bulb only 2x3.5x1		
						brown silc 2ry 3x3.5x1		
						non siliceous circular scraper 4x3x1.5, pale patination		
						black pet. wood block SES 10x7x3, 1 margin flaked		
						fine cream silc 3ry <3		
						brown silc 3ry SES 5x5x2 u/w 3 margins		
						red/black pet. wood 3ry v/b 5x3x2		
						2 pieces black silc 3ry flakes 2x3x1; 3x5x1;		
						deb <2 throughout the site		
						3 grey silc 3ry, 5x5x1.5; 3x2.5x0.5; 5x6x1;		
51	12.8.08	430			Scarred tree	Scarred living box - new growth: 107x28x17; Diam. 73cm; Base to ground 7cm; Ht 15m;	Condition - scarwood partly intact, top is rotted half way to base.	
52	12.8.08	431			LDAS	4 basalt 3ry 4x2.5; 3.5x2.5; 3x2; + frag <3; grey silc 3ry 4.5x4x1; cream pet. wood 3ry;	photo 8863. Relocated to this wpt. bl. bas photo 8861.	

						bl. basalt 3ry / SES u/w on end 6x5x2;		
53	13.8.08	12					Start of transect between fence line and these co ordinates, heading north. Vegetation - wattle, bloodwood, iron bark, quinine, tea tree, spear grass, sandy soil, embedded s's boulders, no artefacts found between 12 and 13. TEAM - Les, Liz, Bonnie, Steven, Gary	
54	13.8.08	13					Vegetation - wattle, blood wood, iron bark, quinine, tea tree, spear grass, sandy soil with sandstone boulders coming out of ground. No artefacts located.	
55	13.8.08	471			LDAS	Broken brown s's/g'stone frag polished on 1 side (3 pieces) 10.5x9x2 - 6x6x1.5 - 6.5x3x2	Artefact located on edge of lancewood forest, in eroded area with sandy soil. Relocated to WPT 437 - 617338/7543183	
						Broken brown s's/g'stone frag polished on 2 sides with a shallow groove on 1 side 11x12x2	Artefact relocated to WPT 437 - 617338/7543183	
56	13.8.08	435			IF	brown silc. core 1 plat 10x8x6 (25% rotation)	Nth of tree at gully 8B	
57	13.8.08	436			2IF	cream silc 3ry 4x4x1	at Gully	
						red silc v/b 3ry u/w on curved margin 6x3x2	as above	
58	14.8.08	439			IF	s's g's slab 23x20x3.5, polish 1 side	on wide gully with eroded banks. Gully bed 40m wide.	8841/2
59	14.8.08	660			IF	brown s's muller polish 5.5x4x1.5		8846
60	14.8.08	661			IF	brown s's g's frag, polish 1, 10x8x5x1.5		8840/39
61	14.8.08	440			IF	half round pebble muller on top of sth bank, 7x4x2.5	Burdekin Plum in gully	
62	14.8.08	441			scarred tree	ST 186x35x6cm, Dead standing Box tree; Diam.61 cm; Base to ground 28cm; Height 10-15m	Condition: Scar wood intact, tree starting to deteriorate.	Photos

63	14.8.08	442			2IF	brown silc 3ry 2.5x3.5x0.5	Track along Harrow Dam, Nth bank.	
						chal 2ry 2x3.5x0.5		
							Sect. Thru sandy clay material. Scatter of silc cobbles. Followed gully (sthn side) toward W. to boundary then transect sth of W side of Low road.	
64	14.8.08	443			IF	brown silc 2ry 4x3x0.5	On track near fence	
65	14.8.08	444			IF	grey silc 2ry 4x4.5x1	Sth. Slope of gully; see v/b notes	
66	14.8.08	445			IF	grey silc 2ry u/w 1 margin 7x5x2	Nth slope; Walked out to boundary. Brigalow.	
67	14.8.08	446			IF	grey silc 2ry 6x4x1	found on stony slope, s'stone bedrock very close to surface.	Photo
68	14.8.08	472			LDAS		On edge of gully on eroded bank. Vegetation - brigalow, burrum bush, bauhinia, gum, lancewood, iron bark, wattle, red sandy soil.	
						Brown silc 2ry flake with s/f 5x3.5x1.5	Same stone found at Saraji.	
						Broken brown riverstone/h'stone with u/w 2 margins, 8x6x3		
						Grey/pink s's/g's frag polished 1 side, 6.5x4.5x2.5		
							TEAM - Les, Liz, Bonnie, Steven, Gary	
69	15.8.08	473			LDAS	Brown silc 1ry flake 9x5x3	Artefacts located on S. edge of gully. Vegetation - brigalow, box, sandalwood, wattle, burrum bush, red sandy soil.	
						Brown/grey silc 2ry flake 9x5x2		
						Brown/cream silc 2ry flake with s/f 8x3.5x1.5		
						Brown/grey silc 3ry flake 4x3x1		

70	15.8.08	474			LDAS	Brown/cream silc core with 1 plat 10x5.5x6	Artefacts located on N side of gully beside erosion. Veg.- brigalow, box, sandalwood, wattle, burrum bush, lime tree, bull oak, yellow wood, iron bark, red sandy soil.	
						Broken brown s'stone/g'stone polished 2 sides, 7x5.5x2		
						Brown/grey silc scraper, u/w on 1 margin 10x8.5x3.5		
71	15.8.08	475			LDAS	Brown silc 2ry flake 4x3x1	Artefacts located on northern side of gully beside eroded area. Vegetation - brigalow, box, sandalwood, wattle, burrum bush, lime tree, bull oak, yellow wood, iron bark, red sandy soil.	
						Red/grey silc scraper, u/w on 2 margins 8x5x2		
						Brown/cream silc scraper, u/w on 2 margins 7x4x1.5		
						Brown silc 1ry flake 4x3.5x1.5		
72	15.8.08	476			LDAS	Brown silc core with 2 plats 10x7x6.5	Artefacts located on northern side of gully beside eroded area. Vegetation - brigalow, box, sandalwood, wattle, burrum bush, lime tree, bull oak, yellow wood, iron bark, red sandy soil.	
73	16.8.08	477			LDAS	brown silc core 2 plats 7x7x6	In topsoil stockpile. Veg: Boxwood, Black Wattle, Native cherry, Gum, Moreton Bay Ash, Emu Apple.	Photo 8822-21
						brown silc scraper u/w 1 margin 6x4x3		
						brown silc 2ry 6x3x2		
74	16.8.08	478			2IF	brown s's g's frag x2, 6x2x1.5, 4x4x1.5		
						brown pet. wood SES 5.5x4x2.5		8820
75	16.8.08	479			IF	brown silc 2ry 3.5x3.5x0.5	found on edge of creek	
76	24.8.08	447			IF	brown silc core 1 plat, 6.5x5x5	returned to gully & inspected Brigalow on sth side near fence.	
77	24.8.08	448			IF	brown pet. wood core 2 plat 10x9x8		

78	24.8.08	449			2IF	pale br silc SES 9x4x3	gully among stones	
						brown silc 1ry, 7x6x2		
79	24.8.08	450			IF	brown silc 1ry, 20x10x7		
80	24.8.08	451			LDAS	black basalt scraper u/w around edge 6.5x5x2		
81	24.8.08	452			LDAS	brown silc 2ry 5x3.5x1		
						brown pet. wood 2ry 5x4x1		
						brown pet. wood 1ry 8x3x1.5		
						brown silc 1ry waste flake 5x4x2		
82	24.8.08	453			IF	brown / mustard 3ry 5x3x0.5	Erosion bank	
83	24.8.08	454			IF	grey silc 2ry 3x3x1		
84	24.8.08	455			IF	brown silc core 1 plat 7x6x5		
85	24.8.08	456			IF	grey silc 2ry 6x5x2		
86	24.8.08	457			IF	pale br silc 2ry 3.5x2.5x0.5	Nth side of 2nd tributary gully in bullock & brigalow, br clay soil. Nth of gully, box forest, part native / part buffel grasses. Vis. circa 15%.	
87	24.8.08	458			Scarred tree	Scar on living Box; 114x18x21cm, Dead trunk; Diam.59 cm; Base to ground 37cm; Height 10m; Faces N.	Condition: tree hollow, inner scar wood gone, almost dead - drought but is regrowing a 2nd trunk from branch.	
88	24.8.08	459			IF	grey silc core 2 plat 8x6x5	in sparse box country.	
89	24.8.08	460			Scarred tree	Dead standing Box; 2 scars: (1) 179x26x14; Diam. 62 cm; ht. 8m; Facing East;	Condition: Top split, base of scar wood rotting, Inner wood detached, held by ant nest, won't last long. 2nd scar is natural.	
90	24.8.08	461			Scarred tree	Living Box - still living trunk (one of two). Dimens 80x13x10 cm; Base to ground 18cm; Diam. 42.5 cm; height of trunk 6m. 2nd trunk 10m.	Condition: wood present but starting to rot.	
91	25.8.08	493			LDAS	brown / grey p/w 2ry 9x5x3	Veg: Brigalow, Sandal wood, lime bush, gum, Box, Burrum Bush, White wood, red sandy soil, buffel grass, Emu Apple. Artefacts located in cleared eroded area:	
						brown / cream silc 2ry 4x4x2		
						grey silc 3ry u/w 1, s/f 6x4.5x1		

						grey / cream silc 3ry 5x3.5x1		
						brown silc 2ry 3x3x1		
						brown / grey silc 2ry 5x5x1		
						brown silc core 1 point 9x8x6.5		
92	25.8.08	494			IF	brown silc 2ry <3	Artefact located in low visibility area: Veg: as above.	
93	25.8.08	495			LDAS	brown / white crystal quartz 2ry 5.5x3.5x1	Area 10x3m. Artefacts located in cleared eroded area beside manmade water way. Veg: as above.	
						brown/ cream silc 2ry 4x3x1.5		
						brown silc 2ry 5x3x1		
						brown silc 2ry 4x2.5x1		
						brown silc 2ry s/f 7.5x6.5x2		
						grey / cream silc core 2pt 4x4x4		
						brown p/w 2ry 6.5x4x2		
						cream silc 3ry u/w 1, <3		
						brown p/w 2ry <3		
94	25.8.08	496			LDAS	brown silc core 1pt 9x6.5x6	Area 10x3m. Artefacts located in cleared and disturbed eroded area beside manmade water way. Veg: as above.	
						brown p/w core 1 pt 5x4x6		
						brown silc core 1 pt 4.5x3.5x4		
	25.8.08	496			LDAS cont'd	brown silc 1ry 6x4x1		
						brown silc 2ry 5.5x4x2		
						brown / cream silc 2ry 4x3x1		
						grey silc 2ry 4x3.5x1.5		
						grey silc 3ry 4x4.5x1		
						brown p/w 2ry s/f 5x5x1.5		
						brown / black p/w 2ry 5x4x1		
						brown silc 2ry s/f 4.5x3.5x1		
						brown / cream silc 2ry 3.5x3x1		
						brown / grey silc 3ry s/f 3x3.5x1		
						brown silc scrap u/w 1, 4x2x1		
						grey crystal quartz 2ry 3.5x2.5x1		
						brown p/w 2ry <3		
						brown p/w 2ry 4x3x0.5		

						brown silc 3ry s/f 4x2x0.5		
						grey p/w 3ry s/f <3		
						brown / red silc 2ry <3		
						brown silc 2ry 3.5x2.5x1		
95	26.8.08	463			IF	grey silc 1ry 4x4.5x1.5	beside deep erosion gully down to creek line; thick buffel; Veg. Brigalow, Blackbutt.	
96	26.8.08	464			LDAS	brown /red silc blade u/w 2 parallel sides DL, 6x3x1	Area 3x2m, slope to gully among gravel	
						brown p/w 2ry 5x3x0.5		
						brown p/w 2ry 5x4x1		
						grey silc utilised piece 6x4x2		
						brown silc core 1 plat 9x8x6, 25% rotated		
	27.8.08						no finds	
97	1.9.08	465			LDAS	s's g's 2 large frags., 22x19x2, 25x15x2cm, 15cm apart on bed of leaf litter	Harrow Creek North bank . Forested slopes and bank, 10m high. Vis. <10% in leaf litter, greater towards haul road. Relocated here from construction of adjacent powerline	
98	1.9.08	466			IF	brown silc 3ry 3.5x3x0.5	in shallow wash erosion	
99	1.9.08	467			2IF	brown silc core 1 plat 10x8x6		
						brown silc 3ry u/w1 groove 4.5x4.5x2		
100	1.9.08	468			LDAS	brown silc core 1 plat: 12x9x8 (v/b, 75% rotated)	Area <3m2	
						brown silc core 10x7x5.5, 50% rotated		
						brown silc core 10x8x8, 100% rotated		
101	2.9.08	469			LDAS	brown pet. wood SES, u/w 1 margin 3.5x3x2	South of Cherwell Creek, near high wall, area v. disturbed, creek diverted. Area former high terrace. Many artefacts previously salvaged early 2008.	
102	2.9.08	470			LDAS	brown silc 1ry 9x5x2	Topsoil in piles from which many artefacts are eroding	
						5x pet.wood (2x2ry, 3x3ry)		
						4 silc (3 deb <3, 1x2ry)		
						1 grey silc. core 1 platform 6x5x8		
						1 grey silc 2ry 5x6x1.5		

103	2.9.08	471			LDAS	brown silc 2ry h/b 4x3.5x0.5	Less dense going south. Reccie	
						4 silc. blades 3-5cm (l)		59/60
						1 brown silc SES		
						5 brown silc broken flakes		
						brown silc. 1ry 3x3x0.5		
104	2.9.08	472			LDAS	5 brown deb <3		61
						black pet. wood core 1 platform 7x5x4, 2/3 rotated		
						brown silc core 1 platform 7x8x6		
						s's slabs possibly prepared for grinding	thick buffel, deep erosion gullies, piles of topsoil	
105	2.9.08	473			IF	brown silc core 1 platform 1/2 rotated	in shallow depression, regrowth box	
106	2.9.08	3			IF	small pebble, grinding on side, wear/pitting on end 8x4x2	north end of pit near road	79/80
							Team: LH, SB, LB jnr NI, + JB, MB, DD, south of Cherwell Ck, near junction with diversion, high terrace, mainly dead brigalow bend of Ck.	
107	6.9.08	4			scarred tree	Scar on dead standing box, Dimens150x30x29, base to ground 89cm; tree ht 8-10m; diam 70cm; cond'n: entire back of tree gone, scar wood intact but split, tree split from top of scar		83-85
108	6.9.08	5			LDAS	riverstone manuport 20x8x4	continuous artefacts along high terrace of Cherwell Creek	
						fine grey silc. 3ry 3x3x0.5		
						fine grey silc SES u/w 80% 5x4x4		
109	6.9.08	6			LDAS/ flaking floor	11 grey silc deb <3	eroding section of terrace	
					LDAS	pet wood 2ry h/b 5x6x1		
						pebble h'stone, pitting on ends 5x3x2		89/90
						4 brown silc 1ry 5x3x1, 6x4x1.5, 5x3x1, 3.5x2x1		
						3 br/bl pet wood: <3, 4x2.5x1, 4x4x1		
110	6.9.08	7			LDAS	pink silc 3ry 4x3x0.5		

111	6.9.08	8			LDAS	brown silc 3ry 3.5x3x0.5	relocated from base of erosion	
						brown silc 2ry 5x4x1		
112	6.9.08	9			LDAS	grey silc 1ry 7x4.5x1.5		
113	6.9.08	11			LDAS	brown silc flaked SES 7x3x6	north bank Harrow Creek, area 10x4m under powerline	
						grey silc SES 5x3x1		
						black pet wood core 11 platform 4x3x3		
						s's g's frag 3.5x2.5x1		
						brown silc 2ry 7x4x1.5		
						cream silc 2ry 5x3x2		
						brown silc core 1 platform 6.5x3x3.5		
						cream silc 2ry 4x2x1		
114	7.9.08	12			LDAS	brown silc 2ry 4x2.5x1.5	Team LH SB, MB, NI, LB jnr. Dam north of Cherwell Creek, earth walls and earth piles	
					LDAS cont'd	pale silc 3ry 3x3x0.5		
					LDAS cont'd	red/brown silc 2ry 3x2.5x0.5		
					LDAS cont'd	brown silc core 1 platform 1/8 rotated 7x6x5		
					LDAS cont'd	brown silc 3ry 3.5x3x1		
					LDAS cont'd	grey silc 3ry 3x3x0.5		
					LDAS cont'd	grey and brown silc deb <3		
					LDAS cont'd	black pet wood 3ry 3x2.5x0.5		
115	7.9.08	13			2IF	2 brown silc waste flakes 3x3x1, 3x2x0.5	as above	
116	7.9.08	14			IF	grey silc flaked piece 5x4x1.5	as above	
117	7.9.08	15			2IF	brown silc 3ry retouched margin 6x5x2	as above	97-99
						brown silc 3ry 4x4x1		
118	7.9.08	16			LDAS	deep brown silc 2ry 4x3x1	in topsoil pile, area 6x4m	105
					LDAS cont'd	br silc 1ry 4x3.5x1		
					LDAS cont'd	grey silc block s/f 4x2x1		
					LDAS cont'd	cream silc tula slug 4x2x1		102-104

					LDAS cont'd	brown silc 3ry 3x2.5x0.5		
					LDAS cont'd	grey ch 1ry 3x2.5x0.5		
119	7.9.08	17			IF	br broken SES u / w 1 margin 7x7x2.5	in side of topsoil pile	
120	7.9.08	18			IF	grey silc deb <3	as above	
						br silc 2ry v/b 3.5x2x0.5	as above on topsoil stockpile	106
121	7.9.08	19			LDAS	pale br silc 2ry 3.5x3x1		
					LDAS cont'd	2 pale br silc 3ry: 3.5x3x1; 3x2.5x0.5		
					LDAS cont'd	pale br silc flaked piece 4x3x1		
					LDAS cont'd	red silc 3ry 3x2.5x0.5		
					LDAS cont'd	red silc deb <3		
					LDAS cont'd	grey ch 3ry h/b 3x2x0.5		
122	7.9.08	20			LDAS	br silc core 1 platform, 50% rotation 0.5x4x6		107
					LDAS	br silc 3ry 6x4x1	see Wpt 15 * same stone as	107
					LDAS	pale br silc 3ry sf 4x3x1		107
					LDAS	pale br silc 3ry 3x2.5x0.5		107
123	7.9.08	21			LDAS	fine br silc 3ry 4x3x0.5	base of stockpile	
						fine br silc deb <2		
124	7.9.08	22			LDAS	br pet. wood utilised piece u/w 1 margin 5x3x1.5	on low sloping clay above water at dam	
					LDAS	br pet. wood 3ry 2.5x4x0.5		
					LDAS	pale silc 3ry 6x4x1		
					LDAS	pale silc 3ry 3.5x2x0.5		
125	7.9.08	23			LDAS	r'stone h'stone minor pits on end 6x5x2.5	15x10m	108
					LDAS	grey silc tula slug 2x4x1		
					LDAS	4 pale br 3ry 5x3x1; 4x4x1.5; 3.5x2x1; 4x3x1; 4x3x1.5		
					LDAS	grey ch point 3x2x1		
126	7.9.08	24			LDAS	red silc 3ry 5x4x1	as above, 10x10m	109
					LDAS	red / br silc 3ry 7x6x2	see above *	
					LDAS	br ch SES 7x5x3		
					LDAS	bl pet. wood core 1 plat 3x3x2		
					LDAS	2 silc deb <3		

	23.9.08					Nth of Cherwell Ck, transect on creek flat, sandy clay, many dead trees, new regrowth (bean, dead finish)	LH, JB, SB, NI, RB,	
127	23.9.08	78			LDAS	brown silc SES u/w 1, 6x3x2	area 6x5m on slope in minor erosion	231/3
						brown silc 3ry v/b , 2x5x1		
						grey silc SES u'w 1 margin (5 grooves) 4x2.5x2		
						cream silc deb <2		
128	23.9.08	79			IF	grey silc 2ry 3.5x3x1	slope in minor erosion	
129	23.9.08	80			IF	cq 1ry 3x3x1	as above	
130	23.9.08	82			IF	grey s's muller polish 2 sides 10x8x2.5	relocated from 81 610133/7548319	
131	23.9.08	83			LDAS	s's g's large frag polish 2, 14x14x3	minor erosion E of large trib. Gully sth of Nine mile Ck	
						s's g's muller polish 2, 6x6x2, prepared edge		
						s's g's frag polish 1 5x3.5x2		
						brown silc SES v/b 3.5x5x2.5		
						brown/black pet wood SES 3x2x1.5		
						brown pet wood 2ry 5x3x1.5		
						black/red pet wood 2ry 4x3x1		
						brown pet wood 2ry 5x4x1.5		
						cream silc core s/f 2 platform 3.5x3x2		
132	23.9.08	84			2IF	brown silc triangular scrapers 5.5x5.5x2	erosion on nine mile Creek	
						pale silc flaked piece 4x3x1		
						Transect to junction of Cherwell and Nine Mile CAS. Banks intact, native grasses and minor buffel.		85/87
133	23.9.08	88			IF	broken pebble hammerstone, pitting on end 10x5x6	beside s'stone wash	
134	23.9.08	89			IF	s's muller polish 1 side, polish + minor groove on other 13x10x1.5	relocated to fenced enclosure with scarred tree	253/4
	27.9.08					Area from Peak Downs Highway to Gully North to South	Team- jeff, les, jade, Steven, lewis, nev, emma, Bec	
135	27.9.08	184			IF	Broken Brown silc 2ry Flake u/w on 1 Margin 2.5x4x1.5		

136	27.9.08	185			LDAS	Brown pet. wood 2ry Flake u/w on 1 Margin 6x3.5x1		
					LDAS	Grey silc 2ry Flake Step Fracturing 3x4x1		
					LDAS	Grey silc 2ry Flake u/w on 1 Margin <3		
					LDAS	Brown/Black pet. wood 2ry Flake u/w on 1 Margin <3		
					LDAS	Grey silc 2ry Flake <3		
					LDAS	Brown/Black pet. wood 2ry Flake 3.5x3x1		
137	27.9.08	186			LDAS	Brown ch 2ry Flake 5x4x0.5		
					LDAS	Cream/Pink silc Scraper u/w on 1 Margin 4x4x1		
					LDAS	Brown silc Tertiary Flake <3		
					LDAS	Brown silc Tertiary Flake Step Fracturing 2x3x1		
					LDAS	Pink silc Tertiary Flake 4.5x3.5x1.5		
					LDAS	Brown pet. wood core (1 Platform) 6x6x4		
					LDAS	Pink silc core (1 Platform) 4x4x3		
					LDAS	Brown silc Tertiary Flake 3x2x0.5		
					LDAS	Grey silc Tertiary Flake <3		
138	27.9.08	187			LDAS	Red silc Tertiary Flake 2.5x3.5x1		
					LDAS	Brown/Grey silc core (2 Platform) 4.5x3x3		
					LDAS	Brown pet. wood Tertiary Flake 3x3x1		
					LDAS	Brown silc 2ry Flake <3		
					LDAS	Cream silc 2ry Flake <3		
					LDAS	Brown silc 2ry Flake <3		
					LDAS	Brown silc 2ry Flake <3		
					LDAS	Brown silc core (1 Platform) 7.5x4x3.5		
					LDAS	Brown/Grey silc 2ry Flake 3.5x3x1		
					LDAS	Brown/Grey silc 2ry Flake 5x3x0.5		
					LDAS	Brown/Grey pet. wood 2ry Flake <3		
					LDAS	Grey silc Tertiary Flake u/w on 2 Margins 4x2.5x0.5		
139	27.9.08	188			LDAS	Brown silc 2ry Flake Step Fracturing 2.5x3x0.5		
	27.9.08				LDAS	Brown/Grey silc Scraper u/w on 1 Margin 7.5x3x2		
	27.9.08				LDAS	Grey silc Tertiary Flake 4x5x2		
	27.9.08				LDAS	Brown/Grey silc 2ry Flake 2x4x1		
140	27.9.08	189			LDAS	Grey silc Scraper u/w on 2 Margins		

						5x4x2		
	27.9.08				LDAS	Black/Brown pet. wood 2ry Flake u/w on 1 Margin 4x3x1		
	27.9.08				LDAS	Cream/Brown ch 2ry Flake 4x3x2		
	27.9.08				LDAS	Brown silc core (1 Platform) 4x2.5x3		
141	27.9.08	190			LDAS	Grey silc Tertiary Flake 4.5x2.5x1		
	27.9.08				LDAS	Brown silc core (1 Platform) 5x3x2		
	27.9.08				LDAS	Brown silc Tertiary Flake 4x3x1		
	27.9.08				LDAS	Brown silc 2ry Flake 3x2.5x1		
	27.9.08				LDAS	Brown silc Tertiary Flake 6x4x1		
	27.9.08				LDAS	Brown silc Tertiary Flake u/w on 1 Margin 4x3x1		
	27.9.08				LDAS	Brown silc Tertiary Flake <3		
	27.9.08				LDAS	Grey silc Tertiary Flake <3		
142	27.9.08	191			IF	Grey silc core (1 Platform) 4x4x3		
143	27.9.08	192			IF	Brown silc 2ry Flake Step Fracturing 4x3x1		
144	27.9.08	193			IF	Brown/Black pet. wood 2ry Flake 4x3x0.5		
145	27.9.08	194			Fireplace	Fire place collection of burnt rocks Broken Grinds stones and Artefacts 45x75		
146	27.9.08	194			flaking floor	10m away flaking floor 9x Yellow 3x Pink, some still buried 120x60		
147	27.9.08	195			LDAS	Grey basalt 2ry Flake Step Fracturing 3x5.5x1		
148	27.9.08				LDAS	Brown pet. wood Scraper u/w on 1 Margin 5.5x5.5x3		
	27.9.08				LDAS	Brown/Grey silc 2ry Flake u/w on 1 Margin 4x4x1.5		
	27.9.08				LDAS	Brown/Grey silc Tertiary Flake 4x4x1.5		
	27.9.08				LDAS	Brown/Cream pet. wood 2ry Flake 4x3x1		
	27.9.08				LDAS	Brown pet. wood 2ry Flake 3x2x0.5		
	27.9.08				LDAS	Brown/Cream pet. wood Tertiary Flake 3x2x0.5		
	27.9.08				LDAS	NORTH OF PEAK DOWN HIGHWAY		
149	27.9.08	196			LDAS	Broken Brown silc Tertiary Flake 3.5x3x1		
	27.9.08				LDAS	Brown/Grey silc 2ry Flake 6.5x5x1		
150	27.9.08	197			LDAS	Brown Sandstone Grindstone, with polish 1 side 5x6x1		

	27.9.08	197			LDAS	Brown Sandstone Grindstone, with polish 1 side 3.5x2x1		
	27.9.08	wpt197			LDAS	Brown/White ch 2ry Flake 7x5x2		
	27.9.08	wpt197			LDAS	Brown silc Primary Flake 5.5x5x2		
	27.9.08	wpt197			LDAS	Brown silc Primary Flake 4x5x1		
	27.9.08	wpt197			LDAS	Brown silc 2ry Flake 4x4x1		
	27.9.08	wpt197			LDAS	Brown/Grey pet. wood 2ry Flake <3		
	27.9.08	wpt197			LDAS	Broken Brown Sandstone Grindstone with Groove 13x14x2.5		
	27.9.08	wpt198			LDAS	Brown Sandstone Grindstone polish 1 side, with Groove 24x18x3		
151	27.9.08	wpt198			LDAS	Brown Sandstone Grindstone polish 1 side, with Groove 9x7x1.5		
152	27.9.08	wpt199			IF	Grey silc u/w on 1 Margin 8x4x3		
153	27.9.08				IF		Team: RB, JB, EO, LB(F), JB(J), Lbrown, SB, NI	
154	27.9.08				IF	Broken Pink silc 2ry Flake 4.5x3.5x1		
155	27.9.08				IF	Grey silc 2ry Flake 4x3x1.5	Found near small gully	
156	27.9.08				LDAS	Broken White silc Tertiary Flake <2		
	27.9.08				LDAS	Broken Grey silc Tertiary Flake <3		
	27.9.08				LDAS	Grey silc 2ry Flake 4.5x3.5x1		
157	27.9.08				LDAS	Brown silc core, 1 Platform 4x3.5x3		
	27.9.08				LDAS	Broken Cream silc Tertiary Flake 2x2x5		
	27.9.08				LDAS	Broken Grey silc Tertiary Flake <3		
	27.9.08				LDAS	Brown pet. wood Tertiary Flake <2		
	27.9.08				LDAS	Broken Red silc Tertiary Flake <2		
158	27.9.08				IF	Black/Brown pet. wood 2ry Flake <2		
159	27.9.08				Fireplace	Fireplace consist burn day and stone, surround by Artefacts		71,74,75
160	27.9.08				LDAS	Partially eroded on bank of dingo creek 55x35cm	On fence line	71,74,75
161	27.9.08				LDAS	Cream/Red silc 2ry Flake 6x5x2		
	27.9.08				LDAS	Brown/Grey pet. wood Tertiary Flake <3		
	27.9.08				LDAS	Broken Grey silc Tertiary Flake <3		

	27.9.08				LDAS	Broken Pink silc Tertiary Flake 2x3.5x1		
	27.9.08				LDAS	Broken Brown/Grey pet. wood Tertiary Flake <3		
162	27.9.08				LDAS	Brown/Grey pet. wood 2ry Flake 4x3.5x1		
	27.9.08				LDAS	Broken Cream ch Tertiary Flake 3x1.5x0.5		
163	27.9.08				LDAS	Black/Brown pet. wood 2ry Flake <3		
164	27.9.08				LDAS	Red/Black pet. wood 2ry Flake 3x1.5x0.5		
	27.9.08				LDAS		North Side of Peak Downs Highway	
165	27.9.08				LDAS	Brown silc 2ry Flake <3		
	27.9.08				LDAS	Grey/Brown pet. wood 2ry Flake u/w 1 Margin 3.5x3.5x1		
	27.9.08				LDAS	Broken Grey/Red silc 2ry Flake 3.5x4.5x1.5		
166	27.9.08				LDAS	Brown/Red ch 2ry Flake u/w on 2 Margins 5x3x1.5		
	27.9.08				LDAS	Brown silc 2ry Flake u/w on 2 Margins 6x2.5x2		
	27.9.08				LDAS	Grey silc Tertiary Flake 4.5x4x1		
167	27.9.08				LDAS	Broken Grey silc Tertiary Flake 4x6x1.5		
	27.9.08				LDAS	Grey silc Tertiary Flake <3		
	27.9.08				LDAS	Red silc 2ry Flake 4.5x3.5x2		
168	27.9.08				LDAS	Brown rectangular silc block end is Broken exposing new facet, Flat Mainly squared edges, l corner broken and curved 55x29x18cm		81, 84
	27.9.08						Area is sandy loam soil, that has been cleared and disturbed all veg new growth. No natural occurring stone in area. Veg-Native grass, gum tree. Also found was a large sandstone boulder	
169	27.9.08					large sandstone out crop 100x60m	No artefacts	
170	27.9.08				LDAS	Brown/Grey silc core (1 Platform) 7.5x6x5		
	27.9.08				LDAS	Broken Brown/Grey silc core (1 Platform) 4.5x4.5x3		
171	27.9.08				IF	Grey/Brown pet. wood 2ry Flake 4.5x3.5x1		

172	27.9.08				IF	Grey silc 2ry Flake Broken 6x3x1.5		
	28.9.08					NORTH SIDE OF PEAK DOWN HIGHWAY	Team- jeff, les, jade, Steven, nev, emma, Bec, Lewis	
173	28.9.08	200			LDAS	Brown pet. wood Scraper u/w on 1 Margin 5x3x4		
	28.9.08	200			LDAS	White quartz 2ry Flake <3		
174	28.9.08	201			LDAS	Brown/Black pet. wood 2ry Flake Step Fracturing 7x5x2		
	28.9.08				LDAS	Brown silc Tertiary Flake <3		
175	28.9.08	202			LDAS	Grey/Brown silc 2ry Flake <3		
	28.9.08				LDAS	Grey/Brown silc core (1 Platform) 7x7x3		
	28.9.08				LDAS	Grey/Brown pet. wood 2ry Flake 3.5x3.1		
	28.9.08				LDAS	Grey/Brown silc 2ry Flake <3		
	28.9.08				LDAS	Brown pet. wood Tertiary Flake 2x3x0.5		
176	28.9.08	203			LDAS	Brown/Grey pet. wood Primary Flake 3x4x1		
	28.9.08				LDAS	Brown/Cream silc 2ry Flake 5x4.5x0.5		
	28.9.08				LDAS	Brown/Grey silc Primary Flake 3.5x5x1		
	28.9.08				LDAS	Brown/Grey silc 2ry Flake 4x5x1		
	28.9.08				LDAS	Grey silc Tertiary Flake s/f, u/w on 1 Margin 2.5x4x1		
	28.9.08				LDAS	Brown silc 2ry Flake 2x3x0.5		
177	28.9.08	204			LDAS	Grey/Brown silc 2ry Flake Step Fracturing 4x2.5x1		
	28.9.08				LDAS	White Quartz 2ry Flake u/w on 1 Margin 4x3x1		
	28.9.08				LDAS	Grey silc 2ry Flake <3		
178	28.9.08	205			LDAS	Brown/Cream silc Tertiary Flake 3.5x2.5x1		
	28.9.08				LDAS	Grey M'stone Tertiary Flake u/w on 1 Margin 2x4x1		
	28.9.08				LDAS	Brown silc Scraper u/w on 1 Margin 3x1.5x1		
	28.9.08				LDAS	Brown silc Tertiary Flake <3		
179	28.9.08	206			LDAS	Brown/Red pet. wood core 14x14x10		
	28.9.08				LDAS	Grey silc 2ry Flake u/w on 1 Margin 4x3x1.5		
	28.9.08				LDAS	Grey silc Tertiary Flake 3x3x0.5		
	28.9.08				LDAS	Brown silc Tertiary Flake u/w on 1 Margin 3.5x3.5x1		

	28.9.08				LDAS	Brown/Black pet. wood core (1 Platform) 4x3x3		
180	28.9.08	207			LDAS	Brown silc 2ry Flake 2x4x0.5		
	28.9.08				LDAS	Brown pet. wood Primary Flake 5x4x1		
181	28.9.08	208			IF	Broken Brown Riverstone h'stone u/w on 1 Margin 7x5x3.5		
182	28.9.08	209			LDAS	Brown silc 2ry Flake 7x4x2.5		
	28.9.08				LDAS	Brown silc 2ry Flake 3x3x1		
183	28.9.08				IF	Red /Pink (unknown) in between ch and silc Broken flaked piece u/w on 1 Margin 7x4x1.5	walking west on creek bank	88
184	28.9.08				LDAS	Brown silc core (1 Platform) 7.5x6x3.5		
	28.9.08				LDAS	Brown pet. wood 2ry Flake 6x5x5		
185	28.9.08				LDAS	White quartz 2ry Flake (reworking 1) 5x4x2		89,92
186	28.9.08				LDAS	Grey/Red silc 2ry Flake 5.5x4.5x2.5		
	28.9.08				LDAS	Brown silc Tertiary Flake <3		
	28.9.08				LDAS	Grey/Red pet. wood Primary Flake 3.5x3x1		
	28.9.08				LDAS	Grey/Black pet. wood 2ry Flake 4x3.5x1		
187	28.9.08				IF	Grey basalt flakes piece Step Fracturing 4x3.5x2.5		
188	28.9.08				LDAS	Brown silc core (1 Platform) 6x5.5x3		
	28.9.08				LDAS	Grey silc Tertiary Flake <3		
	28.9.08				LDAS	Broken Brown silc Tertiary Flake <3		
189	28.9.08				LDAS	Red pet. wood Tertiary Flake 4x2.5x1		
190	28.9.08				LDAS	Brown pet. wood 2ry Flake 5x4x1.5		
191	28.9.08				LDAS	Grey/Brown silc 2ry Flake 3x2.5x1		
	28.9.08				LDAS	Brown silc Tertiary Flake 3x1.5x5		
192	28.9.08				LDAS	Grey/Red silc Primary Flake 6x4x1.5		
	28.9.08				LDAS	grey/Brown silc 2ry Flake 3x3.5x1.5		
193	28.9.08				LDAS	Red pet. wood 2ry Flake <3		
	28.9.08				LDAS	Grey silc Tertiary Flake <3		
194	28.9.08				LDAS	Black/Brown/Red pet. wood 2ry Flake u/w on 1 Margin 4x3x1.5		
195	28.9.08				LDAS	White silc Tertiary Flake u/w on 1 Margin 3.5x2x1		
	28.9.08				LDAS	Grey/Brown pet. wood Steep Edge Scraper (2 Platform) 3.5x3x1.5		

196	28.9.08				LDAS	Brown silc Scraper u/w on 1 Margin 3x2x1		
197	28.9.08				IF	Grey/Red silc 2ry Flake Broken 6.5x3.5x2		
	29.9.08					NORTH SIDE OF PEAK DOWN HIGHWAY	Team-jeff, les, Steven, nev, em, Marty	
198	29.9.08	210			LDAS	Brown/Grey pet. wood core (1 Platform) 9x7x13		
	29.9.08	210			LDAS	Brown/Grey silc core (1 Platform) 3x3x3		
	29.9.08	210			LDAS	Brown/Grey silc 2ry Flake 4.5x3.5x1		
	29.9.08	210			LDAS	Brown silc 2ry Flake 5x2.5x2		
	29.9.08	210			LDAS	Brown silc Primary Flake <3		
199	29.9.08	211			LDAS	Pink silc Primary Flake <3		
	29.9.08	211			LDAS	Brown silc Primary Flake <3		
200	29.9.08	212			LDAS	Brown silc core (1 Platform) 7x7x4.5		
	29.9.08	212			LDAS	Grey silc Tertiary Flake 3x2x1		
201	29.9.08	213			LDAS	Brown/Grey silc core (1 Platform) 9x10x4		
	29.9.08				LDAS	Brown silc 2ry Flake u/w on 2 Margins 4x3x1		
	29.9.08				LDAS	Brown pet. wood 2ry Flake u/w on 1 Margin 3x3x1		
202	29.9.08	214			LDAS	Grey/Brown silc core (2 Platform) 6.5x4x5		
	29.9.08				LDAS	Grey silc 2ry Flake <3		
	29.9.08				LDAS	Brown pet. wood Scraper u/w on 3 margins 5.5x3.5x2		
	29.9.08				LDAS	Brown/Grey silc 2ry Flake <3		
203	29.9.08	215			LDAS	Brown/Grey silc 2ry Flake u/w on 3 margins 5.5x3.5x2		
204	29.9.08	216			LDAS	Brown pet. wood core (1 Platform) 4.5x5x3		
	29.9.08				LDAS	Grey silc 2ry Flake 5x4x1		
	29.9.08				LDAS	Brown silc Tertiary Flake <3		
205	29.9.08	217			LDAS	Brown/Grey silc 2ry Flake u/w on 1 Margin 3x3x0.5		
	29.9.08				LDAS	Brown/Grey silc 2ry Flake u/w on 1 Margin 3x4x1		
	29.9.08				LDAS	Brown/Grey silc 2ry Flake 5x3x1		
	29.9.08				LDAS	Brown silc Primary Flake 3.5x2x1		
206	29.9.08	218			LDAS	Brown silc 2ry Flake 4x4x1		
	29.9.08				LDAS	Brown silc 2ry Flake 3x2.5x1		

	4.10.08						LH, TB, Jade B, NI. Start E of George's house, nth of Peak Downs Hwy. V sandy, followed 1 branch of Ck NW to boundary. Veg. bauhinia, blue gum, box, wilga. Much clearing	
207	4.10.08	85			IF	pale silc core 2 platforms 6x6x4.5	on pad near fence	
208	4.10.08	86			IF	brown silc SES u/w 1 margin (4 grooves) 3.4.5x1	beside small ironbark.	244/6
209	4.10.08	87			LDAS	brown silc core 1 platform 6x4.5x4.5		
						brown silc 2ry 5x4.5x0.5		247/8
						jasper core 1 platform 6x5x4		249/51
210	4.10.08	90			LDAS	2 milky quartz flakes 3x2.5x0.5, <2	erosion bank	255
211	4.10.08	91			LDAS cont'd	very fine brown silc flaked drill piece 4.5x3x1.5		
	4.10.08					milky quartz 1ry 4x3x0.5		
	4.10.08					brown silc flaked piece 3.5x2.5x0.5		
	4.10.08					brown silc 2ry 4x4.5x1		
212	4.10.08	93			LDAS	half s's g's 33x22x3 polish 2 sides	relocated from 608212/7551546 (erosion) to trees	256/60
	4.10.08					brown silc 2ry retouched margin s/f 4x5x1.5		
	4.10.08					deep grey ch 3ry 4x4x1		
	4.10.08					brown silc point 5.5x3x1.5		
213	4.10.08	94			IF	brown pet wood 2ry 4x5x1		
214	4.10.08	95			2IF	deep grey silc core 2 platforms 7x6x4	Area 10x10m, small erosion gully	
	4.10.08					red silc 2ry 4x5x1		
215	4.10.08	96			IF	basalt axe blank, bifacial flaking, very patinated 10x7x4	relocated to fenced enclosure with scarred tree	
216	6.10.08	113			IF	small gully north of previous one.		
217	6.10.08	114			IF	s's g's frag polish 2, pecked 1, 9x9x4;	s'stone slabs in bed of gully & lots of sand, walked between gullies to junction	
218	6.10.08	115			IF	broken br grey silc sf 3.5x6x1;	between creeks in sandy soil, pushed acacia	
219	6.10.08	116			IF	br silc SES u/w 1 (& break) 4x4x2;	as above	
220	6.10.08	117			IF	br grey silc 2ry 5x3x1;	as above	

221	6.10.08	118			IF	large s'stone rocks and bedding - creek.		
222	6.10.08	119			LDAS	br silc core 2 plats 5x6x4;	area 20x20m;	
223	6.10.08	120			LDAS cont'd	broken bl / br pet. wood 2ry 5x4x1;		
						deep br silc 2ry, 4x3x1.5;		
						br silc scraper u/w 1, 5x3x2;		
224	6.10.08	121			LDAS	deep grey silc scraper u/w 1, 4x4x2.5;	Area 20x20m. Photo. 327 / 8	
	6.10.08				LDAS cont'd	br silc scraper, retouch margin, u/w end, 6x5.5x2		
	6.10.08				LDAS cont'd	br pet. wood 1ry 6x4x1;		
225	6.10.08	122			2IF	broken br / grey silc 2ry, 6x2.5x1.5, 2 breaks		
						broken br silc 2ry, 3x2.4x0.5;		
226	6.10.08	123			IF	pale br shiny ch 2ry 3x2x0.5;	Photo 231 / 2	
227	6.10.08	124			2IF	grey silc (red cortex) sq. scraper u/w 2, 5x4.5x1;	Area approx 3x2 m;	333 / 4
						s's g's frag polish, 13x17x4;		
228	8.10.08	128					Tanya's Tor. little hill, red laterite (Ph 338 / 9). Cleared Bendee Nth of hill. Steep dissected gullies and rubble.	
229	8.10.08	129			IF	pale br silc SES & drill point on end 8x4x2.5, retouch 2 margins, u/w 1, u/w on point.	Photo 347 / 9	
230	8.10.08	130			scarred tree	Dead stump on ground - Coolabah, Dimens: 115x37x15, base on ground; Ht of stump 250. Condition: stump broken, wood deteriorating, prob. pushed by dozer during clearing, some minor burning	Photo 350 / 351	
231	8.10.08	131			IF	silc core, 1 platform, 10x7x6; .	near pad among buffel	
232	15.10.08	141			IF	patinated silc SES u/w 2 long margins 7x3.5x2.5	in ironstone gravel, gilgai & surface disturbance: Photo 400 / 1	
233	15.10.08	142			IF	br / pink silc 2ry 3x2x0.5	among low brig regrowth (<1m), brown clay	
234	15.10.08	143			2IF	br silc 3ry u/b 5x2x0.5;	as above, near TP 54	
						br silc 3ry s/f 5x6x1.5;		

235	15.10.08	144			LDAS	2x br silc deb <2;	in gravel on slight rise beside gilgai, Brig regrowth 1-3m. Photo 402 / 3	
						1 br silc point 4x3x1;		
236	15.10.08	145			IF	br silc SES u/w groove 5x3x1.5;	80 m nth of creek in buffel & ruby salt bush. Near road to horse Creek	
	15.10.08	146			IF	gr silc SES h/b u/w 3 sides 4x3x1;	in similar location:	
237	15.10.08	147			LDAS	br silc core v/b one side only 4x4x1.5	w. bank of creek in erosion exposure. Total area of exposure 6x4m:.	405/6
	15.10.08				LDAS	br silc 2ry (scraper & u/w 2 grooves) 4x3x1		
	15.10.08				LDAS	grey silc elongated scraper u/w 1 edge worn, other ground s/f 4.5x3x1		
	15.10.08				LDAS	burnt pet. wood 2ry 3.5x2.5x1;		
	15.10.08				LDAS	;		
	15.10.08				LDAS	br silc blade 3x1x0.5		
	15.10.08				LDAS	br silc point (broken end) 3x2.5x1		
	15.10.08				LDAS	grey silc deb 2.5x2x1		
	15.10.08				LDAS	br silc 2ry 2.5x3x0.5		
	15.10.08				LDAS	grey silc 3ry 3.5x4.5x1;		
238	15.10.08	148			2IF	grey silc 3ry 3x4x0.5;	Area 2x2m:	
						bl pet. wood 1ry 7x4x1;		
239	15.10.08	149			IF	grey silc 2 sided scraper, u/w 2 opposed margins 3x2.5x1;		407/411
240	15.10.08	150			LDAS	br silc 3ry 3.5x3x1	Area 6x5m	
	15.10.08				LDAS	grey silc 1ry 5x3x1.5		

	15.10.08				LDAS	grey silc deb <3		
241	15.10.08	151			LDAS	milky quartz blade 4.5x2x1	on bend of creek, Area 10x10m: Bare area, cleared land, ironstone gravel.	412
	15.10.08				LDAS	br silc 2ry 6x6x2 u/w 1		
	15.10.08				LDAS	br silc 3ry 4x6x1.5		
	15.10.08				LDAS	grey quartzite 3ry 4x4.5x1		
						br silc SES u/w end s/f 4x3.5x2		
242	15.10.08	152			LDAS	bl / grey silc 2ry (scraper u/w 1) 3x3.5x1	Continued from above bend	412
	15.10.08				LDAS	br silc 3ry v/b 4x3x1		
	15.10.08				LDAS	cream silc deb <3		
	15.10.08				LDAS	bl pet. wood 3ry 3x3x1		
243	15.10.08	153			LDAS	gr silc 1ry patinated 4.5x2.5x1	along creek bank, bare area, sloping erosion	
	15.10.08				LDAS	patinated silc 2ry u/w 1, 4x3x1		
	15.10.08				LDAS	grey silc deb <2		
	15.10.08				LDAS	grey silc worked piece 5x3x2		
244	15.10.08	154			IF	br silc core s/f 1 margin 6x3x3;	on bank:	
245	15.10.08	155			LDAS	v. fine grey silc SES u/w 1 long margin, 4x3x1.5		
	15.10.08				LDAS	grey silc 3ry v/b 2.5x3.5x1		
	15.10.08				LDAS	grey pet. wood core 1 plat rotated 2/3, 7x6x3;		
246	15.10.08	156			IF	IF, Riverstone near box in m'stone 5x6x6;		

247	16.10.08	157			LDAS	br quartzite 1ry 8x4x1.5		
	16.10.08				LDAS	jasper 3ry 2.5x2x0.5		
	16.10.08				LDAS	grey silc core 1 plat 6x4.5x3.5		
248	16.10.08	158			IF	br silc core 1 plat, 3/4 rotation, 8x7x7;		
249	16.10.08	159			LDAS	br silc 2ry 4x2.5x0.5	bare stony flat, 30-50m E of cleared gully - much broken mudstone,	415-417
	16.10.08				LDAS	bl silc 1ry 6x5x1		
	16.10.08				LDAS	br silc 2ry 5x5x1		
	16.10.08				LDAS	grey silc SES 4.5x4x2, u/w 1		
	16.10.08				LDAS	br silc 3ry 6x3x1.5;		
	16.10.08				LDAS	br silc 3ry 5x3x1.5		
	16.10.08				LDAS	grey silc deb 3cm		
	16.10.08				LDAS	br silc SES 7x5x3, u/w 1 long margin		
	16.10.08				LDAS	grey silc flaked piece u/w 1, 4x4x1		
	16.10.08	160			LDAS cont'd	Grey silc 3ry 6x5x1	continued, Area 10x8m	
250	16.10.08				LDAS cont'd	grey silc 2ry 2.5x2x0.5		
	16.10.08				LDAS cont'd	grey silc 2ry <3		
	16.10.08				LDAS cont'd	grey silc 1ry 6x5x1		
	16.10.08				LDAS cont'd	grey s's muller frag polish 2, 5x5x corner piece		

251	16.10.08	161			IF	br silc 2ry 3.5x4x1.5;		
	16.10.08	162			IF	grey rhyolite axe frag, bi-faced polish 5x4x1.5;	beside burrum and brig regrowth.	418/20
252	16.10.08	163			IF	br silc 2ry (thin at bulb) 6x4x1;	on earth / stone pile near brig.	421 / 2
253	16.10.08	164			IF	white silc 1ry 3.5x2.5x1;		
254	16.10.08	165			LDAS	1 br silc sloping scraper 5x5x1.5	East of cleared gully on bare flat. Area 20x15m	423
	16.10.08				LDAS	grey silc deb <3		
	16.10.08				LDAS	grey silc 3ry h/b at end 3.5x3x0.5		
	16.10.08				LDAS	grey v. fine silc deb <3		
	16.10.08				LDAS	br silc SES u/w 1 shallow groove 6x4.5x1.5;		
255	16.10.08	166			IF	br silc SES u/w 1 5x4x2;	On low cleared bendee ridge	
256	16.10.08	167			IF	br silc core 2 plats 7x7x5;	at electric fence	
257	16.10.08	168			LDAS	red silc scraper 5x5x1.5	Area 30x10m along fence nr gilgai in cleared brigalow.	
	16.10.08				LDAS	br silc SES 7x5x3 u/w 1 margin		
	16.10.08				LDAS	grey silc 3ry 6x5x2		
	16.10.08				LDAS	grey silc deb <3		
258	17.10.08	170			2IF	br patinated silc SES h/b 4.5x5x1.5;		
	17.10.08				2IF	br silc flaked piece 4x3x1;		
259	17.10.08	171			IF	red br silc 2ry 4x3x1	near gilgai	
260	17.10.08	172			2IF	grey silc 2ry u/w 1 shallow groove 4x3x1; coarse milky quartz core 1 plat		

						11x6x3;		
	17.10.08	172			2IF	coarse milky quartz core 1 plat 11x6x3;		
261	17.10.08	173			IF	grey silc 1ry 3.5x2x1;		
262	17.10.08	174			Historic Feature	Low basalt outcrop, exposure of basalt stones between 10cm x 50m. Circa 22m(l) x 10m (w).	East side of stone exposure has been piled up & sand put in centre. 1/2 concrete hollow brick beside pile. Poly pipe nrby. Photo.	430-5
263	17.10.08	175			IF	br silc 2ry 7x5x1.	near gilgai	
264	17.10.08	176			2IF	pink silc blade 5.5x2.5x0.5 (small notched break); br silc 1ry (point) 6.5x5x1;	near gilgai, slight rise & gravel & stone.	
265	17.10.08	177			IF	br / grey silc 2ry 4x4x1;	as above	
267	17.10.08	178			IF	pink silc 1ry 6x4x1;	as above	
268	17.10.08	179			2IF	2 grey silc 1ry 5x4x1; 5x4.5x1;	among stones	
269	17.10.08	180			2IF	broken r/s h/s polish both sides, muller, central section only, 10x6x4;	bare ground and gidgee, burrum and salt bush.	438
	17.10.08	180			2IF	orange / pink silc 3ry 3.5x3.5x1;		
270	17.10.08	181			Extraction site/LDAS	3 grey silc 2ry 5x4.5x1; 5x3.5x1; 4x2x1	Max artefact dens 1/m sq: Mainly grey silc, area 150x300.	
	17.10.08				Extraction site/LDAS	grey silc 1ry 5x4x1.5		
	17.10.08				Extraction site/LDAS	grey silc point 4.5x3x1		
	17.10.08					grey silc 2ry (side scraper shape) 5x4x1		
	17.10.08					grey silc blade form 6x3x1.5		
	17.10.08				Extraction site/LDAS	red br silc blade form 6x3x1.5		

	17.10.08				Extraction site/LDAS	grey silc 3ry 6x4x1		
	17.10.08				Extraction site/LDAS	grey silc point 5x3x1		
	17.10.08				Extraction site/LDAS	grey silc 3ry 6x5x1		
	17.10.08				Extraction site/LDAS	grey silc 3ry 6x5x1		
	17.10.08				Extraction site/LDAS	grey silc 3ry 6x5x1		
	17.10.08				Extraction site/LDAS	grey silc 3ry 6x5x1		
	17.10.08				Extraction site/LDAS	grey silc core 1 plat 10x10x6. etc		
271	17.10.08				2IF	br silc 1ry 6x5x2;	beside small gully	
	17.10.08				2IF	br silc core 1 plat 6x4x4;		
272	17.10.08	192			IF	grey silc 2ry red cortex 4x3x1;	sth side of sm. Gully	
273	17.10.08	193			IF	br silc core 1 plat (1/2 rotated) 10x8x5;	black soil nth of Horse creek.	
274	17.10.08	194			IF	grey silc 1ry 6x5x1.5;	black soil	
275	17.10.08	195			LDAS	s's muller frag 5x4x2 polish 1;	DL 442	
						br silc triangular SES u/w 1 5.5x5x2;		
						br silc 1ry 4x3x1;		
276	17.10.08	196			IF	grey silc 2ry 5x4x1.5;	in red clay south of black	
277	17.10.08	197			LDAS	br silc 2ry u/w 1, 4x4x1	Area 10x10m	
	17.10.08	197			LDAS	br silc flaked piece 6x4x2		
	17.10.08	197			LDAS	br silc core 1 plat 9x9x7		
278	17.10.08	198			IF	br silc core 1 plat 7.5x6x6;		

279	17.10.08	199			2IF	br silc 2ry <3;		
	17.10.08	199			2IF	br pet. wood 2ry 3x3x0.5;		
280	17.10.08	200			LDAS	white silc 3ry 3x3x1;		
281	17.10.08	201			LDAS	br silc 3ry u/w 2, 8x7x2.5;	Area 20x20m on remnant bank. Horse Creek, w bank. Photo. 443	
	17.10.08				LDAS cont'd	br pet. wood scraper u/w 1, 3x3x1		
	17.10.08				LDAS cont'd	br grey silc 3ry h/b 4.5x5x1.5		
	17.10.08				LDAS cont'd	br silc core 3 plats 4.5x3x3		
	17.10.08				LDAS cont'd	br silc bl u/w 5x2.5x1		
	17.10.08				LDAS cont'd	grey silc 2ry u/w 1, 3.5x3x1;		
	17.10.08				LDAS cont'd	br / red silc 2ry 4x3x1;		
	17.10.08				LDAS cont'd	milky quartz 2ry 5.5x3.5x1.5; ;		
	17.10.08				LDAS cont'd	basalt SES u/w groove 5x5x2		
	17.10.08				LDAS cont'd	2 br silc deb <3; br silc 2ry 4x2.5x1;		
282	17.10.08	203			IF	8 s's g's frags (1 stone) polish 1, 8.5x7x2.5; 12x12x2.5; 5.5x5x2.5; 7x4x2.5; 4x2.5x2.5; 4x3x2.5; 9x6x2.5; 7.5x4.5x2.5;	relocated from 202 609326/7559755	
	17.10.08					above relocated near bauhinia		
283	18.10.08	204			IF	br pet. wood 3ry 6x5x1;	near boundary peg	
284	18.10.08	205			Natural feature	NF - bower bird' nest among lime bushes		
285	18.10.08	206			IF	br silc 2ry + u/w groove 3.5x3x1;		

286	18.10.08	207			IF	s's g's frag, polish 1, 7x4x3;	photo	
287	18.10.08	208			IF	2 frags s's g's, polish 1, fine grained 13x11x3; 13x6x3;	W. end of rail loop, near rail fence, side of red slope.	
288	18.10.08	209			LDAS	s's muller frag polish 1 6x5x1.5;	Area 10x6m on east bank	459
	18.10.08	209			LDAS cont'd	2 br silc 3ry 6x6x1.5; 4x3x0.5;		
	18.10.08	209			LDAS cont'd	br quartzite flaked piece 4x3x3;		
	18.10.08	209			LDAS cont'd	pink / br silc 3ry;		
289	18.10.08	210			LDAS	IF: br silc 1ry, 2 v/b 11x9x1.5	laneway in lancewood. Photo 460?	
					LDAS cont'd	pale silc 3ry 5x3x1		
					LDAS cont'd	br silc 3ry 3.5x3x1;		
290	18.10.08	211			IF	pale silc core 1 plat 12x10x6;		
291	18.10.08	212			LDAS	3 br 3ry 6.5x5x2; 6x5x2 h/b at end; 3x2.5x1;	in erosion at edge of lancewood & clearing	
292	18.10.08	213			LDAS	br silc core 7x5x4.5; 1 platform 100% rotated;		
					LDAS cont'd	br silc SES broken 6x3x2 u/w 1		
					LDAS cont'd	red silc 3ry 3x3x1;		
293	18.10.08	214			LDAS cont'd	pink / br silc 3ry 7x4.5x1.5;		
293	18.10.08				LDAS cont'd	grey silc 3ry 3x3x0.5;		
294	18.10.08	215			Natural feature	grove of old brigalow and native orange	Recommendation: Avoid	467/9
295	19.10.08	216			LDAS	br silc core 1 plat 10x8x6	Area 20x10m	
	19.10.08				LDAS	br silc core 2 plats 10x9x7		
	19.10.08				LDAS	br silc deb <3		
	19.10.08				LDAS	bl pet. wood 2ry 3x1.5x1		
	19.10.08				LDAS	bl pet. wood 3ry <3		

	19.10.08				LDAS	grey silc scraper u/w 1 3x2x1		
	19.10.08				LDAS	grey ch 2ry <3		
	19.10.08				LDAS	grey ch 3ry 5x3x1		
	19.10.08				LDAS	bl pet. wood 2ry 4x2x1;		
296	19.10.08	217			IF	IF: bl pet. wood 1ry 3x2.5x1;		
297	19.10.08	218			2IF	2IF: br silc deb <1;		
	19.10.08				2IF	bl pet wood 2ry 2.5x2x0.5;		
298	19.10.08	219			Flaking floor	br silc 3ry 3x2.5x0.5; 2 br silc deb <1;1 br silc deb <2; 1 milky quartz deb <2;		3 photos
299	19.10.08	220			LDAS	2 br silc 3ry 4x3x1; 5x3x1;	Area 20x20m among broken silc, pet wood and ch	
	19.10.08				LDAS	grey silc 3ry 3x2.5x0.5;		
	19.10.08				LDAS	bl pet. wood 3ry 3.5x3x1;		
	19.10.08				LDAS	br silc scraper u/w 1, 4.5x3x1;		
	19.10.08				LDAS	2 grey silc deb <2;		
300	19.10.08	221			IF	br silc core 1 plat	on bank	
301	19.10.08	222			LDAS	br silc core 1 platform 9x8x6	Area 10x2m. 2 cores embedded in soil beside each other, on slope of bank beneath bauhinia & brigalow.	Photos of cores and area.
						bl pet. wood core 2 platforms 6x5x6;		
						br silc core 2 plat 7x5x5; pink silc 2ry 4x3x1;		
						2 br silc deb <3		
302	19.10.08	224			HDAS/Fireplace	fireplace, central core 33x25; burnt stone (s's, basalt, silc) & burnt clay in core, possible muller up ended edge 9cm	Area 15x10m. Recommendation: Excavation ASAP - large!)	505-516

						exposed;		
	19.10.08				HDAS/Fireplace	large frag of s's muller 50cm from core of fire		
	19.10.08				HDAS/Fireplace	basalt muller 3.5m (8x6x1.5) - Photo 507		507
	19.10.08				HDAS/Fireplace	4 cores within 10m of fireplace		
	19.10.08				HDAS/Fireplace	3 mullers, large grey silc scrapers, flakes, basalt h'stone within 10m of fire towards creek		
	19.10.08				HDAS/Fireplace	2 more burnt clay exposures within 6m of fireplace.		
	19.10.08				HDAS/Fireplace	basalt core within 15m		
303	19.10.08	225			fireplace/LDAS	burnt clay exposure 40x35 (Photo 517)	continued next bare area & 5m radius	
						s's muller frag 4x3x1.5, polish 2		
						br silc core 1plat 9x6x4		
						br silc 2ry burnt 5x3x1		
304	19.10.08	226			LDAS	grey silc core 1 plat (broken) 4x3x3	area 10x10m	
	19.10.08				LDAS	coarse s's g's frag 7x3x2.5		
	19.10.08				LDAS	br silc core 1 plat 8x8x7 (1/8 rotation)		
	19.10.08				LDAS	pale br silc point 5.5x4x1		
305	19.10.08	227			2IF	grey silc 3ry 4x4x4;		
	19.10.08					grey silc SES 3 u/w grooves 8x6x3;		
306	19.10.08	228			LDAS	intact muller s's wear 2, 11x8x2.5, salvaged	10x10m west of track west of creek	518/520
	19.10.08				LDAS	grey silc 2ry 4x4.5x0.5		
	19.10.08				LDAS	basalt flake grey / green <3		

	19.10.08				LDAS	s's muller frag 5x5x1.5 (photo 518)		
	19.10.08				LDAS	grey / br silc scraper 8x7x1.5		519
	19.10.08				LDAS	br silc blade (backed) 8x4x1		520
	19.10.08				LDAS	grey silc 1ry used as scraper (break)		520
	19.10.08				LDAS	grey ch scraper 6x7x2;		
307	19.10.08	229			LDAS	Salvaged: 1/2 grey basalt anvil / muller (2 sides with depressions & pitting) 14x10x3;		521/2
308	19.10.08	230			LDAS	Salvaged: 10 s's g's fragments: No.1 (5 pieces) 36x31x3		525/8
						g's No.2 (4 pieces) 32x25x3		
						g's No.3 (1 piece) 10x7x2 (Ph 527 / 8);		
309	19.10.08	231			LDAS	s's g's frag polish 1, 10x7x2.5;		529
						s's muller frag polish 2, 4x3x1.5;		
310	19.10.08	232			LDAS	smashed muller 9 pieces;		530
311	19.10.08	233			LDAS	s's g's frag 7x4x2;		
312	19.10.08	234			LDAS	Salvaged: 2 intact mullers, polish 2, 12x9x1; 11x7x1.5		531/2
	19.10.08				LDAS	br silc 3ry 6x3.5x1		
	19.10.08				LDAS	br silc core 1 plat 10x8x6		
	19.10.08				LDAS	red silc 1ry 4x3x1		
	19.10.08				LDAS	milky quartz flake 4x4x1;		
313	19.10.08	235			LDAS	bl pet. wood core 1 plat (3/4 rotated) 6x5x5; ;	20x20m	
314	19.10.08	236			LDAS	grey silc core 1 plat 9x7x7	10x10m	533
	19.10.08				LDAS	3 s's muller frags 1 cm		

	19.10.08				LDAS	grey silc SES u/w 50% 4.5x5x1.5		
	19.10.08				LDAS	br silc 3ry 5x3x1;		
315	19.10.08	237			LDAS	br silc core 1 plat 12x8x8;		
						2 grey silc 3ry 4x3x1; 3x3x0.5;		
316	19.10.08	238			LDAS	2 br silc cores 1 plat 9x8x7; 8x7x6;		
	19.10.08				LDAS	grey silc 3ry 5x4x1;		
						1/2 milky quartz pebble h'stone/manuport 1x2.5x1.5 (rubbing stone?);		
317	19.10.08	239			LDAS	2 br silc cores: 1 plat 15x12x10; 1plat 10x8.5x5.5;		
	19.10.08	239			LDAS	br silc blade / point u/w 1, 6x2.5x1.5;		
318	19.10.08	240			Fireplace	fireplace: burnt clay and stone on erosion bank 43x43;		534/5
319	19.10.08	241			LDAS	grey silc 3ry 6x3.5x1.5		
						br silc SES 6x3x1.5		
						broken r's h's 5x3x4		
						broken s's g's polish 1		
320	19.10.08	242			IF	br silc 1 core plat 10x7x7		
321	19.10.08	243			LDAS	s's g's polish 1, pecking 1, 10x8x3.5;		
						br silc core 1 plat 16x15x13.5;		
322	19.10.08	244			fireplace/LDAS	possible fireplace, burnt clay 35x25cm		536-40
	19.10.08	244			fireplace/LDAS	pale silc 1ry 5x4x1		
	19.10.08	244			fireplace/LDAS	s's g's frag 3.5x2.5x2.5		
323	19.10.08	245			LDAS	fine ground s's g's frag polish 2 slight groove 8.5x10x3.5		
	19.10.08				LDAS	coarse s's muller polish 2, 6x6.5x2		
	19.10.08				LDAS	s's muller 8x7x3		
	19.10.08				LDAS	grey silc 2ry 5x4x2;		
	19.10.08				LDAS	3 br silc 2ry		
	19.10.08				LDAS	br r's broken manuport 8.5x8x4;		
324	19.10.08	246			LDAS CONT'D	s's g's frags polish 2, 9.5x7x3.5; 7x6x3; 5x3x3; 4.5x7x2;		541

	19.10.08				LDAS CONT'D	br silc 2ry 4x4x1		
	19.10.08				LDAS CONT'D	grey silc Flake <3		
	19.10.08				LDAS CONT'D	bl pet. wood blade 5x3x1		
	19.10.08				LDAS CONT'D	s's muller polish 1, 5x5x2		
	19.10.08				LDAS CONT'D	2 grey silc cores 1 plat 9x5.5x5; 10x5.5x7		
325	19.10.08	247			LDAS	br silc core 1 plat 21x16x7.5;		543
	19.10.08				LDAS	br s's g's frag polish 6x6x2.5		544
	19.10.08				LDAS	grey silc blade u/w 1 8x4x1.5		
	19.10.08				LDAS	grey silc core 3 plat 9.5x10x6		
	19.10.08				LDAS	grey silc core 1 plat 10x5x4.5; ;		544
	19.10.08				LDAS	grey silc core 8x5x6		544
326	19.10.08	248				grey silc core 1 plat 8x6x5.5		
327	19.10.08	249			LDAS	broken s's muller (0.5) polish 1, 6x6x3.5;		
	19.10.08				LDAS	6 grey & br silc. flakes;		
328	19.10.08	250			LDAS	Br silc core 1 plat, 10x6.5x6	Area 20m. core density up to 1/10msq. - parts of bank.	
	19.10.08				LDAS	grey silc core 1 plat 7x6.5x5.5		
	19.10.08				LDAS	grey silc core 1 plat 8x7x5.5		
	19.10.08				LDAS	br silc core 20%, 7x6x3		
	19.10.08				LDAS	red ch 2ry 4x3x1		
	19.10.08				LDAS	br silc core 1 plat 9x7.5x6.5		
329	19.10.08	251			LDAS	Grey silc SES u/w 2, 8x5.5x3;	area < 50 m.	
	19.10.08				LDAS	br silc core 1 plat 6x6x4;		
	19.10.08				LDAS	br silc scraper 4x4x1;		
	19.10.08				LDAS	grey silc core 6x6x3.5;		
330	19.10.08	252			LDAS	broken h'stone, pitting on 1 edge 5x5x2		
	19.10.08				LDAS	grey silc core 1 plat 6x5.5x5		
	19.10.08				LDAS	patinated grey s's muller polish 1, 11x5x3.5		
	19.10.08				LDAS	br caramel ch scraper 6x3.5x2.5; ;		

	19.10.08				LDAS	br silc SES u/w 1, 8x4x2.5		
331	19.10.08	253			LDAS cont'd	h'stone, pitting on ends 11x7x6;	Photos.	
332	19.10.08	254			LDAS cont'd	intact s's g's polish 2, pitting 1, 23x17.5x3.5;		
332	19.10.08				LDAS cont'd	grey silc core u/w total 9.5x8.5x3;		
332	19.10.08				LDAS cont'd	cream silc 5x3x2;		
333	19.10.08	255			LDAS cont'd	s's muller polish 1, 9x8x2.5;		
334	19.10.08	256			LDAS cont'd	s's g's intact polish 1 25.5x19x2.5 salvaged		
335	19.10.08	257			LDAS	s's g's frag 7x6x3,shallow groove, polish 2;	Area x 10m.	
	19.10.08				LDAS cont'd	4 grey & br silc flakes;		
	19.10.08				LDAS cont'd	grey silc SES 4x3x1.5;		
	19.10.08				LDAS cont'd	s's muller frag 4x3.5x1, polish 1		
	19.10.08				LDAS cont'd	3 grey silc flakes;		
336	19.10.08	258			Fireplace/LDAS	Dimens 40x40cm, burnt basalt, silc & pet. wood; s's g's frag, dished out 10x8x2.5; s's g's frag, dished out 9x8x2.5, corner;		
337	19.10.08	259			LDAS	basalt broken h'stone flattened on sides & end, 10x7x5 - salvaged;		553/4
338	19.10.08	260			LDAS cont'd	r/s h'stone, flattened & pitted on sides 9x6.5x4;	Area 5x5m, round v small bauhinia	
	19.10.08	260			LDAS cont'd	8 pieces s's g's: 14x9x4 (polish 1); 3.5x2x1 (polish 1)		
	19.10.08				LDAS cont'd	9x7x3 (polish 1); 13x7x3.5 (polish 1		
	19.10.08				LDAS cont'd	8x4.5x3 (polish 1); 7x7x3.5 (polish 1);		
	19.10.08				LDAS cont'd	8x6x2.5 (polish 1); 8x4x2 (polish 1);		
	19.10.08				LDAS cont'd	intact s's muller 8x6x3, polish 1;		
	19.10.08				LDAS cont'd	br silc core 1 plat 9.5x6x4.5 (buried)		
	19.10.08				LDAS cont'd	bl pet. wood flake		

339	19.10.08	261			IF	grey silc SES u/w total 5x3x2;		
340	19.10.08	262			IF	br r/s h'stone, break & pitting on ends 9.5x6x2;		
341	19.10.08	263			2IF	9 pieces s's muller, polish 2;		
						s's muller polish 1, 11x8x3; salvaged.		
342	19.10.08	264			LDAS	s's muller polish 1, 10x8x1.5; (salvaged)	Area 10x10m	
					LDAS	basalt muller polish 1, 10x6x2.5;		
					LDAS	br silc 1 plat 8x6.5x4;		
343	19.10.08	265			LDAS	br silc scraper u/w 90% (3 sides) 14x9x5;	relocated in close brigalow & bauhinia.	photo
	19.10.08				LDAS	br s's g's frag polish/pitting 2, 14x13x2.5;		
	19.10.08				LDAS	3x br s's g's frags: 8.5x7x3; 7x5x2.5; 6x4x2.5;		
	19.10.08				LDAS	br r/s h'stone broken pitting on side 5x5.5x2.5;		
	19.10.08				LDAS	br r/s h'stone pitting on side 13x10x7.5;		
							Team:- Jeffrey Budby, Damien Dallachy, Lewis Brown and Jade Budby.	
344	11.11.08	489			LDAS	Brown silc core (1 Platform) - 9x7x7	Area Previously Pulled and Cleared. Vegetation:- Brigalow Regrowth, Black Soil, Buffel Grass.	
	11.11.08				LDAS	Brown silc 2ry - <3		
	11.11.08				LDAS	Brown silc 2ry <3		
	11.11.08				LDAS	Brown silc 2ry u/w 2 Margins - 3x4x1		
	11.11.08				LDAS	Grey silc Scraper, u/w 2 Margins - 7x5x2		
	11.11.08				LDAS	Brown silc 2ry - 3x3x1.5		
345	11.11.08	490			LDAS	Brown pet. wood 2ry - 4x5x1.5		
	11.11.08				LDAS	Brown pet. wood 2ry - 3x3x1		
	11.11.08				LDAS	Grey pet. wood Scraper, u/w 1 Margin - 4.5x2.5x1.5		
							Finishing off area behind Cherwell Ck, black soil plain	

							and dam.	
346	18.07.05	107			Scarred Tree	Dead Box Scarred Tree: 61x24x9cm, Base to Ground: 110cm, Height of Tall: 6-8m, Scar Facing: SE. Condition: The inner wood appears to be struck with an axe.		680-681
347	18.07.05				IF	Brown silcrete secondary flake (with use wear on 1 edge) 5.5x3.5x1.5		
348	18.07.05				IF	Petrified wood debitage < 3		
349	18.07.05				IF	Brown silcrete point (with use wear on 1 edge) 3.5x2x.5		
350	18.07.05				IF	Pale brown silcrete 2ry flake (use wear 1 edge) 4x3x1		
351	18.07.05				LDAS	2x Brown silcrete 2ry flake 6x4x3, 6.5x5x3		
	18.07.05				LDAS	White silcrete 2ry flake 4x4x3		
	18.07.05				LDAS	Grey s's g's fragment (polish 2 sides, prepared edge) 10.5x9.5x1.5		
352	18.07.05				LDAS	2x S's g's fragments (polished 1 side) 7x5.5x2.5, 7x5x2	All artefacts Photo 682	
	18.07.05				LDAS	Brown silcrete tula adze (10 use wear notches) 4x3x1	All artefacts Photo 682	
353	18.07.05				LDAS	Brown silcrete secondary flake < 3		
	18.07.05				LDAS	3x Brown s's g's fragments (same grindstone, possibly portable, polished on 1 side) < 3, 4x4.5x1, 4.5x4x1		
354	18.07.05				IF	Brown s's g's fragments (polish 1 side) 9x7x2		
	18.07.05				IF	Petrified wood secondary flake < 3		
	18.07.05				LDAS	Pale brown silcrete point / secondary flake 4x3.5x.5		
	18.07.05				LDAS	Pale brown silcrete scraper / blade 7.5x5x1.5		
355	18.07.05				LDAS	S's g's fragment polish 1 side, 7.5x5.5x1.5		
	18.07.05				LDAS	Grey s's g's fragment polish 1 side, maybe peeling 12x10x3		
	18.07.05				LDAS	Brown silcrete secondary flake 5.5x6.5x1		

	18.07.05				LDAS	2x Brown sandstone grindstone fragments (both have been polished on 1 side) 5.5x2.5x1.5, 6x5.5x2		
356	18.07.05				LDAS	Brown silcrete tertiary flake (with reworked edge, possibly produced to make backed blade) 5.5x3.5x1		
	18.07.05				LDAS	3x Silcrete waste flake < 3		
357	18.07.05				LDAS	Broken dark grey basalt axe (bifacial polish) 6x4.5x3	Collected for protection.	
358	18.07.05				LDAS	Brown silcrete secondary flake 6.5x5x1		
	18.07.05				LDAS	Grey silcrete secondary flake < 3		
	18.07.05				LDAS	Grey silcrete tertiary flake 4x3x.5		
	18.07.05				LDAS	Brown silcrete tula / secondary flake 4x2x1		
359	18.07.05				LDAS	Pale brown silcrete tertiary flake (with use wear on both edges) 4x3.5x1		
360	18.07.05				LDAS	Grey sandstone grindstone fragment (with polish on both sides, very well used, prepared edges) 9x8x2		
361	18.07.05				LDAS	Cream / brown silcrete secondary flake 4.5x3.5x1.5		
362	18.07.05				LDAS	Grey sandstone grindstone fragment (with polish on 1 side) 8.5x6.5x1.5		
	18.07.05				LDAS	Broken riverstone hammerstone (with impact marks on 1 end) 7x7.5x6		
	18.07.05				LDAS	Brown silcrete tertiary flake 5x3.5x1		
363	18.07.05				LDAS	Cream / brown silcrete secondary flake 4.5x3x1.5		

APPENDIX 2

List of Field Survey personnel and survey calendar

Date	Team	Area surveyed
10.8.08	Les Budby Steven Budby Gary Hardiman, Veronica Brown Elizabeth Hatte	South of Peak Downs Highway, north of Cherwell Creek
11.8.08	Les Budby Steven Budby Gary Hardiman Veronica Brown Elizabeth Hatte	South of Peak Downs Highway, north of Cherwell Creek North of Cherwell Creek
12.8.08	Les Budby Gary Hardiman Veronica Brown Elizabeth Hatte	As above
13.8.08	Les Budby Steven Budby Gary Hardiman Veronica Brown Elizabeth Hatte	Long narrow corridor west of Peak Downs mine and haul road, south of Harrow Creek, SW corner of study area.
14.8.08	Les Budby Steven Budby Gary Hardiman Veronica Brown Elizabeth Hatte	As above extended to North bank of Harrow Creek, west of haul road
15.8.08	Les Budby Steven Budby Gary Hardiman Veronica Brown Elizabeth Hatte	Western side of haul road, between Harrow Creek and Cherwell Creek.
16.8.08	Les Budby Steven Budby Gary Hardiman Veronica Brown	South eastern section of study area, east of Heyford pit
24.8.08	Les Budby Elizabeth Hatte Lewis Brown (Jnr) Neville Isaacs	South western section, south of Cherwell Creek, west of Heyford Pit
25.8.08	Les Budby Elizabeth Hatte Veronica Brown Lewis Brown (Jnr) Neville Isaacs	As above, north of yesterday
26.8.08	Elizabeth Hatte	As above north of yesterday

	Veronica Brown Lewis Brown (Jnr) Neville Isaacs Les Budby	
27.8.08	Les Budby Elizabeth Hatte Veronica Brown Lewis Brown (Jnr) Neville Isaacs	Extreme western side south of Cherwell Ck
1.9.08	Les Budby Elizabeth Hatte Lewis Brown (Jnr) Neville Isaacs	Old box forest north of Harrow Ck, between haul road and pit
2.9.08	Steven Budby Elizabeth Hatte Lewis Brown (Jnr) Neville Isaacs	Northeast and east of Heyford Pit, south along Cherwell Ck
6.9.08	Steven Budby Elizabeth Hatte Lewis Brown (Jnr) Neville Isaacs Jeff Budby, Michael Budby and Damian Dallachy (1/2 day)	East of yesterday, south of Cherwell Ck
7.9.08	Steven Budby Elizabeth Hatte Michael Budby Lewis Brown (Jnr) Neville Isaacs	North of Cherwell Creek, east of Access track across creek
23.9.08	Jeff Budby Elizabeth Hatte Steven Budby Neville Isaacs Rebecca Budby	Between Cherwell and Nine Mile Creek
27.9.08	Jeff Budby Les Budby Steven Budby Neville Isaacs Lewis Brown (Jnr) Jade Budby Emma Oliver , Rebecca Budby	Land between Nile Mile Creek and Peak Downs Highway
28.9.08	Jeff Budby Steven Budby Neville Isaacs Lewis Brown (Jnr) Jade Budby Emma Oliver, Rebecca Budby, Lewis Brown (Jnr)	Land between Nile Mile Creek and Peak Downs Highway
29.9.08	Jeff Budby Les Budby Steven Budby Neville Isaacs Emma Oliver Martin Budby	Land between Nile Mile Creek and Peak Downs Highway
4.10.08	Tanya Budby Elizabeth Hatte Jade Budby Neville Isaacs	North of Peak Downs Highway in Buffel Park

	Martin Budby	
6.10.08	Tanya Budby Elizabeth Hatte Jade Budby Neville Isaacs Martin Budby	As above north of yesterday
8.10.08	Tanya Budby Elizabeth Hatte Jade Budby Neville Isaacs	As above north of yesterday
15.10.08	Elizabeth Hatte Les Budby Neville Isaacs	As above north of yesterday
16.10.08	Elizabeth Hatte Les Budby Steven Budby Neville Isaacs	As above and Horse Creek
17.10.08	Elizabeth Hatte Les Budby Steven Budby Neville Isaacs	As above and extreme northern corner, north of Horse Creek
18.10.08	Elizabeth Hatte Les Budby Steven Budby Neville Isaacs	Rail extension, north western section of project area
19.10.08	Elizabeth Hatte Les Budby Steven Budby Neville Isaacs	North western section and west bank Horse Creek

APPENDIX 3

Glossary of Archaeological terms

(see Bahn 1992; Bourke and Smith 2004; McCarthy 1976)

Blade: a long, flat and narrow flake with parallel sides struck from a prepared core (measures at least twice as long as wide). A backed blade has had one side reworked to a steep angle to provide one non-cutting edge.

Core: piece of stone from which flakes have been removed

Edge ground axe: axe shaped piece of stone which has been knapped and ground to produce sharp edges

Flake: a piece of stone which is removed (knapped) from a core; the flake may be a planned artefact or a waste by-product which is discarded

Grinding: manual abrasion

Grindstone: a stone artefact, with relatively flat surfaces used as a base to grind seeds, roots or tubers and/or ochre; a rounded stone (muller) was used as a pestle to grind the material; grindstones are made from coarse-grained abrasive material such as sandstone

Knapping (flaking): the process of hitting one stone (a hammerstone) on another (a core) to produce s flaked stone artefact

Muller: the small grinder used in combination with a grindstone

Nodule: a natural concretion

Ochre: soft varieties of iron oxide materials such as haematite (red ochre), goethite and limonite which are used as pigments for painting and personal decoration

Pebble: stone worn and rounded by natural forces such as water

Petrified wood: wood which has undergone the process of fossilisation to produce a stone-like substance

Primary flake: one of the first pieces to be struck off a block of stone; retains the cortex (the original outside surface) of the core

Rejuvenation flake: when the edge of a stone axe becomes blunt from use it is resharpened by further knapping and regrinding. The waste flakes produced in this process are called 'edge sharpening' or 'rejuvenation' flakes. They are very distinctive because of their material and the presence of polish. They may also have a distinctive triangular profile

Retouch (secondary flaking): the working of a primary flake to make a tool

Scraper: retouched flake with a thick working edge; probably used to scrape skins or for woodworking

Secondary flake: struck off a core early in the flaking process, but retains some cortex and some flake scars

Taphonomy: the study of the processes that have acted on an archaeological site to make it as it appears today

Tertiary flake: product of the last stages of the knapping process; no cortex remains

Tula or tula adze: hafted chisel with a semi-circular working edge made from a thick flake; used to work various materials including hardwoods.

APPENDIX 4

HUMAN REMAINS DRAFT BURIAL POLICY

(Cultural Heritage coordination Unit, Dept of Natural Resources and Water)

GENERAL INFORMATION SHEET:

ABORIGINAL BURIALS

- Aboriginal burials can be found throughout Queensland
- They are often found in eroded coastal dunes, dunes associated with inland rivers or lakes, desert dunes and clay lunettes
- They may be exposed by natural processes or may inadvertently be exposed in most locations where land modification activities are occurring
- The location of any human remains should first be reported to the Police to exclude the possibility that they are the remains of a crime scene

Background

Death in all human societies is a highly emotional event. It occurs on a regular but unpredictable basis, removing an individual from an accustomed place in society, thus causing a break in the unity and cohesion of the society. Since it affects the family, close relations and society at large, death is often associated with complex ritual. This was and continues to be the case among Aboriginal people where complex rituals associated with death reflect attempts to adjust to changed circumstances. Of vital concern for example is the 'spirit' and what might become of it. Death is not seen as an end point but as a transition to another level of human existence. Burial is therefore an important ritual and any disturbance to such burials is of major concern to Aboriginal people.

Indigenous people have been in Australia for at least 40,000 years. During this time they buried hundreds of thousands of their dead in diverse ways. Burial practices varied across Australia and through time. In some cases burials involved a single procedure such as cremation, or the deposition of remains in the ground, or in caves and trees. Often however two or more stages were involved which took place at different times ranging from several weeks to years. In these cases a corpse may for example have been exposed or desiccated in the sun or over a fire. After one, or several further steps, which usually involved specific individuals carrying the skin or bones of the deceased around with them, the remains were finally laid to rest as cremations, burials, or were placed in caves or hollow logs.

Indigenous burials may be located due to exposure by erosion or by clearance associated with land development. Numbers located vary from one or two individuals, to groups of over hundred. Burials have been found in all types of environments across Queensland and in both rock shelters and open areas. They can be found with stone markers, covered with logs and were often associated with carved or scarred trees, stone arrangements, stone artefacts and food refuse.

Types of Burials

The following types of burials may be found in Queensland:
Cremations. Cremations some times occurred as a single event, at other times as part of a complex cycle of events that included the burning of a variety of grave goods. It might be thought that no evidence would remain of such practices but at times only partial burning occurred and both small and large charred fragments of bone survived.
Desiccation: In some places the internal organs of an individual were removed through a small incision. The body was then packed with grass and allowed to dry in the sun or over a fire. It may then have been painted with ochre and finally placed on a tree platform or in a cave or hollow tree. At other times the individual was buried or cremated.
Bark or Cylinder. An individual's bones were sometimes wrapped in bark, natural fibre, human hair or wallaby skins with a range of grave goods and deposited in a cave or rocky overhang. They are fragile and being movable objects may be sought by collectors.
Tree Burials. On occasions a platform of logs was built in a tree and a corpse laid on it. However, usually after drying, the bones were removed and buried in the ground. Such platforms are unlikely to have survived over time. On other occasions bones were placed in hollowed out logs or trees and these survived in some situations.
Ground Burials. As in most societies, ground burials appear to have been the commonest form of internment, although in the case of Aboriginal Australians it was frequently only the final stage in the process. Corpses were sometimes buried horizontally and oriented in a particular direction, at other times they were buried in a sitting position and sometimes bound. Grave goods were sometimes included with the burial and its location marked by designs carved on surrounding trees.

Location of Burials
Owing to the complexity and variety of Aboriginal burial practices it may sometimes be difficult to distinguish them from early European burials and from more recent European skeletal remains resulting from accidents and criminal activities. However location provides some clues. For example, burials commonly occur in coastal sand dunes and dunes associated with inland rivers or lakes, desert dunes and clay lunettes. Such sites are easily eroded by wind and water, and skeletal material is frequently exposed by such means. Other common locations were rockshelters, rocky overhangs and hollow trees. Evidence of association also provides some clues. For example, the close proximity of scarred or carved trees and stone arrangements, and the remains of fireplaces, stone artefacts and food refuse is usually suggestive of an Aboriginal burial.

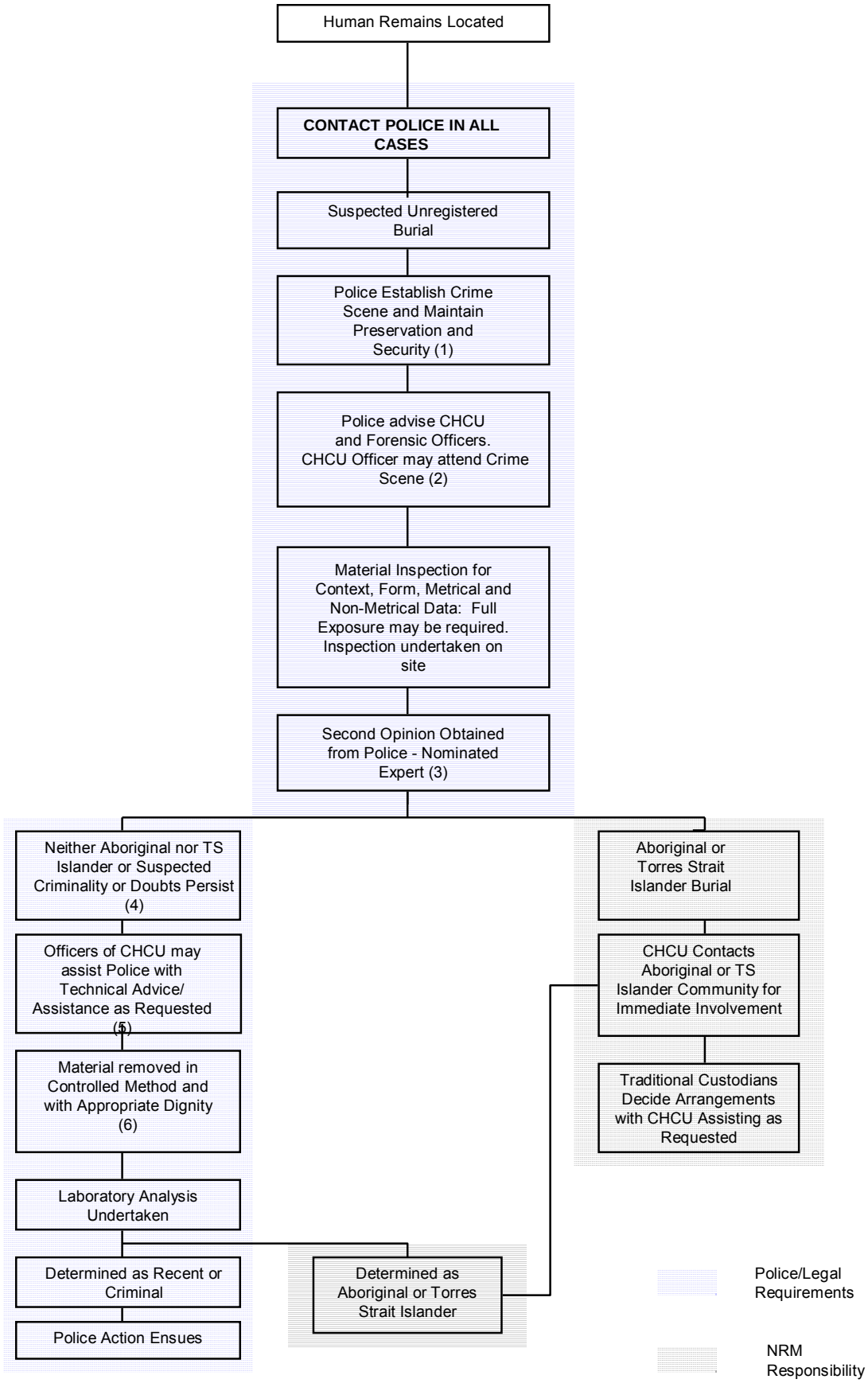
Threats and potential threats to Burials

- Natural threats to burials include wind and water erosion.
- Human threats result from interference and large-scale development

Legislative protection
All burials in Queensland are protected under provisions of the Criminal Code Act 1899 (Section 236), the Coroners Act 2003, and the Aboriginal Cultural Heritage Act 2003 (Part 2) and Torres Strait Islander Cultural Heritage Act 2003.

If you locate human remains it is ***essential that you do not disturb the remains***. ***You must also report the findings to the Police Department***. The Police must secure the location of the remains as a potential crime scene. Once it is established that the remains are not a crime scene and that the remains are Aboriginal the Coroner can release the remains to the Cultural Heritage Coordination Unit of the Department of Natural Resources Mines and Energy. The Cultural Heritage Coordination Unit will then implement the policy *The Discovery, Handling an*

Management of Human Remains under the Provisions of the Aboriginal Cultural Heritage Act 2003 and Torres Strait Islander Cultural Heritage Act 2003.



APPENDIX 5.

SITES ON STATE DATABASE

I wish to advise that the search has been performed on the inventory of recorded Aboriginal sites as per your description. Attached is a list which highlights the identified Aboriginal cultural heritage sites, as recorded for the search area. However, it is not possible to conclusively guarantee the accuracy of these recordings (in particular, the longitude and latitude location description for each site) and extra diligence is required when operating in these locations.

ML	Site Id	Latitude	Longitude	Attribute	Aboriginal Party
1775	GG:A25"	-22.18212	148.13115	ARTEFACT	WOORA CONSULTING
	GG:A26	-22.17412	148.11169	ARTEFACT, Stone axe, blank	WOORA CONSULTING
	GG:A28	-22.15165	148.09503	ARTEFACT	WOORA CONSULTING
	GG:A29	-22.14454	148.07752	ARTEFACT	WOORA CONSULTING
	GG:A30	-22.13104	148.07063	ARTEFACT	WOORA CONSULTING
	GG:A31	-22.10301	148.07333	ARTEFACT	WOORA CONSULTING
	GG:A32	-22.10662	148.07529	ARTEFACT	WOORA CONSULTING
	GG:A34	-22.13369	148.07841	ARTEFACT	WOORA CONSULTING
	GG:A62	-22.29315	148.26308	TREE	WOORA CONSULTING
	GG:A68	-22.37749	148.31175	Silcrete Flaked Cobble	WOORA CONSULTING
	GG:A69	-22.4047	148.31285	ARTEFACT	WOORA CONSULTING
	GG:A70	-22.40449	148.31299	ARTEFACT	WOORA CONSULTING
	GG:B44	-22.17482	148.13372	TREE	WOORA CONSULTING
	GG:B45	-22.1751	148.13167	ARTEFACT	WOORA CONSULTING
	GG:B46	-22.16315	148.10454	ARTEFACT	WOORA CONSULTING
	GG:B47	-22.15736	148.09297	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16804	148.1072	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.1682	148.10722	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16647	148.10758	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16657	148.10764	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16647	148.1079	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16659	148.10791	ARTEFACT	WOORA CONSULTING
	GG:B48	-22.16818	148.10711	ARTEFACT	WOORA CONSULTING
	GG:B49	-22.31908	148.25376	TREE	WOORA CONSULTING
Lot on Plan	Site Id	Latitude	Longitude	Attribute	Aboriginal Party
47 GV226	GG:A27	-22.169773	148.086439	Artefact Scatter	WOORA CONSULTING
13 SP151669	NIL				WOORA CONSULTING
16 SP163605	GG:A33	-22.069762	148.046907	Artefact Scatter	WOORA CONSULTING
	GG:A31	-22.103014	148.073325	Artefact Scatter	WOORA CONSULTING

All significant Aboriginal cultural heritage in Queensland is protected under the *Aboriginal Cultural Heritage Act 2003,* and penalty provisions apply for any unauthorized harm. Under the legislation a person carrying

out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal Cultural Heritage. This applies whether or not such places are recorded in an official register and whether or not they are located in, on or under private land.

Aboriginal cultural heritage, which may occur on the subject property, is protected under the terms of the *Aboriginal Cultural Heritage Act 2003* even if Natural Resources & Water has no records relating to it.

Please refer to our website ***www.nrw.qld.gov.au/cultural_heritage/index.html*** for a copy of the gazetted Cultural Heritage duty of care guidelines, which set out reasonable and practical measures for meeting the duty of care. In order to meet your duty of care, any land use activity within the vicinity of the recorded cultural heritage, should not proceed without the agreement of the Aboriginal Party for the area or a Cultural Heritage Management Plan undertaken pursuant to Part 7 of the *Aboriginal Cultural Heritage Act 2003*.

The Aboriginal party(s) for the area is:

Woora Consulting Pty Ltd
Mr Frank Budby
Lot 1 Powell's Road
Farleigh
QLD 4741
Ph (07) 4959 8822
Fax (07) 4959 8387

Should you have any further queries, please do not hesitate to contact me on (07) 3406 2366.

Kind Regards

Tracey Schmidt | A/Policy Officer

Cultural Heritage Coordination Unit
Indigenous Services
Department of Natural Resources & Water
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