Plate 1 Looking westwards across the northern section of the Project Site towards Vickery State Forest

Plate 2 Looking north-westwards through the remnant woodland in the north-western section.

Note: A colour version of these plates are available on the Project CD

Plate 3 Looking westwards in the northern section, with Jaeger Lane in the tree line on the left. Note the loamy soils

Plate 4 Site 'B1' is the eroded area between Les and Wayne, viewed from the west.

Note: A colour version of these plates are available on the Project CD

Plate 5 Looking north-westwards along a contour bank. The unnamed creek is marked by the tree line.

Plate 6 Looking southwards down the south-western section.

Note: A colour version of these plates are available on the Project CD

Plate 7 Looking westwards across contour banking in the south-western section.

Plate 8 Looking southwards along the site of 'B3' on the western bank of the unnamed creek.

Note: A colour version of these plates are available on the Project CD

Plate 9 The southern end of site 'B3'. The creek follows the line of the trees.

Plate 10 Looking westwards across the south-western section from Wean Road. The trees in the middle distance follow the line of the creek.

Note: A colour version of these plates are available on the Project CD

Plate 11 Looking southwards down the creek line south-west of “Belmont” homestead.

Plate 12 Looking south-eastwards in the south-eastern section of the Project Site.

Note: A colour version of these plates are available on the Project CD

Plate 13 Looking eastwards across the eastern section.

Plate 14 Looking north-eastwards in the north-eastern section of the Project Site.

Note: A colour version of these plates are available on the Project CD

Plate 15 Looking northwards towards “Glenroc” in the northern section with Wean Road to the left.

Plate 16 Looking eastwards along Jaeger Lane from the western edge of the Project Site.

Note: A colour version of these plates are available on the Project CD

Plate 17 Scarred tree 'Btree 1'

Plate 18 'Btree 1' from Wean Road.

Note: A colour version of these plates are available on the Project CD

Plate 19 Scarred tree 'Btree 2'.

Note: A colour version of this plate is available on the Project CD

Plate 20 Looking southwards along the Proposed Transport Road route from south of Vickery State Forest.

Plate 21 Looking southwards along the Proposed Transport Road route with the closed road to the right.

Note: A colour version of this plate is available on the Project CD

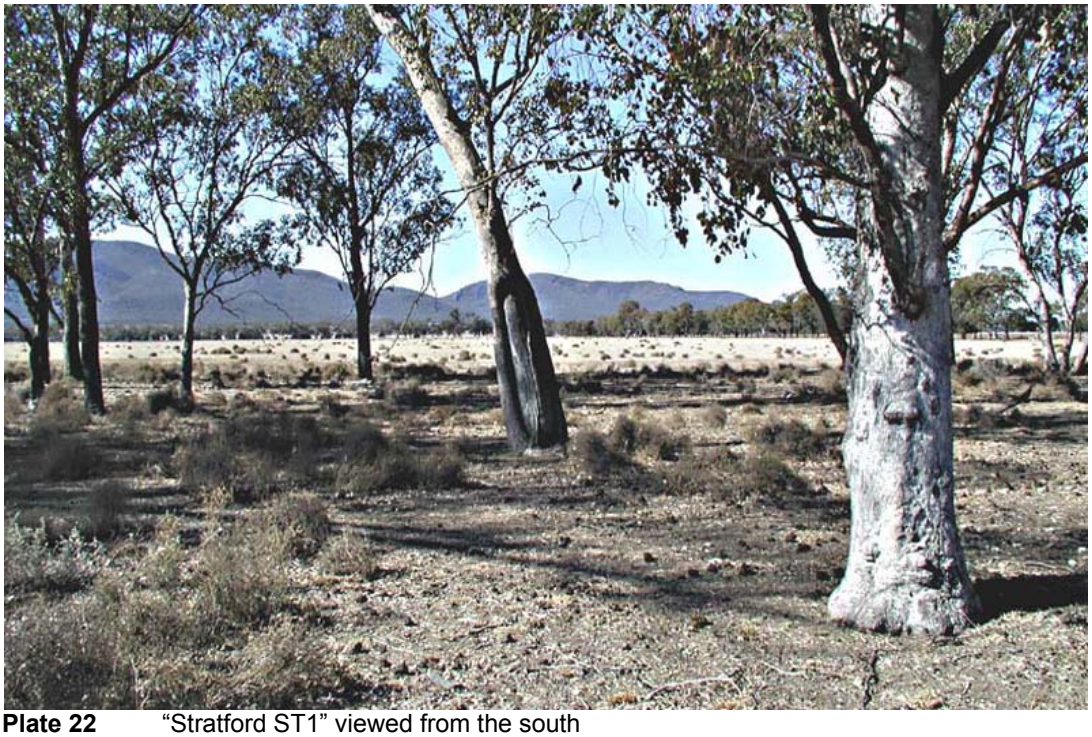

Plate 22 "Stratford ST1" viewed from the south

Plate 23 Close-up of "Stratford ST1" (scale 1 m).

Note: A colour version of this plate is available on the Project CD

Plate 24 "Stratford ST2" viewed from the south.

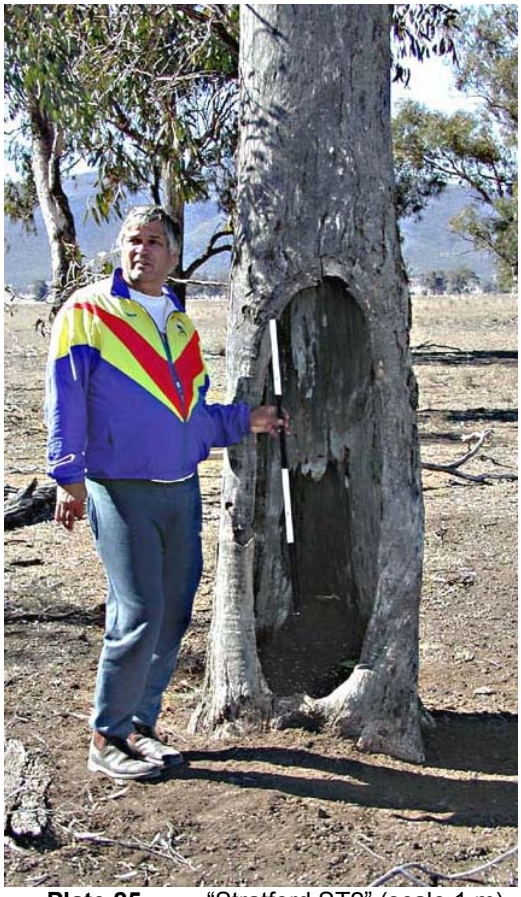

Plate 25 "Stratford ST2" (scale 1 m).

Note: A colour version of this plate is available on the Project CD

Plate 26 Shannon Harbour Road viewed from its junction with Hoad Lane.

Plate 27 Looking eastwards along the mid section of Shannon Harbour Road.

Note: A colour version of this plate is available on the Project CD

7 THE RESULTS

Three artefact sites were recorded within the survey area, with two scarred trees in the Wean Road easement were recorded as sites at the request of the Red Chief LALC Sites Officers. Figure 8 displays the locations of the identified sites. Also, two scarred trees were recorded in the Shannon Harbour Road easement to the east of its proposed junction with Riordan Road. Details of the sites are as follows:

Site name: 'B1'

GPS (AMG)	Ref: 238810 6594070 Kelvin 1:25,000 scale Topographic Map
Site type:	An isolated artefact
Location:	The artefact was partly exposed in a dust/sand erosion feature along a fenceline, 10 metres from the central drainage line.
Description:	A core of very fine-grained silcrete. 25 x 25 x 15 mm. 8 negative flake scars 25% cortex.

Site name: 'B2'

GPS (AMG) Ref:	238850 6594010
Map Reference:	Kelvin 1: 25,000 scale Topographic Map
Site type:	A scatter of micro-debitage or trimming flakes
Location:	The artefacts were scattered on and around a large ant mound on the crest of a contour bank. (A single ant was observed carrying a 12 mm long flake away from where it had been replaced after examination. An example of post-depositional processes at work!).
Description:	8 small flakes of highly silicified very fine-grained silcrete. < 20 mm maximum dimensions of any one piece 0% cortex.

Probably the remains of a knapping, or tool manufacturing site

Site name: 'B3'

GPS (AMG) Ref:	238650 6593300 Kelvin 1: 25,000 scale Topographic Map
Site type:	An extended artefact scatter approximately 800m long
Location:	The scatter extended along the western bank of the central drainage line. All erosion features were either on ant mounds or in scalds swarming with ants (from 3mm to 20mm long), which discouraged any measuring of artefacts or any other activity requiring a person to stand still.
Description:	> 40 artefacts (3 cores, the rest flakes and flaked pieces) of highly silicified very fine-grained silcrete, and at least 3 jasper flakes and one quartzite core.

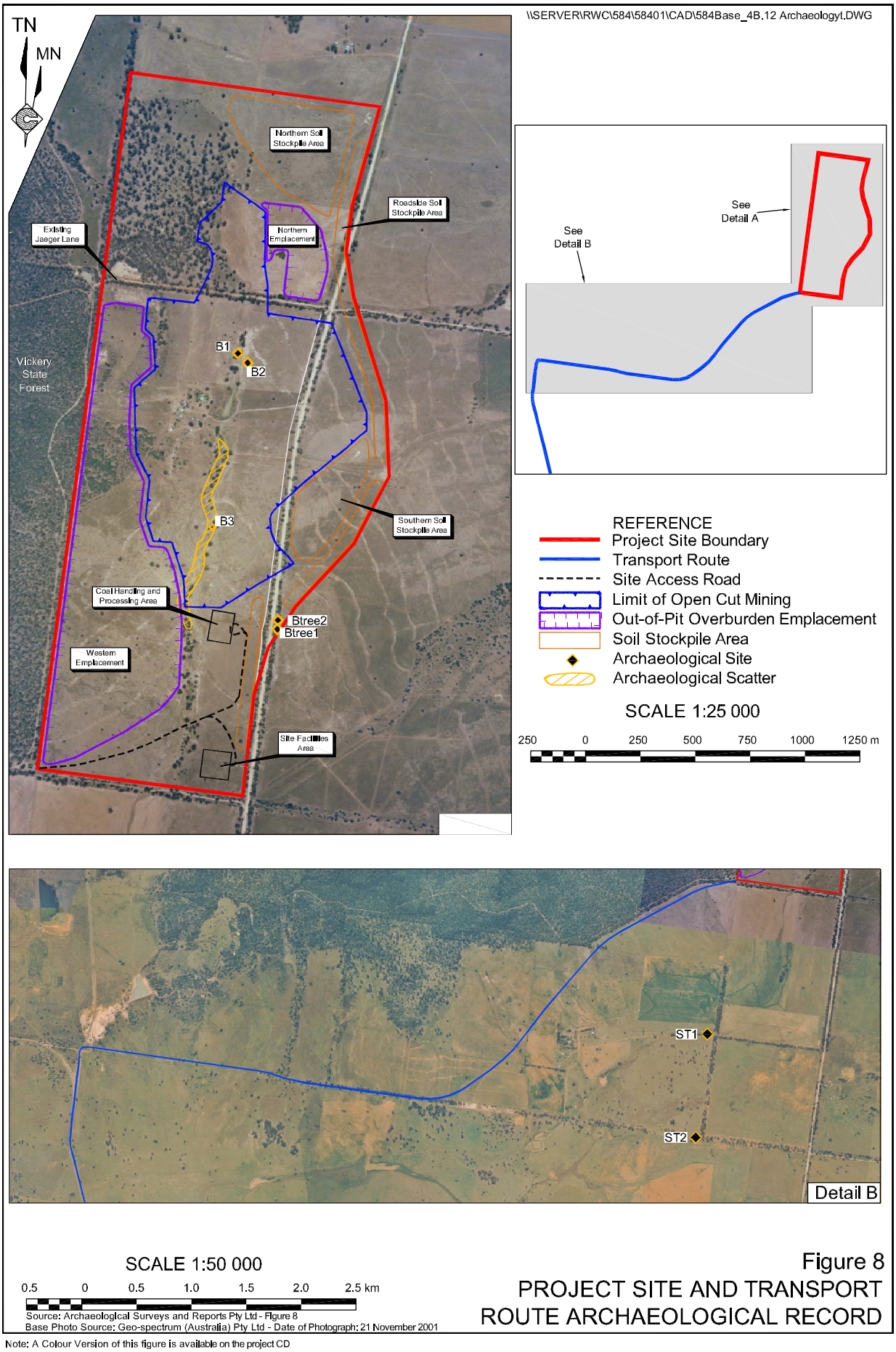

Figure 8
PROJECT SITE AND TRANSPORT ROUTE ARCHAEOLOGICAL RECORD

Note: A Colour Version of this figure is available on the project CD

Site name: 'Btree 1'

GPS (AMG) Ref:	238980 6592830 Kelvin 1: 25,000 scale Topographic Map
Site type:	Scarred tree
Location:	Large box gum on the eastern side of Wean Road easement.
Description:	An irregularly shaped scar
	160 cm long x 40 cm wide
	Scar depth 4 cm
	Base of scar 295 cm above ground level
	Girth of tree below the scar 250 cm
	Aspect of scar: northerly

The scar occurs on a sloping trunk immediately below a major fork in the tree. Similar scars are frequently associated with galahs, which strip the bark off the trunk to deter goannas from reaching their nests. There were no cut marks or scars that might have indicated that the scar was a consequence of deliberate human activity, but the Red Chief LALC Sites Officers believed the scar had been deliberately made by Aboriginal people removing the bark, and insisted that it should be recorded as an Aboriginal site.

Site name: 'Btree 2'

GPS (AMG) Ref:	238980 6592870 Kelvin 1: 25,000 scale Topographic Map
Site type:	Scarred tree
Location:	Large box gum on the eastern side of Wean Road easement.
Description:	A lozenge-shaped scar
	57 cm long x 15 cm wide
	Scar depth 3 cm
	Base of scar 146 cm above ground level
	Girth of tree mid-scar 84 cm.

The scar could have been deliberately made by people removing the bark to make a tool, implement or weapon, but contact from machinery during road construction or the mowing of the easement might also have caused it.

Site name: 'Stratford ST1'.

GPS (AMG) Ref:	237700 6590900 Kelvin: 8936-II-N, 1: 25,000 scale Topographic Map
Site type:	Scarred tree.
Location:	Large box gum in a closed road.
Description:	A lozenge-shaped scar.
	223 cm long x 70 cm wide
	Scar depth 11 cm
	Base of scar 18 cm above ground level
	Girth of tree below the scar 215 cm
	Aspect of scar: westerly.

The tree is located 116 paced-metres north of the fenceline on the eastern approach road to "Stratford". It was unclear whether it was in the road easement of a closed north-south oriented road or was on the "Stratford" property. There were no cut marks or scars that might have indicated that the scar was the result of deliberate human activity, but the Red Chief LALC Sites Officers believed the scar had been made by Aboriginal people removing the bark, and insisted that it should be recorded as an Aboriginal site. The size and shape is typical of scars elsewhere that have been described by Aboriginal informants as being 'shield scars' (Appleton, 1998).

Site name: 'Stratford ST2'.

GPS (AMG) Ref:	237590 6589890 Kelvin: 8936-II-N, 1: 25,000 scale Topographic Map
Site type:	Scarred tree.
Location:	Large box gum in a closed road.
Description:	A lozenge-shaped scar
	140 cm long x 42 cm wide
	Scar depth 6 cm
	Base of scar 14 cm above ground level
	Girth of tree mid-scar 255 cm
	Aspect of scar: westerly

The tree is located 21 paced-metres north of the fenceline immediately alongside the closed north-south oriented road.

There were no cut marks or scars that might have indicated that the scar was the result of deliberate human activity, but the Red Chief LALC Sites Officers believed the scar had been made by Aboriginal people removing the bark, and insisted that it should be recorded as an Aboriginal site. The size and shape is typical of scars elsewhere that have been described by Aboriginal informants as being 'shield scars' (Appleton, 1998).

8 DISCUSSION

8.1 The Results

As described previously, the Project Site and transport route occur on the middle and lower slopes of a broad catchment area of the headwaters of an unnamed ephemeral creek, the vast majority of which has been cleared for pasture, and some of which has been contoured. Generally prior to clearing, the area would have had few resources to encourage Aboriginal people to stay in the area for any length of time, the major constraint being the absence of a reliable water source.

However, the presence of the extended artefact scatter within the limit of open cut mining is evidence that the central drainage line was used as a route on a number of occasions, some of which resulted in artefactual material being deposited along the creek banks. It seems unlikely that the travellers would have found the presence of the conglomerate stone on the western slopes or the prevalence of box trees strong enough reasons for visiting the survey area when both resources were just as plentiful much closer to more reliable water resources such as the Namoi River. Clearly however, Aboriginal people used the area, if only in transit between other places.

The two scarred trees along the closed north-south oriented road adjacent to the "Stratford" property, and two other (less likely deliberately made by human) scarred trees along Wean Road, occur in narrow remnant ribbon strips of vegetation that represents less than 5% of the total survey area. If only one of the four scars was made by Aboriginal people prior to the vegetation being cleared for farming then it is highly likely that many other scarred trees once existed throughout the area.

The two scarred trees along the closed north-south oriented road adjacent to the "Stratford" property do not appear to have been formed naturally, and their shapes suggest that they were caused by the bark being deliberately removed, perhaps for the manufacture of shields. While presently the two trees occur in what appears to be dry open country, they are within a few hundred metres of an ephemeral drainage depression, which prior to the clearing of the surrounding vegetation may have been a more permanent swamp area. If it was a swamp area then it may have been a potential food and water resource for those travelling through the valley.

In summary, the results of the investigation have provided archaeological evidence for past Aboriginal activity in the area, albeit that it may have been infrequent and transitory.

8.2 Potential Cumulative Impact of the Project

As the results of the AHIMS (site register) search show the only sites previously recorded in the area have been recorded during investigations undertaken for coal mining projects, and therefore represent only the distribution of sites in the areas investigated. From the results of the search and the results of the investigation for the Project it is clear that there is a potential for many other sites to exist in the region, particularly adjacent to or in the vicinity of reliable water sources.

Of the sites now recorded in the area, artefact scatters are the most frequently found site type, and artefact scatters are the site type most likely to be found regardless of land use. Artefacts might be found in undisturbed woodland, in ploughed paddocks, on contour banks and in tracks, paths and erosion features. They are, therefore, the site type that is least likely to be affected by land use, and so for the exception of those locations subjected to impacts such as sand, gravel or coal extraction, the sites are likely to remain relatively intact, in some form or another, although they may not be in their precise depositional context.

In contrast, scarred trees can only exist where there are still old growth trees at least c.120 years old or more that would have been sufficiently large in girth prior to 'European' settlement of the area, for the bark to be a useful size to Aboriginal people. In an area such as that in which the Project Site and transport route occur, the only old growth vegetation to have survived clearing for pasture occurs along road easements and creek banks, and so in terms of the extent to which the existing vegetation represents the pre-settlement vegetation regime, those trees represent perhaps less than 3% of past vegetation. Thus, any scarred trees that occur in the area represent a very small fraction of the number of scarred trees there may once have been. Another factor to be considered is that the trees are vulnerable to damage and destruction from wind, fire, termites, dieback, or accident, and so as well as being a relatively rare site type in this area scarred trees are perhaps the site type most vulnerable to direct or indirect impact from natural attrition and from land use.

In summary, it is ASR's assessment that removal of the three artefact sites within the limit of open cut mining would have little cumulative impact on the archaeological record. However, any impact to the two scarred trees in Wean Road easement should be avoided, and protective measures taken to improve their chance of survival.

9 SIGNIFICANCE ASSESSMENT

The DECC (NPWS) policy to safeguard all sites, Aboriginal places, and archaeological material of significance wherever possible requires that some means of assessing the significance of the sites is necessary. This is not only for the purpose of determining whether sand extraction can proceed as proposed, but also to provide cultural resource managers with the information for future management of the area.

9.1 Cultural Significance

The Aboriginal or cultural significance of Aboriginal relics and sites can only be assessed by the Aboriginal community, and in particular, the Elders. It is the responsibility of the archaeologist to ensure that the Elders, or elected representatives of the Aboriginal community are advised of the survey results, and are consulted as to their knowledge and opinion of the significance of the area, and to transcribe and present those expressions in report form.

In this instance, both Les Field and Gary Griffiths, Sites Officers, Red Chief Local Aboriginal Land Council, were unaware of any cultural association with the Project Site prior to the investigation. Following the investigation Les and Gary provisionally recommended there should be no impact to either of the scarred trees in the Wean Road easement, and that both trees should be recorded on the Aboriginal Site Register.

A copy of correspondence subsequently received from Red Chief LALC setting out their comments and recommendations, and which confirmed the provisional recommendations of the Sites Officers, is included as **Appendix i.**

Following the investigation of the transport route Les Field and Gary Griffiths, Sites Officers, Red Chief LALC, recommended there should be no impact to either of the scarred trees, and that both trees should be recorded on the Aboriginal Site Register.

A copy of correspondence subsequently received from Red Chief LALC setting out their comments and recommendations, and which confirmed the provisional recommendations of the Sites Officers, is also included as **Appendix i**.

9.2 Research Potential

While each of the sites recorded during this investigation has added to our archaeological knowledge of Aboriginal site types, distribution and content in the local area, none of the features possess sufficient potential of providing further additional new information that would warrant research funding or commitment. The sites are assessed to be of low research potential.

10 MANAGEMENT OPTIONS

10.1 Protective Measures

As referred to in Section 9.1, ASR recommends that measures should be taken to protect the two scarred trees in Wean Road easement. It is proposed that each of the two scarred trees should be ‘protected’ by a circle of vertical posts, of not less than two metres in height, set no more than three metres apart, at a distance of no less than five metres radius from the girth of the trunk at the base of the tree.

In addition, it is recommended that the Gunnedah Local Environment Plan should be updated to show the locations of the trees, to avoid impact to the sites from road maintenance, fire hazard clearing, etc., by Council employees or contractors.

There will be no impact to either of the scarred trees in the closed north-south oriented road adjacent to the "Stratford" property, but to avoid any future potential impact there might be from road maintenance, fire hazard clearing, etc., by Council employees or contractors, it is recommended that their locations should be noted within the Gunnedah Local Environment Plan.

10.2 Monitoring

Red Chief LALC have recommended that their nominated representatives should monitor all turf stripping. The objective being to observe and record any cultural material that might be exposed, and if any is observed, to advise the Proponent to commission a qualified archaeologist to assist in management of the discovery.

ASR agrees that representatives of both Red Chief LALC and Bigundi Biame should monitor topsoil stripping within the limit of open cut mining, particularly within 40m on both sides of the central drainage line.

11 RECOMMENDATIONS

As a consequence of this investigation the Project Site is known to contain three Aboriginal sites of which there was no prior knowledge and that will be directly impacted upon by the Project (B1, B2 and B3). The impact of this disturbance is to be taken into consideration in the determination of the Proponents application for project approval by the Minister for Planning.

In addition, ASR recommends that protective measures should be taken to mitigate the potential for damage to occur to either of two scarred trees near the eastern edge of the Project Site in the Wean Road easement. Those measures should comprise of circles of vertical posts, of not less than two metres in height, set no more than three metres apart, at a distance of no less than five metres radius from the girth of the trunk at the base of each tree. The locations of the two trees should be recorded on the Gunnedah Local Environment Plan.

Similarly, the two scarred trees in the closed north-south oriented road adjacent to the "Stratford" property should be recorded on the Gunnedah Local Environment Plan and the tenants of the property on which they occur ("Stratford") notified of their location and cultural significance. No other management strategy for their protection is required.

In addition, Red Chief LALC and Bigundi Biame have recommended that their representatives should monitor all turf stripping for the proposed open cut coalmine. ASR agrees that monitoring of topsoil stripping should take place within 40m on both sides of the central drainage line. Although there was good archaeological visibility in the vicinity of the site, the distribution of artefactual material indicated that there were no artefacts more than 15m from the drainage line. While isolated artefacts might occur anywhere in the landscape, the monitoring of a 40m wide strip on both sides of the drainage line is considered sufficient to ensure that any significant concentrations of material are recovered.

The Proponent is also advised that in addition to the recommendations above, that under the obligations and provisions imposed by the *National Parks and Wildlife Act 1974* they are obliged to comply with the provisions which state that:

> "The owners, and their employees, earthmoving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, should be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earthmoving, work should cease immediately in the area of the find".
>
> In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains the police are to be informed of its discovery, and officials and/or their representatives of the Red Chief LALC, Bigundi Biame Traditional People, other Aboriginal stakeholder groups (eg. Gunida Gunyah Aboriginal Corporation) and the Cultural Heritage Division, Western Directorate DECC (NPWS), advised that the bone is subject to police investigation."

Work should not recommence in the area of the find, until both the police (if bone has been found) and those officials or representatives have given their permission to do so. Those failing to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the *National Parks and Wildlife Act 1974*, as amended.

APPENDICES

(No. of pages excluding this page = 11)

Appendix i	Correspondence from Red Chief LALC
Appendix ii	Search of the Aboriginal Sites Register
Appendix iii	Site Types

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Appendix i

Correspondence from Red Chief LALC

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P.O. Box 745,
GUNNEDAH. 2380
Telephone (067) 423602

Mr John Appleton
Archaeological Surveys & Reports Pty Ltd
10 Roslyn Avenue
ARMIDALE NSW 2350

WHITEHAVEN COAL MINE – "BELMONT" PROPERTY, WEAN ROAD – 28 KMS FROM GUNNEDAH.

Red Chief Local Aboriginal Land Council summary of results of "Belmont" on 18 & 19 February 2002.

ATTENDANCE: John Appleton – Archaeologist, Wayne Martin – Aboriginal Sites Officer, Les Field – Aboriginal Sites Officer.

SURVEY RESULTS: 5 Artefacts found to east of creek on bank, north of homestead and 20-metre strip of extensive open scatter on western bank south of homestead. Two scarred trees recorded on Wean Road. Area generally very low in resources except clay creek. Visibility generally poor but artefacts not likely to occur in most areas away from the creek.

CONCLUSION: Recommendations are that any work within the 20 metre strip of extensive open scatter on western bank south of homestead and 20 metre strip north of homestead should be monitored by Red Chief Local Aboriginal Land Council. We also recommend that the two scarred trees should not be disturbed in any way, however if this cannot be avoided Whitehaven Coalmine should contact Red Chief Local Aboriginal Land Council as to a preferred option. With the exception of the above recommendations we have no objections to the project proceeding as proposed.

This is to confirm that Red Chief Local Aboriginal Land Council was represented during the Whitehaven Coal Loader field survey.

Yours sincerely

Wayne Martin
Aboriginal Sites Officer

Les Field
Aboriginal Sites Officer

Ellen Draper
Chairperson

RED CHIEF LOCAL ABORIGINAL LAND COUNCIL

P.O. Box 745,
GUNNEDAH. 2380
Telephone (067) 423602

Mr John Appleton
Archaeological Surveys & Reports Pty Ltd
10 Roslyn Avenue
ARMIDALE NSW 2350

WHITEHAVEN COAL MINE – PROPOSED HAUL ROADS – BETWEEN "BELMONT" PROPERTY AND BLUE VALE ROAD.

Red Chief Local Aboriginal Land Council summary of results carried out on 23 July 2002. The Survey carried out was of two route options for haul roads between the proposed coal mine on the "Belmont" property and Blue Vale road on behalf of "Whitehaven" Coal Mine Pty Ltd.

ATTENDANCE: Les Field – Aboriginal Sites Officer, Gary Griffiths – Aboriginal Sites Officer & John Appleton – Archaeologist.

SURVEY RESULTS: There were no archaeological sites found on option route 1. Two scarred trees were recorded in a "closed road" section of option route 2. The first of these will not be affected by a road should this option be selected.

The second scarred tree occurs at the southern end of the "closed road" and there is some potential for the tree to be impacted upon by the road, unless the necessary precautions are taken to protect this tree.

No other archaeological sites were recorded. In some areas there was very good archaeological visibility while in other areas there was none at all. Generally however the Sites Officers considered that it is unlikely that any archaeological material is present, particularly as neither of the routes cross drainage lines or creeks.

CONCLUSION: The Red Chief Local Aboriginal Land Council recommends that if option route 2 is selected that the road is aligned to avoid causing any impact to the tree.

The Red Chief Local Aboriginal Land Council also recommends that both scarred trees be recorded on the Aboriginal Sites Register.

Les Field
Les Field
Aboriginal Sites Officer

G Griffiths
Gary Griffiths
Aboriginal Sites Officer

Appendix ii

Search of the Aboriginal Sites Register

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22 February 2002

Archaeological Surveys & Reports Pty Ltd
10 Roslyn Avenue
Armidale NSW 2350

Attention: John Appleton

Our Ref: AHIMS#5523
Your Ref:

NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE
ABN 30 841 387 271

Dear Sir/Madam,

RE: Aboriginal sites search, Manilla, Proposed Development for the Following Area Zone 56 Eastings: 230000-243000, Northings: 6567000-6598000

Reference is made to your recent enquiry in respect to whether any Aboriginal sites are registered at the above location.

A search of the National Parks and Wildlife Service's (NPWS) Aboriginal Sites Register database has shown that 10 known Aboriginal sites are currently recorded in or near the proposed development area (refer attached report for any site details & the area that was searched).

The following qualifications apply to the Aboriginal Sites Register database;

- The database only includes recorded sites.
- Large areas of New South Wales have not been the subject of systematic survey or the recording of Aboriginal history. These areas may contain sites which are not currently listed on the Aboriginal Sites Register.
- Site records come from a variety of sources and are variable in their accuracy. When a database search identifies sites in or near the area it is recommended that the exact location of the sites be determined by relocation on the ground.
- The criteria used to search the database are derived from information provided by the client and assume that this information is correct.
- This information can only be used for the purpose it was requested for not to made available to public.

You should be aware that all Aboriginal sites are protected under the *National Parks and Wildlife Act 1974*, regardless of their inclusion on the Sites Register, and it is an offence to damage or destroy them without the prior permission of the Director-General of the NPWS.

In determining development applications under the *Environmental Planning and Assessment Act 1979*, local councils must include matters relating to Aboriginal heritage in the decision making process. As part of this process, the NPWS may be asked for advice on whether an area proposed for development should be subject to Aboriginal heritage assessment. NPWS advice is broadly based on the following criteria;

1) The NPWS would normally recommend an Aboriginal heritage assessment under the following circumstances:

43 Bridge Street
PO Box 1967
Hurstville NSW
2220 Australia
Tel: (02) 9585 6444
Fax: (02) 9585 6555
www.npws.nsw.gov.au

- the Sites Register identifies sites in or near the development area, and these could be impacted during or after the development (this includes indirect impacts, such as increased run-off or sedimentation, changes in visitation, etc).

- the proposed development is likely to impact areas of bushland or undisturbed ground.

- the proposed development is likely to impact areas containing sandstone outcrops (greater than $1m^2$), rock shelters and overhangs, old growth trees, sand bodies, and ground adjacent to creeks, rivers, lakes and swamps.

- the proposed development is likely to impact an area of importance to the Aboriginal community not included in the above (eg. story places, buildings, missions, etc)

2) The NPWS would **not** normally recommend an Aboriginal heritage assessment under the following circumstances:

- the proposed development is within land previously subject to intensive ground disturbance, such as quarrying, repeated market gardening, earthworks for pipelines, roads, sports fields etc. However it should be noted that sites could still occur in these context for example, ploughing generally impacts the top 20cm of ground and there is potential that *undisturbed archaeological deposit may occur* in areas where soil depth exceeds 20cm. *Scarred trees* may be located within road reserves and adjacent sport fields, etc.

- the development is within an existing residential or industrial area, or the redevelopment of an existing building is proposed, and the above criteria (listed in section 1) do not apply.

An Aboriginal heritage assessment would provide you with information about the location and significance of sites or sensitive areas, as well as advice on appropriate management options for these areas. It is recommended that an Aboriginal heritage assessment be carried out by a person qualified in undertaking Aboriginal heritage assessments. It is also recommended that the Aboriginal community (Local Aboriginal Land Council, Tribal Council etc) is contacted and its views sought on possible impacts to Aboriginal heritage.

If the proposed development area is found to contain an Aboriginal site, reference should be made to the NPWS requirements for Aboriginal heritage under the Integrated Development Approval Process (*Environmental Planning & Assessment Amendment Act 1997*).

If you wish to discuss this further, please contact Archaeologist, Jill Ruig (02) 6659 8275

Yours faithfully

Rebecca Simon
Aboriginal Sites Registrar
Cultural Heritage Service Division

Aboriginal Heritage Information Management System
National Park and Wildlife Services, NSW

List of Sites (Partial)

AHIMS # 5523 - Manilla

Grid Reference Type = AMG Zone = 56 Easting From = 230000 Easting to = 243000 Northing From = 6567000 Northing to = 6598000

Site Id	AMG / GDA	Zone	Easting	Northing	Access Restrictions			Site Features	Further Site Information Contact	Report ID
					Gender	General	Location			
20-4-0014	AMG	56	230900	6593900	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal) Modified Tree (Carved or Scarred)		
16-4-0002	AMG	56	231950	6593800	None	No	No	Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal)		
20-4-0005	AMG	56	232000	6579000	None			Burial Modified Tree (Carved or Scarred)		
20-4-0036	AMG	56	232750	6573750	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal) Modified Tree (Carved or Scarred)		1169
20-4-0037	AMG	56	232750	6573750	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal) Modified Tree (Carved or Scarred)		1169
20-4-0047	AMG	56	232750	6573750	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal) Modified Tree (Carved or Scarred)		1169
20-4-0003	AMG	56	239000	6569000	None			Modified Tree (Carved or Scarred) Burial		
20-4-0041	AMG	56	241000	6567600	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal)		1169
20-4-0040	AMG	56	241140	6567630	None			Artefact (Stone, Bone, Shell, Glass, Ceramic and Metal)		1169
20-4-0052	AMG	56	241710	6569820	None			Modified Tree (Carved or Scarred)		1258

Number of Sites : 10

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Appendix iii

Site Types

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Site types associated with Indigenous activities and culture

The definitions that follow are for terms used in this report, and do not necessarily apply to their use in different contexts.

Art sites are defined as places where any medium has been applied to a rock surface either as symbols, characters, drawings, paintings, or any other rendition, recognisable as not being a natural discolouration or feature. They also include markings to a rock surface, either by engraving, abrading, or pecking, and which cannot be identified as being a natural feature.

Bora rings are circles of 2-30 metres diameter of compressed earth (from repeated treading or dancing), or stone arrangements, at which men performed initiation ceremonies, and are the most frequently recorded ceremonial sites. Sometimes they occur as two rings joined by a central track in a barbel configuration. They usually occur on level or low-lying country, which is usually the first topographical unit to be cultivated, or utilised for highways and roads, but they may also occur as circular stone arrangements on elevated rock platforms and hilltops. If they are or were present then they are usually either already known and have been recorded, or they have long since been destroyed.

Carved trees are readily recognised by even the untrained observer. The carving is incised either into the outer bark, or more commonly, into the living wood after removal of a section of the bark. The designs frequently consist of 'diamond cross-cuts', but may also consist of stylised animal motifs. Previously unrecorded carved trees are still discovered in relatively remote or inaccessible areas. Carved trees frequently occur near burial sites and/or Bora rings, but in some regions they may have been tribal boundary markers.

Fish traps may occur either in rivers or on seashores. They are recognisable as unnaturally formed stone arrangements that were constructed to trap fish (or eels or turtles) carried into the enclosure in deep water, and which are left stranded within the enclosure as the water level drops. The fish were then caught by nets, hand, or by spear.

Grinding grooves are usually observed on the surfaces of large sedimentary boulders or exposed shelves and outcrops of sedimentary rock along creek banks and beds, or near water. They have been produced by Aborigines using the rock surface to shape and sharpen the edges of stone to produce ground-edged axes, or to sharpen wooden spears (the latter tend to be narrow and deep). Water was used to lubricate the surface of the rock. The grooves frequently occur as linear abraded depressions in the rock, and may each be between 10 and 50 centimetres long, up to 15 centimetres wide, and 2 to 5 centimetres deep. Some sedimentary rock surfaces may exhibit shallow ground depressions of roughly round or elliptical shape, and these are more likely to be associated with seed grinding, root crushing, or other food preparation.

Middens may be identified variously as beach, lagoon, lacustrine, or estuarine, and are most likely to be observed at or above the water line where erosion, topsoil removal, or mining has exposed the shell. The size of the midden can vary enormously, with the smallest comprising a 'one off', 'dinner-time camp' (Meehan. 1982), with as few as two or three shells, or a shallow lens of only a few centimetres. The largest middens may extend for many kilometres and may comprise of a number of lenses and layers of shell and ash up to several metres deep. These large middens may be evidence of continuous exploitation of the resource over many thousands of years. Middens of fresh water mussel shell may be found in eroding creek banks or in eroding terraces, particularly near both existing and defunct water holes.

Isolated shell or fragments may occur on any surface and in any situation. A single shell may have been discarded by a bird, but the presence of use-wear would indicate Aboriginal use of the shell as a tool, which was discarded after use. Such occurrence is likely to be where there is no immediate source of stone material suitable for tool manufacture.

Natural Mythological sites are places of significance to Aborigines, either because they are described in mythological stories or songlines, or because they were used in religious ceremonies. They may occur anywhere and while some are more predictable than others – as for example, permanent water holes, waterfalls, rock promontories, etc., others may have no particularly remarkable features. Seldom is there any recognisable artefactual evidence or anything to distinguish it from similar features in the vicinity. These sites must of necessity be identified by Aboriginal people with an association with the place.

Open sites, campsites, knapping floors, scatters, and isolated artefacts, are most likely to occur on eroded and exposed creek banks, particularly where slope wash or stock trails has removed the humic layer, or on eroded ridges and spurs, particularly near the junctions in watercourses.
Open sites are most likely to be present in greatest numbers near a source of either raw stone material, or potential food resources, or in a natural corridor between two differentially preferred environmental zones, or at the contact between two environmental zones containing different resources.
Artefacts in open scatters are likely to be manufactured from the dominant raw material available; i.e. Greywacke on greywacke-sourced soils, quartz on granite-sourced soils, silcrete and chert on relict sedimentary soils.
Artefact assemblages in open scatters are likely to consist predominantly of discard material, i.e., cores, flakes, flaked pieces, and debitage.
Artefacts exhibiting retouch scars and backing are most likely to occur in sites where secondary activity took place peripheral to the central camp site, although this is a generality and can only be observed where there is sufficient surface visibility to identify peripheral sites. Fragments of flakes with retouch or backing may occur on knapping floors indicating breakage occurring during manufacture, or maintenance areas in which damaged tools have been replaced and discarded.
Isolated artefacts are likely to be most frequently observed where the groundcover obscures all but the larger artefacts, such as cores, and large flakes, or where there is little contrast between the texture of artefactual material and the surface upon which it lies. Artefacts of materials contrasting with the matrix may be visible regardless of size; eg. quartz artefacts may be far more visible than much larger basalt artefacts against a background of dark humic terrace soils.

PADs or Potential Archaeological Deposits are deposits, usually in shelters (but they may also be identified where there are intact deposits in open areas), which although not containing any visible archaeological material, are considered likely to contain archaeological material below the surface. These 'sites' are not recorded as sites on the Aboriginal Site Register, but are identified as places that require subsurface testing to establish whether a site exists or not.

Rock shelters with art or occupation deposits, are most likely to occur where the character of the parent rock is sufficiently massive or consolidated for it to retain a structure that weathers differentially to form shelters and overhangs.

Scarred trees are perhaps the most difficult site type to determine as having been caused by deliberate removal of the bark by humans and not as a consequence of natural events; such as abrasion from falling trees or branches, natural branch attrition, fire damage, or contact from vehicles or stock. They may occur in places wherever there are tree species that produce bark suitable for tool and implement manufacture. While some scars are clearly the consequence of deliberate bark removal by Aborigines (either evidenced by stone axe marks, or identified by Knowledge

Holders), some scars were made by settlers, and stockmen, and surveyors who frequently blazed trails and property boundaries by scarring the trees, and by timber men who removed a strip of bark to test the suitability of a tree for logging.

Other site types such as hearths, burials, etc., are less easily predicted, although burials are frequently associated with carved trees, and Bora rings, and hearths with campsites, shelters, and shell middens.

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