Review of Archaeological Constraints and Management Recommendations for the Branxton Interchange - Proposed National Highway Link F3 to Branxton

July 2005
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1.0 INTRODUCTION

This report briefly outlines the relevant history of Aboriginal cultural heritage assessment undertaken for the F3 to Branxton Project before concentrating on issues relating specifically to the modified route for the Branxton Interchange, which is located between Greta and Branxton, in the Hunter Valley NSW (refer to Figure 1.1).

The report provides details of the potential impact of the construction of the Branxton Interchange on Aboriginal sites and PADs in the area. Information is provided in relation to Aboriginal sites and potential archaeological deposits (PADs) known within the Branxton Interchange area prior to, and subsequent to the current survey. Some of these sites have been salvaged under Section 90 consent (#2102) and some of the PADs have been tested under a Section 87 Permit (#2096) (refer to Sections 2.3 and 2.4 for details).

Documentation of the current survey is provided along with management recommendations for the sites and PAD still extant within the area to be impacted by the construction of the Branxton Interchange. The report concludes with a discussion of the Department of Environment and Conservation (DEC) consent/permit requirements for those sites and PADs where impact cannot be avoided.

1.1 PREDICTED IMPACTS OF BRANXTON INTERCHANGE ON ABORIGINAL CULTURAL HERITAGE

The construction of the Branxton Interchange has the potential to adversely impact upon Aboriginal sites and PADs within the construction impact area. These adverse effects may be as a direct or indirect consequence of the preconstruction, construction and post-construction phases. Table 1.1 indicates potential impacts and how these may affect sites and PADs. The site types discussed are those known in the immediate area from prior survey (Brayshaw 1994, 2001, Umwelt 2005) and those known in the broader area from the DEC/AHIMS site database.

Table 1.1 - Potential Impacts Sites/PADs/Areas of Aboriginal Cultural Heritage Sensitivity

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>Sites/PADs/Areas of Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct impact by geotechnical testing</td>
<td>• artefact scatters and isolated finds are the most likely site types to be affected by boresome drilling associated with geotechnical testing.</td>
</tr>
<tr>
<td>Highway link construction</td>
<td>• bridge/culvert construction, vegetation clearance and ground disturbance has the potential to impact PADs, artefact scatters isolated finds and grinding grooves (grinding grooves could be located within Anvil Creek);</td>
</tr>
<tr>
<td></td>
<td>• grinding grooves located in close proximity to the route alignment;</td>
</tr>
<tr>
<td></td>
<td>• increases of sediment in the bedload of streams brought about downstream of the highway link construction area may cause increased erosion (by abrasion) of grinding groove sites.</td>
</tr>
<tr>
<td>Post construction phase</td>
<td>• increases in sediment bedload of streams brought about downstream of drainage from the highway link may cause increased erosion (by abrasion) of grinding groove sites.</td>
</tr>
</tbody>
</table>
2.0  HISTORY OF ABORIGINAL CULTURAL HERITAGE SURVEY AND ASSESSMENT

2.1  BRAYSHAW 1994, 2001

The initial assessment of the route alignment was undertaken in 1994 by Brayshaw MacDonald for Connell Wagner and the results of this survey are presented in Working Paper No. 6 of the 1995 Environmental Impact Statement. The 1994 survey was undertaken in consultation with Mindaribba Local Aboriginal Land Council (MLALC). The initial survey located 10 Aboriginal sites (including five artefact scatters and five isolated finds) and 10 PADs along the entire length of the route alignment surveyed at that time.

A review by National Parks and Wildlife Service (NPWS) (now part of the Department of Environment and Conservation - DEC) of the 1994 survey and assessment produced for the EIS by Brayshaw, found that further work was required to meet the current reporting guidelines and the guidelines associated with the Integrated Development Assessment process. The NPWS review of the 1994 report resulted in a request for additional works to comply with new assessment requirements.

Additional information required by the NPWS included:

- documentation from appropriate Aboriginal groups and consideration of their views in the development of the predictive landscape model and definition of sensitive cultural landscapes;
- statement of methodology employed for surveys as well as relevant visibility data showing the relationship between survey coverage and the topographic units to support the interpretation of the results;
- mapping of geology, land system and topographic units within the land system;
- review of subsequent studies undertaken since 1994 to provide support for a predictive model for the landscape along the approved route alignment and assessment of the survey results in view of the revised predictive model;
- development of a predictive model for site and sensitive landscape distribution and criteria for the definition and identification of PADs; and
- re-evaluation of the management options including conservation options as part of any compensatory habitat outcomes, requirements for further investigation, etc.

In 2001 Brayshaw provided the requisite report to NPWS. For this report Brayshaw included consultation with both MLALC and Awabakal Local Aboriginal Land Council (ALALC). Brayshaw indicated in her concluding remarks that her assessment related to the archaeological significance of the sites located and not to the Aboriginal cultural heritage value of the area to be crossed by the approved route alignment. According to Brayshaw this was still to be determined by ‘the Aboriginal people themselves’.

2.2  CONDITIONS OF APPROVAL F3 TO BRANXTON PROJECT (2001)

In September 2001, the Chief Executive of the Roads and Traffic Authority (RTA) decided to proceed with the proposed highway link and subsequently sought the concurrence of the Director-General of NPWS and the approval of the NSW Minister for Planning. Conditional
concurrence was granted by the Director-General of NPWS on 3 October 2001 and on 7 November 2001 the Minister for Planning granted conditional approval for the highway link.

Conditions 100 to 112 (inclusive) of the Approval by the Minister for Planning relate to Heritage and Archaeology. Condition 100 of the Approval by the NSW Minister for Planning (Andrew Refshauge MP, also Minister for Aboriginal Affairs at this time) identified the appropriate Aboriginal community groups for involvement in the consultation process as:

- Awabakal Local Aboriginal Land Council (ALALC);
- Lower Wonnarua Tribal Council (LWTC - later to become Lower Wonnarua Tribal Consultancy Pty Ltd);
- Mindaribba Local Aboriginal Land Council (MLALC); and
- Wonnarua Nation Aboriginal Corporation (WNAC).

At the request of NPWS, RTA increased this list to include consultation with:

- Barkuma Neighbourhood Centre (BNC); and
- Black Creek Aboriginal Corporation (BCAC).

In order to meet the conditions imposed by the Minister for Planning, RTA was required to complete six tasks. The tasks are broadly described as follows and collectively form Stage 2 of the Aboriginal Cultural Heritage Assessment:

1. coordinate and assist Aboriginal community groups with the preparation of Aboriginal Cultural Heritage Assessments;
2. undertake a comprehensive Aboriginal Heritage Offset Study;
3. prepare a detailed research program and undertake a series of test excavations;
4. identify and document management zones for the ongoing management of sites along the route corridor;
5. prepare a Cultural Heritage Plan of Management; and
6. undertake a salvage program as required by the NPWS and the local Aboriginal community groups.

2.3 UMWELT 2003, 2004, 2005

In August 2002, Umwelt (Australia) Pty Limited was commissioned to undertake Task 1 of the Additional Aboriginal Heritage Assessment and over the following 12 months assisted ALALC, BCAC, BNC, LWTC and MLALC (WNAC chose not to participate) to prepare their cultural heritage assessments. The area assessed for Aboriginal cultural heritage values/sensitivity included the entire route alignment and a corridor five kilometres either side. Task 1 was completed and the report forwarded to DEC in September 2003.

During the Aboriginal cultural heritage assessment process a constraint recognised by all the participating groups was the lack of broader consultation during the initial survey and assessment.
period (Brayshaw 1994, 2001). Another constraint was that the route alignment was not pegged during the initial survey period (Brayshaw 1994), suggesting the areas to be impacted may not have been adequately investigated. Therefore, all of the groups recommended that the entire route alignment, and any associated areas that may be impacted throughout the preconstruction and construction period, be inspected after the alignment was clearly pegged. Following further consultation with the groups it was agreed that ALALC should investigate and assess the impact of the project within their Land Council zone (the Section 1 area), whilst the rest of the groups investigated and assessed the remaining route alignment within MLALC’s zone (Section 2).

In November 2003, Umwelt (in prep.) was commissioned to undertake the inspection of the route alignment and associated areas of impact as part of Task 3 of the Additional Aboriginal Heritage Assessment. At the request of DEC the inspection was to focus on obtaining information related to the distribution of Aboriginal resources (e.g. water, food and medicinal plants, stone for tool manufacture, shelter, areas with expansive outlooks, areas suitable for camping, etc) in the landscape and how this related to site distribution. The inspection was also to be used as an opportunity to collect data to formulate the detailed research design and methodology required for the salvage of sites and investigation of PADs to be impacted by the highway link project.

The report relating to the investigation of the F3 route alignment has not been completed at the time of writing as some areas still remain that require inspection and assessment (areas where landholders have not given permission for entry, modifications to the route etc.). The inspection undertaken of the route alignment and access tracks required for geotechnical testing and road construction located in Sections 1 and 2, located 87 sites, 22 areas of potential archaeological deposit, two areas of cultural heritage significance and seven items of European heritage value. Table 2.1 provides a breakdown of the site types located.

Table 2.1 - Site Types/PADs Located in Section 1 and 2 of the F3 to Branxton Route Alignment

<table>
<thead>
<tr>
<th>Site Type</th>
<th>Isolated Find</th>
<th>Artefact Scatter</th>
<th>Grinding Grooves</th>
<th>PAD</th>
<th>Stone Arrangements</th>
<th>Area of Cultural Heritage Value</th>
<th>Historic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>29</td>
<td>50</td>
<td>8</td>
<td>22</td>
<td>3 (recorded as one site)</td>
<td>2</td>
<td>7</td>
<td>121</td>
</tr>
</tbody>
</table>

*Please note that this total includes some sites that were also recorded as incorporating a PAD.

In order to allow for geotechnical testing and the timely commencement of highway link construction, Umwelt (2004, 2005) prepared a Section 87 Permit application and two Section 90 Consent applications (with the requisite Research Design and Methodologies) for sites, PADs and landforms along the route alignment. Section 90 consent was granted by DEC for sites within the Section 1 area on 7 June 2004 (NPWS #1940). The salvage of the sites and PADs in this area was undertaken in July 2004. Section 90 consent (# 2102) was granted for the collection of 66 sites on 14 February 2005. Section 87 permit (#2096) for the subsurface testing of 18 PADs, four sites and multiple landform units was granted on 16 February 2005. The surface collections were undertaken in April 2005 and the subsurface testing commenced in April 2005 and will continue until August 2005. Figures 2.1 and 2.2 indicate the location of the sites and PADs and the management recommendations currently approved by the DEC.

2.4 KNOWN SITES WITHIN THE BRANXTON INTERCHANGE AREA

Prior to the inspection of the area proposed for impact by the Branxton Interchange there were several sites and PADs that had been recorded during the route alignment inspections carried out
by Umwelt (2005) and Brayshaw (1994, 2001) in the area. Figure 2.3 indicates the sites and PADs located in proximity to the Branxton Interchange area known prior to the April 2005 survey.

The southern on/off ramp for the Branxton Interchange (from the Main Northern Railway to Wine Country Drive) and the roundabout area were surveyed by Umwelt in January 2004 during the route alignment inspection. Inspection of the area to the north of the Main Northern Railway could not be undertaken at that time as landholder permission for access was not available. Of the sites/PADs located in January 2004, only Anvil Creek RTA 11 IF is within the area of direct impact by construction of the Branxton Interchange. The remaining sites on the southern side of the Main Northern Railway are on tracks required for access during geotechnical testing and during highway link construction for the route alignment of the main carriageway. The PAD (PAD18) extends into the area to be impacted by the main carriageway (but not the Branxton Interchange).

The survey results, site significance assessment and site and PAD descriptions for the previously surveyed area are discussed in Umwelt (2005). Subsequent to the inspection of the southern section of the Branxton Interchange, DEC Section 90 consent and Section 87 permit applications were prepared in consultation with all five Aboriginal groups. The sites have subsequently been collected and the southern area of the Branxton Interchange, including the roundabout has been cleared of cultural heritage constraints. PAD 18 was subject to subsurface testing in May 2005 resulting in the retrieval of a very low number of artefacts. PAD 18 is outside the area of impact from the Branxton Interchange and thus not directly relevant to this report.

Table 2.2 indicates the current status of the previously recorded sites (eg. salvaged under Section 90, subsurface tested under Section 87, no impact). The PAD (shown in yellow) and isolated find (shown in blue) on Figure 2.3 were located by Brayshaw in 1994 are in an area initially proposed for an off ramp for the highway link. The current Branxton Interchange is a modification to that original design.

<table>
<thead>
<tr>
<th>Site/PAD</th>
<th>Site Type</th>
<th>Status</th>
<th>Further salvage required prior to impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anvil Creek RTA 10</td>
<td>Artefact scatter</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 11 IF</td>
<td>Isolated find</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 18IF</td>
<td>Isolated find</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 19</td>
<td>Artefact scatter</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 20IF</td>
<td>Isolated find</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 21</td>
<td>Artefact scatter</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>Anvil Creek RTA 22</td>
<td>Artefact scatter</td>
<td>Salvaged under Section 90 Consent #2102</td>
<td>No further salvage required</td>
</tr>
<tr>
<td>PAD 18</td>
<td>PAD</td>
<td>Subsurface tested under Section 87 Permit #2096</td>
<td>If substantial numbers of artefacts are located during subsurface testing further salvage may be required.</td>
</tr>
</tbody>
</table>
Table 2.2 - Site/PAD Status (Cont)

<table>
<thead>
<tr>
<th>Site/PAD</th>
<th>Site Type</th>
<th>Status</th>
<th>Further salvage required prior to impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF1</td>
<td>Isolated find</td>
<td>Outside impact area-no impact</td>
<td>N/A</td>
</tr>
<tr>
<td>PAD (Blue)</td>
<td>PAD</td>
<td>Outside impact area -no impact</td>
<td>N/A</td>
</tr>
<tr>
<td>H3 Historic site</td>
<td>Brick culvert under Main Northern Railway</td>
<td>Outside impact area -no impact</td>
<td>N/A</td>
</tr>
</tbody>
</table>

3.0 METHODOLOGY AND RESULTS OF THE BRANXTON INTERCHANGE SURVEY

3.1 ABORIGINAL CONSULTATION

Consultation with BCAC, BNC, LWTC, MLALC and WNAC has been ongoing in relation to the highway link project since August 2002 and inspection of the Branxton Interchange area was undertaken in two parts. The area to the south of the Main Northern Railway was surveyed in January 2004. The area to the north of the Main Northern Railway was surveyed in April 2005. Participants in the survey in January 2004 were: Ann Hickey (BNC), Hazel Bradford (BCAC) and Chris Turnbull and David Jackson (WNAC). Participants in the April 2005 survey were: Ann Hickey (BNC), Hazel Bradford (BCAC), Arthur Fletcher (MLALC) and Maree Waugh (LWTC). All five groups were afforded the opportunity to participate in the surveys, however, not all five groups could participate due to other commitments on the day.

3.2 METHODOLOGY FOR THE INSPECTION

Inspection of the total area to be impacted by the Branxton Interchange was undertaken on foot. The centreline of the route alignment and the on/off access ramps were pegged to assist with the survey. Participants in the survey spread out in a line at 5 to 10 metre intervals. Ground surface visibility was generally poor due to pastoral grasses. Occasional patches of visibility were provided where rock outcropped at the surface (in the northern section) or where the survey transect crossed an existing power easement and access track (in the southern section). Where the route alignment crossed Anvil Creek it was inspected for at least 200 metres upstream and downstream of the edge of the route alignment to check for grinding grooves or sites along the banks of the creek.

All sites/PADs identified were recorded in detail. The Aboriginal significance was discussed with the Aboriginal group representatives and archaeological significance of each of the sites/PADs was assessed according to DEC guidelines so that appropriate management recommendations could be formulated taking the significance assessment into account.

3.3 RESULTS OF THE INSPECTION

As the sites in the southern section of the area to be impacted by the proposed Branxton Interchange have already been salvaged this section of the report will relate specifically to the northern section (north of the Main Northern Railway).
3.3.1 Landform Units

The survey followed the pegged route of the on/off ramp from the New England Highway to the Main Northern Railway (north to south). The survey team began on the upper slope (gradient two to three degrees) and moved downslope across the midslope (three degrees) and lower slope (one to two degrees) (Plate 1). The survey team then crossed a first creek terrace (40 metres wide - Plate 2) before dropping down to the current floodplain, that is only 5 to 10 metres wide in this area. The survey team crossed Anvil Creek in an area where the creekline contained large expanses of conglomerate outcrop, conglomerate benches and deep rock waterholes (Plate 3). The creek was flowing at the time of the survey. The creek is approximately 15 metres wide in this area. The survey transect then crossed the lower mid and upper slope and crest of a low spur that runs between two shallow grassy watercourses which are minor first order tributaries of Anvil Creek (Plate 4). The survey ended at the second watercourse which flowed under the Main Northern Railway at this point. There was no floodplain or terrace development within the area inspected on the southern side of Anvil Creek.

3.3.2 Vegetation and Ground Surface Visibility

The entire area surveyed was covered with improved pastoral grassland with occasional patches of Hakea spp. and regrowth Casuarina spp. and Acacia spp. along the banks of Anvil Creek (Plate 1). Lomandra spp. (mat rush) was observed growing along the banks of Anvil Creek and Triglochin procera (water ribbons), Typha orientalis (bulrush) and Phragmites australis (common reed) were noted growing within areas of still water in the creek. All four of these plants were species used by Aboriginal hunter-gatherers for food and/or fibre.

Ground surface visibility was zero in all landform units except the first creek terrace on the northern side of Anvil Creek (Plate 2). In this area visibility was 50%.

3.3.3 Geology and Soils

Soils in the area are very sandy loams over a pebbly conglomerate. Pebbly conglomerate outcrops in several areas on the slopes indicating that the soil is very shallow. The soil appears to be substantially deeper on the first creek terrace and the modern floodplain. The pebbly conglomerate outcrops at intervals along the Anvil Creek and Redhouse Creek to the north (refer to Section 3.3.4).

3.3.4 Watercourses

Anvil Creek was flowing at the time of the inspection. The size of the creek and the amount of water it carries, suggests that in pre-European times it would have supported fish, eels, freshwater crayfish and tortoises, making it a useful food resource for Aboriginal people.

The base of Anvil Creek in the survey area is a coarse, poorly cemented pebbly conglomerate (Plate 3). The pebbly conglomerate outcrops as benches along the creek and deep pools form upstream of the benches. These pools hold freshwater for an extensive period after rain. The nature of the creekline indicates that it would have provided a valuable freshwater resource for Aboriginal people. It is probable that water would have been available in this area during extended dry periods when waterholes further upstream may have dried out.

The pebbly conglomerate exposures within the creek were inspected, however, no axe grinding grooves were observed. It is unlikely that the course of Anvil Creek in this area has changed since European settlement as it cannot cut down any further into its bedrock base and is confined within its bedrock channel.
PLATE 1
Start of survey transect, Upper slope, Pogo mark controlling of on/off ramp, Facing south-west towards confluence of Avril and Osbourn Creek.

PLATE 2
First creek terrace on northern side of Avril Creek and within power accessment. Area recorded as PAR21. Facing west.
PLATE 3
Waterhole and pebbly conglomerate outcropping in Arrell Creek
in area where tramway crossed creek. Facing east-south-east.

PLATE 4
Low spur between two minor tributaries of Arrell Creek. Main Northern Railway
in background. Southern side of Arrell Creek. Facing west-south-west.
3.3.5 Prior Disturbance

The whole of the area surveyed had been cleared and cultivated. According to a neighbouring farmer the land had been cultivated for at least 30 years before being used for grazing (mainly cattle and horses). On the southern side of the creek there has been a problem with woody weed regrowth (*Hakea* spp.) and the landholder has bulldozed sections of the area surveyed (on numerous occasions) to remove this pest.

Prior disturbance was noted from the construction of the New England Highway at the start of the survey and the Main Northern Railway at the end of the survey.

3.3.6 Sites and PADs located

One isolated find (Anvil Creek 27) and one area of PAD (PAD 21) were located during the survey of the area to be directly impacted by the construction of the Branxton Interchange (refer to Plates 2 and 5). **Table 3.1** provides a description of the site and PAD located. The table also provides details of their location in relation to the proposed Branxton Interchange.
PLATE 5
An isolated tuff (April Creek 271F) was located on conglomerate outcropping on the southern side of April Creek. Facing west-south-west at CH500

PLATE 6
Area at the confluence of Redhouse Creek and April Creek. Artifacts (Redhouse Creek 1 site) were observed eroding out of scree at the top of the eastern bank. Facing north upstream along Redhouse Creek.
Table 3.1 - Aboriginal sites and PAD located during the investigation of the northern section of the proposed Branxton Interchange

<table>
<thead>
<tr>
<th>Site Name/Type</th>
<th>Site Type</th>
<th>No. of Artefacts</th>
<th>AMG Easting</th>
<th>AMG Northing</th>
<th>MGA Easting</th>
<th>MGA Northing</th>
<th>Description</th>
<th>Location in relation to proposed Branxton Interchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD 21</td>
<td>PAD</td>
<td>N/A</td>
<td>346711</td>
<td>6384511</td>
<td>346816</td>
<td>6384700</td>
<td>The PAD is located on a first creek terrace on the northern side of Anvil Creek. The terrace is approximately 40 m wide and about 1 m higher than the current floodplain. The current floodplain is only 5 to 10 m wide in this area. Anvil Creek has numerous conglomerate benches that form weirs across the creek. Large waterholes exist behind the rock benches. There were numerous aquatic plants and animals noted in this area that are known food sources for Aboriginal people. The PAD is within an existing power easement. Topsoil depth in this area is estimated at approximately 1 m. The easement is bounded by regrowth Casuarina spp.</td>
<td>The PAD is within the area to be impacted by an on/off ramp on the northern side of Anvil Creek.</td>
</tr>
<tr>
<td>Anvil Creek 27</td>
<td>Isolated</td>
<td>1</td>
<td>346521</td>
<td>6384350</td>
<td>346626</td>
<td>6384539</td>
<td>A single silcrete flake was located on the midslope of a spur between two minor tributaries of Emu Creek. The artefact was sitting on top of outcropping conglomerate. This area has been subject to cultivation and since cultivation ceased, to regular clearance of Hakea using a bulldozer.</td>
<td>On centreline of on/off ramp (next to CH300 peg) on southern side of Anvil Creek.</td>
</tr>
<tr>
<td>Redhouse Creek 1</td>
<td>Artefact Scatter and PAD</td>
<td>34</td>
<td>346462</td>
<td>6384549</td>
<td>346567</td>
<td>6384738</td>
<td>A scatter of artefacts was located in areas of erosion associated with the banks of Redhouse Creek and Anvil Creek at the confluence of the two creeks. A spur crest divides the two creeks and provides an elevated camp site in an area with semi-permanent to permanent water. It is assessed that the spur crest area within the vicinity of the creek confluence will have relatively large numbers of artefacts in a subsurface context.</td>
<td>The site and associated PAD are approximately 100 m to the west of the area to be impacted by the construction of the Branxton Interchange</td>
</tr>
</tbody>
</table>
It was recognised during the survey that the area associated with Anvil Creek and especially the
confluence of Anvil Creek and Redhouse Creek to the northwest, was sensitive from an Aboriginal
and archaeological perspective. It was decided to enlarge the survey area to incorporate this creek
confluence so that recommendations could be made for the protection of this area if thought
warranted. The survey of this additional area resulted in the recording of an artefact scatter
incorporating a large area of associated PAD (Redhouse Creek 1 - refer to Plates 6, 7 and 8).

DEC site cards have been included in Appendix 2.

3.4 INTERPRETATION OF THE RESULTS OF THE SURVEY

The results of the survey when seen in the light of the results of the broader inspection of the area
undertaken as part of the route alignment inspection, suggest that a light background scatter of
artefacts could be expected in a subsurface context across the whole of the survey area and its
environs. Larger concentrations of artefacts could be expected in the vicinity of waterholes along
Anvil Creek with the greatest concentration occurring on the northern (higher) side of Anvil Creek
within the area at the confluence of Anvil Creek and Redhouse Creek (refer to Figure 3.1).

The creek terrace located on the northern side of Anvil Creek is not confined to the area of impact
and extends approximately 500 metres to the southeast and 100 metres to the northwest of the area
proposed for the Branxton Interchange. The terrace may not be of great antiquity as the floodplain
it adjoins appears very recent in nature. The depth of the terrace deposits, however, does provide
the potential for the location of artefacts which may retain some degree of archaeological integrity
below the plough zone.

4.0 SIGNIFICANCE ASSESSMENT

Cultural heritage significance is a measure of the relative value or importance of Aboriginal sites.
Significance is assessed according to principles outlined originally in Australia in the Burra Charter
(1979), which was adapted from the UNESCO sponsored ICOMOS (International Council for
Monuments and Sites) Venice Charter. The assessment of significance assists in the determination
of appropriate cultural heritage management procedures for sites/artefacts that may be threatened
by development activities. Assessing the significance of Aboriginal archaeological sites is an
extremely complicated process that must take into account the interests of many parties.

The Burra Charter defines cultural significance as the ‘aesthetic, historic, scientific or social value
for past, present or future generations’ of a place. The DEC (NPWS Guidelines 1997) provides
further discussion on the assessment of cultural significance for Aboriginal sites, and for artefact
scatter sites in particular. Categories of significance relevant to Aboriginal archaeological sites
include Aboriginal significance, archaeological/scientific significance, aesthetic significance,
tourism potential and educational significance. The NSW NPWS Guidelines for Archaeological
Report Writing (1997: 25) states:

> While Aboriginal sites and places may have educational, tourism, and other values to groups
> in society their principle values are likely to be in terms of their cultural/social significance to
> Aboriginal people and their scientific significance to archaeologists. It is thus possible to
> identify two main streams in the overall significance assessment process: the assessment of
> cultural/social significance to Aboriginal people and the assessment of scientific significance
> to archaeologists.

Therefore, the significance of the sites and PAD within the proposed Branxton Interchange area
will be assessed in relation to their Aboriginal significance and their scientific or archaeological
significance. The criteria for assessing each type of archaeological ‘significance’ will be detailed in
Section 4.2. The scientific significance assessment of the sites and the potential significance of
PLATE 7
Aboriginal community participants searching for artefacts in the Redhouse Creek 1 site, at the confluence of Austin and Redhouse Creeks. Facing south-south west

PLATE II
Low spur crest at the confluence of Redhouse Creek and Austin Creek. This area is predicted to have relatively large numbers of subsurface artefacts (part of the Redhouse Creek 1 site). Facing west-south-west towards the creek confluence.
the PAD recorded during the survey for this project will be discussed and justification for their significance ranking provided.

### 4.1 ABORIGINAL SIGNIFICANCE

Aboriginal cultural significance can only be assessed by the relevant Aboriginal community groups and often varies from that of archaeological significance. Table 4.1 presents the assessment of Aboriginal significance provided by the representatives of the Aboriginal groups present during the survey. The Aboriginal significance of the sites and PAD is derived from their perceived cultural heritage sensitivity. From the table it can be seen that the Aboriginal representatives identified varying degrees of cultural heritage significance for the sites and PAD.

#### Table 4.1 - Aboriginal Significance

<table>
<thead>
<tr>
<th>Site/PAD/Area Name</th>
<th>Aboriginal Cultural Heritage Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anvil Creek 27 Isolated find</td>
<td>Moderate</td>
</tr>
<tr>
<td>PAD 21</td>
<td>High</td>
</tr>
<tr>
<td>Redhouse Creek 1 and PAD</td>
<td>High</td>
</tr>
</tbody>
</table>

The Aboriginal groups also highlighted the sensitivity of Anvil Creek itself. The creek was seen to be a valuable resource which would have provided a focus for Aboriginal occupation of the area. Thus, the groups would like to see the construction proposed in the area have limited impact on the actual creekline. In this instance they desired assurance that the on/off ramp would cross over Anvil Creek via a bridge rather than using culverts (in this regard the RTA design for the crossing does provide for a bridge to cross Anvil Creek).

A copy of the draft report was forwarded to the groups on 25 May 2005 for their comment. The comments received from the groups are included in (Appendix 1) and summarised in Section 5.7.

### 4.2 ARCHAEOLOGICAL/SCIENTIFIC SIGNIFICANCE ASSESSMENT

The archaeological or scientific significance of the sites and PAD and the potential archaeological deposits were assessed according to their value to contribute to furthering of the archaeological/scientific understanding of Aboriginal culture (their archaeological research potential) in the local and regional context. Six criteria were assessed to deduce archaeological research potential, these were:

- rarity;
- representativeness;
- integrity;
- connectedness;
- complexity; and
- potential for archaeological deposit.
4.3 RANKING OF CRITERIA FOR EVALUATING ARCHAEOLOGICAL SIGNIFICANCE

Table 4.2 indicates how the sites and PAD were evaluated in relation to each of the six criteria to assess their overall archaeological research potential. For the purpose of this assessment PAD21 is viewed as a potential site and is thus assessed as far as possible as if it were a site. Following the table, each of the criteria is discussed and justification provided for the assessed levels of significance.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Low (Score of 1)</th>
<th>Moderate (Score of 2)</th>
<th>High (Score of 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarity</td>
<td>• The location of the site within the landscape, its type, integrity contents and/or potential for subsurface artefacts is common within the local and regional context.</td>
<td>• The location of the site within the landscape, its type, integrity contents and/or potential for subsurface artefacts is common within the regional context but not the local context.</td>
<td>• The location of the site within the landscape, its type, integrity contents and/or potential for subsurface artefacts is rare within the local and regional context.</td>
</tr>
<tr>
<td>Representativeness</td>
<td>• This site when viewed in relation to its type, contents, integrity and location in the landscape is common within a local and regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.</td>
<td>• This site when viewed in relation to its type, contents, integrity and location in the landscape is uncommon within a local context but common in a regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.</td>
<td>• This site when viewed in relation to its type, contents, integrity and location in the landscape is uncommon within a local and regional context and sites of similar nature (or in better condition) are not already set aside for conservation within the locality or region.</td>
</tr>
<tr>
<td>Integrity</td>
<td>• Stratigraphic integrity of the site has clearly been destroyed due to major disturbance/loss of topsoil. The level of disturbance is likely to have removed all spatial and chronological information.</td>
<td>• The site appears to have been subject to moderate levels of disturbance, however, there is a moderate possibility that useful spatial information can still be obtained from subsurface investigation of the site, even if it is unlikely that any useful chronological evidence survives.</td>
<td>• The site appears relatively undisturbed and there is a high possibility that useful spatial information can still be obtained from subsurface investigation of the site, even if it is still unlikely that any useful chronological evidence survives. (In cases where both spatial and chronological evidence is likely to survive the site will gain additional significance from high scores for rarity and representativeness).</td>
</tr>
<tr>
<td>Criterion</td>
<td>Low (Score of 1)</td>
<td>Moderate (Score of 2)</td>
<td>High (Score of 3)</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Connectedness** | • There is no evidence to suggest that the site is connected to other sites in the local area or the region through:  
  - their chronology (rarely known);  
  - their site type (eg. connectedness could be argued between an axe quarry, a nearby set of axe grinding grooves and an adjacent site exhibiting evidence of axe reduction);  
  - by the use of an unusual raw material, knapping technique/reduction strategy;  
  - similar designs/motifs in the case of art sites and engravings; and  
  - information provided by Aboriginal oral history. | • There is some evidence to suggest that the site is connected to other sites in the local area or the region through:  
  - their chronology (rarely known);  
  - their site type (eg. connectedness could be argued between an axe quarry, a nearby set of axe grinding grooves and an adjacent site exhibiting evidence of axe reduction);  
  - by the use of an unusual raw material, knapping technique/reduction strategy;  
  - similar designs/motifs in the case of art sites and engravings; and  
  - information provided by Aboriginal oral history. | • There is good evidence to support the theory that the site is connected to other sites in the local area or the region through:  
  - their chronology (rarely known);  
  - their site type (eg. connectedness could be argued between an axe quarry, a nearby set of axe grinding grooves and an adjacent site exhibiting evidence of axe reduction);  
  - by the use of an unusual raw material, knapping technique/reduction strategy;  
  - similar designs/motifs in the case of art sites and engravings; and  
  - information provided by Aboriginal oral history. |
| **Complexity**   | • The site does not exhibit and is not predicted to contain either of the following in a subsurface context:  
  - a complex assemblage of stone artefacts in terms of artefact types and/or raw materials (including use of local and imported raw materials) and/or knapping techniques/reduction strategies; and  
  - features such as hearths or heat treatment pits, activity areas. | • The site exhibits or can be predicted to contain one of the following in a subsurface context:  
  - a complex assemblage of stone artefacts in terms of artefact types and/or raw materials and/or knapping techniques/reduction strategies and/or use of local and imported raw materials; and  
  - features such as hearths or heat treatment pits, activity areas. | • The site exhibits or can be predicted to contain both of the following in a subsurface context:  
  - a complex assemblage of stone artefacts in terms of artefact types and/or raw materials and/or knapping techniques/reduction strategies and/or use of local and imported raw materials; and  
  - features such as hearths or heat treatment pits, activity areas. |
Table 4.2 - Criteria Used in Evaluating Archaeological Significance (cont)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Low (Score of 1)</th>
<th>Moderate (Score of 2)</th>
<th>High (Score of 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD</td>
<td>• The site does not have or has only a low potential to contain subsurface archaeological material that has stratigraphic integrity or is of a nature that suggest its subsurface investigation would assist with answering questions of contemporary archaeological interest or that indicate it should be preserved for its future research potential.</td>
<td>• The site has a moderate potential to contain subsurface archaeological material that has stratigraphic integrity or is of a nature that its subsurface investigation would assist with answering questions of contemporary archaeological interest or that indicate it should be preserved for its future research potential.</td>
<td>• The site has a high potential to contain subsurface archaeological material that has stratigraphic integrity or is of a nature that its subsurface investigation would assist with answering questions of contemporary archaeological interest or that indicate it should be preserved for its future research potential.</td>
</tr>
</tbody>
</table>

The sites and PAD were afforded a numerical value for each significance criterion so that an overall significance assessment could be quantified. The values for each criterion were scored as follows:

- low significance was afforded a score of 1;
- moderate significance was afforded a score of 2; and
- high significance was afforded a score of 3.

Overall significance was scored as follows:

- low significance 12-15;
- low to moderate significance 16-19;
- moderate significance 20-23;
- moderate to high significance 24-27; and
- high significance 27+.

If the site/PAD was assessed to have low local significance (when compared to other sites within a five kilometre radius) for any criterion then this aspect of the site was also deemed be low at the regional level. If, however, the site/PAD was assessed as having moderate or high archaeological significance on a local scale for any criterion, then it was assessed against other sites known from the literature in the broader Singleton/Muswellbrook area.

4.3.1 Rarity

A site/PAD may be thought of as rare if it represents or has the potential to represent a site type or has the potential to have site contents that are uncommon in the local and/or regional context. Other sites may be composed of common elements, but may be preserved in an unusually informative way or in a landform context that is atypical. Some common site types like artefact scatters, may have increased significance for ‘rarity’ if most other similar sites in the area have been destroyed by development and if no similar sites are being conserved in the locale/region.
Small artefact scatter sites and isolated finds near creeks and areas of PAD in alluvial deposits along creeks are common both locally and regionally and similar sites are known, and could be predicted, upstream and downstream along Anvil Creek, that are outside areas proposed for impact by the construction of the Branxton Interchange and the broader F3 highway link project. Thus the Anvil Creek 27IF site and PAD21 are assessed as having low archaeological significance for rarity on a local and regional scale, however, there are few larger sites with PAD that are actually being conserved or have the potential to be conserved into the future. Thus, the Redhouse Creek 1 artefact scatter site and associated PAD is assessed as having high archaeological significance for rarity on a local scale and moderate archaeological significance for rarity on a regional scale.

4.3.2 Representativeness

One of the objectives of cultural heritage management is to ensure that a representative sample of all site types is preserved in the variety of landscapes in which they occur. Like many other natural resources, archaeological sites are a non-renewable resource. Once they are destroyed they cannot be replaced or replicated. As a result, one of the aims of a scientific value assessment is to examine the potential of newly discovered sites to be conserved to act as ‘representative’ examples of a particular site type.

Small artefact scatter sites, isolated finds and PADs are common both locally and regionally. Isolated finds on slopes are very common in the general Greta/Branxton area and have similar artefact types manufactured from similar raw materials to Anvil Creek 27IF. Many of these isolated find sites will be destroyed by highway link construction, but there are sufficient isolated finds that will not be impacted to lessen the representativeness value of the Anvil Creek 27IF site to low on a local and regional scale. The area of PAD (PAD21) on the first creek terrace, is part of an extensive area of terrace along this section of Anvil Creek, the majority of which is not to be impacted by construction of the Branxton Interchange. Thus, PAD21 is also assessed as having low archaeological significance on a local and regional scale for representativeness. As there are few larger artefact scatter sites with PAD known, that are actually being conserved or have the potential to be conserved into the future, the Redhouse Creek 1 artefact scatter site and associated PAD is assessed as having high archaeological significance for representativeness on a local scale and moderate archaeological significance on a regional scale.

4.3.3 Integrity

Each archaeological site/PAD represents/has the potential to represent, a number of pieces of evidence spatially organised both by human behaviour and by subsequent environmental and land-use effects. When a site/PAD has been subject to relatively few environmental or land-use (post-depositional) processes it will represent more directly the original human activities which created it. Such undisturbed sites/PADs are considered to have archaeological integrity and may have the potential to answer research questions of relevance to both the Aboriginal and archaeological community. Sites/PADs with archaeological integrity are necessary to answer questions related to the antiquity of Aboriginal occupation or related to change over time in ways people were behaving within the landscape.

In sites which have been heavily disturbed by post-depositional processes such as tree clearance followed by erosion, agricultural activities and infrastructure development and/or bioturbation, aspects of the original activities which formed the sites will be disturbed and site integrity lost. This has a severe constraining effect on the utility of the site to inform about the Aboriginal past.

The Anvil Creek 27IF site and the Redhouse Creek 1 site and PAD have only shallow soils which have been heavily disturbed by European land-use practices. Thus, they are assessed as having low archaeological significance for integrity on a local and regional scale. The soil deposits in the area of PAD21 are sufficiently deep that artefactual material may exist at a depth below the cultivation/disturbance zone which may retain a level of archaeological integrity, though
bioturbation is likely to have reduced that integrity to some degree. Thus this site is assessed as having moderate archaeological significance for integrity on a local and regional scale.

### 4.3.4 Connectedness

Connectedness can be considered in a number of ways, at a number of scales. In its broadest sense, ‘connectedness’ refers to patterns linking sites within an area. Connectedness is often difficult to ascertain as the chronological sequence of use of surface sites is unknown at the survey stage of their assessment. Thus connectedness must be related to other features of sites (eg. the use of similar raw materials and reduction sequences aimed at producing similar implement types) or the nature of features within the sites (eg. heat treatment pits and knapping floors containing heat treated artefacts). In some cases, it may be that a series of sites within an area relates to a number of different activities which are in fact all components of a single land use system (eg. a stone quarry, a camp site at which reduction of that stone takes place, a sandstone outcrop on which that stone is ground).

The sites and PAD are located in adjoining landform units associated with Anvil Creek, however, apart from this there are no other criteria on which to assess connectedness between the sites and the PAD (potential site), thus they are assessed as having low archaeological significance for connectedness on a local and regional scale.

### 4.3.5 Complexity

The complexity of a site is assessed on the basis of its ability to contribute to our understanding of the Aboriginal past. The more complex a site, the more potential it has to be interpreted in an informative way. Complexity can be related to the artefact assemblage located within a site, or predicted in a subsurface context and/or the nature of features (heat treatment pits, hearths, knapping floors) within a site.

The isolated find site (Anvil Creek 27IF) does not have a complex assemblage and due to disturbance it is highly unlikely that features will remain intact in the vicinity of the site, thus it is assessed as having low significance for complexity on a local and regional scale. The Redhouse Creek 1 artefact scatter and associated PAD covers a large area and can be predicted to have a relatively large subsurface artefact assemblage, however, due to disturbance it is highly unlikely that features will remain intact in this site/PAD, thus it is assessed as having moderate significance for complexity on a local scale and low significance for integrity on a regional scale.

It is only possible to suggest the potential for complexity within PAD21. Drawing on information gathered during the survey of the Branxton Interchange and the route alignment in the Branxton/Greta area, it can be predicted that creek terraces have the potential to have larger assemblages than those sites located on slopes further from a watercourse, however, larger assemblages do not necessarily lead to more complex assemblages. High rates of bioturbation noted within alluvial deposits also suggest that site integrity will be compromised to some degree. Overall PAD21 is assessed as having moderate archaeological significance for complexity on a local scale and low significance for complexity on a regional scale.

### 4.3.6 Potential for Archaeological Deposits

Potential archaeological deposits (PADs) are places where the subsurface profile is assessed as having a high probability of containing cultural heritage materials in a relatively undisturbed context. They are not simply areas that can be predicted to have subsurface artefacts (though the term is often used in this manner). Factors that need to be considered when assessing PADs include:

- the depth of the ‘A’ (topsoil) horizon;
any potential disturbances to the subsurface environment (eg. bioturbation, stock trampling, power easement clearance, cultivation, dam construction etc);

- the probability of cultural materials being present as assessed through the environmental setting and/or a surface artefact assemblage; and

- any geomorphic agencies likely to have affected the area (eg. slopewash, colluvial erosion and deposition, creek migration).

Due to the degree of soil loss and disturbance to the Anvil Creek 27IF site and predictions related to the general likelihood of few subsurface artefacts in this area it is assessed as having low archaeological significance for PAD on a local and regional scale. The Redhouse Creek 1 artefact scatter site and PAD is assessed as having a high likelihood of subsurface artefacts, however, only a low likelihood of there being any integrity to the deposits, thus it is also assessed as having low significance for PAD on a local and regional scale. PAD21 is assessed as having a high likelihood of subsurface artefacts, however, only a moderate likelihood of there being any integrity to these deposits at depth within the terrace sequence. Overall, PAD21 is assessed having moderate archaeological significance for PAD on a local scale and low archaeological significance for PAD on a regional scale.

4.4 SUMMARY OF ARCHAEOLOGICAL SITE SIGNIFICANCE

Table 4.3 provides a summary of the significance assessment for the sites and PAD located during the April 2005 survey. The scores are based on the ranking criteria provided in Table 4.2 and the discussions in Sections 4.3.1 to 4.3.6. Overall, the Anvil Creek 27IF site is assessed as having low archaeological significance, PAD21 and Redhouse Creek 1 as having low to moderate significance.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Anvil Creek 27IF</th>
<th>PAD21</th>
<th>Redhouse Creek 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarity</td>
<td>Local 1</td>
<td>Regional 1</td>
<td>Local 3</td>
</tr>
<tr>
<td></td>
<td>Regional 1</td>
<td></td>
<td>Regional 2</td>
</tr>
<tr>
<td>Representativeness</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Integrity</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Connectedness</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Complexity</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>PAD</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Subtotal</td>
<td>6</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>16</td>
<td>19</td>
</tr>
</tbody>
</table>

4.5 ARCHAEOLOGICAL RESEARCH POTENTIAL

The research potential of a site/PAD is assessed on the basis of the potential for the site/PAD, through further investigation, to add significantly to our understanding of the past. A number of factors contribute to this assessment, including the complexity of the site, how well preserved the site is, how the site relates to prevailing research themes, and whether the site is able to provide information that is not otherwise available. As such, this assessment draws heavily from the preceding assessments but does not form part of the initial ranking process. Based on the results of the significance assessment it is assessed that neither Redhouse Creek 1 nor Anvil Creek 27IF have research potential, however, it is recognised that Redhouse Creek 1 has high Aboriginal significance and has great teaching potential for the Aboriginal community. The research potential of PAD21 can only be truly known through subsurface testing.
5.0 MANAGEMENT OPTIONS

The following sections discuss the management options for the sites and PAD thought appropriate by the representatives of the Aboriginal groups present during the survey and from an archaeological perspective. Various management options are discussed and a preferred management option provided. The sites discussed are shown on Figure 3.1.

5.1 OPTION 1 SITE CONSERVATION

Conserve the Anvil Creek 27IF, Redhouse Creek 1 and PAD21.

5.1.1 Discussion

Redhouse Creek 1 is outside the area to be directly impacted by the construction of the Branxton Interchange. Due to the high Aboriginal significance of this site and its Aboriginal teaching potential conservation of this site is an appropriate option. Conservation would take the form of appropriate fencing and signage throughout the construction phase of the Branxton Interchange. The fenced area should be at least the area indicated on Figure 3.1.

Conservation of Anvil Creek 27IF and PAD21 would mean the rerouting of the interchange on/off ramp. Rerouting the on/off ramp would only result in the impact of another area of PAD21 and it can be predicted that it would most likely impact other isolated finds. Under these circumstances rerouting is not beneficial. Therefore, conservation of Anvil Creek 27IF and PAD21 is not recommended.

5.2 OPTION 2 SITE DESTRUCTION WITHOUT SALVAGE

Apply to the Director-General of the DEC for a Section 90 Consent for destruction of Anvil Creek 27IF, Redhouse Creek 1 and PAD21.

5.2.1 Discussion

Site destruction is not warranted for Redhouse Creek 1 as it is outside the impact zone. Site destruction without some form of salvage was not acceptable to the Aboriginal community for Anvil Creek 27IF. The Aboriginal community requested that the artefact within the site be collected ahead of impact. From both an Aboriginal and archaeological perspective destruction of PAD21 without some form of subsurface testing to assess its research potential was not thought appropriate.

5.3 OPTION 3 SITE DESTRUCTION WITH SALVAGE (SURFACE COLLECTION)

Apply to the Director-General of the DEC for a Section 90 Consent with Salvage (surface collection only) for collection of the surface artefacts within the Anvil Creek 27IF and Redhouse Creek 1 sites (not applicable to PAD21) and allow development to proceed following the collection of all surface artefacts.
5.3.1 Discussion

This option is thought appropriate from both an Aboriginal and archaeological perspective for Anvil Creek 27IF. It is not appropriate for Redhouse Creek 1 which is outside the direct construction impact area and which can be conserved and is not applicable to PAD21 (as it does not have surface artefacts).

5.4 OPTION 4 SITE DESTRUCTION WITH SALVAGE (SUBSURFACE SALVAGE)

Apply to the Director-General of the DEC for a Section 90 Consent with subsurface salvage Anvil Creek 27IF, Redhouse Creek 1 and PAD21.

5.4.1 Discussion

This option is not thought appropriate for Anvil Creek 27IF as the occurrence of sufficient subsurface artefacts to warrant subsurface salvage is highly unlikely. It is not appropriate for Redhouse Creek 1 which is outside the direct construction impact area and which can be conserved. As the subsurface potential for artefacts within PAD21 is not yet known, subsurface salvage is not thought warranted at present. Subsurface testing of this area should be undertaken first to establish the real research potential of the PAD.

5.5 OPTION 5 SUBSURFACE TESTING

Apply to the Director-General of the DEC for a Section 87 Preliminary Research Permit for subsurface testing of PAD21.

5.5.1 Discussion

From both an Aboriginal and archaeological perspective subsurface testing of PAD21 is thought warranted to assess its research potential.

5.6 PREFERRED MANAGEMENT OPTIONS

Taking into account the concerns of the Aboriginal community and the archaeological significance and research potential of the sites and PAD, the following are seen as the preferred management recommendations:

- apply to the Director-General of the DEC for a Section 90 Consent to collect the artefact in the Anvil Creek 27IF site;

- apply to the Director-General of the DEC for a Section 87 Preliminary Research Permit for the subsurface testing of PAD21. If no artefactual material is located, then RTA will be free to commence works in this area. If artefacts are located during subsurface testing a Section 90 Consent for the site will be required. The requirement for further salvage in the area to be determined in consultation with the relevant Aboriginal community and the DEC based on the results of the Section 87 testing.; and

- RTA to provide temporary fencing to ensure the protection of the Redhouse Creek 1 site during the proposed geotechnical investigations and the construction of the Branxton Interchange. The ongoing protection of the Redhouse Creek 1 site to be addressed in the Aboriginal heritage Management Plan for the broader F3 to Branxton project (refer to Section 5.7).
The following conditions should be placed on the consent/permit:

- if skeletal material thought to be human is encountered all works are to halt and the relevant Aboriginal community groups, DEC and the NSW Police Department are to be called to the area; and

- all artefacts collected are to be appropriately recorded and catalogued for deposit with the Australian Museum until such time as there is a Wonnarua Keeping Place for their deposition.

As mentioned in Section 4.1, the Aboriginal community groups would like RTA to provide a bridge to cross Anvil Creek (as indicated on RTA plans and as shown on Figure 3.1), to protect this culturally sensitive area from extensive disturbance during construction works.

### 5.7 ABORIGINAL GROUP COMMENTS ON MANAGEMENT RECOMMENDATIONS

Three of the Aboriginal interest groups provided comment on the draft report. MLALC and WNAC did not provide comment despite being given two reminders and allowed an extra month to reply.

Barkuma Neighbourhood Centre agreed with the management options and recommendations in this report (refer to Appendix 1).

Black Creek Aboriginal Corporation also agreed to the management recommendations in the report and stated:

> The members of Black Creek Aboriginal Corporation believe all Aboriginal sites have high significance, being that they allow us to learn more about our ancestors way of life and indicate the use of the landscape. We believe that as many sites as possible should be conserved, at least partially, therefore we support the full conservation of those sites that extend outside the route alignment. … we feel that the surface collection of the majority of the isolated finds and the badly disturbed artifact scatters is appropriate and support the subsurface investigation of those sites and PADs listed for subsurface investigation within the earlier report.

Lower Wonnarua Tribal Consultancy supported the management recommendations provided in this report and called for subsurface testing due to poor visibility. This recommendation is supported within the area of PAD 21 but is not warranted in other areas due to high levels of disturbance and low predicted numbers of artefacts.

### 5.8 ABORIGINAL HERITAGE MANAGEMENT PLAN

Task 5 of Stage 2 of the Aboriginal Cultural Heritage Assessment for the F3 to Branxton project is the preparation of an Aboriginal Heritage Management Plan (AHMP). There are currently numerous sites/PADs/areas of cultural heritage significance in close proximity to the route alignment for which Section 90 consent is not required or which may not be impacted for a period of more than two years after operations commence. These sites should be subject to an AHMP to ensure their ongoing management/protection during highway link construction or until they are subject to salvage. An AHMP will also address the possibility of new sites that could be located during the road construction process or during salvage operations and address the detail of the salvage operations. The AHMP should be prepared in consultation with the relevant Aboriginal community groups and the DEC. The AHMP has two principal functions:

- to provide an overview of which sites are subject to Section 87 and Section 90 Permits, and the status and conditions associated with each of these Permits; and
• to provide guidance to RTA and their contractors about the day to day management of cultural heritage values within proximity of the highway link construction area, both for known sites and sites that may be encountered during the course of construction.

As a minimum, the AHMP will address the following issues:

• in-situ management of sites that will not be impacted by highway link construction (such as the Redhouse Creek 1 site);
• in-situ management of sites until they are subject to Section 87 and Section 90 Permits;
• timing and compliance during the implementation of Section 87 and Section 90 Permit conditions;
• general land management issues to protect cultural heritage values;
• protocol for establishment of minor infrastructure (parking bays, etc) in areas not covered by permits; and
• participation in decision making by the Aboriginal community.

6.0 MANAGEMENT RECOMMENDATIONS

The following management recommendations have been formulated after consultation with the representatives of the Aboriginal community groups taking part in the field survey and in view of the overall Research Design and Methodology proposed for the investigative and salvage program for the overall F3 to Branxton project. It should be noted that this draft report and its recommendations will have to be subject to comment by the relevant Aboriginal groups prior to application for Section 90 consent for site salvage or for a Section 87 permit for subsurface testing. The recommendations take into account:

• The legal requirement imposed by Section 90 of the National Parks and Wildlife Act 1974 which states that it is an offence to disturb, deface or cause or permit the destruction of objects or an Aboriginal place without the written consent of the Director-General of the DEC.
• The results of prior survey, assessment and salvage undertaken for the F3 to Branxton project which has resulted in clearance of Aboriginal cultural heritage and archaeological constraints to the area of the roundabout and on/off ramp from Wine Country Drive to the south on the Main Northern Railway.
• The results of the surface survey in the area from the main Northern Railway, north to the New England Highway.
• An evaluation of the impacts of the construction of the Branxton Interchange on Aboriginal cultural heritage and archaeological values.
• The assessment of the Aboriginal and archaeological significance of the sites and PAD that remain extant in the area (not previously salvaged).
• Consultation with the relevant Aboriginal groups regarding management options and recommendations during the assessment process.

It is recommended that the construction of the Branxton Interchange be allowed to proceed under the following conditions:
• application is made to the Director-General of the DEC for a Section 90 Consent to collect the artefact in the Anvil Creek 27IF site;

• application is made to the Director-General of the DEC for a Section 87 Preliminary Research Permit for the subsurface testing of PAD21. If no artefactual material is located then RTA will be able to undertake works in this area. If artefacts are located during subsurface testing a Section 90 Consent for the site will be required prior to works commencing. The requirement for further salvage in the area to be determined in consultation with the relevant Aboriginal community and the DEC based on the results of the Section 87 testing;

• RTA to provide temporary fencing to ensure the protection of the Redhouse Creek 1 site during construction of the Branxton Interchange; and

• RTA to ensure that a bridge is provided to cross Anvil Creek to limit disturbance to this culturally sensitive area.

The following conditions should be placed on the consent/permit:

• if skeletal material thought to be human is encountered all works are to halt and the relevant Aboriginal community groups, DEC and the NSW Police Department are to be called to the area;

• all artefacts collected are to be appropriately recorded and catalogued for deposit with the Australian Museum until such time as there is a Wonnarua Keeping Place for their deposition; and

• the protection of the Redhouse Creek 1 site be addressed in the Aboriginal Heritage Management Plan to be prepared for the broader F3 to Branxton project.

7.0 SUGGESTED TIMETABLE FOR MANAGEMENT ACTIONS

It is suggested that it should be possible to add the salvage of the Anvil Creek 27IF site and the subsurface testing of PAD21 to the existing consent and permit approved by the DEC. If this is possible the salvage and subsurface testing could be undertaken in August/September 2005.

8.0 REFERENCES


APPENDIX 1

Correspondence from Aboriginal Groups
15th June 2005

Ms Jan Wilson
Manager Aboriginal Archaeology
Umwelt (Australia) Pty Ltd
2/20 The Boulevarde
PO Box 838
Tortonto NSW 2283

RE: REVIEW OF ARCHAEOLOGICAL CONTRAINTS AND MANAGEMENT RECOMMENDATIONS FOR THE BRANXTON INTERCHANGE – PROPOSED NATIONAL HIGHWAY LINK F3 TO BRANXTON.

Barkuma Neighbourhood Centre agree with the Management options and Aboriginal Heritage Management plan. Recommended in the draft - review of archaeological constraints and management recommendations for the Branxton interchange.

Yours Sincerely

Ann-Marie Hickory

Please Note: Barkuma has a NEW ADDRESS, listed above
BLACK CREEK ABORIGINAL CORPORATION
PO Box 84 Cessnock
PH: 49906747

Ms Jillian Ford
Archaeologist
Umwelt (Australia) Pty Ltd
PO Box 838
TORONTO NSW 2283

5 July 2005

Dear Ms Ford

RE: Review of Archaeological Constraints and Management Recommendations for the Branxton Interchange – Proposed National Highway Link, F3 to Branxton

Black Creek Aboriginal Corporation has read the report, being that for the Review of Archaeological Constraints and Management Recommendations for the Branxton Interchange – Proposed National Highway Link, F3 to Branxton, which forms part of the F3 to Branxton link road, and we agree with the management recommendations.

As stated prior, the members of Black Creek Aboriginal Corporation believe all Aboriginal sites have a high significance, being that they allow us to learn more about our ancestors way of life and indicate the use of the landscape. We believe that as many sites as possible should be conserved, at least partially, therefore we support the full conservation of those sites that extend outside the route alignment. However, we also realise that full conservation is not always possible, and understand that the employees of Umwelt Pty Ltd would only recommend the destruction of sites where no other alternative exists.

Also as corresponded prior, we feel that the surface collection of the majority of the isolated finds and badly disturbed artifact scatters is appropriate and support the subsurface investigation of those sites and PADs listed for subsurface investigation within the earlier report. We do understand there will be extra excavations in those areas chosen for subsurface testing and agree that the areas chosen are appropriate and we understand that the subsurface investigation will lead to further work as part of the next stage of the salvage program.

Black Creek Aboriginal Corporation would still like to see ‘Care and Control’ of the artifacts salvaged go to Mindeniba Local Aboriginal Land Council for museum and educational purposes. Black Creek Aboriginal Corporation understands that if no unanimous decision is made as to the ‘Care and Control’ then the salvaged artifacts may be lost to this region and to the Indigenous communities of the Hunter Valley, but cannot foresee any other ‘minding place’ for such articles.

Your sincerely,

T White
Secretary
Black Creek Aboriginal Corporation
Lower Wonnarua Tribal Consultancy Pty Ltd

156 The Inlet Road
Bulga NSW 2330
Telephone (02) 6574 5311
facsimile (02) 6574 5322
Mobile 0417 403 153
lowerwonnarua.tc@bigpond.com
ABN: 51 104 794 176

7th July 2005

Ms Jan Wilson
Manager Aboriginal Archaeology
Umwelt (Australia) Pty Ltd
2/20 The Boulevard
PO Box 838
Toronto NSW 2283

RE: Review of Archaeological Constraints and Management Recommendations for the Bruxton Interchange – Proposed National Highway Link F3 to Bruxton

Dear Jan,

We the LWTC have read the above draft document dated May 2005.

I believe that the only reason that 1 IF was found is due the visibility as seen in the photo’s 1, 2, 4, 5 and 8. And that sub-surface testing is required.

We the LWTC AGREE with the Management Recommendations 6.0 on page 20 and 21.

If you have any further questions please do not hesitate to contact me on the above mentioned numbers.

Regards

Barry Anderson
Wonnarua Descendent
APPENDIX 2

Site Cards
## Aboriginal Sites Register of NSW
### Standard Site Recording Form

<table>
<thead>
<tr>
<th>Site name</th>
<th>Anvil Creek Z7</th>
<th>NPWS Site Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner/manager</td>
<td>RTA</td>
<td></td>
</tr>
<tr>
<td>Owner Address</td>
<td>59 Darby Street, Newcastle 2300</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>The site is located to the south of the New England Highway approximately 1.5 km south-east of Branxton and 2 km north-west of Greta.</td>
<td></td>
</tr>
<tr>
<td>How to get to the site</td>
<td>Access to the property is through a gate on the southern side of the New England Highway opposite the property &quot;Winchester&quot;. The site is located approximately 500 m south of the New England Highway and 100 south of Anvil Creek. See attached map.</td>
<td></td>
</tr>
</tbody>
</table>

### Map Information
- **1:250,000 map name**: Singleton
- **NPWS map code**: 6384350
- **AMG Zone**: 58
- **AMG Easting**: 346521
- **AMG Northing**: 6384350
- **Method for grid reference**: Hand-held GPS
- **Map scale (if method = map)**: 1:25,000
- **Map name**: Greta 1:25000 9132-1S
- **NPWS District Name (see map)**: Coffs Harbour
- **NPWS Zone (see map)**: Northern Zone
- **Portion no.**: DP955007
- **Parish**: Branxton

### Site type(c)
- **Site type code**: Isolated Find

### Description of site and contents
- **CHECKLIST**: eg. length, width, depth, height of site, shelter, deposit, structure, element eg. tree scorch, grooves in rock
- **DEPOSIT**: colour, texture, estimated depth, stratigraphy, contents (shell, bone, stone, charcoal, density & distribution of these, stone types, artefact types)
- **ART**: area of decorated surface, motifs, colours, wet/ dry pigment, engraving technique, no. of figures, sizes, patination
- **BURIALS**: number & condition of bone, position, age, sex, associated artefacts
- **TREES**: number, alive, dead, likely age, scar shape, position, size, patterns, axe marks, regrowth
- **QUARRIES**: rock type, debris, recognisable artefacts, percentage quantified

A single silcrete flake was located on the midslope of a spur between two minor tributaries of Emu Creek. The artefact was sitting on top of outcropping conglomerate. This area has been subject to cultivation and since cultivation ceased, to regular clearance of Hakea using a bulldozer.

Despite an intense inspection of the surrounding area no further artefacts were located on the slope, even when the nearby eroded tributary banks were inspected.

It is assessed that there is only a very low likelihood of intact deposits in this area and that there will only be a low background scatter in a subsurface context.
**Aboriginal Sites Register of NSW**  
NFWS, PO Box 1967, Hurstville NSW 2220  
**Standard Site Recording Form**

<table>
<thead>
<tr>
<th>Land form</th>
<th>midslope</th>
<th>Aspect</th>
<th>N</th>
<th>Slope</th>
<th>2 degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark position of the site</td>
<td><img src="image" alt="Diagram" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local rock type</td>
<td>conglomerate</td>
<td>Land use/effect</td>
<td>cleared, cultivated, grazed/general disturbance and loss of topsoil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance from drinking water</td>
<td>100 m</td>
<td>Source</td>
<td>Anvil Creek</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource zone (eg. aquatic, river, forest)</td>
<td>was probably open woodland prior to clearing</td>
<td>Vegetation</td>
<td>pastoral grassland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edible plants</td>
<td>Typha, water ribbons in creek</td>
<td>Faunal resources (include shellfish)</td>
<td>kangaroo, wallaby, goanna, turtle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other exploitable resources (eg. ochre)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there other sites in the locality</td>
<td>Yes</td>
<td>Are they in the Sites Register</td>
<td>Yes</td>
<td>Other site types include</td>
<td>artefact scatters, isolated finds, PAs</td>
</tr>
<tr>
<td>Site condition</td>
<td>Very disturbed</td>
<td>Site is to be impacted by the construction of the Branxton Interchange (part of the F3 to Branxton Highway Link)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management recommendations</td>
<td>Collect artefact under Section 60 Consent prior to road construction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Have artefacts been removed from site**  
No  
**By whom**  
Deposited at  
**Consent applied for**  
✗  
**Consent issued**  
[ ]  
**Date of issue**  
Consent number  

**Reason for investigation**  
Survey for the Branxton Interchange  

<table>
<thead>
<tr>
<th>Were local Aborigines contacted or present for the recording</th>
<th>Names and addresses</th>
</tr>
</thead>
</table>
| ![Checkbox](image) | Maree Waugh  
Lower Wonnarua Tribal Consultancy Pty Ltd  
158 The Inlet Road  
Bulga 2330 |
| ![Checkbox](image) | Arthur Fletcher  
Mindaribba Local Aboriginal Land Council  
1A Chelmsford Drive  
Mettford 2323 |
| ![Checkbox](image) | Ann Hickey  
Barkuma Neighbourhood Centre  
76 Lang Street  
Kurni Kurni 2327 |
| ![Checkbox](image) | Hazel Bradford  
Black Creek Aboriginal Corporation  
6a Cumberland Street  
Cessnock 2325 |

Version: June 1998  
Data entered by:  
Date entered:
### Aboriginal Sites Register of NSW

**NPWS, PO Box 1967, Hurstville NSW 2220**  
**Standard Site Recording Form**

<table>
<thead>
<tr>
<th><strong>Is the site important to local Aborigines</strong></th>
<th><strong>Yes</strong></th>
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<tr>
<td><strong>ASR report number</strong> (or title)</td>
<td>C-0</td>
</tr>
<tr>
<td><strong>Photographs taken</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td><strong>No. of Photos attached</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Site recorded by</strong></td>
<td>Jan Wilson and Kym McNamara</td>
</tr>
<tr>
<td><strong>Date of recording</strong></td>
<td>26 April, 2005</td>
</tr>
<tr>
<td><strong>Address/institution</strong></td>
<td>Umwelt (Australia) Pty Ltd PO Box 838, Toronto, NSW, 2283.</td>
</tr>
</tbody>
</table>
ATTACHMENT "S"

Application for a Section 90 Consent or a Section 87(1) permit under the National Parks and Wildlife Act, 1974.

IMPORTANT: Complete a separate attachment for each site (Aboriginal object or Aboriginal place)

National Parks and Wildlife Service Site #: New Site

Site Name: Anvil Creek 27

Street Address: N/A

Property name or locality: Branxton

Portion number: DP 955007 Parish: Branxton County: Northumberland
(Only for sites without specific street addresses)

Zone: 56 Topographic Map Sheet: Greta 1:25000 9132-1S

Australian Map Grid References.

<table>
<thead>
<tr>
<th>Eastings</th>
<th>Northing</th>
</tr>
</thead>
<tbody>
<tr>
<td>346521</td>
<td>6384350</td>
</tr>
</tbody>
</table>

Land status: Freehold

Full name of property owner: Roads and Traffic Authority

Postal address: 59 Darby Street
Newcastle NSW 2300
An isolated find (Anvill Creek 271F) was located on conglomerate outcropping on the southern side of Anvill Creek, facing west-south-west at C1360.
**Aboriginal Sites Register of NSW**

**NPWS, PO Box 1967, Hurstville NSW 2220**

**Standard Site Recording Form**

### Site Information

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<td>NPWS Site Number</td>
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<table>
<thead>
<tr>
<th>Owner/manager</th>
<th>RTA</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Owner Address</th>
<th>59 Derby Street, Newcastle 2300</th>
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<table>
<thead>
<tr>
<th>Location</th>
<th>The PAD is located to the south of the New England Highway approximately 1.5 km south-east of Branxton and 2 km north-west of Greta.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How to get to the site</th>
<th>Access to the property is through a gate on the southern side of the New England Highway opposite the property “Winchester”. The PAD is located within an transmission line easement approximately 400 m south of the New England Highway and approximately 50 m north of Anvil Creek. See attached map.</th>
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<table>
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<table>
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<tr>
<th>AMG Northing</th>
<th>6384511</th>
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<tr>
<th>Method for grid reference</th>
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<table>
<thead>
<tr>
<th>Map name</th>
<th>Greta 1:25000 0132-18</th>
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<table>
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<tr>
<th>NPWS District Name (see map)</th>
<th>Coffs Harbour</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>NPWS Zone (see map)</th>
<th>Northern Zone</th>
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</table>

<table>
<thead>
<tr>
<th>Portion no.</th>
<th>DP955007</th>
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<table>
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<tr>
<th>Parish</th>
<th>Branxton</th>
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<table>
<thead>
<tr>
<th>Site type(s)</th>
<th>PAD</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Site type code (NPWS use only)</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Description of site and contents</th>
<th>The PAD is located on a first creek terrace on the northern side of Anvil Creek. The terrace is approximately 40 m wide and about 1 m higher than the current floodplain. The current floodplain is only 5 to 10 m wide in this area. Anvil Creek has numerous conglomerate benches that form natural weirs across the creek. Large waterholes exist behind the rock benches. There were numerous aquatic plants and animals noted in this area that are known food sources for Aboriginal people. The PAD is within an existing power easement. Topsoil depth in this area is estimated at approximately 1 m. The easement is bounded by regrowth Casuarina on both sides. The topsoil in this area has been disturbed by clearing, cultivation and grazing, however, there is sufficient depth of deposit to allow for intact deposits below the plough zone/disturbance zone. The area was recorded as a PAD as it is located in an area highly likely to have been used by Aboriginal people as a camp site and relatively large numbers of artefacts can be expected in a subsurface context. An artefact scatter is present on an adjacent spur crest (Redhouse Creek 1).</th>
</tr>
</thead>
</table>

**Version:** June 1999

**Data entered by:**

**Data entered:**
Aboriginal Sites Register of NSW
NPWS, PO Box 1967, Hurstville NSW 2220
Standard Site Recording Form

<table>
<thead>
<tr>
<th>Land form</th>
<th>Aspect</th>
<th>S</th>
<th>Slope</th>
</tr>
</thead>
<tbody>
<tr>
<td>first creek terrace</td>
<td></td>
<td></td>
<td>&lt;1 degree</td>
</tr>
</tbody>
</table>

Mark position of the site

Local rock type: conglomerate
Land use/effect: cleared, cultivated, grazed/general disturbance and loss of topsoil
Distance from drinking water: 200 m
Source: Anvil Creek
Resource zone (eg. estuarine, river, forest): riparian
Vegetation: pastoral grassland and she oak
Edible plants: Typha, water ribbons, commom reed in creek
Faunal resources (include shellfish): kangaroo, wallaby, goanna, turtle
Other exploitable resources (eg. ochre):

Are there other sites in the locality: Yes
Are they in the Sites Register: Yes
Other site types include: artefact scatters, isolated finds, PADs

Site condition: Disturbed
PAD will be impacted by the construction of the Branxton Interchange (part of the F3 to Branxton Highway Link)

Management recommendations: Subsurface test under Section 87 Permit prior to highway link construction.

Have artefacts been removed from site: No
By whom: Deposited at
Consent applied for: ☒ Consent issued: ☐
Date of issue: Consent number:

Reason for investigation: Survey for the Branxton Interchange

Were local Aborigines contacted or present for the recording: ☒ Not contacted
☒ Contacted and present
☐ Contacted but not present

Names and addresses:
Marea Waugh
Lower Wonnarua Tribal Consultancy Pty Ltd
150 The Inlet Road
Bulga 2330

Arthur Fletcher
Mindaalba Local Aboriginal Land Council
1A Chelmerford Drive
Merford 2323

Ann Hickey
Barkuma Neighbourhood Centre
76 Leng Street
Kuri Kuri 2327

Hazel Bradford
Black Creek Aboriginal Corporation
6a Cumberland Street
Cessnock 2325

Version: June 1998
Data entered by: Date entered:
<table>
<thead>
<tr>
<th><strong>Aboriginal Sites Register of NSW</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>NPWS, PO Box 1867, Hurstville NSW 2220</td>
</tr>
<tr>
<td>Standard Site Recording Form</td>
</tr>
</tbody>
</table>

| **Is the site important to local Aborigines** | Yes |
| **ASR report number(s) (or title)** | C-0 C- |
| **Photographs taken** | Yes |
| **No. of Photos attached** | 2 |
| **Site recorded by** | Jan Wilson and Kym McNamara |
| **Date of recording** | 26 April, 2005 |
| **Address/institution** | Umwelt (Australia) Pty Ltd PO Box 838, Toronto, NSW, 2263, |
ATTACHMENT "S"

Application for a Section 90 Consent or a Section 87(1) permit under the National Parks and Wildlife Act, 1974.

IMPORTANT: Complete a separate attachment for each site (Aboriginal object or Aboriginal place)

National Parks and Wildlife Service Site #: New PAD

Site Name: PAD21

Street Address: N/A

Property name or locality: Branxton

Portion number: DP 955007  Parish: Branxton  County: Northumberland
(Only for sites without specific street addresses)

Zone: 56  Topographic Map Sheet: Greta 1:25000 9132-1S

Australian Map Grid References.

<table>
<thead>
<tr>
<th>Eastings</th>
<th>Northing</th>
</tr>
</thead>
<tbody>
<tr>
<td>346711</td>
<td>6384511</td>
</tr>
</tbody>
</table>

Land status: Freehold

Full name of property owner: Roads and Traffic Authority

Postal address: 59 Darby Street
Newcastle NSW 2300
PLATE 1

First creek terrace on northern side of Anvil Creek end within power easement. Area recorded as PADZ1. Facing west.
**Aboriginal Sites Register of NSW**

**NPWS, PO Box 1967, Hurstville NSW 2220**

**Standard Site Recording Form**

<table>
<thead>
<tr>
<th>Site name</th>
<th>Redhouse Creek 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner/manager</td>
<td>RTA</td>
</tr>
<tr>
<td>Owner Address</td>
<td>59 Darby Street</td>
</tr>
<tr>
<td></td>
<td>Newcastle 2300</td>
</tr>
</tbody>
</table>

**Location**
The site is located to the south of the New England Highway approximately 1.5 km south-east of Branxton and 2 km north-west of Greta.

**How to get to the site**
Access to the property is through a gate on the southern side of the New England Highway opposite the property "Winchester". The site is located at the confluence of Redhouse Creek and Anvil Creek - approximately 450 m south of the New England Highway. See attached map.

<table>
<thead>
<tr>
<th>1:250,000 map name</th>
<th>Singleton</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMG Zone</td>
<td>58</td>
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<td>AMG Easting</td>
<td>346462</td>
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<tr>
<td>AMG Northing</td>
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<td>Method for grid reference</td>
<td>Hand-held GPS</td>
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<tr>
<td>Map scale (if method = map)</td>
<td>1:25,000</td>
</tr>
<tr>
<td>Map name</td>
<td>Greta 1:25000 9132-1S</td>
</tr>
</tbody>
</table>

**NPWS District Name (see map)**
Coffs Harbour

**NPWS Zone (see map)**
Northern Zone

**Portion no.**
DP955007

**Site type(s)**
Artfact scatter

**Description of site and contents**
A scatter of 34 artefacts was located in areas of erosion associated with the banks of Redhouse Creek and Anvil Creek at the confluence of the two creeks. A low gradient spur crest divides the two creeks and provides an elevated camp site in an area with semi-permanent to permanent water. It is assessed that the spur crest area within the vicinity of the creek confluence will have relatively large numbers of artefacts in a subsurface context. The area of PAD is estimated to extend for approximately 250 m upstream from the confluence of the creeks along Redhouse Creek and 200 m upstream along Anvil Creek; and approximately 200 m to the NE along the spur crest.

The area has been heavily cleared with only a remnant corridor of Casuarina along the creek lines. The area appears to have been cultivated and is presently subject to grazing by horses. An EnergyAustralia power easement crosses the site area.

The soil is a shallow sandy loam with bedrock exposed further upslope. Whilst subsurface artefacts are highly likely, the high degree of prior disturbance suggests poor archaeological integrity.

Both Redhouse Creek and Anvil Creek have large rock waterholes in this area which would have supplied semi-permanent to permanent water. The outcrops in the creek were inspected for signs of grinding grooves, however, none were observed. The pebbly nature of the majority of the conglomerate indicates that it was not suitable for grinding.

**Version:** June 1998

**Data entered by:**

**Date entered:**
### Aboriginal Sites Register of NSW

**Standard Site Recording Form**

<table>
<thead>
<tr>
<th>Landform</th>
<th>Lower slope of spur/creek confluence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark position of the site</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Local rock type</td>
<td>conglomerate</td>
</tr>
<tr>
<td>Land use/effect</td>
<td>cleared, cultivated, grazed, general disturbance and loss of topsoil</td>
</tr>
<tr>
<td>Distance from drinking water</td>
<td>0 m</td>
</tr>
<tr>
<td>Source</td>
<td>Redhouse Creek and Anvil Creek</td>
</tr>
<tr>
<td>Resource zone (eg. catarrine, river, forest)</td>
<td>riparian</td>
</tr>
<tr>
<td>Vegetation</td>
<td>pastoral grassland and she oak</td>
</tr>
<tr>
<td>Edible plants</td>
<td>Typha, Water ribbons in creek</td>
</tr>
<tr>
<td>Faunal resources (include shellfish)</td>
<td>kangaroo, wallaby, goanna, turtle</td>
</tr>
<tr>
<td>Other exploitable resources (eg. ochra)</td>
<td></td>
</tr>
<tr>
<td>Are there other sites in the locality</td>
<td>Yes</td>
</tr>
<tr>
<td>Are they in the Sites Register</td>
<td>Yes</td>
</tr>
<tr>
<td>Other site types include</td>
<td>artefact scatters, isolated finds, PADs</td>
</tr>
<tr>
<td>Site condition</td>
<td>Disturbed</td>
</tr>
<tr>
<td>Management recommendations</td>
<td>Site will not be impacted by the construction of the Branxton interchange (part of the F3 to Branxton Highway Link)</td>
</tr>
<tr>
<td>Have artefacts been removed from site</td>
<td>No</td>
</tr>
<tr>
<td>By whom</td>
<td>Deposited at</td>
</tr>
<tr>
<td>Consent applied for</td>
<td>☑</td>
</tr>
<tr>
<td>Consent issued</td>
<td>Consent number</td>
</tr>
<tr>
<td>Date of issue</td>
<td></td>
</tr>
</tbody>
</table>

**Reason for investigation**

Survey for the Branxton Interchange

| Were local Aborigines contacted or present for the recording | [Diagram](image) |
| Names and addresses | Maree Waugh  
Lower Worranarne Tribal Consultancy Pty Ltd  
150 The Inlet Road Buiga 2330  
Arthur Fletcher  
Mindaribba Local Aboriginal Land Council  
1A Chelmford Drive Medford 2323  
Ann Hickey  
Barkuma Neighbourhood Centre  
76 Lang Street Kurri Kurri 2327  
Hazel Bradford  
Black Creek Aboriginal Corporation  
6a Cumberland Street Cessnock 2325 |

**Version:** June 1998  
**Data entered by:**  
**Date entered:**
| **Is the site important to local Aborigines** | Yes |
| **ASR report number(s) (or title)** | C-0 C- |
| **Photographs taken** | Yes |
| **No. of Photos attached** | 2 |
| **Site recorded by** | Jan Wilson and Kym McNamsra |
| **Date of recording** | 26 April, 2005 |
| **Address/institution** | Umwelt (Australia) Pty Ltd PO Box 838, Toronto, NSW, 2263. |
Plate 1
Area at the confluence of Redhouse Creek and Anvil Creek. Artifacts (Redhouse Creek 1 site) were observed eroding out of scours at the top of the eastern bank. Facing north upstream along Redhouse Creek.

Plate 2
Aboriginal community participants searching for artifacts in the Redhouse Creek 1 site, at the confluence of Anvil and Redhouse Creeks. Facing south-south west.
PLATE 3

Low spur crest at the confluence of Redhouse Creek and Anvil Creek. This area is predicted to have relatively large numbers of subsurface artefacts (part of the Redhouse Creek site). Facing west-south-west towards the creek confluence.
For further information

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🌐 www.rta.nsw.gov.au