

Appendix D
Cultural Heritage

Appendix D Cultural Heritage

D.1 Test Pit Archaeological Survey

D.2 Cultural Heritage Certificates

Appendix D.1
Test Pit Archaeological Survey

*Archaeology and Historic Heritage Assessment for the
open cut pit at the McArthur River Mine, NT*

A draft report

A report for URS on behalf of McArthur River Mines

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SUMMARY

The consultant was engaged by URS to assess the potential impact upon Aboriginal and historic sites and objects that may be located in the areas to be disturbed by the proposed expansion of an open cut mine at the McArthur River Mine. This assessment is based on a review of previous studies in the area. The report also recommends survey strategies for both surface and subsurface material. Finally the report includes a description of the findings and recommendations made for the mitigation of any archaeological or historic sites that may be disturbed during the construction phase of the project.

Background research was carried out to find any previously recorded archaeological and heritage sites in the area of the proposed development. Following recommendations from the Office of the archaeological surveys were carried out prior to and during the clearing and excavation of the surface for the test pit project. During the surface survey two archaeological sites were located in the area to be disturbed by the proposed project.

There are several recommendations for ensuring the protection of unidentified archaeological material located before and during the construction stage of the open cut mine.

- Firstly an archaeological survey consisting of both random and purposive pedestrian transects should be carried out before construction begins and should target eroded areas, the McArthur River and its new diversion route area.
- Secondly it is recommended that an archaeologist is present during the various stages of disturbance up to a depth of 50cm to locate subsurface archaeological material in areas predicted to have a higher potential for subsurface material. The criteria for the selected areas will be based on information collected from the initial surface survey.
- It is also recommended that before the initial clearing and excavations for the proposed open cut mine project commences a permit to destroy any isolated stone artefacts of low archaeological significance within the areas to be disturbed is obtained from the Minister for the Environment and Heritage.

It is anticipated that detailed recommendations for specific sites will be made after the surface survey has been carried out over all areas that will be disturbed by the development. The specific recommendations for the two sites located in the area to be disturbed are:

- **Stone artefact scatter MRM1**
Location: 53 617553E 8183239N
It is recommended that before the open cut project commences permission should be sought from the Minister of the Environment and Heritage to destroy the site with the proviso that there is a detailed surface recording of the site. The site has been assessed as having moderate archaeological significance.
- **Stone artefact scatter MRM2**
Location: 53 617621E 8183247N
It is recommended that before the open cut project commences permission should be sought from the Minister of the Environment and Heritage to destroy the site with the proviso that there is a detailed surface recording of the site and an excavation. The site has been assessed as having moderate to high archaeological significance.

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1. INTRODUCTION

This report was prepared for McArthur River Mines to describe the archaeological component of an environmental assessment over areas that will be disturbed by the proposed open cut mine and subsequent expansions. The development consists of an open cut mine, a bund wall that will surround the open cut, areas for the waste rock dump and top soil stock pile, the expansion of the tailings dam facility and the diversion of the McArthur River and Barney Creek.

To ensure that archaeological and historic sites and objects are not damaged or destroyed during the proposed development and are protected within the terms of the *NT Heritage Conservation Act 1991*, the aims of the archaeological and cultural heritage project are:

1. To identify any archaeological and historic objects or places within the development area and to assess level of impact on the identified sites and objects.
2. To provide recommendations for the management of particular archaeological or historic places or objects.
3. To provide recommendations for generalised mitigation procedures and management of prescribed archaeological places and objects.
4. To carry out mitigation and conservation strategies designed to minimise loss of heritage values to the Northern Territory.

2.0. HERITAGE LEGISLATIVE FRAMEWORK

2.1. Northern Territory legislation

There are two kinds of heritage sites protected under the *NT Heritage Conservation Act (1991)* that places legal constraints on owners of private property, local government and the Crown:

- Places or objects listed on the Northern Territory Heritage Register are declared heritage places and objects that are protected under section 33 of the Act, and
- Prescribed archaeological places and objects that are protected under sections 29 and 39 of the Act.

It is an offence under the Act to damage, destroy, alter or carry out work of any sort on declared or prescribed sites without the written consent of the Minister or Minister's delegate.

Declared heritage places and objects.

To date there have been more than three hundred nominations to the Northern Territory Heritage Register, leading to the registration of more than 150 places. Categories, which describe the status of each site on the Northern Territory Heritage Register database, are listed in Table 2.1.

Table 2.1 Site status on the Northern Territory Heritage Register database.

Status	Description
D	Declared heritage place.
NR	Not recommended. HAC* determined that the place did not meet heritage assessment criteria and did not hold sufficient value to warrant declaration under the act.
RF	Refused by the Minister. HAC* recommended for declaration and minister refused to do so.
P	Proposed. HAC* has determined that the place warrants declaration under the Act but has not yet made its recommendations to the minister.
RV	Revoked. Declaration as a heritage place pursuant to Section 26(1) of the Act is revoked.
N	Nominated. HAC* has yet to complete its assessment of the heritage value of the place.

*Heritage Advisory Council

The Northern Territory Heritage Register contains places that possess special significance for the Northern Territory and have been recognized for a wide range of natural and cultural values. As a result it includes places that have been deemed significant because of their environmental and /or cultural characteristics. For the purposes of the current report, only places of historic or archaeological significance have been included.

Prescribed archaeological places and objects.

The NT Heritage Conservation Services, Office of the Environment and Heritage (OEH) holds the Archaeological Sites Register. Listing on this register does not necessarily mean that a site is protected or holds legal significance under the *NT Heritage Conservation Act 1991*. Included in this register are the protected prescribed sites that consist of all archaeological sites and objects pertaining to the past occupation by Aboriginal or Macassan people.

2.2 Commonwealth legislation

The Commonwealth Government protects heritage sites under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environment and Heritage Legislation Amendment Act (No 1) 2003* and places legal constraints on archaeological and historic sites. There are two lists of protected heritage sites that may be relevant to this study. The lists are available on the internet at <http://www.deh.gov.au> and they are:

- *The Register of the National Estate* which consists of “...an inventory of places in Australia with aesthetic, historic, scientific, or social significance or other special value for present and future generations” (Pearson and Sullivan 1995:45). It represents a national database of places with significant Indigenous, historic or environmental values.
- *The National Heritage List* that protects places of exceptional natural and cultural significance with penalties for any breaches. Approval by the Minister of Environment and Heritage is needed before any sites are disturbed.

Register of the National Estate

The Register of the National Estate database contains not only places that are registered but also places that have been nominated to the register and are yet to be assessed, as well as nominated places that have been rejected or removed from the Register of the National Estate (Table 2.2.). Sites are divided into places of historic, Indigenous or environmental significance. The entry of a place on the Register of the National Estate does not place any direct legal constraints or control over the actions of state or local government or private owners, but does impose other legal obligations.

Table 2.2. Site status on the Register of the National Estate database.

Status	Description
R	<i>Registered.</i> The place is listed on the Register of the National Estate.
ID	<i>Identified.</i> The Commission has formally considered the values of this place and decided that it should be publicly proposed for entry in the Register. The place is awaiting publication in the gazette and the press to give full effect to this decision.
RE	Removed from the Register or Interim List. The place has been removed from the Register or list via a public process that provides for the submission of objections.
IL	<i>Interim list.</i> The place has been publicly proposed for entry in the Register and may be awaiting objections, considering objections, or seeking other data before making a decision on whether the place should be entered on the Register proper.
IP	<i>Indicative place.</i> Data provided to or obtained has been entered into the database and the place is at some stage in the assessment process.
D	<i>Destroyed.</i> The place has been destroyed before being assessed or listed.
REJ	<i>Rejected.</i> The place has been assessed and found that it does not warrant entry in the Register

While the database is large, relatively comprehensive and national in focus, individual site listings vary enormously in terms of the amount and the accuracy of information contained with them. Some site listings contain no information other than a site name and approximate location, while other listings contain inaccurate information or represent duplicate listings. Only places of historic or archaeological significance have been included in this current report.

National Heritage List

This list commenced on 1st January 2004, and as at July 2005 there were only three heritage or Indigenous sites recorded for the Northern Territory (being Kakadu National Park, Uluru-Katjatjua National Park and the Hermannsburg historic precinct). This will probably change as the Australian Heritage Council enters more sites onto the list.

3.0. ASSESSMENT OF ARCHAEOLOGICAL AND HERITAGE SIGNIFICANCE

3.1. Archaeological sites.

According to Sullivan and Bowdler (1984) archaeological significance means that a site or object has scientific, archaeological or research value, that is, it has the potential to assist current or future research into problems of human history or other areas of enquiry. The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance, otherwise known as the Burra Charter (Maquis-Kyle and Walker 1992:73) states that the scientific value or research potential of a place depends upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place or object may contribute to further substantial information.

Therefore the significance of a site is firstly related to the intactness or integrity of a site, and the state of preservation of the archaeological material. Secondly, if the site has stratigraphic reliability then it may be possible to use the cultural material for dating which will provide a chronology extending back into the past. Thirdly, the representativeness of a site is important either because a site is unusual or because the site has research potential when taken in conjunction with other sites.

In order to effectively manage archaeological resources sites located in the background research the sites have been ranked according to their perceived significance. Sites are considered to hold low levels of archaeological significance because their research potential has been greatly compromised by disturbance due to erosion and /or the low density of artefacts and diversity of artefact types.

Sites that are likely to be particularly valuable in answering archaeological research questions are given moderate to high archaeological significance. These sites contain a higher density and diversity of archaeological material and are either particularly well preserved or represent a type of archaeological site that is uncommon in the general area. Sites could be classed as significant on rarity alone.

3.2. Historic sites

There are further criteria that can be considered when assessing the significance of historic sites and these are:

- A site is associated with events, developments or cultural phases in human occupation.
- A site demonstrates a way of life, no longer practiced or in danger of being lost or of exceptional interest

- A site provides information contributing to a broader understanding of the history of human occupation.

It should be noted that historical significance would not necessarily be equated with archaeological significance, as some events may leave nothing in the archaeological record.

3.3. *Background scatters*

All background scatters located during the surveys will be assessed as having low archaeological significance. The methods used during the survey will ensure that the artefact's location, dimensions, type and raw material were documented. Consequently the isolated artefacts have little potential for contributing to further knowledge.

4.0. BACKGROUND INFORMATION.

4.1. Environmental background.

The area of the proposed development is located on the Surprise and McArthur Land Systems (Hughes 2002, Aldrich and Wilson 1992, Guse and Collis, 1998). The McArthur Land System consists of broad or narrow fluvial corridors conducting regional drainage and supports mid-high open woodland and tall fringing riparian vegetation on deep alluvial soils, grey and brown clays, cracking clays and siliceous sands formed during recent and Holocene floodings. Along the banks of Barney Creek and the McArthur River deep gullies have formed in the alluvium by wet season run-off.

The Surprise Land System consists of level to gently undulating plains on mainly unconsolidated Pleistocene transported material with yellow and brown earths, cracking clay soils and mid high open woodland. There are areas where gravel and cobbles have floated to the surface from the underlying bedrock.

4.2. Historic background.

The first European to visit the area was Leichhardt (1845) when he crossed and named the McArthur River near the present Borroloola town. The next European explorers were the Gregory brothers in 1856 when they passed approximately 11kms south of the town. In 1878 Nat Buchanan drove 1200 cattle through Borroloola to the Adelaide River and then between 1878 and 1883 Favenc explored the Barkly and Gulf region. The 1880s saw the beginning of the pastoral industry in the Gulf region and during this period Europeans from the east coast travelled through the Borroloola area to Pine Creek and the Kimberley.

The presence of minerals was first identified on the McArthur River Station in 1887 by the station manager who identified copper, lead and silver (Jones 1987:170). Small mining ventures occurred in the district intermittently but all were abandoned as freight costs were prohibitive (Radmuller 2004). In 1907 a government exploration team travelled 40 kilometres south of Borroloola to the McArthur River Station where they found large surface outcrops of copper, lead and zinc ores (Jones 1987:133). In 1911 the McArthur River Syndicate was floated to take up claims in the district, however after successful drilling occurred they wound up the company when it was decided that mining was not viable given the remote location of the ore bodies.

From the 1950s onward Mount Isa Mines carried out surveys and exploration drillings on the lease, however it was not until 1995 that mining commenced.

There is only one historic site in the region of the mine that is listed on the Archaeological Site Register held by HAS. The Old McArthur River Station is located approximately 3 kilometres

south west of the area to be disturbed by the open cut mine. During the archaeological survey for the Test Pit Project (Crassweller 2005) several areas were located where there were the remains of glass bottles and jars, camping gear, 44 gallon drums, star pickets and drill holes that appeared to be the remains of exploration surveys and test drilling carried out over the last thirty years.

4.3. Archaeological background.

Past archaeological research in the McArthur River area was generated in the 1970s and onwards by the development of the McArthur River Mine and other projects (Haglund 1975, Stokes 1992, Thorley 1992, Thorley & Blackwood n.d., Guse and Bowen 1993, Heritage Surveys 1999). Little analytical research or detailed descriptions have been carried out in this region as the majority of the sites were recorded for environmental impact studies where the site recordings were used for management purposes (Guse and Collis 1998).

The only other archaeological research to have been documented in the region was by McLaughlin (1976), Mathew (1964) and Reay (1965) who recorded either rock art or anthropological sites in the area.

There are presently 122 sites listed on the Archaeological Site Register for the Borrooloola 6165, 1:100,000 map sheet held by the Heritage Advisory Service, Darwin. However twenty-two of these sites are solely mythological or anthropological sites containing no archaeological material. The frequency of site types and archaeological material on the register are identified in Table 1.

Table 4.1. Frequency of archaeological sites / material on 1:100,000 Map Sheet Borrooloola 6165

Stone artefact scatter	Rock Painting	Rock Engraving	Grinding stone	Quarry	Shell Midden	Skeletal Remains	Scarred tree	Stone arrangement	Historic object/ place
54	44	3	20	8	3	7	3	1	10

The majority of sites are either open stone artefact scatters or rock shelters containing rock art and occasionally stone artefact scatters. The rock art consists mostly of painting sites with only three recorded engraving sites. Three of the quarry sites were used to extract pigments that may have been used for either rock paintings or ceremonial purposes. The other quarries were used to extract raw material such as chert and quartzite used in the manufacture of the stone artefacts (Haglund 1975, Guse and Bowen 1993).

Guse and Collis (1998) attempted to provide an overview of archaeological site types and occurrence in relation to the environment in the wider McArthur River region. They found that the majority of sites were located in rugged rock plateaus, steep hills or alluvial plains along major drainage line. Stone artefact scatters are the dominant site type on the alluvial plains, the terrain where the proposed development is to occur.

The archaeological material identified from these studies include flakes, cores, retouched flakes and unifacial and bifacial points predominately made of chert with smaller numbers of quartzite, mudstone and sandstone. Backed blades and tulas have also been identified in the region (Pickering 1990, Sim 2001, Guse and Bowen 1993)

Guse and Bowen (1993) located five areas of background scatters north of Borrooloola and they were associated with either raw material source, sources of freshwater or with alluvial floodplains. Stokes (1992) also noted a continuous background scatter of stone artefacts that were most visible in disturbed areas.

Pickering (1990) located an artefact scatter on the banks of the McArthur River near Borroloola and described the site as consisting of a light scatter of artefacts exposed through the denudation of sandy soils through human traffic. It contained mainly small flakes and cores of chert and silcrete. Other artefacts identified were two backed blades, one broken bifacial point and a small fragment of a grindstone.

4.4. Previous archaeological surveys on the McArthur River Mine lease

The first archaeological surveys were carried out by Haglund (1977). While this report has not been sighted, the Archaeological Site Register from the HAS locates all the archaeological sites outside the area of disturbance for the current development. Hughes (2000:2,3) mentions that Haglund found eight open artefact scatters along Emu Creek five kilometres north of Barney Hill that consisted of cores, flakes, some with retouch and grindstone slabs. Another 28 sites were located along the Glyde River near the junction with the McArthur River and approximately three kilometres east of the proposed area of disturbance (Thorley & Blackwood n.d). The majority of these sites were located at the base of a sandstone escarpment and consisted of rock shelters, burials, rock paintings, artefact scatters and quarry sites.

The Barney Hill artefacts scatter was also recorded during this preliminary survey and Hughes and Hiscock (1993) carried out a detailed recording of this site. This report has also not been sighted. Hughes (2002:4) notes that this site had a high diversity of artefacts that included grindstones, tulas points and other retouched artefacts. It is thought that this site was used as a base camp where people processed and consume food and repaired their tool kits.

The Stokes (1992) fieldwork consisted of an intensive survey over the then proposed tailings dam, accommodation camp, concentrator facility and the pipeline linking the dam to the concentrator. Stokes (1992:7) recorded one artefact scatter in association with Surprise Creek and noted that there was a continuous background scatter of stone artefacts along the creek in areas of erosion. All of this archaeological material is located outside the area of disturbance for the current development. The Barney Hill site was also re-recorded during this survey.

Thorley and Blackwood (n.d.) located two small artefact scatters 350 metres apart adjacent to Barney Creek when carrying out a survey for the proposed gas pipeline from Daly Waters to the mine site. These two sites are located approximately five kilometres south west of the proposed area of disturbance. The sites were located on an old gravel terrace and on the creek's floodplain.

No archaeological sites were located during the 2002 survey carried out by Hughes (2002) over the proposed McArthur River mine expansion for the open cut mine. The survey included areas that will be disturbed by the current open cut proposal. The survey also located nineteen areas that contained "find spots" or background scatters of isolated stone artefacts. Unfortunately there is no record of the co-ordinates for these archaeological objects. Twelve of these 'find spots' were located adjacent to Barney Creek on cracking clays, four adjacent to Surprise Creek on either silty sands or cracking clays, two on cracking soils in the proposed plant area near rock 'float' and one near the Old McArthur River Station.

The archaeological survey carried out by Crassweller (2005) identified eighteen areas of background scatter containing isolated artefacts and two archaeological sites of stone artefacts scatters. These two sites and all the background scatters are located within the area to be disturbed by the proposed open cut project. The two sites are approximately 20 metres apart and located at the top of a gully / creek that becomes quite steep as it nears Barney Creek. MRM1 is located on undulating terrain of cracking clays while MRM2 appears to be eroding out of the side of the gully. The sites are approximately 400 metres from where Barney Creek flows into the McArthur River. MRM1 has been fenced to protect the site from any disturbance during the construction of the test pit's bund wall. The second site MRM2 is located outside the fence line surrounded the test pit development and has been flagged.

The scope of works for the archaeological survey required that an archaeological examination of the surface occur during the clearing of vegetation and the removal of the first one metre of topsoil in the areas to be disturbed by the test pit project. The majority of the test pit area was covered in only 20 to 40 centimetres of topsoil that lay on top of heavy clays. The areas where the topsoil was deepest occurred on the steep banks of the McArthur River where the topsoil was often greater than two metres deep. These areas consisted of alluvial deposits that contained no stone at all.

The approach utilised by archaeological survey was dependent upon the method used to clear the area. The clearing and excavation of the test pit area consisted of three processes consisting of the removal of vegetation by a bulldozer, followed by the grading of the surface to remove the remaining vegetation and level the surface and finally the removal of the remaining topsoil by scrapers. Archaeological surveys were carried out behind the bulldozer, the grader and the scrapers until the first one metre or all of the topsoil was removed. This method resulted in at least three pedestrian surveys over all the area. Where the topsoil was deeper transects were more frequent. In the area of the alluvial banks of the river the surface was examined to at least two metres in areas where the banks had been breached by gullying by wet season drainage.

The bulldozer usually disturbed the top 15 centimetres of the surface and removed approximately 5-10 centimetres of the disturbed soil. The grader then removed another 5-10 centimetres of the surface before the scraper removed approximately 20 centimetres per scrape.

Forty two isolated stone artefacts were located during all stages of the clearing and excavation process. The number of artefacts located during the different stages are summarised in Table 3. The majority of isolated artefacts were located on the undulating terrain of cracking clays. Five artefacts were located in an area of approximately 60 x 50 metres on top of Barney Hill east.

Table 4.2. Number of isolated artefact located after various stages of clearing.

No. of artefacts				
Before clearing	After bulldozer (depth 15cm)	After grading (depth 5-10cm)	After 1 st scrape (depth 20cm)	After 2 nd /3 rd scrape (depth 20/20cm)
7	20	4	6	4

The two archaeological sites were located in areas undisturbed by clearance while the majority of isolated artifacts were located after the first 10-15 cm of top soil had been disturbed and removed by the bulldozer and grader.

Each isolated artefact was recorded in detail and their locations documented. The majority of the artefacts were located in areas of minor drainage lines and particularly in the area adjacent to the two archaeological sites. The background scatters have already received a permit to destroy from the Minister of the Environment and Heritage as they were assessed as having little archaeological potential for future archaeological research.

4.5. Discussion

Previous archaeological research in the McArthur River region indicates that there will be a higher likelihood of archaeological sites around freshwater sources. In the survey area these sites will consist of open artefacts scatters containing a wide range of stone artefact types. The previous research also indicates that there will be background scatters of isolated artefacts around creeks, billabongs and rocky higher ground.

The archaeological survey of the test pit project indicated that the majority of subsurface artefacts will be located in the top 10 to 15 centimetres of topsoil in areas of cracking clays, while the potential for locating artefacts in the alluvial soils of the river banks will be low.

There is a higher potential for locating sites or isolated artefacts near the upper reaches of drainage lines to the river either on the eroding cracking clays or in areas where there has not been any alluvial deposit accumulated during recent wet season floods and in areas protected by the force of the floodwaters.

5.0. POTENTIAL IMPACTS AND RECOMMENDATIONS

This section describes the potential impacts that may be produced by the project on archaeological and historic sites and objects during the construction and operational phases of the project. Recommendations are then suggested that will help in the protection of archaeological and historical material, the mitigation of any impacts and to ensure that no offences are committed under *NT Heritage Conservation Act 1991*.

There are no archaeological or historic sites listed on any Commonwealth or Northern Territory site registers that will be disturbed by the open cut mine development at the McArthur River Mine. There are thirty four indigenous sites recorded on the Register of the National Estate for the Borroloola region. No details or locations for these sites are available and it is possible that some may be located in the areas to be disturbed and contain archaeological material. However as traditional owners and representative bodies will be consulted as a component of the project, any archaeological sites that may be located in the area will be protected by either the Aboriginal Areas Protection Authority or through discussion with the Northern Land Council.

A review of previous archaeological investigations and surveys over McArthur River Mine identified two archaeological sites that will be destroyed by the open cut mine. The subsurface archaeological surveys carried out during the clearance of the test pit and associated areas indicate that there is a high potential for the presence of isolated stone artefacts that are protected under the *NT Heritage Conservation Act 1991*.

5.1. Pre-Construction phase

5.1.1. Impacts

There is a potential that unidentified archaeological sites and objects will be destroyed by the construction of the open cut mine and associated infrastructures.

5.1.2. Recommendations

Before any works commences it is recommended that an archaeological survey be carried out over all areas to be disturbed. This survey should be carried out after areas of low ground visibility have been burnt to increase the potential for locating archaeological material in the grassed areas. The survey will consist of both purposive and random transects. The targeted areas should include the banks of McArthur River, Barney Creek, the length of the McArthur River diversion and all eroded areas.

During the initial clearance of the open cut mine and associated areas it is recommended that an archaeologist is present to survey areas that are predicted to have a higher potential for subsurface material. The criteria for the selection will be based on information collected from the initial surface survey. An archaeological survey for the subsurface investigation should occur during the various stages of disturbance up to a depth of 50cm.

The general recommendations for the protection and mitigation of archaeological sites that will be disturbed or destroyed by the proposed project will be as follows:

No further mitigative action will be required at sites of low archaeological significance. However as these sites are still protected under the *Heritage Conservation Act 1991* under sections 29 and 39, consent to disturb the sites must be sought from the Minister for the Environment and Heritage..

Sites with moderate to high archaeological significance will need various levels of protective actions, including temporary fencing of the site until salvage procedures such as surface collections and / or excavations of archaeological material are carried out. Salvage procedures are carried out only after permission to disturb the site has been obtained from the Minister for Lands, Planning and the Environment under the *Heritage Conservation Act 1991*, sections 29 and 39.

It is possible to make several specific recommendations at this time and they are:

- There is a high potential for the presence of subsurface isolated stone artefacts in the areas to be disturbed. To ensure that the *NT Heritage Conservation Act 1991* is not contravened and to facilitate the compliance of the Act, it is recommended that before the initial clearing and excavations for the proposed open cut mine project commences a permit to destroy any isolated stone artefacts of low archaeological significance within the areas to be disturbed is obtained from the Minister for the Environment and Heritage. It is also recommended that attempts be made to obtain the location of the background scatters located during the Hughes (2002 surveys) so that they can be included in the above permit.
- MRM1.
This site has been assessed as having moderated archaeological significance and will be destroyed by the proposed project. Therefore it is recommended that permission be sought to destroy the site from the Minister for the Environment and Heritage, with the proviso that a detailed surface analysis is made by a qualified archaeologist before the site is destroyed.
- MRM 2.
This site has been assessed as having moderate to high archaeological significance and will be destroyed by the proposed project. Therefore it is recommended that permission be sought to destroy the site from the Minister for the Environment and Heritage, with the proviso that a qualified archaeologist makes a detailed surface analysis and excavation before the site is destroyed.

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Appendix D.2
Cultural Heritage Certificates

Appendix D.2 Cultural Heritage Certificates

Detail of Authority Certificates Issued by AAPA for Previously Proposed Works

Reference	Land	Old Proposed Work	Special Conditions	Date Issued
D89/199; 90/1015/1 (Doc 47535)	Area of land including a gorge on the Glyde River located approximately 2 km upstream from the junction of the McArthur and Glyde Rivers, with the inundation area stretching up to a further 15 km upstream from this point.	Construction of a Rollcrete Weir to a height of approximately 15 m to provide all-seasons water supply to the mine and processing plant.	No entry, no ground disturbing works, no damage to vegetation, no storage of material and parking of machinery allowed within areas of sites 6165-14, 6165-15 and 6165-17.	26 June 2004
D89/199;90/ 1015/1 (Doc 47536)	Land stretching from the western entrance of the open pit, around the southern rim of the McArthur River realignment, intersection with an access road from the eastern edge of the open pit and east to the Glyde River Weir.	Construction of a road.	No entry, no ground disturbing works, no damage to vegetation, no storage of material and parking of machinery allowed within areas of sacred sites 6165-6 and 6165-18. A highly visible temporary protective fence is to be erected along the outer perimeter of the work areas in the vicinity of sacred sites 6165-6 and 6165-18 and maintained while the construction works are in progress.	16 June 2004
D89/199 90/1015/1 (Doc 47544)	Land between the Carpentaria Highway and Barney Creek.	Construction of new power station.		16 June 2004
D89/199 90/1015/1 (Doc 47545)	Land including the bed and banks of the Glyde River in three locations.	Extraction of river sand for construction purposes.	No entry, no ground disturbing works, no damage to vegetation, no storage of material and parking of machinery allowed within the area of sacred sites 6165-13, 6165-14, 6165-15 and 6165-17.	16 June 2004