



SNAPPER MINERAL SANDS MINE

**ABORIGINAL CULTURAL HERITAGE
MANAGEMENT PLAN**

NOVEMBER 2007
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1 INTRODUCTION

Bemax Resources Ltd (Bemax) is the proponent of the Snapper Mineral Sands Project (the Project). The Project is located approximately 50 km west of the township of Pooncarie in western New South Wales (NSW) and approximately 10 km to the south-west of the Ginkgo Mine. The Project includes the Snapper Mine Lease, and short extensions to the mineral concentrate transport route and electricity transmission line (Figure 1).

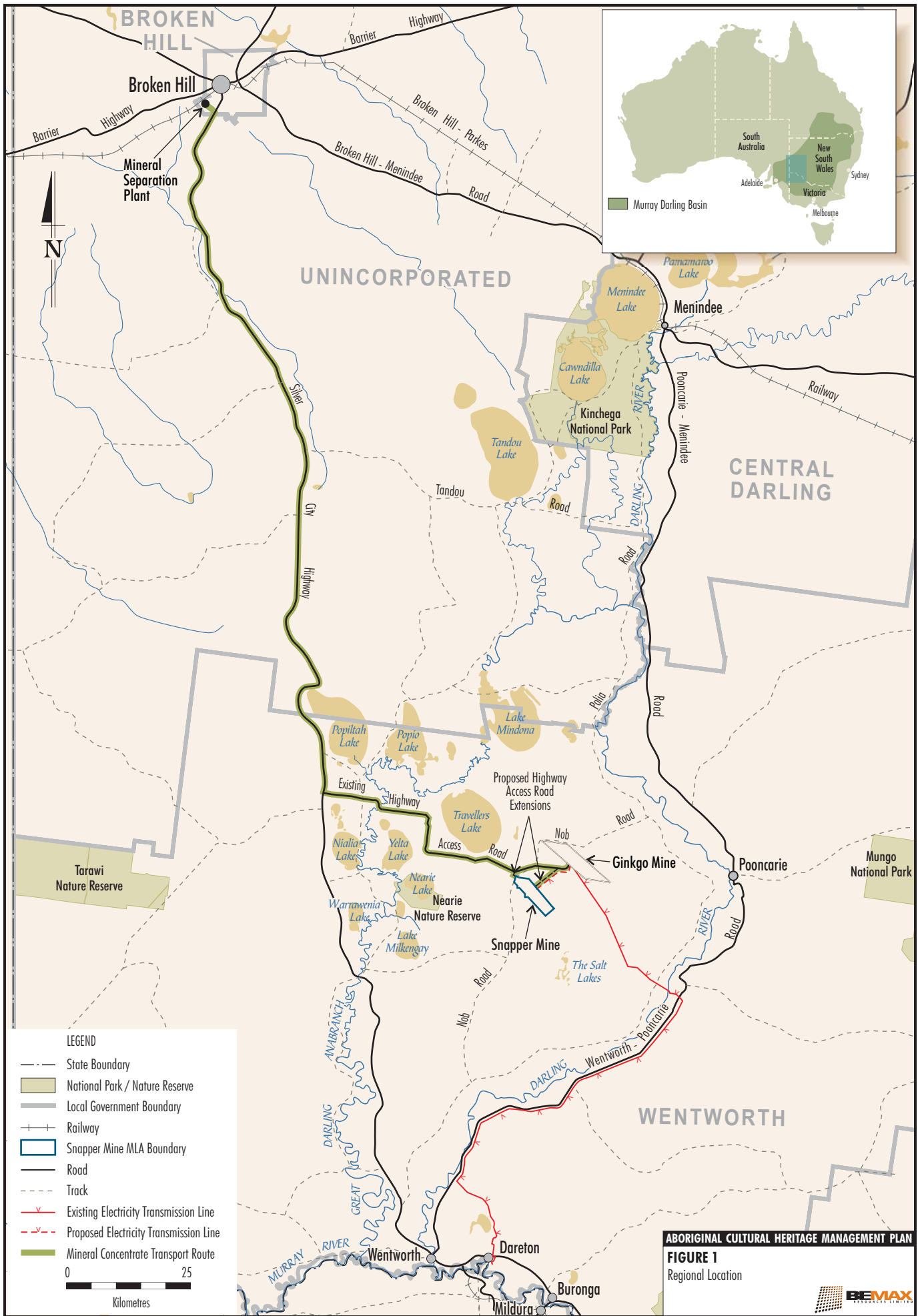
The NSW Minister for Planning granted development consent for the Project in September 2007. This Aboriginal Cultural Heritage Management Plan (ACHMP) has been prepared in accordance with development consent Schedule 3, Condition 19, which requires the preparation of an Aboriginal Cultural Heritage Management Plan to address Aboriginal cultural heritage issues during the development of the Project.

1.1 OBJECTIVES AND PURPOSE

Specifically, the objective of this ACHMP is to address Aboriginal cultural heritage issues pertaining to the Project to fulfil the relevant development consent conditions, via detailing:

- statutory requirements (Section 2);
- ongoing consultation undertaken in the preparation of the ACHMP (Section 3);
- results of previous cultural heritage surveys and assessments (Section 4);
- measures to avoid impacting on identified Aboriginal objects¹ (Section 5);
- actions undertaken should previously unidentified Aboriginal objects be discovered (Section 6); and,
- dissemination of cultural heritage information (Section 7).

¹ "Aboriginal object" means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains (as defined in Schedule 1 of the *National Parks and Wildlife Amendment Act 2001*).



2 LEGISLATIVE FRAMEWORK

The Project was approved by the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as a Major Project. Part 3A of the EP&A Act provides an approval process that is particularly adapted for major projects. Schedule 1 of the State Environmental Planning Policy (SEPP) (Major Projects) (2005) identifies developments which are major projects. Under Group 2 of Schedule 1 mineral sands mining is listed as a project to which Part 3A of the EP&A Act applies. In August 2006, the Director-General of the NSW Department of Planning (DoP) formed the opinion that the Snapper Mine met the requirements of the Major Projects SEPP and declared the Snapper Mine to be a major project under Part 3A of the EP&A Act.

Section 75U of the EP&A Act outlines the authorisations that do not apply to approved Part 3A projects. Under Section 75U permits and consents under Sections 87 and 90 of the *National Parks and Wildlife Act 1974* (NPW Act) do not apply.

The development consent issued by the Minister for Planning includes the relevant Aboriginal cultural heritage consent conditions listed in Table 1.

Table 1
Snapper Mineral Sands Project Development Consent Condition

Development Consent Condition	Where Addressed
Schedule 3	ABORIGINAL CULTURAL HERITAGE
20	All Sections
The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:	All Sections
(a) be prepared in consultation with the DECC and the registered Aboriginal stakeholders (involved during the preparation of the EA);	Section 3
(b) be submitted to the Director-General for approval prior to carrying out development on the site; and	
(c) include a:	
• description of detailed management strategies outlined in statement of commitment 5 in Appendix 4 (of the consent approval);	Section 5
• description of the measures that would be implemented if any skeletal remains are discovered during the project; and	Section 6
• program to monitor the effectiveness of the proposed management strategies;	Section 7

2.1 STATUTORY AUTHORITY GUIDELINES

The Cultural Heritage Assessment (Cupper, 2007) for the Snapper Environmental Assessment (EA) (Resource Strategies, 2007) was prepared in accordance with the general requirements of the NSW Department of Environment and Climate Change's [DECC] *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005) and considered the *Aboriginal Cultural Heritage Standards and Guidelines* (NPWS, 1997a, b).

The Cultural Heritage Assessment (Cupper, 2007) and this ACHMP have incorporated the requirements of these guidelines by:

- involving appropriate Aboriginal people in all phases of the assessment process, considering their cultural values and concerns;
- identifying Aboriginal cultural heritage places and items during the Environmental Assessment (EA) process; and

- preserving such sites and Aboriginal objects and avoiding the destruction of culturally important Aboriginal sites.

3 CONSULTATION PROCESS

During the course of the development of the Project EA and Cultural Heritage Assessment, representatives from Bemax and archaeological consultancy Landskape consulted with members of the Aboriginal community. Relevant stakeholders from the Aboriginal community were identified using a process consistent with the *Interim Community Consultation Requirements for Applicants* (DEC 2004). The Aboriginal organizations/people responsible for the provision of Aboriginal cultural heritage advice within the Project area included:

- members of the southern Barkindji Elders community (in particular Noel Johnson, Sheila Kirby and Ray Lawson); and
- the Webster Family (in particular Wayne Webster).

Aboriginal consultation was undertaken in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005) prior to and during the course of the development of the Cultural Heritage Assessment (Cupper, 2007) for the Project EA and the Aboriginal Cultural Heritage Management Plan for the Project.

3.1 CULTURAL HERITAGE ASSESSMENT FOR THE PROJECT ENVIRONMENTAL ASSESSMENT

A full record of the Aboriginal participation during the development of the Project EA is included in the Snapper Mineral Sands Project Environmental Assessment (Resource Strategies, 2007).

Preliminary Aboriginal Involvement

Discussions were held with members of the Aboriginal community about the development prior to the fieldwork phase of the investigation. This has included Project Archaeologist Matt Cupper from Landskape making a preliminary inspection of the Snapper Mine MLA area (i.e. a general traverse along the MLA area) with Barkindji Elders Noel Johnson and Ray Lawson on 16 March 2006.

Aboriginal Involvement Prior to the Field Assessment

Project Archaeologist Matt Cupper and Bemax Exploration Manager Ray Roberts met with Barkindji Aboriginal Elders Noel Johnson, Sheila Kirby and Ray Lawson in Dareton on 18 October 2006 to explain the developments associated with the Snapper Mine and the planned cultural heritage assessment. Telephone discussions were also held with Wayne Webster, Mark Sutton, Les Bennett, Patricia Doyle, Evelyn Crawford and Michael Gilby about the development and cultural heritage assessment prior to the commencement of the assessment.

Measures to avoid or mitigate any impacts on cultural heritage places or items were discussed with the Aboriginal community groups and individuals. They were given written copies of a proposed methodology for the cultural and archaeological assessment. Opinions of the Aboriginal community groups and individuals about the development and its potential impacts on cultural heritage were sought and any concerns or queries were addressed.

Aboriginal Involvement During the Field Assessment

On the recommendation of the relevant Aboriginal community groups and individuals, 11 representatives from the local Aboriginal community participated in the field survey:

- Barkindji Elder Ray Lawson, assisted by son Rodney Lawson and grandsons Russell Andrews, Joshua Harris and Justin Riley. Ray and his family reside in Dareton. Ray is chairperson of the Pooncarie Wiimpatya Paakandyi Aboriginal Corporation, a Barkandji Native Title applicant and former chairperson of the Dareton Local Aboriginal Land Council.
- Barkindji Elder Noel Johnson, assisted by son Frank Kirby and son-in-law David Smith. Noel is treasurer of the Pooncarie Wiimpatya Paakandyi Aboriginal Corporation and a Barkandji Native Title applicant. He lives in Wentworth and is head of the Brown and Whyman families.
- Desmond Webster, Jeffrey Webster and Clinton Squire. Desmond and Jeffrey are sons of Wayne Webster's sister, Leila Webster. Clinton is the son of Wayne Webster's brother, Larry Webster. Jeffrey and Clinton live in Broken Hill and Desmond lives in Wilcannia.

Aboriginal Involvement Following the Field Assessment

Project Archaeologist Matt Cupper visited the study area with Wayne Webster and Johanne Carr on 15 November 2006 to explain the developments and show them the cultural heritage sites identified during the field survey. The views of Wayne and Johanne about the social and cultural significance of the cultural heritage sites were sought and strategies for management of the sites discussed.

Project Archaeologist Matt Cupper also met with Mark Sutton and Les Bennett on 15 November 2006 to explain the results of the cultural heritage field survey and management proposals.

The registered Aboriginal stakeholders were advised of the availability of a draft of this cultural heritage assessment report on 27 November 2006, consistent with the *Interim Community Consultation Requirements for Applicants* (DEC, 2004). Draft copies of this report were provided for comment to Sheila Kirby, Noel Johnson, Ray Lawson and Wayne Webster on 27 November 2006.

Project Archaeologist Matt Cupper and Bemax environmental officer Greg Lamb met with Wayne Webster in Broken Hill on 5 December 2006 to discuss the recommendations of the cultural heritage assessment. Wayne Webster was satisfied that the report effectively detailed Aboriginal cultural and social values and that the strategies for managing Aboriginal cultural heritage within the development area were appropriate.

Project Archaeologist Matt Cupper and Bemax Exploration Manager Ray Roberts also met with Sheila Kirby, Noel Johnson and Ray Lawson in Dareton on 7 December 2006 to discuss the management proposals for Aboriginal cultural heritage. Sheila Kirby, Noel Johnson and Ray Lawson endorsed the recommendations of the cultural heritage assessment report.

3.2 ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN

Draft copies of the Aboriginal Cultural Heritage Management Plan were provided for comment to Sheila Kirby, Noel Johnson, Ray Lawson and Wayne Webster on 5 September 2007

Project Archaeologist Matt Cupper and Bemax environmental officer Greg Lamb met with Wayne Webster in Broken Hill on 11 September 2007 to discuss the Aboriginal Cultural Heritage Management Plan and seek Wayne Webster's opinion about the plan. Wayne Webster was satisfied that most of the strategies for managing Aboriginal cultural heritage within the development area were appropriate. However, he requested that a representative of the Aboriginal community also be

present to monitor all soil stripping for the Project. Project Archaeologist Matt Cupper explained that representatives of the local Aboriginal community will be engaged to monitor construction activities in the vicinity of previously identified Aboriginal objects and that Bemax personnel with cultural heritage training will supervise all other soil stripping activities (see Section 6).

Wayne Webster stated that it was his belief that Aboriginal objects may occur in the soil subsurface and that a representative of the Aboriginal community was the appropriate person to identify any buried Aboriginal objects that may be exposed during soil stripping activities. Project Archaeologist Matt Cupper explained that representatives of the local Aboriginal community would be involved in assessing the significance and determining the management of any previously unidentified Aboriginal objects that may be identified during construction activities (see Section 6). Wayne Webster stated that it was his opinion that the draft Aboriginal Cultural Heritage Management Plan should be modified to include provision for a representative of the Aboriginal community to monitor all soil stripping activities.

Given that the Cultural Heritage Assessment (Cupper, 2007) for the Project EA concluded that the Project is located in an area where significant impacts on cultural heritage will be avoided, the plan outlined in Section 6 for identifying and managing any previously unidentified Aboriginal objects is considered appropriate (ie. representatives of the local Aboriginal community will be engaged to monitor construction activities in the vicinity of previously identified Aboriginal objects and that Bemax personnel with cultural heritage training will supervise all other soil stripping activities).

Project Archaeologist Matt Cupper and Bemax environmental officers Greg Lamb and Michael Priest also met with members of the southern Barkindji Elders community Sheila Kirby, Noel Johnson and Ray Lawson in Dareton on 12 September 2007 to discuss the management proposals for Aboriginal cultural heritage. Sheila Kirby, Noel Johnson and Ray Lawson endorsed the Aboriginal Cultural Heritage Management Plan. In particular, Sheila Kirby, Noel Johnson and Ray Lawson were satisfied that the plan outlined in Section 6 for identifying and managing any previously unidentified Aboriginal objects was appropriate (ie. representatives of the local Aboriginal community will be engaged to monitor construction activities in the vicinity of previously identified Aboriginal objects and that Bemax personnel with cultural heritage training will supervise all other soil stripping activities).

4 ABORIGINAL CULTURAL HERITAGE SURVEYS AND ASSESSMENTS

4.1 SNAPPER MINERAL SANDS PROJECT AREAS

An Aboriginal cultural heritage survey and assessment of the Project was undertaken by Landskape (Copper, 2007) as a component of the EA process. A summary of the survey results are provided in Section 4.2.

The assessment adopted the NSW DECC site type system for describing archeological sites as follows:

- **Hearth:** Fireplace or ground oven made by Aboriginal people, consisting of hearthstones, charcoal and/or heat retainers.
- **Artefact:** Concentration of stone artefacts manufactured by Aboriginal people. Hearths may also be present. An **isolated find of artefacts** is up to several stone artefacts that do not appear to be part of a concentration.
- **Stone quarry:** Rock outcrop that has been exploited by Aboriginal people to obtain lithic resources for the manufacture of stone artefacts.

4.2 SNAPPER MINING LEASE AREA

Twenty-two Aboriginal archaeological sites (SN01—22) (Figure 2) were identified within the study area during the survey. These sites are:

Table 2
Identified Aboriginal Archaeological Sites

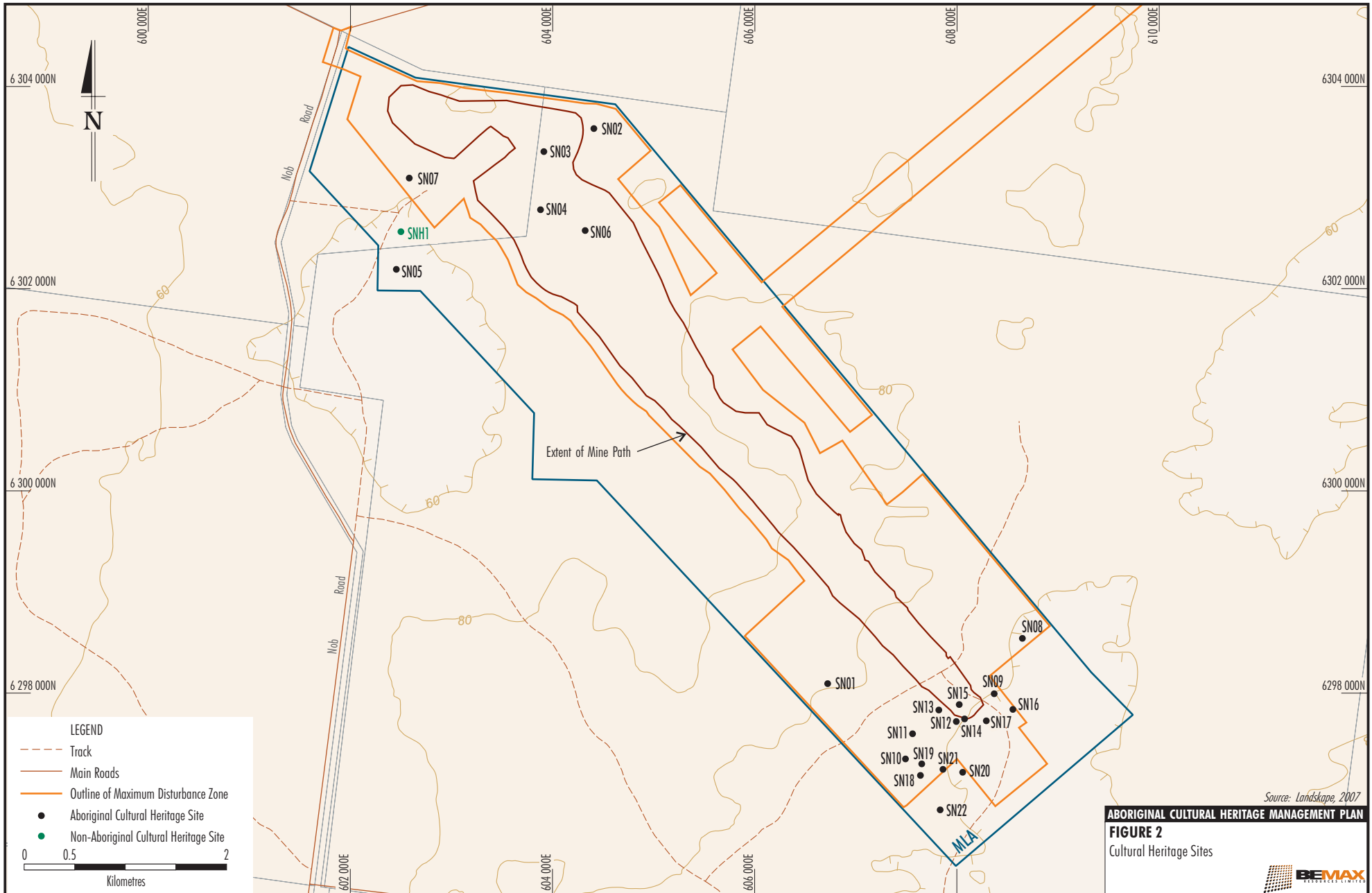
Site Name/s	Site Type/s	Physical Characteristics	Location
SN01, SN11	Stone quarries, stone artefact scatters	Quarried silicified and ferruginized sandstone cobbles with associated silcrete artefacts.	Sandplains at the southern end of the Snapper Mine MLA area.
SN02	Stone artefact scatter, hearths	Scatter of silcrete, chert and quartz artefacts with two associated <i>in situ</i> hearths of baked clay heat retainers.	Adjacent to a small ephemeral depression at the northern end of the Snapper Mine MLA area.
SN03, SN05	Isolated finds of stone artefacts	Isolated finds of a silcrete scraper and fragment of a quartzite pestle/hammerstone.	Northern end of the Snapper Mine MLA area.
SN04, SN06	Hearths	Scattered baked clay heat retainers from eroded hearths.	
SN07	Stone artefact scatter, hearth	Scatter of silcrete and quartz artefacts with associated scattered calcrete hearthstones.	
SN08, SN10, SN12, SN13, SN14, SN15, SN17, SN18, SN19, SN21	Stone artefact scatters	Scatters of silcrete artefacts.	Southern end of the Snapper Mine MLA area.
SN09, SN16	Isolated finds of stone artefacts	Isolated finds of silcrete artefacts	
SN20, SN22	Stone quarries, stone artefact scatters	Quarried silcrete outcrops with associated scatters of silcrete artefacts	

Summaries of the characteristics of these sites are presented in Table 3.

Table 3
Summary Data of the Aboriginal Archaeological Sites in the Study Area

Site Name	Site type/s	Location GDA (mE)	Location GDA (mN)	Site Dimensions (m)	Landform	Contents
SN01	Stone quarry, stone artefact scatter	606719	6298095	150 x 150	Sandplain	1000s silicified and ferruginized sandstone cobbles, 50 silcrete artefacts
SN02	Stone artefact scatter, hearth	604405	6303587	20 x 20	Sandplain	8 silcrete, 2 chert, 1 quartz artefacts, 2 <i>in situ</i> baked clay heat retainer hearths
SN03	Stone artefact	603910	6303359	na	Sandplain	1 silcrete stone artefact
SN04	Hearth	603877	6302784	2 x 2	Sandplain	Scattered baked clay heat retainers
SN05	Stone artefact	602450	6302194	na	Sandplain	1 quartzite stone artefact
SN06	Hearth	604319	6302578	10 x 10	Sandplain	Scattered baked clay heat retainers
SN07	Stone artefact scatter, hearth	602578	6303097	10 x 10	Sandplain	1 silcrete, 1 quartz artefacts, scattered calcrete hearthstones
SN08	Stone artefact scatter	608646	6298543	25 x 25	Sandplain	14 silcrete artefacts
SN09	Stone artefacts	608367	6297995	10 x 10	Sandplain	2 silcrete artefacts
SN10	Stone artefact scatter	607489	6297350	100 x 100	Sandplain	9 silcrete artefacts
SN11	Stone quarry, stone artefact scatter	607559	6297599	300 x 300	Sandplain	1000s silicified and ferruginized sandstone cobbles, 24 silcrete artefacts
SN12	Stone artefact scatter	607992	6297720	75 x 75	Sandplain	15 silcrete artefacts
SN13	Stone artefact scatter	607819	6297834	50 x 50	Sandplain	7 silcrete artefacts
SN14	Stone artefact scatter	608074	6297746	100 x 100	Sandplain	45 silcrete artefacts
SN15	Stone artefact scatter	608021	6297888	100 x 100	Sandplain	12 silcrete artefacts
SN16	Stone artefacts	608552	6297840	50 x 50	Sandplain	3 silcrete artefacts
SN17	Stone artefact scatter	608289	6297727	100 x 100	Sandplain	7 silcrete artefacts
SN18	Stone artefact scatter	607637	6297187	100 x 100	Sandplain	87 silcrete artefacts
SN19	Stone artefact scatter	607650	6297301	100 x 100	Sandplain	69 silcrete artefacts
SN20	Stone quarry, stone artefact scatter	608055	6297218	200 x 200	Sandplain	Silcrete outcrops, 1000s silcrete cobbles, 92 silcrete artefacts
SN21	Stone artefact scatter	607860	6297247	200 x 200	Sandplain	38 silcrete artefacts
SN22	Stone quarry, stone artefact scatter	607833	6296849	400 x 400	Sandplain	Silcrete outcrops, 1000s silcrete cobbles, 500+ silcrete artefacts

Source: Cupper (2007)



ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN

FIGURE 2
Cultural Heritage Sites



5 MANAGEMENT OF IDENTIFIED ABORIGINAL OBJECTS

The management measures detailed in the following sub-sections have incorporated indicative Aboriginal community attitudes recorded during the consultation process with the representatives from the southern Barkindji Elders community, the Webster family, and the members of the wider Aboriginal communities who participated in the Cultural Heritage Assessment.

Aboriginal objects will be avoided where possible (Section 5.1). General land management strategies will also be implemented to avoid inadvertent damage (Section 5.2).

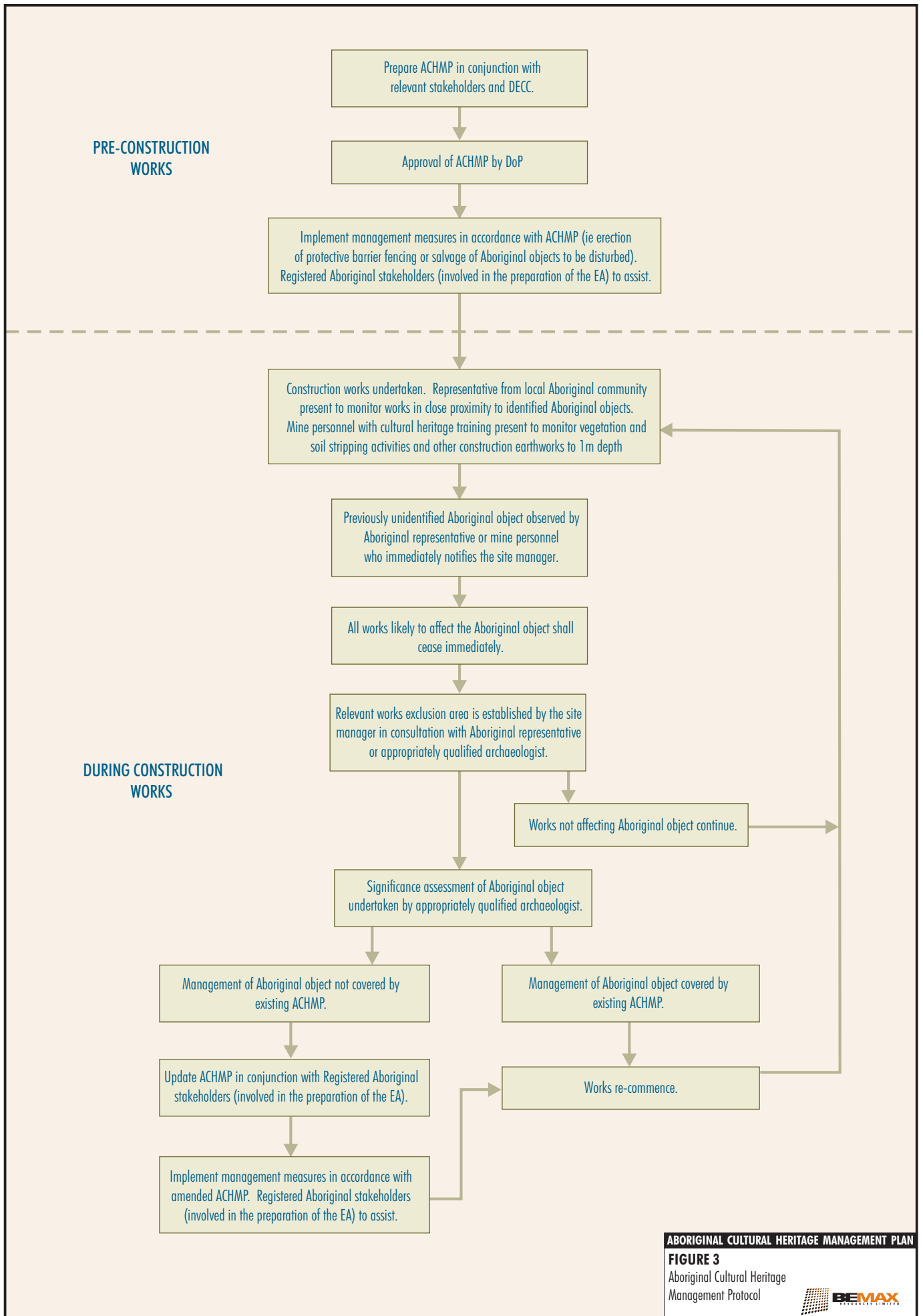
Aboriginal objects which cannot be avoided, and which will be disturbed as a result of construction and/or operational activities, will be managed in accordance with the strategies outlined in Table 4.

Figure 3 outlines the protocol for the management of previously identified Aboriginal objects prior to and during the development of the Project. An overall summary of the proposed mitigation measures for the relevant sites and isolated finds identified during the cultural heritage surveys and assessments are provided in Table 4.

Table 4
Summary of Site Specific Management Strategies for the Cultural Heritage Sites

Site name/s	Site types	Potential impacts	Proposed management measures
SN01, SN11	Stone quarry, stone artefact scatter	Direct	Representative sample of stone artefacts will be recorded, collected and moved to the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The representative sample will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC. Lithic technologies and reduction strategies adopted at the stone quarry sites and the relationship of these sites to other sites within the disturbance area will be investigated.
SN02	Stone artefact scatter, hearth	Direct	Stone artefacts and heat retainers will be recorded, collected and moved to the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The artefacts and heat retainers will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC. Hearths will be excavated by an archaeologist and representatives of the local Aboriginal community. Radiocarbon and/or luminescence dating will be used to determine the ages of the hearths.
SN03	Stone artefact	Direct	The stone artefact will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The artefact will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.
SN04, SN06	Hearth	Direct	The heat retainers will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The heat retainers will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.

Site name/s	Site type/s	Potential impacts	Proposed management measures
SN05	Stone artefact	Indirect	Avoid disturbing the site, possibly by erecting a temporary protective barrier around it.
SN07	Stone artefact scatter, hearth	Direct	Stone artefacts and heat retainers will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The artefacts and heat retainers will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.
SN08, SN13, SN17	Stone artefact scatter	Direct	Stone artefacts will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The artefacts will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.
SN09, SN16	Stone artefacts	Direct	Stone artefacts will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The artefacts will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.
SN10, SN12, SN14, SN15, SN18, SN19, SN21	Stone artefact scatter	Direct/indirect	Representative sample of stone artefacts will be recorded, collected, curated and stored at the 'Keeping Place' at Bemax's Ginkgo Mine by an archaeologist and representatives of the local Aboriginal community. The collected artefacts will be recorded in sufficient detail to allow a description of the lithic technologies and reduction strategies adopted. The regional and local contexts of the artefacts will also be analysed and described. The representative sample will be replaced within rehabilitated areas in consultation with the local Aboriginal community and NSW DECC.
SN20, SN22	Stone quarry, stone artefact scatter	Indirect	Temporary protective barriers will be erected around the sites. Bemax will engage an archaeologist and representatives of the local Aboriginal community to supervise the erection of the barriers and monitoring of their maintenance.



ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN
FIGURE 3
 Aboriginal Cultural Heritage Management Protocol



5.1 AVOIDANCE

Archaeological surveys undertaken for the Project EA (Cupper, 2007) identified several archaeological sites to be avoided during construction and operation of the Project. Details of the sites to be avoided and measures to be undertaken to prevent direct and indirect impact of the sites are detailed below.

In order to avoid any unnecessary disturbance of Aboriginal objects within currently proposed disturbance areas, salvage of objects will only be undertaken where disturbance of the Aboriginal object is unavoidable.

Archaeological Sites to be Avoided

Identified Aboriginal objects in sites SN05, SN20 and SN22 will be avoided and protective fencing erected around each site in accordance with Table 4 and Figure 3.

Aboriginal Community Involvement

Representatives of the local Aboriginal community will be engaged to monitor construction activities in the vicinity of identified Aboriginal objects to ensure these areas are avoided and appropriate mitigation measures are in place (ie. the erection of protective barrier fencing and sedimentation control structures).

Construction of Protective Fencing

Bemax will retain appropriate contractors to construct protective fencing around identified sites to be avoided. Construction of the fences will be conducted under the supervision of the Aboriginal representatives and in consultation with a qualified archaeologist.

5.2 LAND MANAGEMENT STRATEGIES

General land management strategies will be implemented during the development of the Project to minimise the impact on Aboriginal cultural heritage and identified Aboriginal objects through:

- minimising disturbance areas;
- controlling sedimentation; and
- progressive rehabilitation.

These land management strategies are detailed in a number of environmental management plans prepared for the Project including the Site Water Management Plan and Flora and Fauna Management Plan.

5.3 INVESTIGATION PROGRAMS

Aboriginal objects in areas where disturbance cannot be avoided will be managed via the investigation programs outlined below and summarised in Table 4. These research designs and study plans are based on the findings and recommendations of the Cultural Heritage Assessment (Cupper, 2007) prepared for the Snapper Mineral Sands Mine Environmental Assessment.

Bemax will engage a suitably qualified archaeologist and representatives of the local Aboriginal community to record and collect a representative sample of scientifically and culturally significant items

from the Aboriginal archaeological sites that are in areas to be disturbed as a result of construction and/or operational activities.

The aims of the investigation programs will be to examine the lithic technology and reduction strategies adopted at the Aboriginal sites. In addition, material recovered from hearths at site SN02 will be dated using radiocarbon and/or luminescence techniques. The research design will include an analysis of the context of the artefacts, in an effort to better understand and interpret local and regional patterns of past Aboriginal settlement and resource use. The program will also aim at protecting Aboriginal cultural heritage items, which will be stored in a 'Keeping Place'.

Archaeological Sites to be Investigated

Identified Aboriginal objects in sites SN01—04, SN06—19, SN21 are located in areas where disturbance cannot be avoided.

Aboriginal Community Involvement

The investigation programs will involve the appropriate representatives of the local Aboriginal community and considered their cultural values and concerns in accordance with the *Guidelines for Archaeological Practice in Aboriginal Heritage Management* (NPWS, 1997a).

Aboriginal community consultation for the investigation programs will be conducted before the field recording and collection to provide an update on the Snapper development and its impact on archaeological sites, discuss the methodology for the investigation programs, and organise a field team for the field study.

Representatives of the Aboriginal community will be invited to observe and, where appropriate, participate in the recording and collection programs.

Results of the investigation programs will be disseminated to the Aboriginal community using a variety of media including plain-English written reports and presentations and discussions at community forums and meetings.

Research Methodology

This research design provides for the recording, excavation, collection, curation, storage and replacement of identified Aboriginal objects from areas that will be disturbed as a result of the construction and operational activities associated with the development of the Project.

All previously identified archaeological sites and isolated finds outside the mine path and infrastructure areas will be avoided. Identified archaeological sites and isolated finds within the mine path will be disturbed (Table 4).

Proposed mine works will include progressive vegetation clearance, topsoil stripping, removal of overburden, dredging, replacement of tailings and overburden, and rehabilitation. All sites which will not be directly impacted upon will be excluded from the mine works areas by erecting temporary protective fencing.

Prior to vegetation clearance, archaeological work at each site to be disturbed will include the following:

- Commissioning of a suitably qualified archaeologist to inspect and record each known site to identify surface Aboriginal objects within the proposed disturbance area. Representatives of the local Aboriginal community will be consulted on the inspection and will be invited to

observe and, where appropriate, participate in the works (eg. recording, excavation and collection).

- In relation to each identified Aboriginal object, the archaeologist will, prior to any disturbance, record its position with a GPS and/or map, and measure and describe the site or find. A representative sample of surface Aboriginal objects will be recovered and separately bagged, labelled, and stored temporarily in the 'Keeping Place' at the Ginkgo Mine Office.
- The collected Aboriginal objects will be recorded in sufficient detail to allow description of the lithic technology and reduction strategies adopted. The regional and local contexts of the collected objects will also be analysed and described.
- *In situ* hearths at site SN02 will be excavated by the archaeologist and charcoal and/or hearthstones/heat retainers extracted for radiocarbon and/or luminescence dating. Additional recovered archaeological material will be stored temporarily in the 'Keeping Place' at the Ginkgo Mine Office.
- Remaining Aboriginal objects that cannot be practicably recovered will be collected with soil during soil stripping operations and stored temporarily in soil stockpiles before being replaced during rehabilitation activities (ie. when soil is replaced on mine landforms as a component of the revegetation programme).

Following the completion of rehabilitation activities or during the rehabilitation program at a time when works within the specific area do not pose a threat, the salvaged Aboriginal objects will be replaced in a location as close as possible to their original location in consultation with Aboriginal community representatives. Aboriginal object replacement will be conducted by a suitably qualified archaeologist. Representatives of the local Aboriginal community will be consulted on the replacement activities and will be invited to observe and, where appropriate, participate in replacement works.

Reporting

Bemax will commission an archaeologist to produce reports detailing the results of the investigation programs. These reports will include:

- the aims and methodology of the investigation program;
- the location and characteristics of sites;
- the number of Aboriginal objects collected from each site;
- the nature of the cataloguing system used;
- the lithic technology and reduction strategies adopted;
- an analysis of the regional and local contexts of the artefacts;
- descriptions and ages of any excavated and dated hearths; and,
- a summary of consultation undertaken with the relevant Aboriginal community groups.

These reports will form part of the Annual Environmental Management Report (AEMR) (see Section 7.3). They will be provided to the NSW DoP and NSW DECC within 12 months of the completion of each investigation program. Plain-English summary reports without technical archaeological terms will be provided to the Aboriginal community.

Management of Previously Unidentified Aboriginal Objects

In accordance with Section 6, should previously unidentified Aboriginal objects be encountered during works the management of such Aboriginal objects would proceed in accordance with the Aboriginal Cultural Heritage Management Protocol (Figure 3). Information about any such Aboriginal cultural heritage sites or items would be submitted to NSW DECC for inclusion in the Aboriginal Heritage Information Management System (AHIMS) Site Register.

6 MANAGEMENT OF PREVIOUSLY UNIDENTIFIED ABORIGINAL OBJECTS

Management of previously unidentified Aboriginal objects including skeletal remains during the development of the Project will be conducted in accordance with the Aboriginal Cultural Heritage Management Protocol (Figure 3).

Representatives of the local Aboriginal community will be engaged to monitor construction activities in the vicinity of previously identified Aboriginal objects. Bemax personnel with cultural heritage training (see Section 7.1) will supervise all vegetation clearing and soil stripping activities and other construction earthworks to 1 m depth.

In accordance with the Protocol, if during the course of construction or operational activities, any previously unidentified Aboriginal objects including skeletal remains are encountered by an Aboriginal representative or mine personnel, all works likely to affect the Aboriginal object shall cease immediately and the relevant authorities will be consulted about an appropriate course of action prior to the recommencement of work. Relevant authorities may include NSW DECC and the local Aboriginal community.

A works exclusion zone will be established in the area proximal to the Aboriginal objects. Works not affecting any Aboriginal objects (ie. outside of the works exclusion zone) will continue whilst an appropriate course of action is determined.

Determination of an appropriate course of action will include:

1. Assessment of the previously unidentified Aboriginal object by a suitably qualified archaeologist to confirm the nature of the object.

This assessment will be conducted in consultation with the local Aboriginal community and will include an evaluation of the significance of the object in accordance with *Standards for Archaeological Practice in Aboriginal Heritage Management* (NPWS, 1997b). Assessment of the significance of the object will provide an indication of the research potential, representation and rarity in the area (within and outside the study area), educational and aesthetic values, and spiritual, traditional, historical or contemporary significance to the local Aboriginal community. The significance assessment will be documented for consultation purposes.

2. Updating the ACHMP to include a suitable management strategy for the previously unidentified object. The local Aboriginal community and NSW DECC will be consulted and provided with copies of the updated ACHMP.
3. Once a suitable management strategy has been agreed upon by relevant stakeholders management actions be implemented under the supervision of a suitably qualified archaeologist and representatives of the local Aboriginal community. These actions may include avoiding disturbance by modifying the development and erecting protective fencing or the recording, excavation, collection, curation, storage and replacement of identified Aboriginal objects from areas where disturbance cannot be avoided.
4. Work within the exclusion zone will not recommence until the management strategy has been fully implemented.

7 DISSEMINATION OF CULTURAL HERITAGE INFORMATION

Aboriginal culture heritage information will be disseminated at a local and regional level through a series of measures including:

- site education and training programs (Section 7.1);
- provision of an accessible on-site 'Keeping Place' (Section 7.2);
- reporting Aboriginal cultural heritage management procedures and activities (Section 7.3); and,
- providing up to date Aboriginal site records for inclusion on the NSW DECC AHIMS Site Register (Section 7.4).

7.1 EDUCATION AND TRAINING PROGRAMS

Education and training programs will be used to distribute information on the Aboriginal cultural heritage management issues. The program will also be used to educate personnel and contractors of the significance of the sites identified and preventative strategies to minimise the risk of disturbing any Aboriginal objects.

The education and training programs will include but will not necessarily be limited to:

- induction of all company employees, contractors and first time visitors;
- ongoing refresher training programs for key employees and contractors to improve skills and competencies as necessary; and,
- cultural awareness training programs for all employees.

7.2 'KEEPING PLACE'

It is proposed to use the existing 'Keeping Place' at the Ginkgo Mine Office for the storage of Aboriginal objects that are excavated, collected and removed from their original sites. Suitable storage will be provided to provide sufficient casing to protect Aboriginal objects such as those identified at the archaeological sites in the mine path and any isolated finds. This 'Keeping Place' will be accessible to members of the Aboriginal community.

7.3 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

Bemax will issue an Annual Environmental Management Report (AEMR) detailing relevant Aboriginal cultural heritage works and monitoring conducted during the reporting period. Works reported would include those required under the development consent as well as any consultation undertaken. Proposed Aboriginal cultural heritage works and monitoring for the next year will also be reported.

The AEMR will include the results of the investigation programs described in Section 5.3.

The AEMR will be provided to the NSW DoP and NSW DECC. A plain-English summary of the sections of the AEMP pertaining to Aboriginal cultural heritage works and monitoring will be provided to the local Aboriginal community.

The Project's annual environmental reporting requirements are detailed under Development Consent Condition 5 of Schedule 4 (see below).

Annual Reporting

Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and relevant agencies. This report must:

- (a) identify the standards and performance measures that apply to the project;*
- (b) describe the works carried out in the last 12 months;*
- (c) describe the works that will be carried out in the next 12 months;*
- (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;*
- (e) include a summary of the monitoring results for the project during the past year;*
- (f) include an analysis of these monitoring results against the relevant:*
 - impact assessment criteria/limits;*
 - monitoring results from previous years; and*
 - predictions in the EA;*
- (g) identify any trends in the monitoring results over the life of the project;*
- (h) identify any non-compliance during the previous year; and*
- (i) describe what actions were, or are being, taken to ensure compliance.*

7.4 ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM SITE REGISTER

The NSW DECC maintains the Aboriginal Heritage Information Management System (AHIMS), a database containing information about known Aboriginal cultural heritage sites.

Results of previously conducted surveys (Cupper, 2007) have been made available to NSW DECC for inclusion in AHIMS. Results of any future surveys would also be made available to NSW DECC for inclusion in AHIMS.

8 REFERENCES

Cupper, M.L. (2007). *Cultural Heritage Assessment: Snapper Mineral Sands Project*. Report to Bemax Resources Limited.

Department of Environment and Conservation (DEC) (2004). *Interim Community Consultation Requirements for Applicants*. (NSW Department of Environment and Conservation: Sydney).

Department of Environment and Conservation (DEC) (2005). *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*. (NSW Department of Environment and Conservation: Sydney).

National Parks and Wildlife Service (NPWS) (1997a). *Guidelines for Archaeological Practice in Aboriginal Heritage Management*. (Cultural Heritage Services Division, NSW National Parks and Wildlife Service: Hurstville, NSW).

National Parks and Wildlife Service (NPWS) (1997b). *Standards for Archaeological Practice in Aboriginal Heritage Management*. (Cultural Heritage Services Division, NSW National Parks and Wildlife Service: Hurstville, NSW).

Resource Strategies (2007). *Snapper Mineral Sands Project Environmental Assessment*. Report to Bemax Resources Limited.