ARCHAEOLOGY REPORT

A CULTURAL HERITAGE SURVEY

FOR THE PROPOSED

SILL 80 PROJECT ON NUMUL NUMUL STATION, NT

A report for EcOz VDM

On behalf of Australian Ilmenite Resources.

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SUMMARY

No archaeological or historic sites or object were identified during the survey. A stone cairn was observed on the summit of an isolated hill. However as the hill was located within the restricted area of a sacred site, it was not possible to examine the cairn closely.

Therefore no further action is required for compliance with the provisions of the *Northern Territory Conservation Act, 1991*.

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1.0. INTRODUCTION

This report describes a cultural heritage survey that was carried out over sections of Numul Numul and Flying Fox Pastoral Leases that may be disturbed by Australian Ilmenite Resources for their proposed Sill 80 Project. The project intends to mine ilmenite which is found in the top three metres of the surface. Begnaze Pty Ltd was engaged by EcOz VDM Environmental Services to undertake the survey, the result of which will be included in a PER for Australian Ilmenite Resources.

The proposed mine is located approximately one kilometre east of the Roper Valley Community which is nine kilometres south of the Roper Highway and 110 kilometres from the Stuart Highway. The land proposed for mining covers an area of 3.75 x 3.25 kilometres. A proposed access road from the Roper Highway to the mine site and a proposed pipeline route from the Roper River to the highway were also surveyed. The pipeline will run adjacent to the access road from the highway south to the mine (see Figure 1).

The survey was carried out over one and a half days by Christine Crassweller accompanied by Casey Hawkey from EcOz and two traditional owners, Estelle Farrar and Mildred Ponto from the Roper Valley Community

2.0 BACKGROUND INFORMATION

2.1. Environmental

The area is located within the Dissected Gulf Fall physiographic division consisting of broad valleys lying between strike ridges of sandstone (Aldrick and Wilson 1992). The majority of the subject land consists of either flat to gently undulating plains, or undulating to rolling hills and low rises. The underlying geology consists of Derim Derim Dolerite and there are hills to the east and south made up of the Kyalla Formation of embedded siltstone mudstone and very fine grained quartz sandstone, which are suitable materials for manufacturing stone artefacts (Abbott *et al*. 1992).

Drainage in the region is controlled by the series of sandstone ridges which results in the accumulation of sediments in broad shallow valleys. There appears to be only one creek, the headwaters of Blackwater Creek, in the southeastern section of the survey area.

The vegetation consists of Vegetation Unit 16 of woodlands of *Eucalyptus tectifica* (Northern Box) and *Eucalyptus terminalis* (Bloodwood) with a grassland understorey (Wilson *et al.* 1991).

2.2. Ethnographic / historic background

The first recorded description of the inhabitants of the region was by the explorer Leichhardt (1964: 442-451) who crossed the area in 1845. Evidence of Aboriginal occupations included fish traps, camps sites with the remains of fish and mussels, well-worn footpaths, burnt areas and frequent grinding stones used to pound seeds. He also noted that the camps near the Roper River appeared older than those surrounding the billabongs from the freshness of mussel shells and the evidence that burning had occurred earlier in the season. These descriptions correspond with the earliest research in northern Australia investigating Aboriginal subsistence strategies and material culture, which was carried out by Basedow (1907), Foelsche (1882), Thomson (1983) and Spencer (1914). Their observations describe general information regarding Aboriginal life including the various weapons and other implements used during the contact period in the Top End. The early accounts (Basedow 1907, Foelsche 1882) describe swamps and lagoons as being focal points of subsistence activities providing sources of fish, geese, ducks, turtles, crocodiles and their eggs, shellfish and the roots of water lilies and rushes. Away from the

lagoons, wallabies, snakes, goannas and other small game were hunted. Seasonal factors were a key determinant on camp locations, types of residential grouping, the degree of mobility and the nature of subsistence activities. During the wet season groups of people would have been able to access resources over a wider area, as water was readily available, and higher uplands used to avoid the rivers and tributaries. In the dry season as water receded, the location of camps would have contracted to more permanent sources of water.

The finding of gold in Pine Creek in the early 1870s and the beginning of the pastoral industry in the late 1870s resulted in the movement of cattle and people through the region from Queensland. During the period of pastoral expansion Aboriginal inhabitants started to leave their traditional life style and work on the stations. It was also a time when there were a number of violent conflicts because of the loss of access by Aboriginals to resources and the pollution of waterholes by cattle. The Aboriginals fought back by cattle spearing at waterholes and the pastoralists retaliated by denying access to the water holes by patrolling these areas and shooting Aborigines (McGrath 1987).

2.4. Archaeological background

There have only been two archaeological surveys in the vicinity of the subject area. The Kinhill (1995) archaeological survey along the northern side of the Roper Highway consisted of vehicular surveys along the route to assess the areas of higher archaeological potential. The survey identified a quarry / stone artefact scatter and three stone artefact scatters which were located in eroded areas near a source of fresh water. Kinhill (1994) concluded that as the banks of the creeks along the route were not raised above the level of the surrounding landscape, the banks would consequently be subjected to frequent flooding which tends to remove any artefacts deposited on them. It also means that there would be no higher ground along the creeks that could act as a focal point for campsites.

The Kinhill report (1995:4-10) also stated that 'the lack of artefacts close to the numerous creeks and rivers crossed …was surprising". However, as the survey found that approximately 50% of the northern boundary of the Roper Highway had been disturbed by gravel pits, top soil mounds, vegetation clearance and fence construction (Kinhill 1995:4-8) this could also explain the lack of archaeological material.

Guse (1998) carried out a survey near the Wilton River near Urapunga and identified a stone artefact scatter and grinding stone on a stony surface on an alluvial plain, and several isolated stone artefacts. The site was a medium density artefact scatter containing chert, siltstone, quartzite, silcrete and tuff flakes.

The Archaeological Sites Register held by the Heritage Branch lists only one other site in the region, a stone artefact scatter eroding from a levee of the Roper River.

Another survey (Crassweller 2008) between Ngukurr and the Wilton River and along 20 kilometres of a proposed power line on a flat to undulating plain with low stony / rock outcrops line, failed to identify any archaeological material.

Further afield, previous archaeological surveys in the Mataranka region (Thorley and Blackwood 1993: Hermes 1986: Guse and Niemoeller 1998: Kinhill 1994 and 1995) found that all identified sites and isolated stone artefacts were clustered around major creek systems especially where these are abutted by high ground such as terraces or hill slopes, or outcrops of Tindal limestone containing chert nodules.

An archaeological survey along a proposed pipeline route in the Bulman region (Crassweller 2004), which has a similar environment to the study area, identified very few

archaeological sites. However there was a regular frequency of isolated stone artefacts. There was a 34 kilometre section along the pipeline route where no archaeological material was located.

2.5. Predictive model for distribution of archaeological material

The ethnographic data indicate that the banks of creeks and billabongs were frequently used as camp sites in the past. The archaeological background information suggests that any archaeological material will be distributed along eroded surfaces or higher ground near creeks and rivers. Due to the high sedimentation rate on the plains and undulating terrain there is only a very low potential for archaeological material in this environment and, as the majority of the higher ground is located within the boundaries of a sacred for there is only a low potential for archaeological material in the remaining low hills which do not contain a suitable raw material for manufacturing stone artefacts.

3.0. FIELDWORK PROCEDURES

3.1. Field survey

The aim of the archaeological field survey is to locate and record any archaeological objects or places to ensure that the provisions of the *Northern Territory Heritage Conservation Act 1991* are not contravened. The archeological survey was carried out as follows:

- The survey was carried out by both pedestrian and vehicular transects in a manner that ensured the highest possible coverage of the area. Approximately a third of the subject land was not surveyed, as access is not permitted due to several sacred sites in the area. These areas consisted of a section along the east west track in the northern section of the survey area and a series of hills in the mid to western section of the survey area.

  Pedestrian transects were made over all the remaining hills and rises on the alluvial plain. As surface visibility was extremely poor (average visibility was less than 5%), small areas where visibility was higher were targeted. Vehicle transect were made along all existing station roads.

- Any archaeological or heritage places, objects or classes of objects located during the survey were recorded in such detail as to permit independent assessment of their significance. The location of any archaeological places and objects included coordinates obtained by a hand-held Global Positioning System using GDA94 datum.

- After assessing the significance of the archaeological place or object, recommendations are made regarding compliance with the provisions of the *Northern Territory Heritage Conservation Act 1991*.

The following section consists of the definitions used to describe the archaeological material located during the survey.

3.1. Types of archaeological sites.

On the basis of previous archaeological studies in the region, it was considered possible that at least three types of sites might be discovered during the survey:

- *Artefact scatters.* These may contain flaked or ground artefacts and hearthstones. They occur as surface scatters of materials or as stratified deposits when there have been repeated occupations.

- *Art sites* that include engravings or poundings where the pictures or designs are produced by the removal of material from the rock surface.
- *Stone quarries* are generally sites where stone for flaked or edge ground artefacts have been extracted from an outcropping source of rock.

3.2. Site definition.

An archaeological site is defined for this survey as a concentration of artefactual material, such as stone artefacts, with an average density that is 5 times greater than the average density of the background scatter and there are more than ten artefacts that cover an area of at least $2m^2$. A site will have an identifiable boundary where either artefact densities decrease to the extent as to be classified as background scatter or environmental features determine the boundary.

Background scatter is generally a very low density, more or less continuous distribution of isolated artefacts or shell over the landscape. Although these artefacts do not constitute a site they will be given location details for research purposes.

3.3. Artefact identification.

A requirement for a successful archaeological project involves the accurate identification of archaeological materials. For an object to be identified as a flaked object it needs to possess one or more of the following:

- A positive or negative ring crack;
- A distinct positive or negative bulb of percussion;
- A distinct eraillure scar in an appropriate position below the platform; and
- Definite remnants of flake scars on dorsal surface or ridges.

Stone artefacts are divided into 4 main types (Hiscock 1984:128-129). They are defined as follows:

- *Cores* are pieces of stone that have one or more negative scars and the absence of positive flake scars
- *Unretouched flakes* are pieces of stone that have been struck off another piece of stone and ideally possess platforms, positive bulbs of percussion, concentric ripples, ring cracks and /or eraillure scars on the ventral surface.
- *Retouched flakes* are flaked flakes. They are identified by the presence of negative scars that must have been created after the ventral surface of the flake had been created. There will be either negative scars on the ventral surface or negative scars on the dorsal surface, which have been formed by the flake being hit on the ventral surface.
- *Flaked piece*s are stone artefacts that have been formed by knapping but cannot be identified as either a core or a flake.

Other artefact and implement types that have been identified in the region are listed below following characteristics outlined by McCarthy (1976) and Holdaway and Stern (2004).

- *Unifacial points* are flakes that have been retouched along the margins from one surface, either ventral or dorsal to give or enhance its pointed shape. They are sometimes symmetrical or leaf shaped.
- *Bifacial points* are retouched along both ventral and dorsal surfaces of a flake to enhance or give the artefact its pointed shape. They may have the platform removed and the proximal end rounded.
- *Edge ground axes* have been shaped by the process of flaking, pecking and polishing. They generally have only one working edge that has been ground to a sharp margin although occasionally they may have two leading edges.

- *Grindstones* are characterized by a worn and abraded surface or surfaces. There also may be a concave surface.
- *Hammerstones* display use-wear on the surface in the form of the abrasion, pitting, edge fracturing with some negative scarring.
- *Manuports* are stone material that are not found naturally in an area and must have been carried in by humans.

3.4. Assessment of significance and heritage management principles

According to Sullivan and Bowdler (1984) archaeological significance means that it 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 ICIMOS 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, that is, the state of preservation as well as the stratigraphic reliability of the cultural material. Secondly, 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. Thirdly a site may provide chronology extending back into the past.

4.0. RESULTS

The survey area was covered in dense grass and there were only small areas which were denuded of vegetation from either sheet wash on lower slopes of rises or from cattle damage. Also the area does not appear to have been burnt for many years resulting in an average surface visibility of less than 5%. There was a series of low rises and hills in the southwest corner which were examined in detail. Another pedestrian transect was made within the banks of Blackwater Creek as visibility on top of the banks was negligible.

Blackwater Creek

Surface around creek

Estelle on summit of hill

Estelle and Mildred on a low stony rise

The proposed access road runs along slightly higher ground across the undulating plain, and the lower stony slopes of several hills in the area. The survey for the proposed access road was carried out by driving along station tracks to identify any higher ground or areas where surface visibility appeared to be high enough to see the surface. Approximately two kilometres of the proposed access road runs along an existing fence line.

Sheet wash area along proposed access road.

Lower slopes along proposed access road

A pedestrian transect was made along 85% of the proposed 3.5 kilometre pipeline route from the Roper Highway to the Roper River. This area consisted of low levy banks near the river and a cracking clay plain for the reminder of the route. Average surface visibility over the route was on average higher than 40%.

Cracking clays and small wash away near Roper River.

No archeological material was identified in the survey areas. Both Estelle Farrar and Mildred Ponto used to walk the country when they were young and when asked if they knew of any areas where there were stone artefacts, they said that yes there were two areas where the 'sharp stones' are found. One was south of the survey area in the vicinity of Blackwater Creek and another site was located near the Roper Highway and the Roper River. They did not know of any sites within the subject land.

A stone cairn was sighted on the summit of a steep sided circular hill within the area designated as a sacred site. It was located at approximately 396850E 8348500N. As the cairn is in a no access are for the proposed project, the cairn will not be disturbed.

5.0. CONCLUSIONS AND RECOMMENDATIONS

As no archaeological sites or objects were identified during the survey of the proposed Ilmenite mine, access route and pipeline corridor, it is recommended that no further action is required for compliance with the provisions of the *Northern Territory Heritage Conservation Act 1991*.

The absence of any archaeological material is consistent with previous findings to other surveys in the region and is most likely related to the environmental conditions and processes that occur in the area. There were no rock outcrops present which contained a suitable raw material that could have been used in the manufacture of stone artefacts. The undulating plains consisted of either black cracking soils or red silty soils. These two surfaces result in a very low archaeological visibility as any stone artefacts that had been discarded in the past would have been covered by the silts in the wet season floods or lost in the clays during the expanding and contracting of the clays in the wet and dry seasons. The surface has also been churned up by cattle as the area has been used as holding paddocks.

Consequently, while surface visibility was extremely poor at the time of the survey, it is assessed that there is only a low potential for the presence of any unidentified significant archaeological material within the subject land.

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REFERENCES

Abbott ST, IP Sweet, KA Pumb, DN Young, A Cutovinos, PA Ferenczi, A. Brakel and BA Pietsch, 1991. Australia 1:250,000 Geological Series Urapunga - Roper River Special Sheet SD53-10, 11 (2nd Edition). AGSO and Dept. of Mines and Energy NT.

Aldrich, JM and PL Wilson. 1992 *Land Systems of the Roper River Catchment*. Conservation Commission, NT.

Basedow. H. 1907. Anthropological notes on the western coastal tribes of the Northern Territory of South Australia. *Transactions and Proceedings and Report of the Royal Society of South Australia*, 31:1-55.

Crassweller, C. 2008 An archaeological survey for the proposed 11kV powerline extension between Rittarangu and Ngukurr NT. A report for PowerWater.

Crassweller, C. 2004 Environmental Impact Statement for the proposed Trans Territory Underground Gas Pipeline. Report on archaeology and historic heritage. A report for EcOz on behalf of Alcan Engineering Pty Ltd and Woodside Energy Ltd.

Foelsche, P. 1882. Notes on the Aborigines of North Australia. *Transactions of the Royal Society of South Australia*, 5:1-18.

Guse, D. 1998. Archaeological survey of the Urapunga and Roper Bar OFC extension, Northern Territory. A report for Telstra.

Guse, D and G. Niemoeller 1998. Archaeological survey of the Stuart Highway to Mataranka Homestead optical fibre cable route, Northern Territory. An unpublished report to Telstra.

Hermes, M.1986. Amadeus Basin to Darwin Natural Gas Pipeline – Spread 2 internal report on the archaeological findings. Museum and Art Galleries of the Northern Territory.

Hiscock, P. 1984. A preliminary report on the stone artefacts from Colless Creek Cave, Northwest Queensland. *Queensland Archaeological Research*, 1:120-151.

Holdaway, S. and Stern, N. 2004. A Record in Stone. The Study of Australia's Flaked Stone Artefacts. Museum Victoria and AIATSIS.

Kinhill Engineering Pty Ltd 1995 Mataranka to Ngukurr proposed 140m/bit optical fibre cable link environmental assessment. Unpublished report for Telstra Corporation.

Leichhardt, L. 1964. Journal of an Overland Expedition in Australia. Australian Facsimile Editions No.16. Libraries Board of South Australia, Adelaide.

McCarthy, F.D. 1976. *Australian Aboriginal Stone Implements*. The Australian Museum Trust, Canberra.

McGrath, A. 1987. *Born in the Cattle: Aborigines in Cattle Country*. Allen and Unwin, Sydney

Maquis-Kyle, P. and M. Walker, 1992. *The Illustrated Burra Charter: Making good decisions about the care of important places*. Australian Heritage Commission, Canberra.

Spencer, B. 1914. Native Tribes of the Northern Territory of Australia Macmillan London.

Sullivan, M.E. and S. Bowdler 1984. *Site Surveys and Significance Assessment in Australian Archaeology*. Department of Prehistory, Research School of Pacific Studies, ANU, Canberra.

Thomson, D. 1983. *Donald Thomson in Arnhem Land*. Compiled by N. Peterson. Curry O'Neil Ross Melbourne.

Thorley, P. and P. Blackwood 1993. Proposed Daly Waters to McArthur River gas pipeline route: Baseline archaeological report. Unpublished report to Hollingsworth, Dames and Moore Pty Ltd, Darwin

Hermes 1986: Guse and Niemoeller 1998

Wilson, BA., Brocklehurst, PS., Clarke, M.J., Dickinson, KJM., 1991. Vegetation Survey of the Northern Territory, Northern Sheet, 1:100,000 map sheet. Conservation Commission NT.