Condobolin Ethanol Production Facility Aboriginal Heritage Assessment Report

Final Report

for Agri Energy Limited

July 2007

0056132

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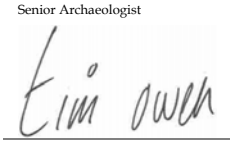
Prepared by:	*Neville Baker*
Position:	Principal Archaeologist
Signed:	
Date:	*July, 2007*
Approved by:	*Tim Owen*
Position:	Senior Archaeologist
Signed:	
Date:	*July, 2007*

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FINAL REPORT

Agri Energy Limited

Condobolin Ethanol Production Facility
Aboriginal Heritage Assessment

July 2007

Environmental Resources Management Australia
Building C, 33 Saunders Street
Pyrmont, NSW 2009
Telephone +61 2 8584 8888
Facsimile +61 2 8584 8800
www.erm.com

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1 INTRODUCTION

1.1 BACKGROUND TO THIS REPORT

Agri Energy Limited (AEL) seeks project approval for the development of an ethanol production facility at Condobolin, New South Wales (NSW), under Part 3A of the *Environmental Planning and Assessment Act, 1979 (*EP&A Act). Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by AEL to prepare an environmental assessment for the construction and operation of the ethanol production facility, inclusive of an Aboriginal Heritage Assessment.

The ethanol production facility will be capable of processing a range of cereal grains (such as corn, wheat, barley and sorghum), which are grown in the Central West Region of NSW, to produce up to 200 megalitres (Ml) annually. It will include several holding dams, an effluent treatment facility and an irrigation area. The irrigation area will be irrigated with process wastewater as part of a wastewater recycling scheme. The proposal will have a development cost of in excess of $30 million and is therefore a 'major project' to which Part 3A of the EP&A Act applies. As such, it will be determined by the Minister for Planning.

This report follows the preliminary assessment for the Condobolin facility. The preliminary assessment was prepared under Clause 75(F) of the EP&A Act to gain the Director-General's requirements (DGRs) for the preparation of an environmental assessment report (EAR). The preliminary assessment report (ERM 2006) set out the likely environmental 'issues', including Aboriginal heritage, associated with the project to facilitate the preparation of the DGRs.

The DGRs issued on 5th October 2006 stated that as part of the overall environmental assessment for the proposed facility, 'Aboriginal Heritage' needed to be assessed in collaboration with local Aboriginal representatives and the Department of Environment and Conservation (DEC), following the relevant Aboriginal consultation guidelines and reporting standards.

A letter supplied by the DEC (19th September 2006) provides guidance for the environmental assessment with respect to impacts of the project on Aboriginal cultural heritage values. They state:

> "1. The EA should address and document the information requirements set out in the draft "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" involving survey and consultation with the Aboriginal community.
>
> 2. Identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area.

3. Describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implanted.

4. The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, development options and making final recommendations".

This report presents the results of the Aboriginal archaeological survey and Aboriginal community consultation for the proposed development at Condobolin in accordance with these DEC requirements and the DGRs.

1.2 LOCATION

The site of the proposed ethanol production facility is wholly within the local government area of Lachlan. It is located along Micabil Road approximately five kilometres (km) west of Condobolin. Condobolin is situated in the Central West region of NSW, approximately 460km west of Sydney and 100km west of Parkes, as shown in *Figure 1.1*.

1.3 SITE DESCRIPTION

The study area and surrounds and the proposed development are shown in *Figure 1.2*. The study area comprises two parts:

- the *property* comprising one land parcel approximately 96 hectares (ha) in size, identified as Lot 32 of Deposited Plan (DP) 752093, where the ethanol production facility and associated holding dams and irrigation area will be positioned; and

- the *pipeline corridor* within which two subsurface pipelines are to be constructed to the property, being a raw water pipeline from the Lachlan River and an extension to the potable water pipeline from the Condobolin township. For this study two alternative corridors were considered for the raw water pipeline so that final design could take any Aboriginal heritage constraints into account.

The Orange-Broken Hill Railway line runs through the south-west corner of the property. Micabil Road and the Orange-Broken Hill Railway line run along part of the southern boundary of the property. The property is approximately 1800 metres (m) east-west and 1100m north-south. Several fences divide the property from its rural neighbours to the north, east, and west. It is relatively flat with very gradual rise of around seven metres to the northeast.

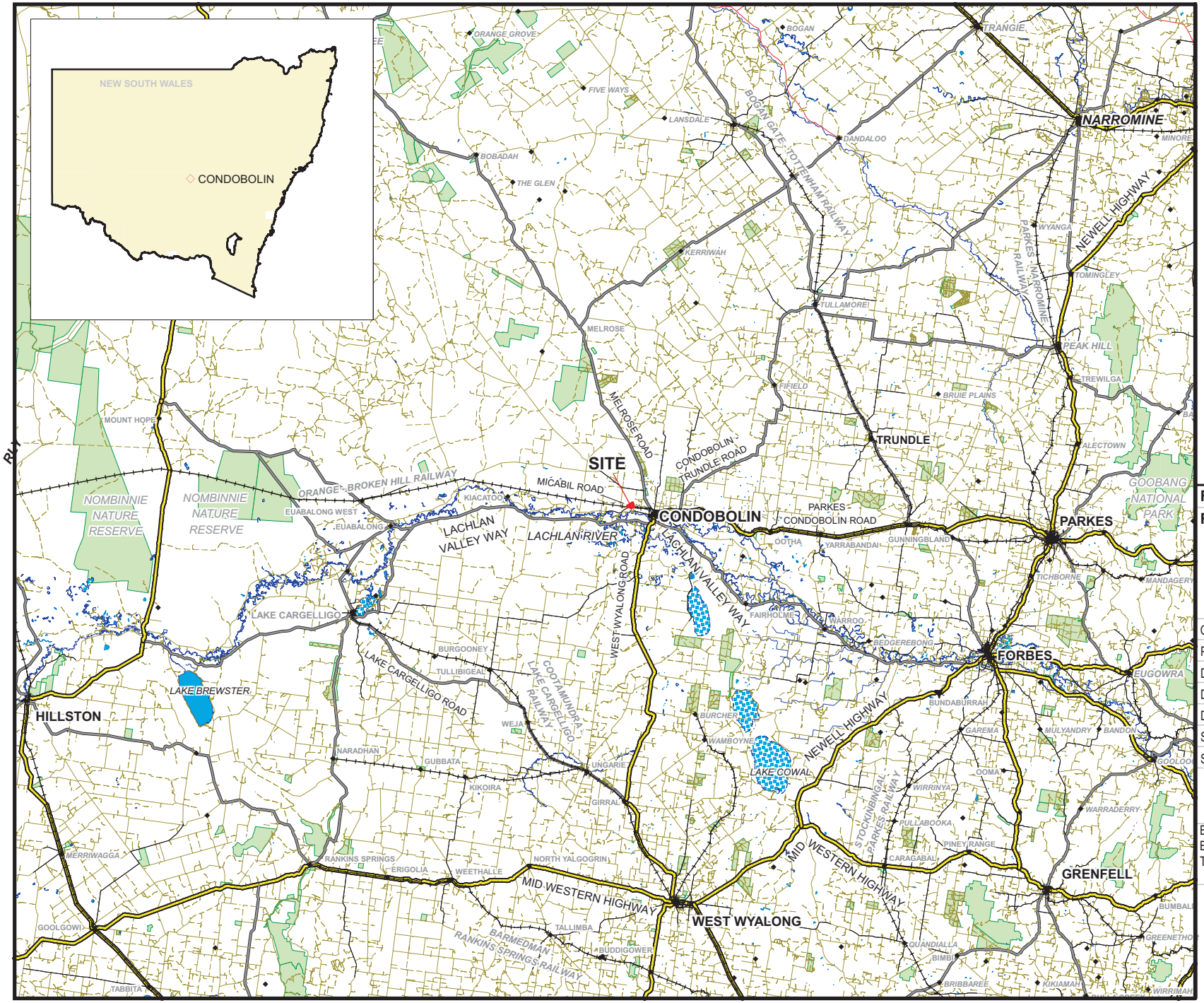

Figure 1.1

Regional Location of Study Area

Client:	Agri Energy Limited	
Project:	Condobolin Ethanol Production Facility	
Drawing No:	0056132_CN_H_01	
Date:	16.02.2007	Drawing Size: A4
Drawn By:	ML	Reviewed By: -
Source:	-	
Scale:	Refer to Scale Bar	

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Telephone +61 2 8584 8888

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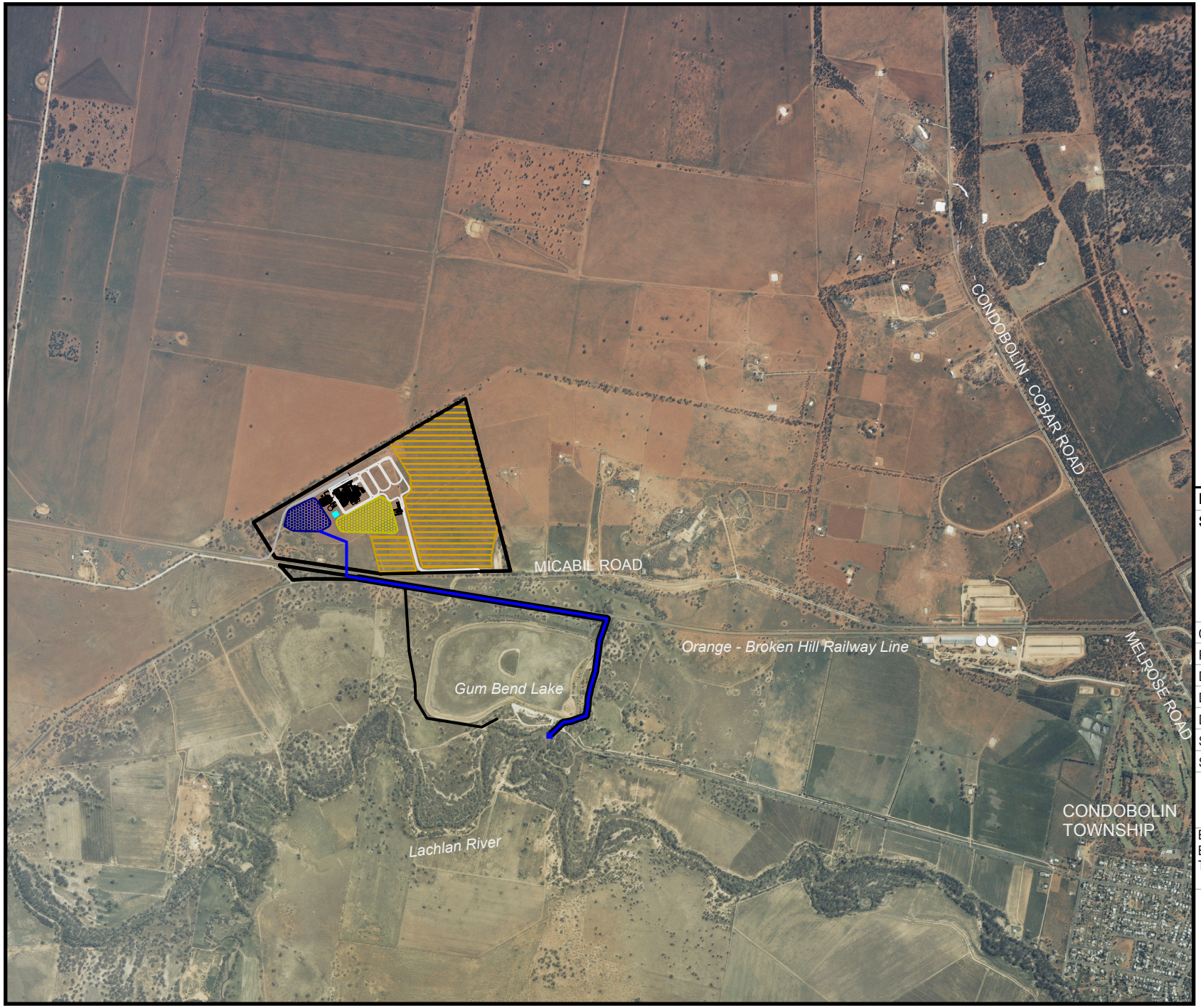

Legend

- 200Ml Raw Water Dam
- 2Ml Stormwater Dam
- 40Ml Effluent Dam
- Irrigation Area
- Water Pump Station (existing) & Pipeline
- Study Area
- Internal Access Road
- Future Rail Siding

Figure 1.2

Study Area and Proposed Site Layout

Client:	Agri Energy Limited	
Project:	Condobolin Ethanol Production Facility	
Drawing No:	0056132_HER_GIS11	
Date:	19.02.2007	Drawing Size: A4
Drawn By:	DH	Reviewed By: -
Source:	Aerial: Department of Lands NSW Plant Layout: PDF DWG No: M06075-0311	
Scale:	Refer to Scale Bar	

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Telephone +61 2 8584 8888

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1.4 ASSESSMENT AIM AND OBJECTIVES

The overall aim of this assessment was to identify the Aboriginal heritage values of the project land, identify the potential development impacts on those values and provide suitable management recommendations. To achieve these aims the following objectives were established:

- to consult with the local Aboriginal community as to specific social value of the land;
- to understand the regional research context of any Aboriginal objects on the land;
- to identify and record any Aboriginal objects and sites on the land;
- to assess the cultural significance of Aboriginal objects and sites on the land;
- to assess the impact of the proposed development on Aboriginal heritage values; and
- to prepare recommendations on the management of Aboriginal heritage values in consultation with the local Aboriginal community.

1.5 DEVELOPMENT LAYOUT

The proposal includes the construction of an ethanol production plant including grain storage bunkers, water and effluent storage dams and an irrigation area on the property. The layout of the proposed development is shown in *Figure 1.2*.

The ethanol production plant will be positioned in the central portion of the site. It will have a footprint of approximately 300m x 300m and will include:

- a bunded storage building where all chemicals and products (other than grain and ethanol) stored on the site will be kept;
- a maintenance workshop and store which also includes a crop services facility;
- two 7000 tonne grain storage silos with a maximum height of 35m (these will be the tallest buildings on the site);
- a 1300 tonne shift silo;
- a milling section including two hammermills;

- a fermentation structure;
- a liquefaction and saccharification area;
- a distillation structure and tower;
- a boiler building;
- a cooling tower;
- a two storey building which houses the ring dryer for drying WDGS to produce DDGS;
- an ethanol storage bunded area which houses two anhydrous ethanol storage tanks, an off-spec storage tank and a gasoline storage tank; and
- a bunded storage building where WDGS and DDGS are stored.

A grain storage area comprising six grain bunkers will be located adjacent to the main buildings. These bunkers will be circumnavigated by a one-way road that is surfaced with a prepared road base foundation.

Site access off Micabil Road will be upgraded and internal roads will be sealed and sufficiently wide to accommodate passing vehicles. There will be a weigh bridge, a light vehicle parking area with 40 spaces and a truck standing area. An office/ administration area will be constructed adjacent to the weighbridge and will comprise a reception area, offices, meeting rooms, bathroom facilities and a first aid room. Once the plant is operational the option of rail transportation of grain and ethanol product may be investigated. This would require on-site construction of a rail siding to connect with the Orange - Broken Hill Railway.

Three dams will be constructed on the property as follows:

- *2Ml stormwater dam* – located adjacent to the production buildings to hold and evaporate runoff from the buildings and hard surface areas;
- *40Ml effluent dam* - located south of the production buildings to store process wastewater from the facility, for pumping to the irrigation area; and
- *200Ml raw water dam* – located immediately west of the production buildings to store water pumped from the Lachlan River and supply all plant raw water needs (approximately 5.06Ml per day).

A salt evaporation system will be located adjacent to the ethanol plant, within the footprint of the effluent dam shown on *Figure 1.2*, to manage process wastewater with a high salt content that is discharged from the facility.

A subsurface pipeline will be constructed from the existing water pumping station (owned and maintained by Council) adjacent to the Lachlan River, to the raw water dam on the property. A subsurface extension to the potable water pipeline from the Condobolin township will be constructed to the property, located adjacent to the raw water pipeline. It should be noted that the existing potable water pipeline extends to the proposed raw water pipeline corridor such that the trenching required for raw water pipeline construction will also accommodate the extension to the potable water pipeline.

AEL proposes to establish approximately 55ha of cropping (refer *Figure 1.2*), which will be irrigated with plant wastewater. The irrigation area will provide a future crop resource and its irrigation will facilitate reuse of any plant wastewater not recycled back into the process.

1.6 STATUTORY CONTEXT

1.6.1 Environmental Planning And Assessment Act 1979

The proposed development will be assessed in accordance with the EP&A Act and the *Environmental Planning and Assessment Regulation 2000.*

The EP&A Act was amended in 2006 to include Part 3A which provides a streamlined assessment and approval process for development that is defined as a Major Project. Clause 75(b), Part 3A of the EP&A Act states that:

'(1) This Part applies to the carrying out of development that is declared under this section to be a project to which this Part applies:

(1)(a) by a State Environmental Planning Policy…'

The proposal is referred to as a Major Project in State Environmental Planning Policy (Major Projects) 2005 (SEPP MP). The requirements of a 'Major Project' under Part 3A therefore apply to the site. The application of this SEPP is discussed later in this section.

Under Part 3A environmental planning instruments (EPIs) (other than State environmental planning policies) do not apply to a 'Major Project' as delineated in section 75(R).

Pursuant to section 75U of the EP&A Act an approved Part 3A project does not require authorisations under

- Part 4, or an excavation permit under section 139, of the Heritage Act 1977,
- Section 87 or section 90 National Parks and Wildlife Act 1974,

- Section 12 of the Native Vegetation Act 2003,
- Part 3A of the Rivers and Foreshore Improvement Act 1948,
- Section 100B of the Rural Fires Act 1997, or
- Sections 89, 90 or 91 of the Water Management Act 2000.

1.6.2 State Environmental Planning Policy (Major Projects) 2005

SEPP MP identifies development to which the project assessment and approval process of Part 3A of the EP&A Act applies. Under clause 6 of SEPP MP, Part 3A of the EP&A Act applies to projects listed in Schedule 1 of SEPP MP, which includes:

'10 Chemical, manufacturing and related industries:

(1) Development that employs 100 or more people or with a capital investment value of more than $20 million for the purpose of the manufacture or reprocessing of the following (excluding labelling or packaging):……

…(f) oils, fuels, gas, petrochemicals or precursors'

As the proposed ethanol production facility at Condobolin will have a capital investment value in excess of $30 million, the project satisfies the relevant criteria set out in SEPP MP and Part 3A of the Act applies.

A project application will therefore be lodged under Part 3A for project approval pursuant to clause 75E of the Act. The policy establishes the Minister for Planning as the determining authority for any development classified as a 'Major Project'.

1.7 STRUCTURE OF THIS REPORT

Chapter 2 provides environmental context.

Chapter 3 provides archaeological context.

Chapter 3 describes the assessment methodology employed.

Chapter 4 lists the Aboriginal objects and sites identified on the land.

Chapter 5 details the Aboriginal consultation methodology and results.

Chapter 6 describes legislation guiding Aboriginal heritage management.

Chapter 7 includes Aboriginal heritage management recommendations

1.8 PROJECT TEAM

Neville Baker (ERM Principal Archaeologist) conducted the fieldwork along with Lance Smith representing the Condobolin Local Aboriginal Land Council and Peter Knight representing the Wiradjuri Condobolin Corporation.

2 GEOLOGY SOILS AND LANDFORM

2.1 TOPOGRAPHY

Information from the *Condobolin 8331-1 & IV 1:50 000 Topographic Series Sheet (1st Edition),* identifies that the site is located approximately 190m above the Australian Height Datum (AHD). GPS readings indicate an altitude of 191m in the south of the main property and 197m in the north. The immediate surrounding local topography gradually slopes to the north, although this slope is barely perceptible. Despite the very gradual slope, the main property is best considered as a single "flat" landform element.

The pipeline corridor extends from the existing pumping station immediately south of Gum Bend Lake. The Lake was constructed in the late 1980s and opened for the 1988 Bicentenary. The 1974 air photo of the area shows the remnant slight depression features of former palaeochannels extending to the southern boundary of the main property. These features mark the northern edge of the floodplain. The location of the main transport routes is also placed at the edge of the main flood affected zone to minimise flood impacts.

2.2 GEOLOGY AND SOIL LANDSCAPES

According to the *Condobolin 1:100 000 Geological Series Sheet 8331 (1st Edition)*, the geological unit at the site is Cza, which comprises Tertiary inactive alluvial plains. Mineral deposits of gold, aggregate and sand have been recorded in the locality.

Micabil Road and the railway are constructed on the approximate divide between the Cobar pediplain silty red sands to the north and the Lachlan floodplain grey clayey silts to the south. The main property is located on the red silty sands and the pipeline corridor on the grey clayey silts.

There is evidence of salinity-induced friable soils in the south western corner of the main property. Cultivation does not extend to this corner, nor is any of the proposed development planned here.

2.3 DRAINAGE AND WATER RESOURCES

The main property is located 830m north of the Lachlan River. No other watercourse flows through or closer to the main property. Small culverts constructed under a section of railway close to the south eastern corner of the main property indicate flood flow.

In addition Gum Bend Lake is located approximately 330 m south of the main property. Gum Bend Lake is a 50ha artificial lake created for boating, swimming and water skiing and is surrounded by 40ha of landscaped grounds for recreational purposes.

2.4 *CURRENT LAND USE*

Currently the property comprises:

- former agricultural cropping land with an agricultural storage area (mainly small scale farming equipment) in the north;
- stands of native trees along the property boundaries and in the southwest corner of the property;
- two shallow dams in the southeast and southwest corners of the site; and
- a metal storage shed of approximately 10x20 m^2 near to the northern boundary towards the centre of the site.

The property is bounded by open agricultural cropping land to the north, east and west, and Micabil Road and the Orange - Broken Hill Railway line to the south. There are scattered rural residences to the east, including a residence approximately 100m from the eastern site boundary. The land adjacent to the southern site boundary is occupied by a Travelling Stock Reserve (Route 17), Gum Bend Lake and the Recreation Reserve associated with Gum Bend Lake.

2.5 *IMPLICATIONS FOR ABORIGINAL ARCHAEOLOGY*

The main property borders the flood plain and comprises the first area of well drained rising land outside of inundated country during times of flood. The flat landform and lack of close proximity to water within the main property area are not conditions normally associated with Aboriginal sites; however this close association of two landsystems gives rise to an expectation for occasional Aboriginal use of the main property during times of flood.

The archaeological survey was conducted in a manner sufficient to test this assumption.

The pipeline corridors traversing the riparian areas from the Lachlan River pass through relatively intact areas of floodplain in close proximity to reliable water source. The highest concentration of Aboriginal objects are anticipated in close proximity to the Lachlan River, decreasing exponentially with distance.

Past clearing and land use would not have affected the survival potential for Aboriginal sites (with the exception of scarred or carved trees), although grass cover limits the discovery potential in many area during archaeological surface survey. Unsurfaced vehicle tracks and paddock soil exposures on drains, ploughed areas and clear areas provide suitable sample windows of visibility to estimate archaeological content across the study area.

The lack of bedrock exposures and mature trees eliminates the possibility of axe (hatchet) grinding groove sites and Aboriginal scarred trees occurring within the main development area, although large trees are present next to the Lachlan River. Quartz pebbles occur naturally within the red sand gravels but there are other rock outcrops within the study area which may have been suited for stone artefact manufacture.

3 CHAEOLOGICAL BACKGROUND

3.1 PREVIOUS STUDIES

Aboriginal heritage in the Condobolin area has been sparsely documented through several minor development-related heritage assessment reports. The nearest large scale Aboriginal heritage investigation in the region relates to the Lake Cowal Gold Mine, approximately 70km to the south east of Condobolin. A review of Wiradjuri places has been conducted by Kabaila (1997) which covered the historic Aboriginal reserves at Condobolin known as the Mission (now Willow Bend village) and the "Murie" located on the south side of town. The history of Aboriginal people that have moved or have been moved to either of these two places is reflected in the present make-up of the Condobolin Aboriginal community. One social perception offered was that local Aboriginal people may be identified as local Wiradjuri or as Aboriginal people from other country who were moved in to the area by government authorities in the past (Peter Knight & Lance Smith pers.comm. 17 Oct 2006).

A survey of previous studies in the local area suggests that archaeological sites, mostly with stone artefacts and occasional midden material are concentrated along the Lachlan River corridor in close association with the river itself and adjacent sand bodies (Paton & Hughes 1984). Burials are associated predominantly with sand bodies along the Lachlan corridor (Bonhomme 1987, Webb 1986). Scarred trees have been recorded along the river or on the Cobar pediplain country by watercourses around Condobolin along with sites comprising a single artefact or low numbers of stone artefacts without discrete concentrations (eg. Appleton 2000, 2002).

During a survey of an area 30km west of Condobolin, Appleton found a single artefact on 975ha of red sandy soil land bordering the Lachlan Valley. In previous surveys for the Syerston Nickel-Cobalt project in the Fifield area 20km north east of Condobolin, artefact scatter sites comprised low numbers of stone artefacts either as rare isolated finds or few artefacts (less than 10) in areas not in close proximity to reliable water. Over the space of a 90km gas pipeline, Appleton recorded four isolated finds in areas away from water and one extensive artefact scatter on the banks of the major watercourse Humbug Creek. Five scarred trees were also recorded in close proximity to major watercourses.

Comber's 2004 survey of a water pipeline route on the edge of Condobolin township confirmed the anticipated pattern of scarred trees associated with the major watercourse of the Lachlan River. Scar types include small scars possibly from bark and cambium removed for containers, to large scars of around two metres generally associated with removal of bark sheets for canoe manufacture.

3.2 PREDICTIVE MODEL OF ARCHAEOLOGICAL SITE LOCATION

These results from previous surveys provide the basis for development of a model of archaeological site location in and surrounding the study area as follows:

- significant concentrations of stone artefacts and possibly shell will occur in open context in close proximity to major watercourses, generally within sight of the water;
- stone artefacts in isolation may occur occasionally in any areas more than 50m from the Lachlan River;
- scarred trees will occur in the general proximity of watercourses where trees of larger girth are sufficiently watered;
- stone quarries are not anticipated due to the absence of stone outcrops;
- stone arrangements are not anticipated; and
- rockshelters, rock art, and grinding grooves in bedrock will not occur due to the absence of bedrock.

In summary, the present study proceeded with expectation of finding the occasional stone artefact in the property and along most of the alternate pipeline corridors either side of Gum Bend Lake, and larger concentrations of stone artefacts and possibly shell material in the vicinity of the pumping station and pipeline corridor very close to the Lachlan River immediately south of Gum Bend Lake.

The results of the study conformed partially to this model, but more extensive and consistent low density distribution of artefacts was discovered on the property than was predicted. This is discussed in the results and discussion sections of this report.

4 METHODOLOGY

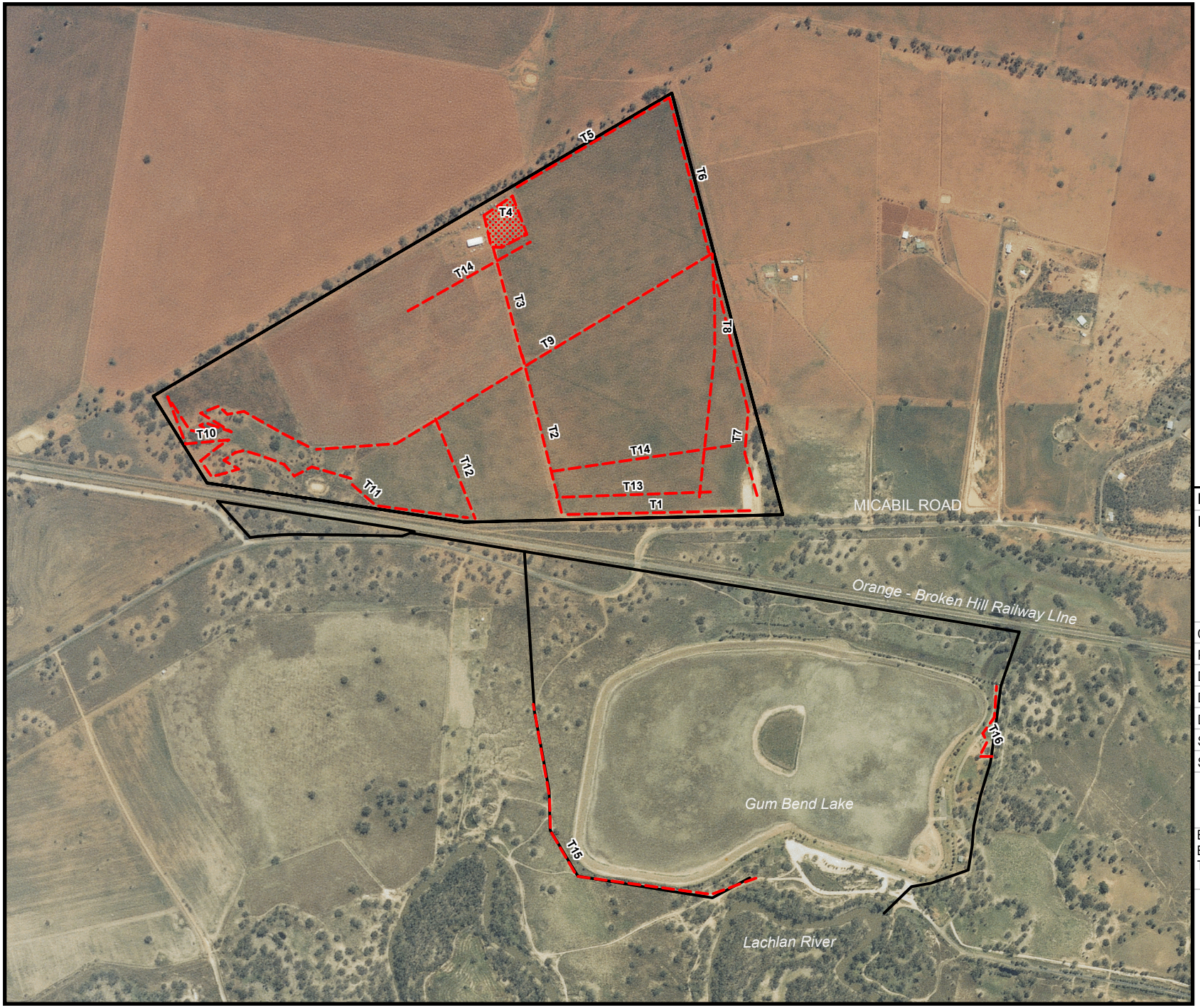
Initial interview of the Aboriginal representatives indicated that the archaeological investigation was the principal avenue of inquiry for this Aboriginal heritage assessment. While Aboriginal connection to all parts of the landscape is acknowledged, there were no indications of particular social connection with the study area over and above other parts of the region. This section describes the archaeological methodology.

Fieldwork was undertaken on 17 and 18 October 2006 by ERM archaeologist Neville Baker working with Aboriginal site officers Peter Knight (Wiradjuri Condobolin Corporation) and Lance Smith (Condobolin Local Aboriginal Land Council).

Transects were walked by all three workers (two for a short period on the first day) principally along vehicle track exposures to explore the association between artefact density, landform and proximity to environmental features. As noted in the previous section, prominent features included the southern margin of the red sandy soils bordering the Lachlan floodplain, and the Lachlan River itself. The locations of transects are shown in *Figure 4.1* and details of these transects are included in *Table 5.1*.

Because the two parts of the study area were not amenable to further landform element subdivision, transects were designed to identify stone artefacts and then to explore trends in stone artefact distribution. From the outset Paton and Hughes' 1984 survey had identified the strong likelihood of stone artefacts close by the Lachlan River, although their inexact large scale mapping and the poor quality of data held by DEC did not provide a precise picture of archaeological variability moving away from the river. Fieldwork was undertaken with the aim of more precisely quantifying this variability – to the extent possible by surface survey methods. Given the absence of large trees with potential for Aboriginal scarring in the main property efforts were predominantly directed to identifying Aboriginal stone artefacts. Four Aboriginal scarred trees were noted in the vicinity of the existing pumping station by Gum Bend Lake. These trees are outside the study area and are unaffected by the development and so their presence was noted in summary only and not recorded in detail in this report.

The sampling methodology was limited by the visibility constraints on the ploughed paddocks in the property and grassed flats on the floodplain. The aim was not to identify all discrete "sites", rather the survey aimed to identify archaeological characteristics of different parts of the landscape in order to estimate the overall distribution of artefacts.



Legend

- Study Area
- Transect Line
- Transect Area

Figure 4.1

Location of Survey Transects

Client:	Agri Energy Limited	
Project:	Condobolin Ethanol Production Facility	
Drawing No:	0056132_HER_GIS08	
Date:	19.02.2007	Drawing Size: A4
Drawn By:	DH	Reviewed By: -
Source:	Aerial: Department of Lands NSW	
Scale:	Refer to Scale Bar	

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Telephone +61 2 8584 8888

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5 RESULTS

5.1 TRANSECTS

A series of transects were walked over the track and road verge exposures within the main property and along the road exposures on the floodplain. The characteristics of each transect with effective coverage are detailed in *Table 5.1* and the locations of these transects are shown in *Figure 4.1*.

Four types of exposure were evident within the study area:

- graded track verges (main property);
- exposed but undisturbed ground surface on improvised tracks (main property and floodplain);
- ploughed and cropped paddock surface (main property); and
- paddock edge drain spoil (main property).

Constraints on survey in both parts of the study area entailed heavily grassed flats and paddocks. Paddocks in the main property were heavily grassed with the exception of the south east paddock which offered sufficient visibility to identify the few isolated artefacts recorded during survey. Short transects were walked in the more heavily grassed northern and western paddocks (Transect 14 and part of Transect 9) to confirm the lack of visibility.

Stone artefacts were observed on all transects in the lower southern half of the main property. Transects 1, 2 and 3 covered the verges of the main track which runs from the main gate on the southern fence along part of the southern boundary and through the centre of the property. These track verges also provided good exposure of topsoil content given that they are formed by grader cuts. Artefacts were absent from the northern half of the central track as evident in the results of Transect 3. Transects 3, 4 5 and 6 covered large exposures within the northern part of the main property including a large machine yard (Transect 4) and broad exposures along the northern fence, including inspection over the northern fence onto the neighbouring property's fence line track and ploughed paddock. These exposures included turned-over soil, providing good exposure of topsoil contents. No stone artefacts were identified on these transects.

The western corner paddock of the main property is not cultivated, but does include graded gutters draining towards a roughly constructed farm dam. Soils appear highly friable, consistent with the effects of salinity. Extensive exposures of soil are present and Transect 10 is best described as a random walk by the three members of the survey team initially following a track and circling around the area.

Transects 15 and 16 were located in the vicinity of Gum Bend Lake near the Lachlan River. These transects covered visible ground surface within potential water pipeline corridors from the Lachlan River pumping station. While this appears to be an area previously covered by Paton and Hughes 1984 survey, much has changed. The development of Gum Bend Lake, opened for the 1988 Bicentennary (P Knight pers.comm.), has resulted in heavy gravelling of many of the tracks immediately south and east of the lake up to the existing pumping station. Transect 15 extends to the eastern limit of ungravelled track. The site located within the portion of track running closest to the river, Site AE17, is likely to be the same as that recorded by Paton in 1984 (Paton's site CON-24, DEC site 43-1-32) and is described further below. Aboriginal artefacts and objects extend beyond the area observed for this survey and are likely to continue in all vegetated areas for at least 50m from the river bank along the northern bank of the Lachlan River meander immediately south of Gum Bend Lake.

The ground surface of the extensive camping area immediately on the eastern side of the lake has been covered in red sand, with natural ground surface exposed only in the northern part of the camping area where Transect 16 is located. Vehicle tracks are mostly gravelled throughout this area, with the exception of the northern part where Transect 16 was walked. Further to the north of Gum Bend Lake the proposed water supply pipeline will be constructed on disturbed land in close proximity to the existing railway.

Table 5.1 Field Survey Transect Data

Transect #	Length (m)	Width (m)	Area (m^2)	Exposure type	Visibility	Effective Coverage (m^2)	Artefacts	m^2/artefact	Background	Comments
1	570	12	6,840	Graded road verges 6 m wide	100%	6,840	14	489	Occasional quartz gravel; Abundant shaley stone gravel	Both 6 m wide verges either side of gravelled track
2	400	6	2,400	Graded road verges 3 m wide	60%	1,440	0	n/a	Occasional quartz gravel; Shaley gravel	Both 3 m wide verges either side of gravelled track
3	310	6	1,860	Graded road verges 3 m wide	20%	372	0	n/a	Rare gravel	Both 3 m wide verges either side of gravelled track
4	100	100	10,000	Equipment yard with light weed growth	80%	8,000	0	n/a	No gravel	large 100% visibility areas
5	530	40	21,200	unsurfaced paddock boundary track and sandy paddock border v light grass	80%	16,960	0	n/a	No gravel	large 100% visibility areas
6	400	3	1,200	Unsurfaced paddock boundary track	50%	600	0	n/a	No gravel	
7a	400	3	1,200	unsurfaced paddock boundary track	75%	900	1	900	No gravel	
7b	250	15	3,750	open exposure under trees	100%	3,750	9	417	No gravel	
8	650	15	9,750	Ploughed & lightly grassed paddock	65%	6,338	0	n/a	No gravel	
9	1,335	15	20,025	Unsurfaced paddock border track and adjacent grassed paddock	20%	4,005	1	4,005	No gravel	track 3 m wide good visbility, paddock very poor visibility

Transect #	Length (m)	Width (m)	Area (m²)	Exposure type	Visibility	Effective Coverage (m²)	Artefacts	m²/artefact	Background	Comments
10	1,800	30	54,000	Salt scalds lightly grassed	90%	48,600	11	4,418	Rare gravel	
11	365	3	1,095	Paddock edge drain spoil	100%	1,095	18	61	Rare gravel	
12	260	2	520	Paddock edge drain spoil	60%	312	4	78	Rare gravel	
13	450	15	6,750	Ploughed & lightly grassed paddock	50%	3,375	3	1,125	Rare gravel	
14	540	15	8,100	Ploughed & lightly grassed paddock	50%	4,050	1	4,050	Rare gravel	
15	1,050	5	5,250	Unsurfaced vehicle track on alluvium	100%	5,250	19	276	No gravel	South and Western side of Gum Bend Lake
16	250	5	1,250	Unsurfaced vehicle track on alluvium	100%	1,250	8	156	No gravel	Eastern side of Gum Bend Lake

5.2 ABORIGINAL SITES

5.2.1 Recorded Sites

A total of 21 sites were identified in the course of fieldwork as shown in *Figure 5.1* and are detailed in *Table 5.2*. A total of 16 sites were located within the main property, including 10 with artefacts in isolation and six sites with two or more artefacts.

A total of five sites were located on the floodplain transects, including three with artefacts in isolation and two sites with several artefacts.

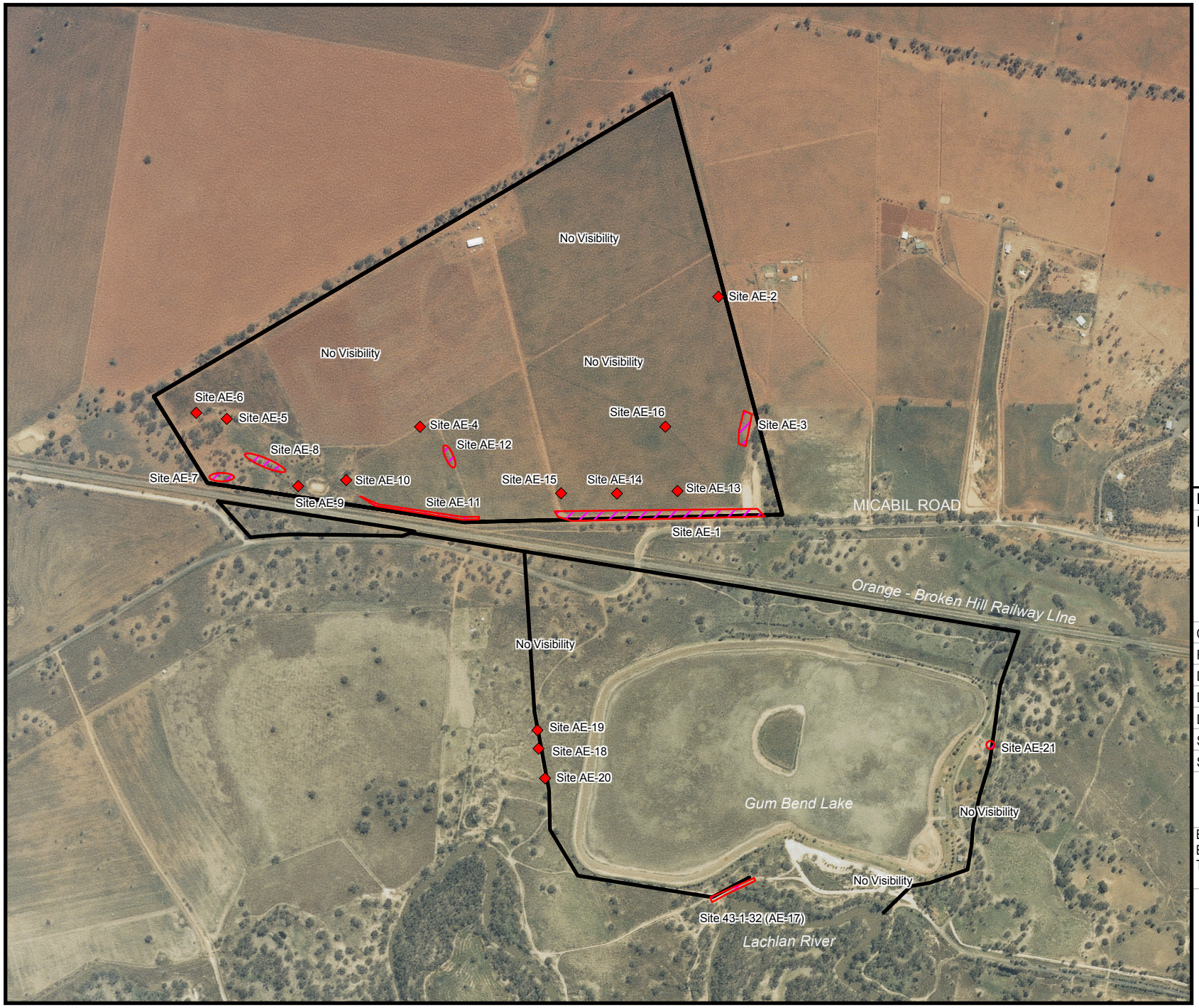
Aboriginal sites comprise mostly flaked stone artefacts with some grindstone fragments at various locations. Grindstone fragments were identified on the basis of a distinctive smooth surface from grinding on a fragment of tabular sandstone or meta-sandstone. A total of 90 stone artefacts were recorded at all sites, mostly comprising flakes and broken flaked with some grindstone fragments and a few cores. The details of artefacts are shown in *Table 5.3* and *Table 5.4.*

5.2.2 "Sites" As An Indicator Of Wider Distributions

A series of discrete locations where one or more stone artefacts ("Aboriginal objects" as defined by the National Parks & Wildlife Act 1974) were identified during fieldwork and are described here as "sites". The term "site" is used as the location of an Aboriginal object or groups of Aboriginal objects. Given that the sites described in this report all comprise stone artefacts, the term "site" is used for single artefacts as well as groups of several artefacts within 50m of each other.

The "sites" described here do not represent the entirety of Aboriginal heritage material present within the study area, nor do they represent discrete areas where Aboriginal people camped in the past. The sites recorded are indicators of a broader distribution of Aboriginal artefacts hidden by topsoil and vegetation. Experience has shown that archaeological excavations in areas adjacent to surface exposures reveal the presence of stone artefacts within the soil. This has been confirmed with such consistency over recent decades that it is a reliable assumption that where artefacts are visible on the ground surface they will be present in comparable environmental context below the ground surface. The location and characteristics of surface sites thus allows an estimation of the characteristics of that broader subsurface distribution.

The archaeological pattern interpreted from the distribution of sites and comparable landform within the study area is shown in *Figure 5.2*. Aboriginal heritage constraints are defined by the archaeological patterning, and not by specific "site" locations.



Legend

- Study Area
- Artefact Location
- Artefact Location (Area)

Figure 5.1

Location of Aboriginal Sites

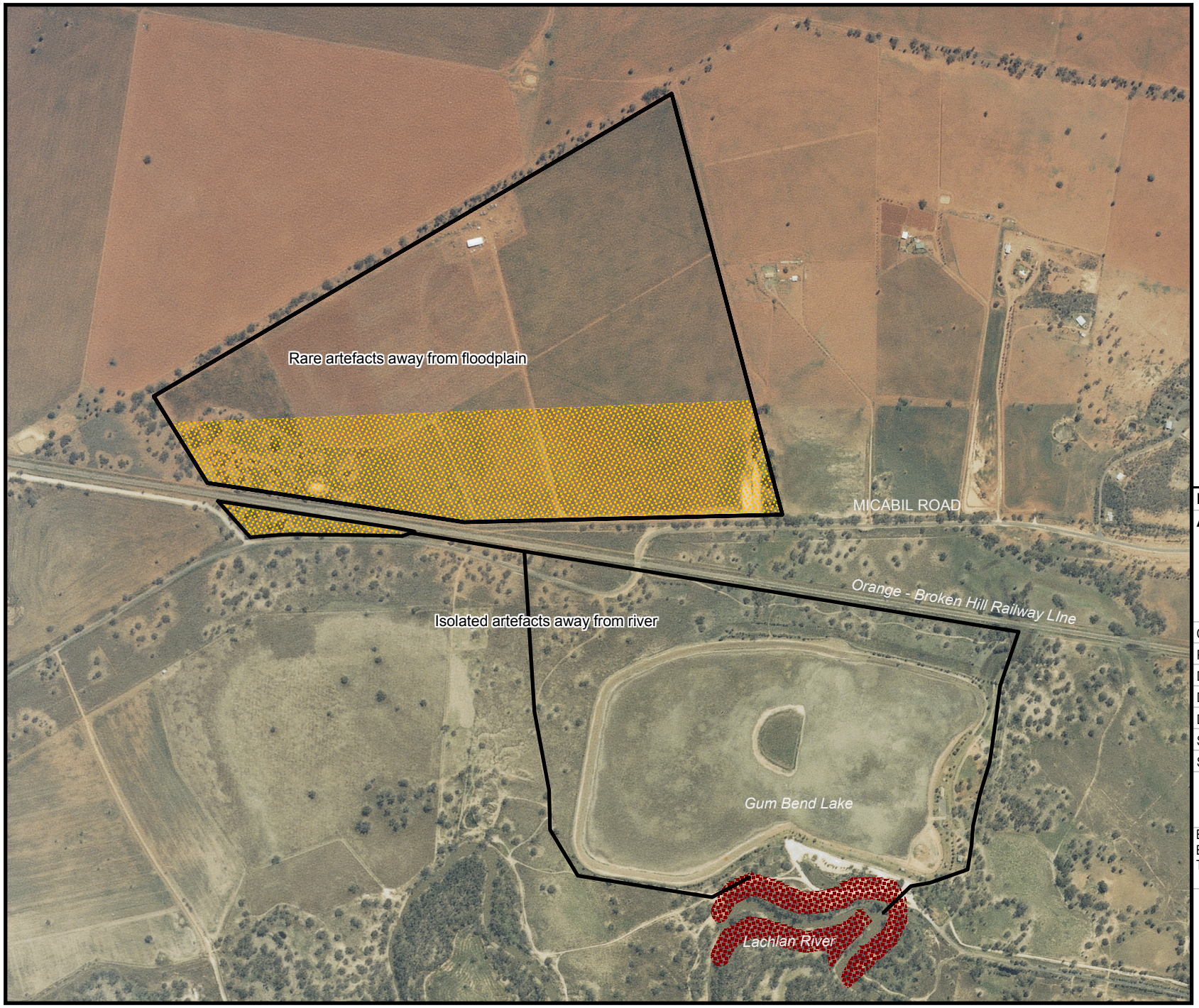
Client:	Agri Energy Limited	
Project:	Condobolin Ethanol Production Facility	
Drawing No:	0056132_HER_GIS09	
Date:	19.02.2007	Drawing Size: A4
Drawn By:	DH	Reviewed By: -
Source:	Aerial: Department of Lands NSW	
Scale:	Refer to Scale Bar	

N

0 200 400m

Environmental Resources Management Australia Pty Ltd
Building C, 33 Saunders St, Pyrmont, NSW 2009
Telephone +61 2 8584 8888

ERM



Legend

- Study Area
- Concerntration of Camp Site Evidence < 50 m from River
- Low Density Artefact Distribution at Margin of Floodplain

Figure 5.2

Archaeological Patterning

Client:	Agri Energy Limited	
Project:	Condobolin Ethanol Production Facility	
Drawing No:	0056132_HER_GIS10	
Date:	19.02.2007	Drawing Size: A4
Drawn By:	DH	Reviewed By: -
Source:	Aerial: Department of Lands NSW	
Scale:	Refer to Scale Bar	

N

0 200 400m

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Table 5.2 Aboriginal Site Details

Site No.	AMGE	AMGN	Length	Width	Area	Artefacts	Density per m²	Exposure Type	Landform Element	Comments
AE1a	508,603	6,340,785	570	12	6,840	14	0.002	graded vehicle track verges	very gentle lower slope	verges only counted in area calculation; part of larger lower slope distribution
AE1b	508,292	6,340,740			0					
AE2	508,716	6,341,309	1	1	1	1	N/A	vehicle track	very gentle slope	isolated find
AE3a	508,774	6,341,049	90	25	2,250	9	0.004	open exposure	very gentle slope	7 grindstone fragments from one grindstone
AE3b	508,764	6,341,013			0					
AE3c	508,768	6,340,990			0					
AE4	507,911	6,340,975	1	1	1	1	N/A	vehicle track	very gentle slope	isolated find
AE5	507,486	6,341,023	1	1	1	1	N/A	open exposure	very gentle slope	isolated find
AE6	507,394	6,341,014	1	1	1	1	N/A	open exposure	very gentle slope	isolated find
AE7	507,453	6,340,860	30	20	600	3	0.005	open exposure	very gentle lower slope	salt affected area
AE8a	507,536	6,340,891	110	20	2,200	4	0.002	open exposure	very gentle lower slope	salt affected area
AE8b	507,528	6,340,889			0					
AE8c	507,538	6,340,917			0					
AE8d	507,606	6,340,883			0					
AE9	507,647	6,340,842	1	1	1	1	N/A	graded drain spoil	very gentle lower slope	isolated find
AE10	507,771	6,340,871	1	1	1	1	N/A	ant trail	very gentle lower slope	isolated find
AE11a	507,858	6,340,787	320	3	960	18	0.019	graded drain spoil	very gentle lower slope	part of larger lower slope distribution
AE11b	508,090	6,340,758			0					
AE12a	507,998	6,340,993	30	2	60	5	0.083	graded drain spoil	very gentle lower slope	
AE12b	507,998	6,340,978			0					

Site No.	AMGE	AMGN	Length	Width	Area	Artefacts	Density per m²	Exposure Type	Landform Element	Comments
AE13	508,601	6,340,842	1	1	1	1	N/A	ploughed paddock light grass	Very gentle lower slope	isolated find
AE14	508,446	6,340,821	1	1	1	1	N/A	ploughed paddock light grass	Very gentle lower slope	isolated find
AE15	508,319	6,340,814	1	1	1	1	N/A	ploughed paddock light grass	Very gentle lower slope	isolated find
AE16	508,649	6,340,968	1	1	1	1	N/A	ploughed paddock light grass	Very gentle lower slope	isolated find
AE17a	508,772	6,339,879	50	6	300	16	0.053	unsealed vehicle track	Very gentle lower slope	same as 43-1-32 (CON24 Paton & Hughes 1984)
AE17b	508,689	6,339,851			0					
AE18	508,279	6,340,132	1	1	1	1	N/A	unsealed vehicle track	Flat	isolated find
AE19	508,255	6,340,274	1	1	1	1	N/A	unsealed vehicle track	Flat	isolated find
AE20	508,328	6,339,953	1	1	1	1	N/A	unsealed vehicle track	Flat	isolated find
AE21	509,396	6,340,226	40	30	1,200	8	0.007	Unsealed vehicle track	Flat	

1. Start and end points of widely spread sites are listed as "a" and "b"
2. Isolated finds are given a nominal 1 m² area, but density listed intentionally as not applicable (N/A)

Table 5.3 Size and Raw Material of Stone Artefacts from all sites

Size Class (cm)	Chert	Igneous	Porphyry	Quartz	Sandstone	Silcrete	Total
0-1	1						**1**
1-2	21			14			**35**
2-3	13	1		5	2	1	**22**
3-4	7			5	3		**15**
4-5	6				2		**8**
5-6	2		1		3		**6**
6-7					2		**2**
7-8		1					**1**
Total	**50**	**2**	**1**	**24**	**12**	**1**	**90**

Table 5.4 Artefact Type and Raw Material

Type	Chert	Igneous	Porphyry	Quartz	Sandstone	Silcrete	Total
Grindstone Fragment					12		12
Retouched Flake	1			1			2
Core	3	1	1	4			9
Flake	32	1		9			42
Proximal Flake Fragment	1			1			2
Medial Flake Fragment	4			1			5
Distal Flake Fragment	6			3		1	10
Flaked Piece	3			5			8
Total	**50**	**2**	**1**	**24**	**12**	**1**	**90**

Artefacts types and raw materials are typical of the region. While cores are present, small debitage is absent indicating the lack of knapping floors. In all areas sites comprise low numbers of highly dispersed artefacts. Slightly higher densities are evident at site AE17 next to the Lachlan River (as was anticipated) and sites AE11 and AE12 on the margin of the red sand country adjacent to the floodplain (as was not anticipated). Site AE17 comprises a vehicle track exposure whereas AE11 and AE12 comprise paddock edge drain cuts where topsoil has been turned over by a grader and slightly mounded next to the drain.

A larger number of separate grinding dish fragments were identified at AE17 as well as some mussel shell fragments outside of the pipeline corridor.

5.3 *ARCHAEOLOGICAL DISTRIBUTIONS*

The fieldwork sampled exposures across the main property and identified a consistent absence of Aboriginal artefacts in the upper (northern) part of the barely detectable slope, but a consistent presence of stone artefacts on the lower part of the main property near the main road and railway where the red sandy soil borders the floodplain and palaeochannels. The approximate limits of this distribution archaeological distribution are represented by sites AE3, AE4, AE5 and AE6, with the "outlier" artefact AE2 representing a random isolated find outside of the lower more consistent low density distribution.

On the floodplain, the concentration of artefacts (and some mussel shell) were closely associated with the river. The distribution of artefacts dropped off sharply more than 50m from the edge of the river bank flat, with only random isolated finds present beyond this point. Site AE17 continues in close proximity to the river beyond the area surveyed. If the area was test excavated it was undoubtedly show a continuum of Aboriginal occupation evidence along the river's edge on the high flat.

Paton and Hughes' 1984 archaeological survey report for weirs along the Lachlan River covers this stretch of river. It seems likely that AE17 is actually Paton's site CON24 (DEC site 43-1-32) when one examine the very large scale map provided with the site card. Coordinates in the AHIMS register for this site and all other Paton sites are erroneous as a result of the computer translation of imperial coordinates in the then NPWS Aboriginal site database nearly 20 years ago. Paton's report supports the general pattern of a higher density of artefacts within 50m of the river and small numbers of artefacts occurring further away.

5.4 *DISCUSSION*

Aboriginal people were engaged in activity in parts of the main property and near the Lachlan River. Aboriginal people did not engage in activity and leave behind archaeological evidence at 16 discrete locations within the main property. Nor did they engage in activity at five discrete locations near the Lachlan River. Archaeological evidence is much more extensive than this, but is hidden beneath the grass and soil surface. The hidden evidence points to a much broader pattern of past Aboriginal land use.

The most appropriate way to understand the Aboriginal heritage material within the study area is not as discrete "sites", but as "distributions". Sites are "windows" of visibility into these broader distributions of artefacts. Aboriginal stone artefacts are broadly spread across the lower part of the main property and are tightly concentrated in close proximity to the Lachlan River. Away from these areas, artefacts occur occasionally, but are generally rare.

Over many thousands of years Aboriginal people camped at the margin of the flood prone country. Perhaps they engaged in activities all across this part of the landscape in wetter times, when access to water and food did not require camping close to river. This pattern of occupation resulted in archaeological evidence from many individual but overlapping activities.

Perhaps in dryer times Aboriginal people camped at the river edge, preferring locations under the large river gums and within site of the water where mussels and fish were hunted and gathered. Some activities were carried out in locations spread more broadly across the floodplain, but the main focus of occupation was the river itself.

6 SIGNIFICANCE ASSESSMENT

6.1 PRINCIPLES OF ASSESSMENT

Heritage sites, objects and places hold value for communities in many different ways. The nature of those heritage values is an important consideration when deciding how to manage a heritage site, object or place and balance competing land-use options. The many heritage values are summed up in an assessment of "Cultural Significance".

The primary guide to management of heritage places is the Australian ICOMOS Burra Charter 1999. The Burra Charter defines cultural significance as:

> *Cultural significance* means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.
>
> Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.
>
> Places may have a range of values for different individuals or groups.

This assessment has sought to identify heritage objects and sites within the study area and obtain enough information to allow the values of those objects and sites to be determined.

6.2 SOCIAL VALUE TO THE ABORIGINAL COMMUNITY

Aboriginal heritage sites with archaeological evidence are all of value to the Aboriginal community through the tangible connection that they represent with pre-European Aboriginal land use. This is appropriately summed up in a statement by an Aboriginal consultant in a survey report, "The Cultural Sites that we find today in the landscape remind us of our original connection to this Country that reinforces our ties to the land" (Perry 1999: 2).

6.3 SCIENTIFIC VALUE

Scientific value is assessed according to the research potential of a site. Rarity and representativeness are also related concepts taken into account. Research potential or demonstrated research importance is considered according to the contribution that a heritage site can make to present understanding of human society and the human past. Heritage sites, objects or places of high scientific significance are those which provide an uncommon opportunity to inform us about the specific age of people in an area, or provide a rare glimpse of artistic endeavour or provide a rare chronological record of changing life through deep archaeological stratigraphy.

The comparative rarity of a site is a consideration in assessing scientific significance. A certain site type may be "one of a kind" in one region, but very common in another. Artefacts of a particular type may be common in one region, but outside the known distribution in another.

The integrity of a site is also a consideration in determining scientific significance. While disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be addressed. A heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. In the region, as with other parts of NSW, a high value is placed on Aboriginal archaeological evidence which can be dated. Much is yet to be learned of the pattern of Aboriginal settlement and the definition of regional artefact assemblages. There is still great value in defining the basic characteristics of open stone artefact sites and their assemblages.

6.4 SIGNIFICANCE OF ABORIGINAL HERITAGE MATERIAL IN THE STUDY AREA

This survey has defined a pattern of archaeological evidence which has been interpreted as representing various aspects of an Aboriginal land use strategy which assumes a core occupation focus along the river's edge and withdrawal to the floodplain margin during wetter periods. Each part of this pattern of archaeological evidence contributes to understanding the greater land use strategy. It is from this contribution that the scientific significance of the Aboriginal heritage material is derived.

It follows that loss of one *part* of the stone artefact distributions described above may affect understanding of the *whole*.

This assessment does not differentiate the significance of different parts of the study area. Areas with greater amounts of Aboriginal heritage materials would provide a greater amount of data, but the frame of reference for interpreting that material is lost once it is removed from the landscape. To mitigate this loss it is important that it is carefully recovered, its context fully recorded and the material scientifically reported. This level of effort is required for any part of the landscape under consideration.

6.4.1 Integrity

All parts of the archaeological patterning in the main property have been affected by past cultivation, road construction and drain construction. The stone artefact distribution across the lower southern half of the property does not retain vertical or horizontal spatial integrity, nor would any hearth features have survived.

6.4.2 Research Contribution

The archaeological patterning identified in this investigation has not been reported before in this region. From a scientific perspective, this represents a significant research potential which is manifest in the totality of the archaeological resource and may be realised in an extensive recording programme.

Site 43-1-32 (AE17) along the north bank of the Lachlan River provides excellent potential for research into Aboriginal campsite content and structure, with the promise of a rich stone artefact assemblage. No other sites or parts of the study area hold such potential.

6.4.3 Rarity

While the comment above suggests that this form of archaeological distribution has not been previously recorded, there is no reason to assume that it is not widely present at the margin of the floodplain. There is no rarity value to the assemblage.

6.4.4 Representativeness

The archaeological distribution within the main property does not provide a pristine example of any particular type of site.

Site 43-1-32 (AE17) along the north bank of the Lachlan River provides a typical example of an archaeologically rich river bank camp site. The present exposure of many types of stone artefacts holds educational value.

6.5 STATEMENT OF SIGNIFICANCE

The archaeological distribution within the main property is of moderate significance for it ability to demonstrate a previously unrecorded pattern of Aboriginal settlement pattern at the Lachlan River flood plain margin. The distribution is not rare and is anticipated to occur on other properties at the boundary of the red sand country and Lachlan floodplain grey clays.

Site 43-1-32 (AE17) is of high significance for its research potential and educational value.

7 IMPACT ASSESSMENT

The proposed development will result in impacts to Aboriginal heritage in the southern half of the main property and along the pipeline corridor to the Lachlan River. Impacts are described in terms of the overall distribution and pattern of Aboriginal heritage material, and not in terms of individual "sites". As described above, "sites" are but a window into the broader pattern of Aboriginal heritage material present on the landscape.

7.1 MAIN FACILITY

The ethanol processing facility and holding tanks located in the upper northern part of the main property will not impact Aboriginal heritage material. No artefacts were identified in these upper areas and none are predicted to occur from the model of land use inferred above.

7.2 WATER HOLDING DAMS, SALT EVAPORATION SYSTEM AND ROAD IMPROVEMENT

Development of the main road into the property and construction of the raw water dam, effluent dam and ponds for the salt evaporation system will impact an area of significant Aboriginal heritage material comprising a large low density distribution of artefacts including flaked stone artefacts, stone tools and grindstone fragments. Although the distribution of the artefacts has been completely disturbed by decades of cultivation, the overall assemblage (regardless of its immediate spatial configuration) is of value as representative of occupation at the floodplain margin. A significantly greater proportion of this distribution will be retained within the main property. Mitigation of the impact through artefact collection and scientific description is warranted.

7.3 IRRIGATION AREA

Establishment of cropping within the irrigation area will require disturbance of ground with a low density distribution of artefacts. This disturbance is no greater than previous and current cultivation impacts and should be considered "existing use" impact. No additional loss of heritage value is expected and hence no mitigation measure is warranted.

7.4 WATER PIPELINE

Construction of the raw water pipeline will impact the area of greatest artefact concentration close to the Lachlan River. If this artefact concentration was considered separately as a distinct "site" it might be regarded as having the highest information content and hence scientific significance due to the greater quantity and hence diversity of the archaeological content. Although the "site" is not rare due to the continuation of comparable material along the river's edge, archaeological salvage excavation of any construction area within 50m of the river is warranted to mitigate the loss of this heritage material.

Impacts on the high density area of Aboriginal heritage material close to the river will be lessened through construction of the pipeline along the eastern side of Gum Bend Lake. Construction of the water pipeline along the eastern side of Gum Bend Lake is therefore recommended.

7.5 PUMPING STATION

If the proposed development requires the construction of a new pumping station, it will not impact Aboriginal heritage material as it is within a very disturbed area of constructed river bank bench adjacent to road fill. While two stone artefacts were observed on the road fill within five metres of the existing pumping station, these are in an entirely disturbed context and do not form part of a coherent archaeological deposit due to their mobile on the road base surface. It is likely however that the existing pumping station will be used to provide water to the proposed plant.

8 ABORIGINAL CONSULTATION

Aboriginal consultation is required for any assessment of Aboriginal heritage. The Department of Environment and Conservation has interim guidelines for Aboriginal consultation in relation to any study that might eventually be used to support an application under Part 6 of the *National Parks and Wildlife Act 1974*. The new guideline sets out a process of inviting Aboriginal groups to register interest as a party to consultation (including local press advertisement), seeking responses on proposed assessment methodology, and seeking comment on proposed assessments and recommendations. The interim guideline requires proponents to allow ten working days for Aboriginal groups to respond to invitations to register, and then 21 days for registered Aboriginal parties to respond to a proposed assessment methodology.

As the proposed development project is being assessed under Part 3A of the EP&A Act (not Part 6 of the NPW Act) then the guidelines do not necessarily apply. However, DEC requirements attached to the DGRs (see *Chapter 1*) have specified that these guidelines should be followed.

ERM has adhered to the interim guidelines and relevant reporting (See *Annex A* for log). This chapter provides details of the process undertaken.

8.1 DEC CONSULTATION

Telephone contact was made with Phil Purcell DEC on 6 October 2006 regarding Aboriginal communities and relevant archaeological background. Aboriginal stakeholders identified were the Condobolin Local Aboriginal Land Council (CLALC) and the Wiradjuri Condobolin Corporation (WCC). These groups were contacted on 5 October 2006 and a full briefing letter with maps was sent by email on 9 October 2006.

8.2 CONDOBOLIN LOCAL ABORIGINAL LAND COUNCIL CONSULTATION

The CLALC were provided with a colour copy of an 'information pack' (see *Annex B*) that detailed the intended project and its impacts, along with the intended methodology for the survey and known Aboriginal sites in the area. The CLALC were invited to provide a representative for the two days survey on 17 to 18 October. ERM understands that, at the time of survey, the CLALC was undergoing a change of executive, with the field representative, Lance Smith, organised by Sheila Drew.

8.3 WIRADJURI CONDOBOLIN CORPORATION

The WCC is a corporation established through the Barrick Mines Cultural Heritage Management Plan for Lake Cowal to coordinate monitoring. Percy Knight is the manager. The WCC were invited to provide a representative for the two days survey on 17 to 18 October.

8.4 ADVERT FOR ABORIGINAL REPRESENTATIVES

In accordance with the interim guidelines for Aboriginal consultation an advert was placed in the Condobolin Argus (25 October 2006). The advert read:

> NOTICE OF ABORIGINAL CONSULTATION
>
> An assessment of Aboriginal heritage is to be conducted on a property 5 km west of Condobolin and north of the Lachlan River. The assessment will follow relevant guidelines issued by the Department of Environment & Conservation.
>
> Aboriginal organisations and individuals with cultural association to this area are invited to register their interest in being consulted as part of the assessment. Consultation does not guarantee employment, but does give opportunity for Aboriginal community input to the assessment process.
>
> To register interest please provide a written response including your contact details to:
>
> ERM Cultural Heritage Services
> Locked Bag 24
> Broadway
> NSW 2007
>
> or fax to 02 8584 8800 marked to the attention of "ERM Cultural Heritage Services"

No further responses to the advertisement were received.

8.5 CONSULTATION DURING THE SURVEY

On the first morning of the survey, Neville Baker met Percy Knight (WCC), Peter Knight (WCC) and Lance Smith (CLALC) in the WCC office and a full overview of the proposed survey, its methodology and the development were discussed. Each representative was provided with colour copies of the development including a laminated air photo of the study area for reference in the office and during the field survey. A discussion was held on the method of assessment under Part 3A and the fact that the normal DEC permit and consent process would not be undertaken if sites were to be impacted by the development. It was decided that all necessary Aboriginal heritage mitigation measures would be written into the ERM survey report.

Consultation was undertaken over the course of the two day survey and all assessments of recorded Aboriginal sites and the potential of the study area to yield further archaeological deposits were discussed.

8.6 POST SURVEY CONSULTATION

A draft version of this report was provided to the Aboriginal groups on 2 January 2007. A request was made to respond with comments on the significance assessment and recommendations. Follow up requests for response were made in early February 2007.

A written response was received from William Gilbert of the CLALC on 19 February 2007 and is included in *Annex C*. This response highlighted the need for AEL and the CLALC to continue to work together to protect and preserve the Aboriginal heritage of the Wiradjuri people. No areas of concern were raised in this response.

In a telephone conversation with Neville Baker on 19 February 2007, Percy Knight of the WCC provided verbal agreement with the content of the draft Aboriginal Heritage Assessment Report, including the significance assessment and recommendations. No written responses to the report were received from the WCC.

9 STATEMENT OF COMMITMENTS

9.1 BACKGROUND TO THESE COMMITMENTS

This section presents the recommended Aboriginal heritage management measures as a series of commitments rather than recommendations. The commitments are actions which will be undertaken by the proponent as a condition of Development Approval under Part 3A of the *Environmental Planning and Assessment Act 1979 (*EP&A Act).

A development approval under Part 3A of the EP&A Act does away with the requirement for subsequent heritage impact approvals under the *National Parks and Wildlife Act 1974 (*NPW Act). Normally any impact on Aboriginal objects in NSW can only be undertaken with written consent of the Director-General of the DEC under section 90 of the NPW Act. Normally any archaeological excavation or collection of Aboriginal objects in NSW can only be undertaken under a section 87 permit. These requirements do not apply where a development has been approved under Part 3A of the EP&A Act. This report represents the consideration of impacts, significance and basis for approval with conditions that would otherwise be considered through the S.90 or S.87 application process.

9.2 COMMITMENTS

The following commitments are made in consideration of the results of Aboriginal heritage survey, Aboriginal consultation, assessment of cultural significance and the principle of inter-generation equity which states that "future generations have fair and equal right to the same standard of quality of life and environment as the present generation". This extends to the enjoyment and benefit from heritage. This extends to the management of heritage resulting in a tangible benefit for future generations and not just present generations.

- Two weeks notice will be given to the WCC and CLALC of construction works to allow organisation of Aboriginal site monitors to inspect initial ground breaking works for the lower part of the main property and the pipeline corridor close to Gum Bend Lake;

- The initial stage of dam and salt pond construction and road widening will be monitored by an Aboriginal community representative with collection of all artefacts and a report describing the recovery and each of the artefacts prepared by an archaeologist with stone tool expertise;

- Prior to pipeline construction an archaeological excavation will be conducted to recover any Aboriginal heritage materials within the pipeline construction area within 50m of the Lachlan River. This will involve a qualified archaeologist working with the CLALC and WCC under a work plan jointly prepared by the archaeologist and WCC and CLALC. A report describing the work and detailing the results will be prepared by a qualified archaeologist in a format accessible and readily understood by the Condobolin Aboriginal community.

- Monitoring by an Aboriginal community representative of initial ground disturbance stage of pipeline construction on the eastern side of Gum Bend Lake outside of the 50m river-side zone.

REFERENCES

Appleton J (2000) **The report of the archaeological investigation of the mine site and sites of associated ancillary infrastructure for the Syerston Nickel-Cobalt Project, Condobolin/Fifield area, Western NSW** Report to Resource Strategies for Black Range Metals Ltd

Appleton J (2002) **The archaeological investigation of the site of a proposed feedlot at Kiacatoo west of Condobolin, Central-west NSW** Report to E.A. Systems Pty Ltd for Rockdale Beef Pty Ltd

Bonhomme T (1987) **Aboriginal burials and sand mining on the Riverine Plain, NSW** Draft report to the National Parks & Wildlife Service (NSW) (Anutech Pty Ltd)

ERM (2006) **Proposed Ethanol Production Facility at Condobolin Preliminary Assessment Report**. Prepared for Agri Energy Limited.

Kabaila P R (1997) **Wiradjuri Places: The Lachlan River Basin** Black Mountain Projects, Canberra

Paton R C & Hughes P J (1984) **An Archaeological Survey of two proposed re-regulation weirs along the Lachlan River near Condobolin and Hillston, NSW** Report to the NS Water Resources Commission (Anutech Pty Ltd)

Perry V (1999) **Wonnarua Cultural Heritage Assessment for the Proposed Lower Hunter Water Pipeline** Report to Mr Ross McDonald.

Webb S (1986) **An archaeological investigation of a sand dune near the Lachlan River at Condobolin, NSW** Report to the NPWS

Annex A

Aboriginal Consultation Log

Aboriginal Consultation Process

Project: 0056132 Condobolin Ethanol Plant

Stage 1 - Advisory Requests Sent

	Contact	Date Sent	Comment
Local Newsapaper Ad	Condobolin Argus	25-Oct-06	
DEC	Phil Purcell	06-Oct-06	
LALC	Narelle (secretary	05-Oct-06	Contacted by phone 5 Oct and Letter 9 Oct
Registrar Aboriginal Owners			
Native Title Services			
Local Council			

Aboriginal Group Notifications Sent 9 October 2006

Aboriginal Group Registrations Received

Organisation	Contact person	Date	Comments
Condobolin LALC	Sheila Drew	N/A	
Wiradjuri Condobolin Corporation	Percy Knight	N/A	

Stage 2 - Briefing & Methodology Advice Sent

Organisation	Contact person	Date Sent	Comments
Condobolin LALC	Sheila Drew	09-Oct-06	
Wiradjuri Condobolin Corporation	Percy Knight	09-Oct-06	

Aboriginal Group Comments Received

Organisation	Contact person	Date Rec'd	Comments
Wiradjuri Condobolin Corporation	Percy Knight	10-Oct-06	advised happy with approach by phone; will organise Peter Knight for survey
Condobolin LALC	Narelle	10-Oct-06	happy with response and will organise Lance Smith to represent CLALC on survey

Stage 3 - Draft Reports for Review - Sent

Organisation	Contact person	Date Sent	Feedback Received & Date
Condobolin LALC	Lance Smith	02-Jan-07	sent c/o Lance Smith, Condobolin Aboriginal Health Service, 99 Bathurst St Condobolin
WCC	Percy Knight	02-Jan-07	
Condobolin LALC	Lance Smith	30-Jan-07	tried calling to ask for feedback - no answer
WCC	Percy Knight	30-Jan-07	tried calling to ask for feedback - no answer
Condobolin LALC	Secretary/Coordinator	14-Feb-07	tried calling but only fax tone - fax sent asking for feedback
WCC	Donna (reception)	14-Feb-07	called re feedback on report and left message for Percy with Donna, left voicemail on Percy Knight's mobile, sent fax asking for feedback

Annex B

Aboriginal Consultation - Information Package

Environmental Resources Management Australia

Building C,
33 Saunders Street
Pyrmont NSW 2009
Telephone (02) 8584 8888
Facsimile (02) 8584 8800
Locked Bag 24,
Broadway NSW 2007
www.erm.com

Monday, 9 October 2006

Sheila Drew
Condobolin Local Aboriginal land Council
Condobolin
NSW

Our Reference: 0051752 L03 CONDOBOLIN LALC .DOC

Dear Sheila,

RE: ABORIGINAL HERITAGE SURVEY AT CONDOBOLIN

As discussed on the phone on the 5th October, I wish to invite the Condobolin Local Aboriginal Lands Council on an Aboriginal heritage survey in Condobolin area. This letter provides the background details with regards to the need for the survey, the details of when the survey will take place and relevant requirements and a billing address for you invoice relating to the survey.

If you send any formal correspondence to me, please can you quote the above reference.

1. INTRODUCTION

ERM have been engaged by Australian Ethanol Limited to undertake environmental assessment work for three proposed ethanol production plants across western NSW. One of these plants will be located at Condobolin, and is the subject of our proposed field survey.

Neville Baker is the ERM archaeologist who will be undertaking the field survey. He is an archaeologist based in Sydney, who you should contact on 02 8584 8803 for any information with regards to the project.

We have also been in contact with Phil Percell at DEC, who is aware of this project and your involvement in the process. He is also able to answer questions relating to the project if you are not able to contact Neville Baker.

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A.C.N. 002 773 248
A.B.N. 12 002 773 248

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2. PROPOSED DEVELOPMENT AT CONDOBOLIN

The ethanol production facility will be capable of processing a range of cereal grains (such as corn, wheat, barley and sorghum), which are to be grown locally, with the aim of producing up to 60 ML of ethanol products annually.

The proposed development will include the construction of a holding dam and effluent treatment and recycling areas. A portion of each site will be dedicated as forestry plantations to provide carbon offset for the facilities by-products. The proposed location of the Condobolin facility is shown in Figure 1.

Australian Ethanol Limited will seek project approval for the ethanol production facility and associated plantation at Condobolin, under Part 3A of the *Environmental Planning and Assessment Act, 1979 (*EP&A Act). The facility will have a development cost exceeding $30 million and therefore the proposal will be determined by the Minister for Planning.

This means that the normal heritage process of permits under sections 87 and section 90 of the NSW National Parks and Wildlife Act are not to be applied. It is therefore important that all known Aboriginal heritage values, sites and/or concerns are identified during this initial survey period, as once approval under Part 3A is granted it will not be possible to undertake further heritage work unless identified now.

3. SUMMARY OF POTENTIAL IMPACTS ON ABORIGINAL HERITAGE & METHODOLOGY FOR SURVEY

3.1 IMPACTS

The proposed development will result in disturbance to the soil levels within the site. This could destroy any Aboriginal heritage sites (i.e. stone artefact scatters, scarred trees etc) which are located with the study area.

The development at Condobolin will also include the excavation of a water supply pipeline and a dam.

The survey will therefore aim to identify all such sites and present appropriate mitigation measures, which will be devised between yourselves and ERM following the heritage survey.

3.2 SURVEY METHDOLOGY

The heritage survey will commence with the main area to be impacted (see figure), where we will inspected areas with exposures and good soil visibility i.e. tracks. As the study area is flat and does not contain any waterways, I propose that we inspect the boundary of the site, and any tracks, roads etc within the study area in a systematic manner. This will result in covering the majority of this larger land area.

I would then like to walk the two possible routes for the proposed water pipeline.

I will have a camera, GPS, Aboriginal site recording forms and photo scale, so that we can jointly record any Aboriginal sites that we discover on the day. I would like your assistance in fill out such forms, including input into any proposed mitigation needing to be undertaken prior to the development.

The approximate total length of the walked survey route will be around 10 km. I anticipate that we should be able to cover this area in two days, however, if this is not possible then we can continue the survey on the following day.

4. KNOWN ABORIGINAL HERITAGE IN THE LOCAL AREA

ERM has undertaken a background search of the DEC AHIMS register for all known Aboriginal sites inside and surrounding the study area. The results of this search are provided in Figure 2 and discussed below.

Several registered Aboriginal sites are located outside of the study area to the south adjacent to the river. These sites are mainly stone artefact scatters, which were identified during previous heritage surveys. To date no Aboriginal sites have been recorded within the study area.

5. REQUEST FOR ABORIGINAL HERIATGE INFORMATION

ERM invite you to provide a written response to this letter and the soon to be undertaken survey, detailing any information, concerns and the outcomes from the Aboriginal heritage survey. All correspondence you provide will be incorporated into the heritage report and also forwarded to DEC for their records and consideration.

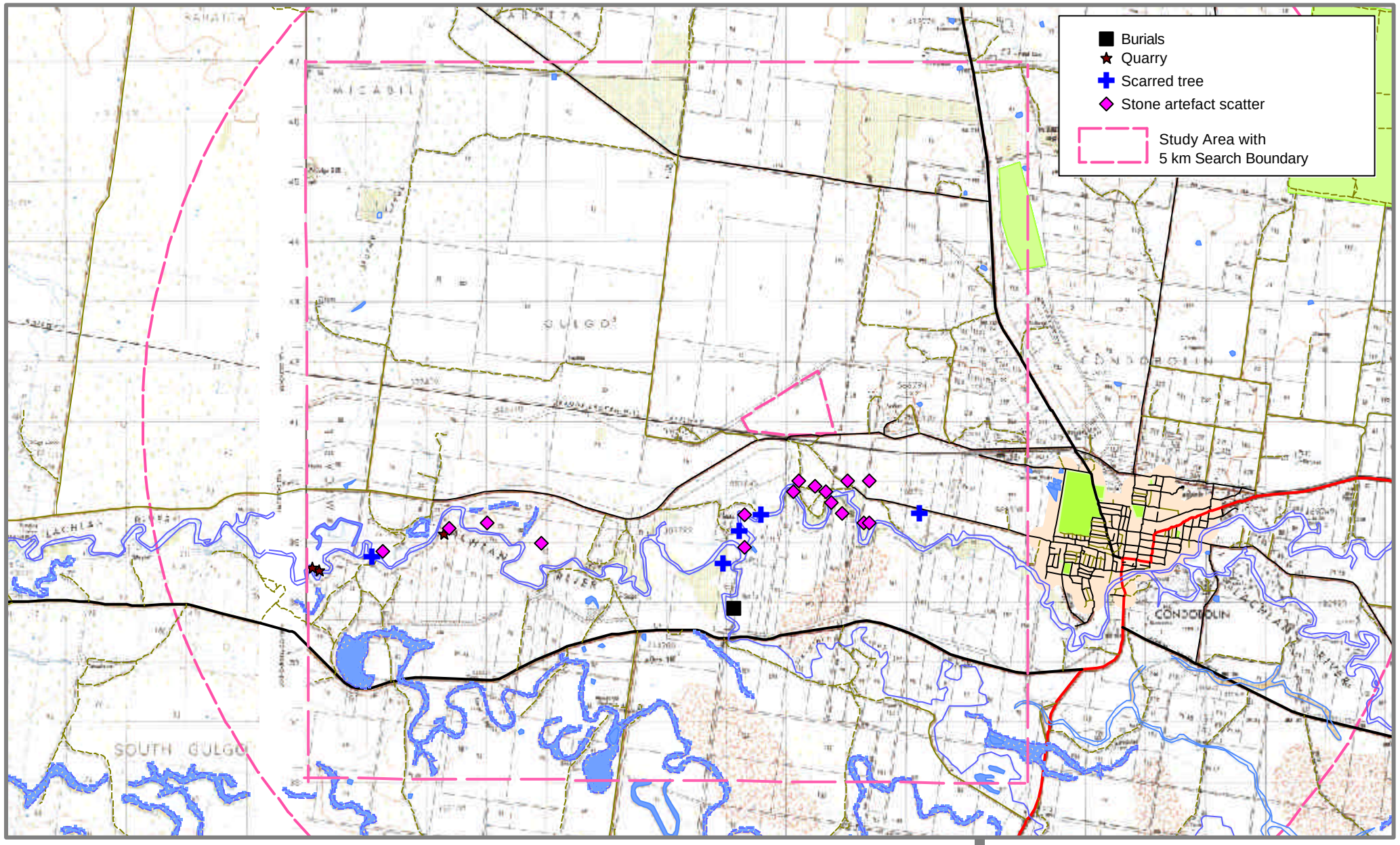
If you have serious cultural concerns over any impacts that this project could have, please can you raise these with us as soon as possible, so that they can be discussed and presented to DEC and the client. If any of your concerns are gender specific, then ERM can provide an appropriate archaeologist to confidentially discuss any matters.

Following the heritage survey you will be provided with a draft copy of our report, for your review and comment. We will include any comments and letters you have in the final report and provide you with a full colour copy once it has been completed to both of our satisfactions.

Aerial Photo of Proposed Plant and Surrounding Area - Condobolin

Planning Focus Meeting for Proposed Ethanol Production Facility: Condobolin

G:\GIS\Minor Projects\0051752\Fig4 AHS Cond.WOR 28 07 2006 Environmental Resources Management Australia Pty Ltd



0 2 4
Kilometres

Figure 4 Location of Aboriginal Sites (registered on AHIMS Database) within 5 km of Study Area

6. DETAILS OF THE SURVEY

6.1 SURVEY DATE & PERSONNEL

ERM wish to undertake the Aboriginal heritage survey on the **Monday 16th and Tuesday 17th October 2006**. We require you to provide **one** representative to accompany Neville Baker on this survey. The survey will systematically inspect all exposures within the study area and the proposed route for the water pipeline.

6.2 MEETING PLACE

Please meet outside the **Condobolin Post Office** (33 Bathurst Street), at **0900** on Monday.

If I am going to be late I will call you and let you know. Please can you also call me on 0408 207 057 if you are going to be more than 10 minutes late on the day.

6.3 PLEASE BRING

Please can you wear sturdy walking shoes, appropriate clothing (i.e. a hat, long sleeves and sun block) and bring any food and water that you might need on the day.

6.4 INVOICE DETAILS

Please can you send your invoice for your days work and any letters you need to write directly to:

Australian Ethanol Limited

Attention: Kim Colero
PO Box 1792
West Perth
WA 6872

On your letter headed invoice please clearly state the work you undertook (i.e. Aboriginal heritage survey at Condobolin) including the date of the survey.

If you have any questions with regards to this project please contact me on 02 8584 8803 to discuss them. I look forward to undertaking the survey with you and will see you soon!

Yours sincerely,
for Environmental Resources Management Australia Pty Ltd

Neville Baker
Archaeologist

Annex C

CLALC Response To Draft Aboriginal Heritage Assessment Report

Condobolin Local Aboriginal Land Council
ABN: 72 410 266 331.

18 William Street
PO Box 114
CONDOBOLIN NSW 2877
Phone No 68953 639

FAX No 68953 639

Date 19/02/07

Environmental Resources Management Australia Archaeological and Aboriginal Heritage Survey

Heritage Survey carried out on the 17TH and 18TH of October 2006
Environmental Resources Management Australia Mr Neville Baker Archaeologist and Mr Lance Smith Aboriginal sites officer, on the proposed Ethanol project and proposed water pipe line route at Condobolin NSW.

Environmental Resources Management Australia.

Final Report.
It is Clear and undeniable that in the final report by the E.R.M Australia, Mr Neville Baker Archaeologist and Mr Lance Smith Aboriginal Sites Officer report, that at the proposed site for the Ethanol project and the proposed water pipe line route. The evidence of Aboriginal travel and occupation in and around the two proposed sites is clear because of the varied array of Aboriginal Artefacts of varied degrease of significants.

The Aboriginal Rights Act 1983 and the National Parks and Wildlife Act 1974.

One of the primary functions of any Aboriginal Land Council is to protect and preserve Aboriginal Heritage with in its Land Council boundary. Under the both Acts mentioned above the desecration or removal any Artefacts of any significants by a unauthorised company, person or persons will result in heavy penalties. It is in the best interest of the Condobolin Aboriginal Land Council and the Ethanol Limited group that we work together to protect and preserve Aboriginal Heritage, Aboriginal Artefacts of significants for future generation of the Wiradjuri nation and Australians, It is also important that we be guided by the reports by E.R.M Australia Mr Neville Baker Archaeologist and Aboriginal Sites Officer Mr Lance Smith, Which will serve the best interest of both parties.

The Condobolin Aboriginal Land Council appreciate and thank the Ethanol Limited group for their understanding of the significants to protect and preserve the Aboriginal Heritage of the Wiradjuri people.

William Gilbert

Coordinator

ERM consulting services worldwide **www.erm.com**

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Pyrmont NSW 2009
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Facsimile (02) 8584 8800