

Proposed Ethanol Production Facility at Oaklands

Preliminary Assessment Report



Australian Ethanol Limited

September 2006

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Environmental Resources Management Australia Pty Ltd Quality System

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This report was prepared in accordance with the scope of services set out in the contract between Environmental Resources Management Australia Pty Ltd ABN 12 002 773 248 (ERM) and the Client. To the best of our knowledge, the proposal presented herein accurately reflects the Client's intentions when the report was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In preparing the report, ERM used data, surveys, analyses, designs, plans and other information provided by the individuals and organisations referenced herein. While checks were undertaken to ensure that such materials were the correct and current versions of the materials provided, except as otherwise stated, ERM did not independently verify the accuracy or completeness of these information sources

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*Preliminary Assessment
Report*

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**Environmental Resources Management
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1.1

PURPOSE OF THE REPORT

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by Australian Ethanol Limited to prepare a preliminary environmental assessment for the construction and operation of three ethanol production facilities in Condobolin, Coleambally and Oaklands New South Wales (NSW).

Figure 1 shows the regional locations of the three proposed facilities.

The ethanol production facilities will be capable of processing a range of cereal grains (such as corn, wheat, barley and sorghum), which are grown in the Murray Region of NSW, to produce up to 200 ML of ethanol products annually.

A number of holding dams and effluent treatment and recycling areas will also be incorporated into each facility, while a portion of each site will be dedicated as forestry plantations to provide carbon sequestration for the facilities by-products.

Australian Ethanol Limited seeks project approval for the development of an ethanol production facility and associated plantation at Oaklands, 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 report is the preliminary environmental assessment for the Oaklands facility. It has been prepared in order to gain the Director-General's requirements under Clause 75(F) of the EP&A Act for the preparation of an environmental assessment report (EAR).

The preliminary assessment report sets out the likely environmental issues associated with the project to facilitate the preparation of the Director-General's requirements.

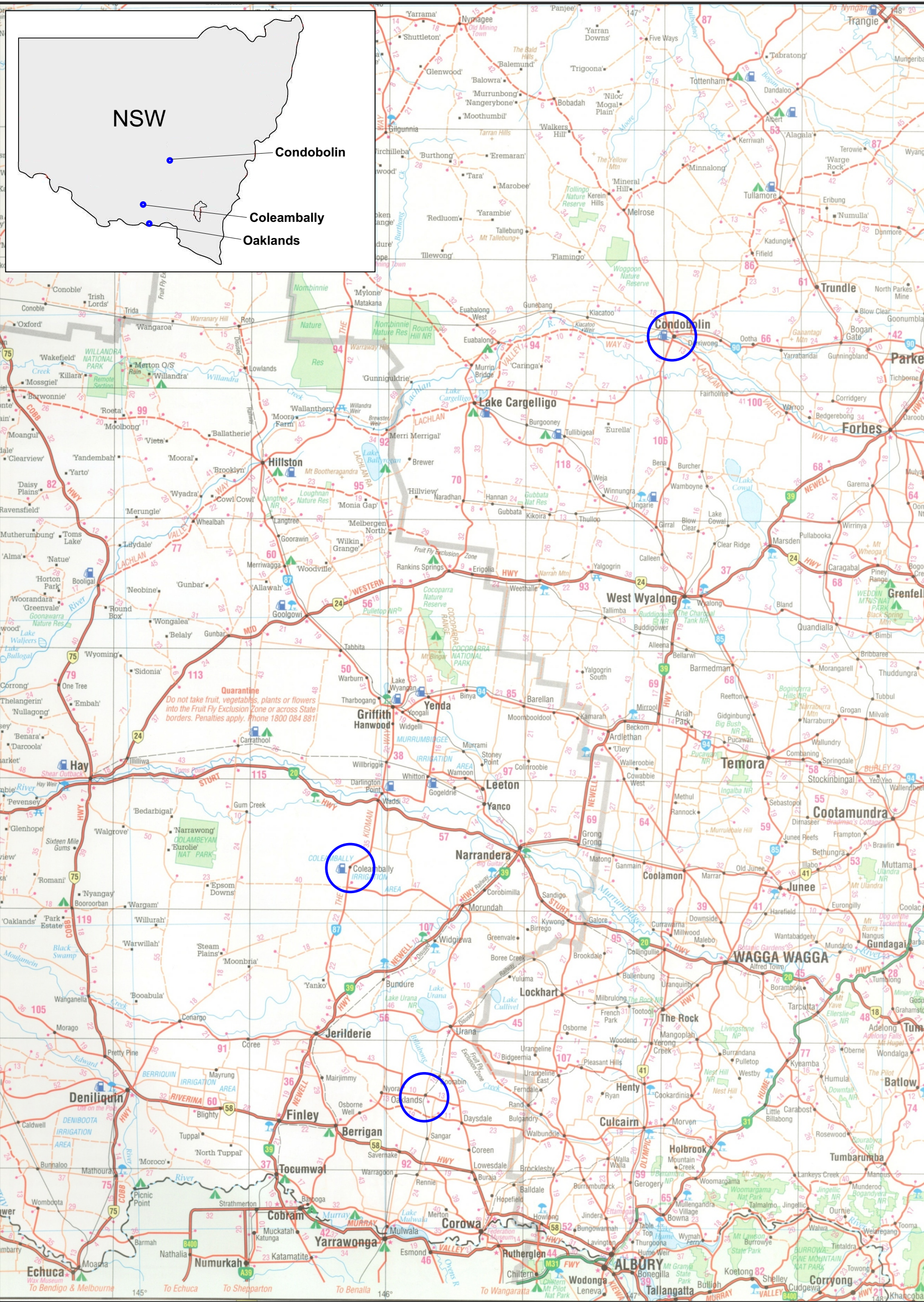


Figure 1 Regional Locations of the Three Proposed Plant Sites

Preliminary Environmental Assessment for Proposed Ethanol Production Facility at Oaklands

1.2

AUSTRALIAN ETHANOL LIMITED

Australian Ethanol Limited is a publicly listed company on the Australian Stock Exchange and in April 2004 acquired the company Australian Biofuels Pty Ltd.

Australian Ethanol Limited's business model is to develop ethanol plants in conjunction with local organisations such as cooperatives, local agricultural service groups and grain aggregators. This model enables local rural communities to invest in a value adding industry, while also increasing the security of supply of key feedstock for the company's planned ethanol plants.

The intent of Australian Ethanol Limited is to project finance, construct, and operate three ethanol production facilities at Condobolin, Coleambally and Oaklands, New South Wales. These three separate applications follow the development approval for Australian Ethanol Limited's first ethanol production facility at Woorinen South near Swan Hill in the north-west of the State of Victoria. It was approved for the annual production of 100 ML per year on 28 September 2004 and construction is planned to commence on 21 August 2006. Australian Ethanol Limited is in discussions with all of the major fuel companies in regard to ethanol off-take, in addition to pursuing regional and export market sales for the three projects.

The demand for ethanol blended fuel in the Australian fuel or motor spirit market is driven by global vehicle compliance with international emissions and vehicle efficiency legislation, cleaner fuel policy and energy security issues faced by consumer countries including Australia. More recently the increase in international fuel prices has triggered the fuel ethanol debate in Australia and internationally.

The fuel ethanol industry in Australia forecasts substantial demand and growth from 2008 onwards. Australian Ethanol Limited intends to be an established producer and distributor of ethanol at that time and be positioned to participate in the anticipated growth of market demand.

1.3

ETHANOL FUEL PRODUCTION OVERVIEW

Ethanol is a liquid fuel, produced principally from natural products, which is non-toxic, water soluble and highly combustible. Ethanol has traditionally been used as a fuel and solvent for hundreds of years and has also been used as drinking alcohol. When blended with petrol, ethanol can displace benzene and other octane enhancers which are known toxic gasoline components and carcinogens. Ethanol fuel blend improves combustion efficiency, lowers tail pipe emission in vehicles and reduces pollutants. Ethanol is renewable and a sustainable option for use in conjunction with petrol, particularly to meet more stringent Australian fuel standards post 2006.

The production of ethanol involves the receipt and storage of grain, milling of the grain to flour followed by a cooking, fermentation and distillation process.

The ethanol production process converts starch which comprises up to 75 per cent of the grain seed to sugar and subsequently to ethanol. The ethanol to be produced on the site will be suitable for use as:

- a fuel blend stock, which is dehydrated (water removed), stored and at the time of dispatch to market mixed with a small percentage of petrol ('denatured'). The majority of ethanol produced by the plant will be for this purpose;
- lesser amounts of export grade industrial ethanol, which requires further processing than fuel blend stock to remove the low traces of impurities; and
- extra neutral (potable) ethanol – a smaller proportion requiring further processing to remove impurities.

The co-product of the ethanol production process is wet distiller's grain and solubles (WDGS), which is sold as stockfeed and is in high demand in feedlots, dairies and piggeries. The distiller's grain contains up to 70 per cent water and for commercial reasons is sold within 200km of the production facility. WDGS has a useful shelf life of less than a week.

Australian Ethanol Limited has an off-take arrangement with James & Sons (Grain Merchants) Limited for the off-take take or payment for wet distiller's grain from the Oaklands site. James & Son is an international feed marketing firm which will remove and on-sell the WDGS to the Riverina Region's intensive agriculture industry.

1.4 CONSULTATION

Representatives from Australian Ethanol Limited and ERM met with the General Manager and Council officers from Urana Shire Council as well as the owner of the property, to discuss the proposed project on 18 July 2006. Council expressed support for the project with regards to the economic benefit to the region. Potential issues related to the project were discussed including the potential for traffic generation and the source and housing of employees required for the facility. Council did not identify any other specific areas of concern at this initial stage.

Following lodgement of the preliminary assessment, Australian Ethanol Limited will hold a planning focus meeting with the Department of Planning (DOP), Council and relevant government agencies to discuss the project, so that Council, the departments and agencies are able to provide informed input into the Director-General's requirements for the preparation of the EAR.

The structure of the preliminary assessment is as follows:

- Chapter 1* provides an introduction to Australian Ethanol Limited and the proposed project and sets out the purpose of the report.
- Chapter 2* provides a description of the site and surrounding area.
- Chapter 3* provides a description of the proposed project.
- Chapter 4* outlines the statutory context in which the proposal is to be assessed.
- Chapter 5* provides a preliminary assessment of the project issues such as water, noise, air quality, traffic and ecological impacts, provision of services and potential social impacts.
- Chapter 6* provides a summary of the key environmental issues of the project and a conclusion.

2.1 LOCATION

The site is located off Daysdale Street, Oaklands NSW, approximately 580 km south-west of Sydney via the Hume and Sturt Highways.

Oaklands is a small country town in the Riverina area located between Lockhart and Jerilderie and is part of the Murray Region. The Murray catchment is situated in southern New South Wales, and covers an area of approximately 3,535,000 ha. The region is bounded by the Murray River to the south, the Murrumbidgee River catchment to the north, the Australian Alps (Great Dividing Range) to the east and by the convergence of the Murray and Murrumbidgee Rivers to the west.

The main agricultural contributors to the local economy are wheat and rice with other significant contributors being dairy, sheep, beef, barley, vegetables, pastures (for hay), oats and potatoes.

Within a 150 km catchment, Oaklands produced an average of 2.6 million tonnes of grain in the production years of 2000/01 and 2002/03 (Clark and Associates, 2006). The estimated feed grain demand from the region over the period was 1.6 million tonnes, leaving an average grain surplus of over 1 million tonnes for that time period. Yearly surpluses would be available for use in the ethanol production process.

An aerial photograph of the site and surrounding area is shown in *Figure 2*.

2.2 SITE DESCRIPTION

The site is comprised of a number of lots as follows:

- Lots 72 and 73 on Deposited Plan DP 756402 (proposed plant site); and
- A portion of Lot 68 DP 756402 and Lot 61 DP 119505 (proposed 200 ML water storage dam and pipeline).

The site is located in the County Urana, Parish of Clear Hill.

The site is located off Daysdale Street one of the main roads through Oaklands. Oaklands township is located almost adjacent to the south-western boundary of the site across Daysdale Street. The site has an area of approximately 122 hectares surrounding the Ray Brooks & Co. bulk grain storage and terminal which the site envelopes on its western boundary. The property is bounded by agricultural land to the north, Saffron-Oaklands Road to the south, Daysdale Street to the west, and a sheep grazing property to the east. The site and surrounding area is generally flat.

Currently the site comprises:

- agricultural cropping land (barley);
- some sparse tree cover along the eastern boundary of the site; and
- the disused Oaklands-The Rock railway line which passes through the site from the northeast corner to the middle western boundary.

Immediate surrounding areas include:

- agricultural cropping land and some sheds on the northern boundary of the site, and a rural residence to the northwest approximately 1km from the proposed plant site;
- closest rural dwelling is located approximately 250m southwest of the site, approximately 1km from the proposed plant site;
- agricultural land and sheep grazing immediately to the east and an abandoned rural residence located approximately 1 km to the east;
- agricultural cropping land on the southern boundary of the site; and
- to the immediate west is the Ray Brooks & Co. bulk storage and grain terminal beyond which lies Daysdale Street and agricultural cropping land.

The surrounding area further out from the site includes:

- Saffron-Oaklands Road approximately 1 km to the south beyond which is agricultural cropping land;
- Oaklands township located approximately 1 km to the southwest ;
- Nowranie Creek and agricultural cropping land approximately 1.5 km north of the site; and
- O'Dwyer Channel approximately 2.5 km to the west beyond which is agricultural cropping land.

The main road network surrounding the site includes:

- Daysdale Street located on the western boundary of the site, connecting to Saffron-Oaklands Road 1 km south of the site and Urana Lockhart Road approximately 10 km north of the site.
- Saffron-Oaklands Road connecting to the Riverina Highway, a major highway that leads to Albury to the south-east and Deniliquin in the west; and
- Urana Lockhart Road leading to the Newell Highway in the west and the Sturt Highway in the east