



# *Adelaide Energy Limited*

Annual Report

Preliminary Survey  
Licence No 19

*29 October 2008 – 28 October 2009*

Onshore Otway Basin  
South Australia

This report has been prepared in accordance with the requirements of the *Petroleum and Geothermal Energy Act 2000* and the *Petroleum and Geothermal Energy Regulations 2000* and covers all of the operations conducted under PSL 19 by Adelaide Energy Limited during the period 29 October 2008 and 28 October 2009. Subsequent to this Pipeline Licence 19 was granted.

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## 1 Introduction

Adelaide Energy was granted a Preliminary Survey Licence PSL19 in October 2008 to undertake survey activities to investigate potential flowline routes to convey hydrocarbons from Jacaranda Ridge-2 and Limestone Ridge-1 wells in the Otway Basin, South Australia, to existing Katnook Gas Plant petroleum gathering infrastructure.

PSL 19 was granted on 29 October 2008 with an expiry date of 28 October 2009.

The survey activities cover an approximate area of 350 km<sup>2</sup>, which is shown in the map below and defined as follows:

*“Commencing at a point being the intersection of latitude 37°19' 04" S GDA94 and longitude 140°41' 18" E GDA94, thence east to longitude 140°05' 01" E GDA94, south to latitude 37°29' 10" S GDA94, west to longitude 140°04' 18" E GDA94 and north to the point of commencement but excluding Penola Conservation Park and Mining Production Tenement Regulation Area SE 19 (Wetlands of the South East).”*



Pipeline Licence 19 (PL 19) was granted on 20 November 2009.

This report details relevant activities occurring under PSL19 for the reporting period 29 October 2008 through to 28 October 2009.

## 2 Administration

Adelaide Energy has 100% interest in PSL19.

## 3 Regulated Activities

PSL 19 authorised the following activities

- Land Survey;
- Geotechnical Survey;
- Ecological survey; and
- Heritage survey,

as identified in the Statement of Environmental Objectives.

Work on these activities was completed during the licence period.

### 3.1 Land Surveys

An alignment and profile survey was conducted by Calder Harris Surveyors during the period April to June 2009. The survey crew travelled along the proposed route together with an environmental consultant and land owner liaison officer, to determine the optimum alignment. This was considered a low impact survey. The terrain was primarily farm land with areas of forestry or public roads.

### 3.2 Geotechnical Surveys

Coffee Geotechnics was contracted to undertake geotechnical surveys.

Stage 1, a desktop assessment, was undertaken in April 2009. The desktop review and field investigation was undertaken to determine presence of rock, ground water table, areas subject to inundation, earthquake potential, geology and features that could potentially impact proposed pipeline alignment.

Stage 2 followed in May 2009, where twenty-five 50mm testholes were drilled along the four proposed pipeline routes using a 4WD mounted Rockmaster drilling rig. All work complied with Australian standards and industry codes of practice.

Bore depths, as specified by GPA Engineering (Pipeline Design Engineers), were as follows: 2.5m at the 4 well sites; 3m at tie-in points; 6m at bitumen crossings and 2.5m along the pipeline route. These depths were based on design & risk assessments following the desktop investigations. In some instances, the full depth was not achieved due to refusal of push tube. All samples were taken to be indicative of the proposed pipeline depths.

The report issued provides recommendations relating to:

- Excavatability of subsurface materials;
- Stability of excavation;
- Ground water conditions;
- Possible need for backfill.

All recommendations were incorporated into the pipeline construction specification (09095-ADE-SP-003).

### 3.3 Consultation undertaken

Chris Annear, Adelaide Energy's Landowner Liaison Officer consulted with all key stakeholders impacted along the proposed pipeline routes through the reporting period.

### 3.4 Flora and Fauna

Steve Milnes of RPS Ecos Pty Ltd performed field investigations along the pipeline corridor during April and June 2009. Expert botanical input was obtained from EAC – Ecological Evaluation and input to the fauna investigation was through Environmental and Biodiversity Services. Brief ground assessments of vegetation types and habitat were undertaken at 22 locations along the alignment routes with all findings reported in the Environmental Impact Report (EIR), submitted with the pipeline licence application and the Construction Environmental Management Plan (CEMP).

### 3.5 Cultural Heritage

A heritage clearance of the pipeline routes was carried out by Des Hartmann from the Interim South East Aboriginal Heritage Group on 1 May 2009. No sites of significance to Aboriginal tradition, history, anthropology or archaeology were found during the clearance.

No sites of non-indigenous heritage significance were recorded near the pipelines.

## 4 Compliance Issues

### 4.1 Licence and Regulatory Compliance

Adelaide Energy Limited believes it has complied with the requirements of:

- a) the Licence; and
- b) the state wide *Statement of Environmental Objectives for Pipeline Preliminary Survey Activities in South Australia*.

Adelaide Energy has not complied with Regulation 33 (1).

***Division 2—Performance and technical reports  
33—Annual reports***

*(1) A licensee must, within 2 months after the end of each licence year, furnish to the Minister a report for the relevant licence year .*

Adelaide Energy Limited believes it has complied with all other requirements of the *Petroleum and Geothermal Energy Act 2000 (SA)* and of the *Petroleum and Geothermal Energy Regulations 2000 (SA)*.

## 5 List of Reports and Data Generated

The following reports were generated during this reporting period:

- “*Proposed Pipelines Penola – Desk Top Geotechnical Assessment*”, Coffee Geotechnics, 05830/ AA-AB 15 April 2009;
- “*Proposed Pipelines – Penola Geotechnical Investigation*”, Coffee Geotechnics, 05830/AA-AC 19 May 2009;
- “*Environmental Impact Report – Adelaide Energy Pipeline*”, RPS Environment & Planning, (JR#2, LR#1, HS#2 and W#2), EBO08828-ADE-EIR; June 2009

- *Pipeline Alignment Sheets*, Calder Harris & GPA
- “*Construction Environmental Management Plan*”, RPS Environment & Planning, 08228-ADE-CEMP.

## **6 Reportable Incidents**

There were no reportable incidents in relation to PSL 19.

## **7 Foreseeable Threats**

No threats were identified.

## **8 Statement of Expenditure**

Commercial in confidence.

## **9 Operations for ensuring Year**

There are no further activities required for the ensuring year under PSL 19.

## Appendix 1 - Environmental Objectives and Performance – SA Preliminary Survey Licence SEO

Environmental Objectives	Comment	Assessment Criteria	Objective Achieved
<p>1. To minimise disturbance to landowners/managers.</p>	<p>The criteria used for assessing the achievement of this objective has been developed on the basis of the current understanding of the risks from access to third party safety and property. Communication and the establishment of good relations with landowners/managers and community (where necessary) by the proponent is the key objective to minimise disturbance to as low as practicably possible.</p>	<ul style="list-style-type: none"> <li>The project has a nominated person with specific responsibility for maintaining contact with all potentially affected landowners/managers.</li> <li>All landowners/managers are consulted prior to preliminary survey activities and their specific requirements are recorded and addressed appropriately.</li> <li>All reasonable landowner requirements are incorporated into management strategies.</li> <li>Landowners/managers are provided with information regarding the scope, schedule and duration of preliminary survey activities.</li> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>Landowner complaints are recorded and reported to the licensee.</li> </ul>	<ul style="list-style-type: none"> <li>Relevant parties were notified of proposed activities and future development plans through ADE Landowner Liaison Officer.</li> <li>All reasonable landowner requests were managed appropriately.</li> <li>The number of site visits were kept to a minimum.</li> </ul>
<p>2. To minimise damage to crops and pasture.</p>	<p>South Australia has numerous areas of high rural productivity and diversity, with many communities dependent on the livelihood derived from agricultural practices. Surveys typically pose only a minor and very short term disturbance to agricultural or grazing practices. Nevertheless, measures should be undertaken to limit disturbances.</p>	<ul style="list-style-type: none"> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>Existing tracks are used where available.</li> <li>The area utilised for excavation is restricted to the smallest practicable (i.e. approx. 20 m<sup>2</sup> per site).</li> <li>Disturbance is restricted to the proposed construction right-of-way where practicable (right-of-way width is likely to vary from between 10 to 25 metres).</li> <li>Topsoil is kept separate from subsoil.</li> <li>The soil profile and contours are restored to as near as possible to their undisturbed state as soon as practicable and to the landowners satisfaction.</li> <li>Landowner complaints are recorded.</li> </ul>	<ul style="list-style-type: none"> <li>Number of site visits kept to a minimum.</li> <li>Existing tracks used where possible.</li> <li>Consultation with Landowners prior to entering 3<sup>rd</sup> party land.</li> <li>Soil sampling methodology chosen to minimise impact to surrounding areas. Geotechnical test holes were restricted to 50mm in diameter. Top soil separated from subsoil.</li> <li>ROW wide reduction was considered during PSL.</li> <li>No landowner complaints recorded.</li> <li>No disturbance to soil profiles</li> </ul>
<p>3. To minimise disturbance to stock.</p>	<p>Livestock may be at risk of injury from collision with vehicles or escape from unclosed gates. Prior liaison with landowners/managers regarding stock movements and personnel/contractor education programs normally reduces the risk of interfering with stock.</p>	<ul style="list-style-type: none"> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>Landowners/managers are provided with adequate prior notice of proposed land access (as per requirements of Part 10 of the Act).</li> </ul>	<ul style="list-style-type: none"> <li>Landholders were given adequate notice and consulted prior to any work begin undertaken. Specific requirements were included in landowner line list, and distributed to all relevant parties.</li> <li>Vehicles were driven at appropriate</li> </ul>

Environmental Objectives	Comment	Assessment Criteria	Objective Achieved
		<ul style="list-style-type: none"> <li>Vehicles are driven at appropriately slow speeds to avoid undue disturbance.</li> <li>Gates are left as found.</li> <li>Landowner complaints are recorded.</li> </ul>	<p>speed for the conditions.</p> <ul style="list-style-type: none"> <li>Gates were left as found.</li> <li>No Landowner complaints.</li> </ul>
<p>4. To prevent disturbance to native fauna.</p>	<p>Native fauna may be disturbed by survey activities, particularly noise generated by movement of vehicles and survey personnel. Impact is considered to be of negligible to low consequence and expected to be limited to duration of the site visit.</p>	<ul style="list-style-type: none"> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>Vehicles are driven at appropriately slow speeds to avoid undue disturbance.</li> <li>Plan / rationalise preliminary survey activities to ensure the number of site visits is as few as practicable.</li> <li>Clearing native vegetation as part of survey activities avoided.</li> <li>Excavation holes checked regularly for wildlife.</li> <li>Undertake ecological survey prior to geo-technical and land/cadastral survey and identify any "no-go" areas.</li> </ul>	<ul style="list-style-type: none"> <li>The number of site visits were kept to a minimum.</li> <li>Vehicles were driven at appropriate speed for the conditions.</li> <li>There was no clearing of native vegetation during the reporting period.</li> <li>There were no reports of damage to native vegetation as a result of this activity.</li> <li>An ecological survey was undertaken as part of Environmental audit &amp; development of EIR to identify any "no-go" areas. ROW route to take findings into account.</li> </ul>
<p>5. To minimise generation of dust.</p>	<p>Given that the majority of South Australia receives a low, seasonal rainfall and at times experiences drought conditions dust generation is likely. The issue of dust management is important to residents. As well as minimising the effects of dust from traffic movement, the main objectives are to minimise the disturbance to landowners/managers and reduce the loss of topsoil in off-road areas.</p>	<ul style="list-style-type: none"> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>Vehicles are driven at appropriately slow speeds to avoid undue disturbance.</li> </ul>	<ul style="list-style-type: none"> <li>The number of site visits were kept to a minimum.</li> <li>Slow speeds were maintained around residential areas.</li> <li>All work undertaken during cooler months, when dust generation was less likely.</li> </ul>
<p>6. To avoid the introduction of weeds or disease.</p>	<p>A potential source of weeds or pest introduction is from vehicles and equipment bought in from other regions or interstate. The most effective technique to prevent the introduction and spreading of such species is to ensure that vehicles and equipment are appropriately cleaned prior to entry into a new region. In some cases specific quarantine procedures apply to properties and roadsides within the state.</p>	<ul style="list-style-type: none"> <li>Identify local weed and disease management issues prior to the commencement of preliminary survey activities.</li> <li>Management procedures in place to prevent the spread of identified weeds/diseases/pathogens.</li> <li>Ensure all equipment and vehicles are free of soil and vegetative matter prior entry to and exit from properties and roadsides.</li> <li>The number of site visits are restricted to as few as practicable (under normal circumstances this will be four or less).</li> <li>All landowners/managers are consulted prior to preliminary survey activities and their specific requirements are recorded.</li> <li>Planning has taken account of season / climates, as some pathogen born diseases (e.g. dieback) are</li> </ul>	<ul style="list-style-type: none"> <li>An environmental survey was undertaken to identify local weed issues. Findings and management of all issues were incorporated into the Construction Environmental Management Plan and EIR.</li> <li>ADE Environmental Management Procedures in place and complied with.</li> <li>All vehicles were checked for soil &amp; plant material and if necessary washed down before entering area.</li> <li>There have been no reports of weeds and feral animal introduced.</li> <li>Number of site visits kept to a minimum.</li> <li>Landholders were given adequate notice</li> </ul>



Environmental Objectives	Comment	Assessment Criteria	Objective Achieved
		transported during particular conditions.	<p>prior to all survey activities.</p> <ul style="list-style-type: none"> <li>• Inductions cover impact &amp; control of weeds.</li> </ul>
<p>7. To avoid or minimise damage to vegetation and wildlife habitat.</p>	<p>Survey works normally have an insignificant impact on vegetation communities or fauna habitats. Due to the declining nature of remnant vegetation and the subsequent loss of available habitat, it is important to monitor the achievement of this objective.</p>	<ul style="list-style-type: none"> <li>• Clearing native vegetation as part of land survey is prevented where avoidable in native vegetation areas. Where demonstrated to be unavoidable a location specific environmental management plan is developed and implemented.</li> <li>• Soil excavations are not conducted in areas of native vegetation.</li> <li>• Survey is undertaken by appropriately trained and experienced personnel.</li> <li>• Any sites of significance (due to size, density and/or presence of threatened species) are recorded for subsequent avoidance during construction.</li> <li>• Any areas of clearance are rehabilitated using local seed sources, where available, and appropriate methods.</li> <li>• Preliminary survey activities not conducted within any areas of intact vegetation without prior consultation with relevant government departments.</li> <li>• Samples of native vegetation are collected by qualified botanists or appropriately trained and experienced personnel under appropriate permits from the Department of Environment and Heritage.</li> </ul>	<ul style="list-style-type: none"> <li>• All rare, vulnerable and endangered species sites were avoided.</li> <li>• There were no reports of damage to native vegetation as a result of this activity.</li> <li>• The number of site visits were kept to a minimum.</li> <li>• All survey work undertaken by appropriately trained and experienced personnel.</li> <li>• There was no clearing of native vegetation during the reporting period.</li> <li>• Proposed pipeline route specifically chosen to use already disturbed areas and avoid areas containing remnant native vegetation.</li> </ul>
<p>8. To avoid damage or unnecessary disturbance to cultural heritage sites.</p>	<p>The aim of the objective is to ensure that any sites of cultural (Aboriginal or Non-Aboriginal) heritage significance are identified and protected. Many sites are recorded on registers held by the Department of Environment and Heritage and the Department of State Aboriginal Affairs. To ensure the best possible protection of artefacts and sites, it is important that sites be identified during survey activities. Any recorded sites should be submitted to DOSAA for inclusion on the cultural heritage register.</p>	<ul style="list-style-type: none"> <li>• Survey is undertaken by appropriately trained and experienced personnel.</li> <li>• The proponent has a mechanism in place to appropriately report and respond to any sites discovered during pipeline survey activities.</li> <li>• Any sites are recorded for subsequent avoidance during construction.</li> </ul>	<ul style="list-style-type: none"> <li>• All Survey personnel are appropriately trained and experienced in Cultural Heritage matters.</li> <li>• A process was in place to appropriately report Cultural Heritage sites during this period.</li> <li>• No sites of cultural significance identified during this period.</li> <li>• All relevant aboriginal groups were notified before the commencement of activities.</li> <li>• Existing roads and tracks were used wherever possible.</li> <li>• Number of site visits were kept to a minimum.</li> <li>• <i>ADE-PRO-023 Cultural Heritage Management Procedure.</i></li> </ul>

Environmental Objectives	Comment	Assessment Criteria	Objective Achieved
9. To minimise visual impacts.	The visual impact of survey works is an insignificant and temporary impact. Standard field techniques normally achieve objective outcomes.	<ul style="list-style-type: none"> <li>• Marker pegs are limited to those essential for identifying the proposed alignment.</li> <li>• Excavations are restricted to areas away from general public view, where practicable.</li> <li>• Excavations are restored as soon as practicable.</li> </ul>	<ul style="list-style-type: none"> <li>• Small number of non intrusive survey pegs used to identify the route.</li> <li>• All working areas maintained in a neat and orderly manner.</li> <li>• Waste management practices in line with ADE procedures were adopted (<i>ADE Waste Management Plan</i>)</li> <li>• Geotechnical work undertaken by suitably qualified personnel.</li> <li>• Refer <i>ADE-PRO-022 Earthworks &amp; Land disturbance Procedure</i>.</li> </ul>
10. To minimise soil disturbance.	The repercussions of soil disturbance can potentially be interrelated with other aspects of the environment e.g. erosion, dust emissions, rehabilitation success, weed invasion, encroachment etc. Wide temporal and spatial variations in soil conditions occur throughout the State. The main impact to soil is caused from vehicle movement in off-road locations and sub-surface excavations. The monitoring of achieving minimal soil disturbance is considered important.	<ul style="list-style-type: none"> <li>• The area of excavation is restricted to the smallest practicable (approx. 20 m<sup>2</sup> per site).</li> <li>• Disturbance is restricted to the proposed construction right-of-way where practicable (right-of-way width is likely to vary from between 10 to 25 metres).</li> <li>• Topsoil is kept separate from subsoil.</li> <li>• Vehicles use existing road tracks where practicable.</li> <li>• The soil profile and contours are restored to as near as possible to their undisturbed state as soon as practicable and to the landowners satisfaction.</li> </ul>	<ul style="list-style-type: none"> <li>• Boreholes for geotechnical surveys were limited to 50mm in diameter at each site using 4WD mounted rig. Techniques used ensured minimal soil &amp; land disturbance/impact.</li> <li>• No recorded disturbance to soil profile along proposed ROW.</li> <li>• Vehicles used existing tracks where possible.</li> <li>• <i>ADE-PRO-022 Earthworks &amp; Land disturbance Procedure</i>.</li> </ul>
11. To minimise impact of surface water, groundwater and drainage patterns.	Due to the minimal impact, expected low traffic volume, light weight equipment type, and careful selection of access tracks, there should be minimal impact to surface water, groundwater and drainage patterns as a result of survey activities.	<ul style="list-style-type: none"> <li>• Access tracks are located to avoid any diversion of water during flood inundation.</li> <li>• Areas of inundation, which may result in bogging, or creation of heavy wheel track rutting (more than 200mm deep) are avoided.</li> <li>• Vehicles parked away from watercourses or sensitive ecological environments (minimum 50m).</li> </ul>	<ul style="list-style-type: none"> <li>• Vehicles used existing tracks where possible.</li> <li>• Areas prone to bogging were avoided.</li> <li>• <i>ADE-PRO-022 Earthworks &amp; Land disturbance Procedure</i>.</li> <li>• No geotechnical survey work undertaken around watercourses.</li> <li>• Geotechnical field work which involved drilling 50mm diameter bore holes (deeper than the 1.5m depth specified in EIR), potentially affecting ground water was managed by: <ul style="list-style-type: none"> <li>– Using competent engineers and contractors (GPA Engineering &amp; Coffee Geotechnics) to carry out all work (design, specifications, field work &amp; assessments), complying with Australian standards and normal industry practices;</li> <li>– Restricting holes to 50mm in</li> </ul> </li> </ul>

Environmental Objectives	Comment	Assessment Criteria	Objective Achieved
			<p>diameter to avoid impact to surface drainage patterns;</p> <ul style="list-style-type: none"> <li>- Locating water table depths prior to drilling in preliminary desktop work;</li> <li>- Following Australian standards and Industry Codes of practice.</li> </ul>
12. To minimise the impact on the environment of waste handling and disposal.	Wastes refer to all wastes with the exception of the Listed Wastes in Schedule 1 Part B of the <i>Environment Protection Act 1993</i> . On completion of survey activities, proponents should aim to leave the smallest 'footprint' possible.	<ul style="list-style-type: none"> <li>• All rubbish is removed from survey site</li> <li>• All vehicle oil spills are managed appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>• Rubbish removed from site.</li> <li>• No reported vehicle oil spill incidents.</li> <li>• <i>ADE Waste Management Plan</i></li> </ul>
13. To minimise the risk of fire.	The primary risk of fire is associated with the use of vehicles in off road situations.	<ul style="list-style-type: none"> <li>• Diesel vehicles are used where practicable.</li> <li>• Fire extinguishers and/or knapsacks are kept in all vehicles.</li> <li>• Vehicles are not parked on, or driven through, long grass where avoidable.</li> <li>• Requirements of the landowner/manager are met.</li> <li>• All access to be prohibited on days declared Total Fire Ban.</li> <li>• All requirements of the Country Fires Act 1989 have been met.</li> <li>• Personnel do not smoke while conducting survey activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel vehicles used.</li> <li>• All vehicles have fire extinguishers or knapsacks.</li> <li>• Survey work not conducted during fire ban days.</li> <li>• <i>ADE-PRO-017 Fire Prevention &amp; Control Procedure</i></li> </ul>
14. To minimise erosion.	In areas where rehabilitation of eroded areas may further exacerbate the problem (eg. gibber), other erosion control measures should be considered and implemented.	<ul style="list-style-type: none"> <li>• Any areas of erosion are rehabilitated or managed to prevent further erosion.</li> <li>• The soil profile and contours are restored to as near as possible to their undisturbed state as soon as practicable and to the landowners satisfaction.</li> <li>• Any areas of excavation have been restricted to the smallest practicable.</li> </ul>	<ul style="list-style-type: none"> <li>• Geotechnical surveys restricted to areas of 50mm in diameter, using equipment mounted on 4WD.</li> <li>• No disturbance to soil profiles or contouring of land.</li> <li>• <i>ADE-PRO-022 Earthworks &amp; Land disturbance Procedure.</i></li> </ul>