

**PEL 32**

**Onshore Otway Basin**

**South Australia**

**Year 2 Annual Report**

**For the Period**

**19 February 2001 To 18 February 2002**

Prepared by:  
Origin Energy Resources Ltd

April 2002

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## 1 Introduction

Petroleum Exploration Licence No. 32 ("PEL 32") is located in the onshore portion of the Otway Basin, South Australia. This report covers the work performed by Origin Energy Resources Ltd as Operator of PEL 32 *in accordance with requirements of Section 33 of the Petroleum Regulations 2000*. The reporting period is 19 February 2001 to 18 February 2002, being the second year of the fourth permit term.

PEL 32 is in good standing with all required work commitments for the current permit term exceeded.

## 2 Administration

The working interests in the permit are as follows:

Origin Energy Resources Ltd	20%
SAGASCO South East Inc	55.7143%
Omega Oil NL	24.2857%

The first and second year work commitments for PEL 32 are G&G Studies to \$80,000, and a 100 square kilometre 3D seismic survey. The acquisition of the 213 square kilometres Balnaves 3D seismic survey and its interpretation in the first year, combined with the drilling of two exploration wells during June and July 2001, greatly exceed these commitments. PEL 32 is therefore in good standing.

The Joint Venture requested an extension to the deadline for the submission of the Well Completion Report for Limestone Ridge 1. PIRSA granted an extension on 16 January 2002, of 2 months until 31 March 2002. This was due to the loss of key technical staff.

## 3 Regulated Activities

*Section 33.(2) (a) a summary of the regulated activities conducted under the licence during the year:*

### 3.1 Drilling

Two exploration wells were drilled on the results of the Balnaves 3D seismic data. Both prospects were targetting Pretty Hill Sandstone reservoirs in easterly trending tilted fault blocks at the western end of the Katnook graben. The Balnaves 1 and Limestone Ridge 1 wells were located six kilometres west, and seven kilometres west-northwest of the Katnook Field respectively.

Balnaves 1 spudded on June 10<sup>th</sup> 2001 and drilled to a total depth of 2874 metres. The well tested gas to surface at 1.2 mmcfd with water from the Pretty Hill Sandstone, but was plugged and abandoned as being non-commercial. Limestone Ridge 1, spudded on July 12<sup>th</sup> 2001, encountered gas within the Pretty Hill Sandstone, and was cased and suspended for future evaluation as a gas producer.

### 3.2 Seismic Data Acquisition

No new seismic data were recorded during the reporting period.

### 3.3 Seismic Data Processing/Reprocessing

The PEL 32 Joint Venture commenced reprocessing the Balnaves and Haselgrove 3D seismic data sets in February 2002. WesternGeco have developed several new processing algorithms that were used very effectively on the recent St George 3D Seismic Survey in the adjacent permit PEL 83. Initial results indicate a significant data improvement.

It is expected that the reprocessing will be completed by the end of April 2002.

#### 3.4 Geological and Geophysical Studies

The Geological and Geophysical studies during the reporting period have focussed on refining the well locations for the drilling of the Balnaves and Limestone Ridge Prospects and subsequent post-mortem analyses.

Prospect risking and economic studies have also been completed and well proposal documents prepared.

Primary focus of the G&G effort has subsequently been the planning, preparation, monitoring and evaluation of the drilling of the two wells.

##### *Balnaves 3D Interpretation*

Interpretation of the Balnaves 3D seismic data was completed, with the prospects identified on the time structure map produced at the Top Pretty Hill Formation. An RMS amplitude map at the Top Pretty Hill Formation level was produced, and used to fine tune the final drilling locations for Balnaves 1 and Limestone Ridge 1.

### 4 Compliance Issues

#### 4.1 Regulatory Compliance

*Section 33.(2) (b) a report for the year on compliance with the Act, these regulations, the licence and any relevant statement of environmental objectives.*

Origin Energy Resources Ltd, as Joint Venture Operator for the PEL 32 petroleum exploration licence area, comply with all relevant conditions under the *Petroleum Act 2000*, and the *Petroleum Regulations 2000*. Seismic operations in the Permit are operated as per the requirements of the "Statement of Environmental Objectives for Seismic Operations in the Otway Basin, South Australia"<sup>1</sup>, and a report issued by PIRSA entitled "The Environmental Management of Seismic Operations in the South East of South Australia"<sup>2</sup>. Drilling operations are conducted as per the requirements of the "Statement of Environmental Objectives for Drilling Pad and Access Road Construction On Private Land, Otway Basin, South Australia"<sup>3</sup>, the "Statement of Environmental Objectives for Drilling and Well Operations in Limestone Ridge 1, Otway Basin, South Australia"<sup>4</sup>, and "Statement of Environmental Objectives for Drilling and Well Operations in Balnaves 1, Otway Basin, South Australia"<sup>5</sup>.

No environmental incidents were reported during the Permit year.

#### 4.2 Rectification of Non-Compliance

*Section 33.(2) (c) a statement concerning any action to rectify non-compliance with obligations imposed by the Act, these regulations or the licence, and to minimize the likelihood of the recurrence of any such non-compliance.*

As detailed in Section 4.4, the following reports and data were non-compliant due to late submission:

- Balnaves 3D Seismic Survey Operations and Interpretation Reports.
- Balnaves 1 Well Completion Report.
- Balnaves 3D Seismic Survey final processed volume.
- Basic field data for Balnaves 3D Seismic Survey (still outstanding).

The delays were caused by several factors including the late arrival of data from the seismic contractors, the loss of key personnel, the inadequate time allowed for in the *Petroleum Regulations* to conduct complex tasks such as 3D seismic interpretation, and inadequate internal company monitoring procedures.

To ensure future compliance with report submission Origin has developed a computer database called the Permits and Lands Management System (PLMS) designed to track critical dates and provide prompts for impending reports. The objective of this system is to ensure compliance with the requirements of the *Act* and *Regulations*.

#### 4.3 Management System Audits

*Section 33.(2) (d) a summary of any management system audits undertaken during the relevant licence year, including information on any failure or deficiency identified by the audit and any corrective action that has, or will be, taken.*

A checklist (Checklist 13) has been developed to demonstrate compliance with the environmental objectives as stated in the relevant SEO's for drilling operations and drilling pad construction. Checklist 13 for the Balnaves 1 and Limestone Ridge 1 wells are contained in Appendices 1 and 2 respectively.

As shown in these documents all environmental objectives were achieved.

#### 4.4 Data Submissions

*Section 33.(3). (e) a list of all reports and data relevant to the operation of the Act generated by the licensee during the relevant licence year.*

- Balnaves 3D Seismic Survey Operations report: - submitted 27 July 2001 (due 20 November 2000).
- Balnaves 3D Seismic Survey Interpretation report: - submitted 10 January 2002 (due 9 August 2001).
- Balnaves 1 Well Completion Report: - submitted 25 January 2002 (due 9 January 2002).
- Limestone Ridge 1 Well Completion Report: - submitted 26 February 2002 (due 31 March 2002).
- Year 2 Annual Report (this report).
- Limestone Ridge 1 and Balnaves 1 well and drilling proposals.
- As required under the *Petroleum Act 2000* an Environmental Impact report and a Statement of Environmental Objectives report were prepared for the Drilling and Well Operations in Limestone Ridge 1<sup>4</sup> and Balnaves 1<sup>5</sup> wells, and submitted in May 2001.
- Lease preparation for the two wells was conducted under a separate Environmental Impact report and a Statement of Environmental Objectives report for Drilling Pad and Access Road Construction on Private Land<sup>3</sup>. These were submitted in May 2001.
- Digital logs and cuttings samples and other basic well data have been submitted for the Limestone Ridge 1 and Balnaves 1 wells.
- The final processed 3D seismic volume for the Balnaves 3D Seismic Survey was submitted on 26 March 2002 (due 9 August 2001).
- The basic field data for the Balnaves 3D Seismic Survey (Field tapes, Observer's Logs, Field Statics etc) were due for submission on 9 August 2001, and are currently being compiled for delivery.

#### 4.5 Safety

*Section 33.(2) f in relation to any incidents reported to the Minister under the Act and these regulations during the relevant licensing year-*

*Section 33.(2) f (i) an overall assessment and analysis of the incidents, including the identification and analysis of any trends that have emerged.*

*Section 33.(2) f (ii) an overall assessment of the effectiveness of any action taken to rectify non-compliance with obligations imposed by the Act, these regulations or the licence, or to minimize the risk of recurrence of any such non-compliance.*

One reportable incident occurred during the drilling of the Limestone Ridge 1 well when an injury occurred to a Floorman during routine drilling operations. The incident was investigated and several recommendations for the future have been instigated. A full report was sent to PIRSA and is included here as Appendix 3.

#### 4.6 Threat Prevention

*Section 33.(2) (g) a report on any reasonably foreseeable threats (other than threats previously reported on) that reasonably present, or may present, a hazard to facilities or activities under the licence, and a report on any corrective action that has, or will be, taken.*

There were no perceived threats, and no action taken.

#### 4.7 Licence Conditions and Future Work Program

*Section 33.(2) (h) unless the relevant licence year is the last year in which the licence is to remain in force a statement outlining operations proposed for the ensuing year.*

The permit Year 2 commitment was 100 square kilometres of 3D seismic data. This was acquired during Year 1 with the Balnaves 3D Seismic Survey of 213 square kilometres. The drilling of the Balnaves 1 and Limestone Ridge 1 wells fulfils the Year 4 and Year 5 work commitments.

As all work commitments for the current permit term are now completed, subsequent activities are additional to the work commitment for the permit.

The Balnaves and Haselgrove 3D seismic surveys are currently being reprocessed by WesternGeco Australia Pty Ltd, to improve data quality and structural confidence in the PEL 32 area. The data is being reprocessed using the F KX KY 3D velocity filter which significantly increases the signal to noise ratio. Specific objectives include:

- Reconcile the differences between reserves calculated from material balance verses structural mapping over the Ladbroke Grove and Haselgrove gas fields.
- Remap the existing fields by integrating all newly drilled wells in the area, to supply a structural model and attribute model for reservoir simulation.
- Remap the leads located south of the Ladbroke Grove gas field and re-evaluate for prospectivity.
- Improve structural mapping in the area between the Pyrus and Haselgrove faults, to the northeast of the Haselgrove Field.
- Investigate the area of the Balnaves and Limestone Ridge structures for updip potential or new prospects.

The Sawpit Sandstone oil play will be evaluated in the northern part of the permit, in conjunction with the area covered by PEL 27. This will include an analysis of the Wynn Updip Prospect, that requires reserves and economics be completed for final evaluation.

**5. Expenditure Statement**

*Section 33.(3) An annual report must be accompanied by a statement of expenditure on regulated activities conducted under the licence for the relevant licence year.*

An Expenditure Statement for PEL 32 Joint Venture during the period from 19 February 2001 to 18 February 2002 is attached.

**PEL 32 ONSHORE OTWAY BASIN, SOUTH AUSTRALIA**

**19 FEBRUARY 2001 TO 18 FEBRUARY 2002 (PERMIT YEAR 2)**

**STATEMENT OF EXPENDITURE**

Confidential

**2 References**

1. CD Cockshell and KR Langley, 2001. "Statement of Environmental Objectives for Seismic Operations in the Otway Basin, South Australia". Primary Industries and Resources SA, Report Book 2001/020.
2. "The Environmental Management of Seismic Operations in the South East of South Australia", 4<sup>th</sup> edition 1996. Issued by the Department of Primary Industries and Resources Petroleum Division (formerly MESA).
3. "Statement of Environmental Objectives for Drilling Pad and Access Road Construction On Private Land, Otway Basin, South Australia". May 2001. Origin Energy Resources Ltd.
4. "Statement of Environmental Objectives for Drilling and Well Operations in Limestone Ridge 1, Otway Basin, South Australia". May 2001. Origin Energy Resources Ltd.
5. "Statement of Environmental Objectives for Drilling and Well Operations in Balnaves 1, Otway Basin, South Australia". May 2001. Origin Energy Resources Ltd.



# APPENDIX 1

## CHECKLIST 13

### COMPLIANCE WITH STATEMENT OF ENVIRONMENTAL OBJECTIVES-BALNAVES 1



Issue	Actions that may resolve the issue	How / was this achieved?
	Areas from which pad material removed, reseeded and rehabilitated to landowners satisfaction	April/May 2002
	Original drainage patterns restored or modified in accordance with landholders wishes	April/May 2002
	Landholder approval attained at completion	TBA
Minimise impact on surface water and drainage patterns	Oil and grease spills confined and removed	Yes
	Assess track design and location to avoid water diversion that may cause erosion	Yes
	Culverts installed where necessary	Yes
	Where soil removal from drill pads required, soil respread and rolled over the disturbed area during restoration	April/May 2002 - soil only removed from sump area
	Areas from which pad material removed, reseeded and rehabilitated and original drainage patterns restored in accordance with landowners wishes and the SEO for Drilling and Well Operations	April/May 2002
Conduct all operations in relation to landholder and access to the land according to the Act	Procedures relating to access to land and notification to landowners of proposed activities conducted in accordance with <i>Petroleum Act 2000</i> and Company Policy	Yes. Notice of Entry signed. Compensation agreement signed pre pad construction.
Minimise risks to the safety of the public, employees and other third parties	Construction conducted without incident from third parties approaching the site	Yes
	Construction personnel aware of their responsibility to their own safety and that of co-workers	Yes - no reported incidents
Minimise impact on the environment of waste handling and disposal	Landholder approval attained at completion	April/May 2002
	Waste generated recycled or disposed of at EPA licensed facility	All waste disposed by Northcott at approved sites - see dockets
Avoid Adverse impacts on livestock	Fenced off some areas involving moving machinery to avoid incidents with livestock	Entire pad and camp fenced off
	Operators aware of potential for startling stock with equipment and of the potential consequences	Yes
	Waste collected diligently so as to minimise risk of rubbish causing lacerations to stock	No rubbish in stock areas - all waste in designated bins - emptied at approved sites.

<b>In the event of an oil spill, minimise the impacts on fauna, flora, soil, livestock and surface and ground water</b>	In the event of a spill, contingency plan implemented	No spills
	Oil spill contingency plan in place in accordance with Regulation 31	
	Bio-remediation taken out on soil affected by on and off site as required	N/A
	Oil spill assessment criteria specific for the relevant environment developed.	N/A
<b>Control production and dispersal of dust on unsealed roads and drill lease area</b>	Roads lightly sprayed with water when dust problem identified	Generally damp conditions. Dust was not a problem.
	Weather conditions monitored and heavy vehicle operating procedures during periods of extremely still air and negligible wind regulated accordingly	N/A
	Vehicle speed limits established	Yes (refer photos of signs on site)
Control noise from road vehicles and machinery	Vehicle speed limits established	Yes (refer photos of signs on site)
	Personnel aware of requirement for noise control	Yes
	Loading and unloading conducted with minimal noise	Yes
Plan vehicular movements and schedule activities as best as possible to minimise inconvenience to the local community	Induction on safe driving given to drivers	Yes - at prespud meetings
	Schedule deliveries during low periods of rural community activity on roads	Daylight deliveries where possible
	Nil complaints regarding vehicular impacts	No complaints received
Confinement of flammable sources, restrictions on certain procedures and ready access to suitable fire fighting equipment	Eliminated high levels of grass fuel in proximity to the site	Cleared pad with adequate fire break - also wet conditions
	Clearing performed in consultation with landowner	Yes
	Systems in place to highlight increased risk of fire on days of high wind and temperature	Yes - appropriate Fire Danger sign in place - similar sign to that used by Forestry
	In the event of a fire, procedures implemented to protect plant operators in accordance with the Emergency Response plan	No fires
	Procedures in place to minimise risk of initiating and propagating fire during periods of high temperature and winds	Yes - no hot work permits issued on high fire danger days
	Risk of fire clearly defined to supply truck drivers	N/A
	Minimised movement of heavy vehicles on high risk days	N/A
	Contact with local Country Fire Service to keep roads clear during fire and to predict their likely movements	Yes - CFS aware of rigs presence
	Fire fighting equipment maintained in readiness during periods of high fire danger	N/A
<b>Drilling &amp; Well operations</b>		
Avoid disturbance to known sites of Aboriginal and European heritage significance	Activities that were assessed to potentially result in long-term harm in the regions defined in the scope of the SEO carried out with prior specific approval of the respective landowner and, where necessary, local authorities and/or state Government	No long term harm risk assessed

	Proposed well sites and access tracks scouted by appropriate personnel for sites of Aboriginal and European heritage significance before commencement of construction	Yes - Kungari Aboriginal Organisation
	Records for investigation retained	Invoice from Kungari Aboriginal Organisation
	Compliance with Aboriginal Heritage Act 1998	
	Personnel trained to identify and respond appropriately to sites discovered during construction and operation activities	Yes - Chris Annear supervised all excavations - contractor aware to look out for items of cultural significance
	Work on freehold land was to the satisfaction of the landowner unless it would have involved impact likely to contravene environmental State legislation	No complaints to date. Final rehabilitation April/May 2002.
Avoided disturbance to rare, vulnerable and endangered flora and fauna species	Drilling pad and access road scouted for rare, vulnerable & endangered flora & fauna species by appropriately trained and experienced personnel before commencement of construction	EPBC search
	Areas affected by construction of the campsite, sump and flare pit scouted for rare, vulnerable & endangered flora & fauna species by appropriately trained and experienced personnel before commencement of construction	EPBC search
	Sites of rare, vulnerable & endangered flora & fauna species clearly identified or avoidance	Non identified
	Records for scouting retained	N/A
Prevent the introduction and establishment of weed species	Vehicles and equipment assessed for risk of weeds or plant pathogens prior to entering the region	Assessed as no risk - all vehicles of local (Otway) origin
	Records related to equipment and vehicle inspection retained	N/A
	Nil detection of exotic weeds as a result of OERL activities	Yes
	Landholder aware of the risk and approved of procedures	Yes
Minimised impacts to soil	Soil only removed when required for the building of a sump and flare pit	Yes
	Soil removed in construction of sump and flare pit stored on site and returned to original stratigraphic level on restoration of drill site	Due in April/May 2002
	Restoration of drill site approved by landowner or in accordance with landowners wishes where retention of specific parts of the pad requested	April/May 2002
	Landholder approval attained at completion	April/May 2002
	Nil seepage into soil underlying or surrounding the sumps	Lined sump - pits drained for disposal, liner removed
	Oil and grease spills at campsite generators confined and removed, as required	Yes
	Hazardous material stored, used and disposed of in accordance with relevant state legislation on dangerous substances	Yes - Northcott docket for sump disposal

	MSDS available on the well site	Yes
	Oil-spill bioremediation, as required meets end point assessment criteria	N/A
	Oil spill end point assessment criteria specific for the relevant environment developed (use Victorian EPA limit until developed)	N/A
Avoid initiating erosion on shallow limestone soil substrates and any area of relief such as palaeo-dunes	Soil not removed from drill pad and access track in accordance with landowner wishes	Yes
	Soil removed during construction of the sump and flare pit respread and rolled over the disturbed area during restoration	April/May 2002
	Area artificially elevated via pad or access track construction lowered by removal of compacted material unless retention requested by landowner	April/May 2002 - landowner required gravel for use on his farm after removal from drill pad
	Areas from which pad material removed, reseeded and rehabilitated in accordance with landowners wishes	April/May 2002
	Original drainage patterns restored or modified in accordance with landholders wishes	April/May 2002
	Landholder approval attained at completion	April/May 2002
	<b>Drilling &amp; Completion Activities</b>	
Minimise loss of reservoir and aquifer pressures and contamination of freshwater aquifers	Casing design (including setting depths) carried out in accordance with the well's Drilling Programme and Company defined procedures which satisfy worst case expected loads and environmental conditions determined for the well	Yes
	Casing set in accordance with design parameters, the Drilling Programme and Company approved procedures and records kept	Yes - refer casing reports
	Sufficient isolation between formations listed in the adjacent column - where present -substantiated	Yes - surface casing cemented to surface - see cementing report
	Where isolation of formations was not established sufficient evidence available to demonstrate that they are in natural hydrologic communication	N/A
	Where isolation of formations was not established and formations are not in a natural hydrologic communication remediation action taken in accordance with Company procedures to ensure cement squeezed and circulated to achieve sufficient isolation	N/A
	<b>Well Abandonment Activities</b>	
Plugs set to isolate aquifers through the well bore designed and set in accordance with defined procedures to satisfy worst case expected loads and downhole environmental conditions	Yes - plugs based on calliper log hole diameter - refer daily drilling report	
Plugs set to isolate aquifers which are present and which are not in a natural hydrologic communication nor have been isolated by cement behind casing	Yes - open hole plugs set as per program - refer daily drilling report	

	Where isolation of formations behind casing was not established and formations are not in a natural hydrologic communication remediation action taken in accordance with Company procedures to ensure cement squeezed and circulated to achieve sufficient isolation	N/A
	Records of plug depths and interval retained	Drilling records and Cementing Contactor job logs
Avoid contamination of aquifers and minimise impact on surface water and drainage	MSDS relating to mud chemicals readily accessible on the rig	Yes, plus wall plaque and CD
	Mud pit fluids pumped out and disposed of at an EPA approved facility on completion of drilling	Yes - refer Northcott dockets
	Sump allowed to dry out then backfilled level with surrounding landscape	Sump was pumped out by contractor, residual fluid absorbed in sawdust and the sump back filled
	Drill solids trucked to an EPA approved facility for disposal	Yes - refer Northcott dockets
	In the unlikely event that soil removed from drill pad or access tracks, soil respread and rolled over the disturbed area during restoration	N/A
	Area artificially elevated via pad or access track construction lowered by removal of compacted material unless retention requested by landowner	Due April/May 2002
	Areas from which pad material removed, reseeded and rehabilitated in accordance with landowners wishes	Due April/May 2002
	Original drainage patterns restored in accordance with landholders wishes	Due April/May 2002
	Fluid loss control maintained in drilling mud according to good industry practice	Yes - refer Drilling Fluid reports
Conduct all operations in relation to landowners and access to the land according to the Act	All procedures related to access to land and notification to the landowner of proposed activities conducted in accordance with the Petroleum Act 2000 and Company policy of best practice	Yes
Minimise risks to the safety of the public, employees and other third parties	<b>Unauthorised Access by Third Parties</b>	
	No Entry signs warning of dangers associated with drilling rigs placed at the entry to the rig access road	Yes - all visitors advised to report to rig office. Must have PPE.
	Drill crew instructed to report to the Drilling Supervisor and Drilling Contractor Rig Manager if third parties approach the rig	Yes
	Rig Supervisor and Drilling Contractor Rig Manager given authority to request unauthorised parties to leave the rig site	Yes
	<b>Drilling &amp; Completion Activities</b>	
	Casing design (including setting depths) carried out in accordance with Company approved procedures which satisfy worst case expected loads and environmental conditions determined for the specific geology intercepted by the well	Yes
	Casing set in accordance with design parameters and Company approved procedures	Yes
	Maximum cement bond with the formation ensured by the use of centralisers, cement grade and volumes excess to calculated requirements	Yes - cement to surface on 9 5/8" surface casing

	Blow out prevention precautions in place and operational in accordance with defined procedures and appropriate to the expected loads and downhole environmental conditions	Yes - BOP tests conducted
	<b>Well Abandonment Activities</b>	
	Downhole abandonment of well carried out in accordance with Company approved procedures to satisfy worst case expected loads and downhole environmental conditions	Yes
	Effective isolation maintained between aquifers to prevent cross flow between zones and over-pressuring of shallow aquifers	Yes
	<b>Well site Restoration Activities</b>	
	Assessment of the threats to third party safety from well completion or downhole abandonment conducted	Yes
	Necessary measures taken to prevent the public accessing wellhead equipment and waste relating to the well	Yes. No well head in place. Well was abandoned and casing cut below GL
	Effective rehabilitation of the rig site to remove potentially dangerous perturbations in ground level	Yes - initial rehabilitation after drilling - final rehabilitation April/May 2002
Minimise impact on the environment of waste handling and disposal	Landholder approval attained at completion	April/May 2002
	Waste generated on well site (excluding grey water) recycled or disposed of at EPA licensed facility	Yes - removal by contractor
	Records show that sewerage at drilling camp stored and disposed of in a manner that posed no risk to human health or hygiene	Yes - covered septic system - regular disposal by Northcott contractors.
	MSDS readily available on well site	Yes
<b>Avoid Adverse impacts on livestock</b>	Mud pits and/or flare pits and moving machinery fenced off to avoid incidents with livestock	Yes - entire drilling pad fenced
	Drill crews aware that sudden starting of machinery or vehicular motion may promote panic in stock and consequent collision with other animals, fences or other solid objects	Yes
	Rubbish collected diligently so that stock do not come into contact with waste material or objects likely to cause lacerations	Yes - dedicated rubbish bins on site - emptied regularly
	For producing well, well cellar, rat hole and mouse hole made safe for livestock through appropriate covering or fencing	N/A - well plugged and abandoned
	For an abandoned restored well site, the cellar was backfilled to a level with the surrounding landscape	To be done on final Rehab - April/May 2002

<b>Avoid spills of oil or hazardous material outside of impermeable sumps or other areas designed to contain such spills</b>	No spills that pose a significant threat to aquifers and immediate drainage system outside containment areas	No spills
	MSDS available for all chemicals likely to be in a spill	Yes
	Vehicle mishaps on tracks and access roads minimised by driver induction and education program	All vehicle access restricted to pad area and designated access road
<b>In the event of an oil spill, minimise the impacts on fauna, flora, soil, livestock and surface and ground water</b>	In the event of a spill, contingency plan implemented	No spills
	Results of emergency response procedures carried out in accordance with Regulation 31 show that oil spill contingency plan in place in the event of an oil spill is adequate and necessary remedial action to the plan taken promptly by the licensee as required	Drains were constructed to direct any potential spills to the containment area of the sump
	Bio-remediation undertaken on affected soil, on or off site as required	N/A
	Oil spill bioremediation meets end point assessment criteria developed specifically for the relevant environment	N/A
	Oil spill end point assessment criteria specific for the relevant environment developed (use Victorian EPA limit until this developed)	N/A
<b>Control production and dispersal of dust on unsealed roads and drill lease area</b>	Roads lightly sprayed with water when dust problem identified	Damp conditions throughout the program - no dust problem
	Weather conditions monitored and heavy vehicle operating procedures during periods of extremely still air and negligible wind regulated accordingly	N/A
	Vehicle speed limits established	Yes
Control noise from road vehicles and machinery	Drill crews aware of requirement for noise control, especially while 'tripping-out', laying out drill pipe or running casing	Yes
	Rig service necessary if brake noise excessive	Yes
	Supply truck drivers aware of need to control noise when approaching and leaving drill site	Yes
	Loading and unloading conducted with minimal noise	Daylight deliveries programmed
	Vehicle speed limits established	Yes
Plan vehicular movements and schedule activities as best as possible to minimise inconvenience to the local community	Drivers aware of risks of intersections	Yes - additional Caution signs placed on road adjacent to access track
	Schedule deliveries during low periods of rural community activity on roads	Yes - all drivers advised to give way to school bus
Minimise chance of fire by clearing of dry pasture around facilities	Eliminated high levels of grass fuel in proximity to the rig and flare pit	Yes - fire break area around rig pad - also damp ground conditions
	Clearing activities performed in consultation with landowner	Yes
	In the event of a fire approaching or being initiated on the drilling rig, implemented procedures for protection of drill crew in accordance with Emergency Response Plan	Evacuation plan was in place
Confinement of flammable sources, restrictions on certain procedures and ready access to suitable fire fighting equipment	Systems in place to highlight increased risk of fire on days of high wind and temperature	Yes - High Fire danger sign on site

	In the event of a fire approaching or being initiated on the drilling rig, planning for the safety of the rig personnel in place	Yes - Fire drill - crews to muster at the assembly point
	Procedures in place to minimise risk of initiating and propagating fire during periods of high temperature and winds	Yes- no Hot Work permits to be issued on High Fire danger days.
	Risk of fire clearly defined to supply truck drivers	Yes
	Minimised movement of heavy vehicles on defined high risk days	There were no high fire danger days on the well
	Contact with local Country Fire Service to keep roads clear during fire and to predict their likely movements	Yes - CFS contacted
	During periods of high fire danger, maintained pumps and water supply in readiness	N/A but abundant water supply on site
	Informed the Country Fire Service that a volume of water in the "Turkeys Nest" suitable for high extraction rates should it be required	Yes
Other		
Other		

Accepted by Drilling Manager: \_\_\_\_\_

Signature: \_\_\_\_\_

Date \_\_\_\_\_

# APPENDIX 2

## CHECKLIST 13

### COMPLIANCE WITH STATEMENT OF ENVIRONMENTAL OBJECTIVES - LIMESTONE RIDGE 1

**Checklist 13: Compliance with Statement of Environmental Objectives**

Checklist 13 has been developed to provide a method of demonstrating compliance with SEO documentation developed in accord with Part 12 of the Schedule to the Petroleum Act 2000, for drilling operations in South Australia. In SA drilling is managed by OCA on behalf of Origin Energy Resources Limited. Checklist 13 replaces Checklists 1 and 2 in South Australia and covers the generic SEO for Drilling Pad and Access Road Construction on Private Land posted May 2001 as well as site specific SEO developed for Drilling & Well Operations at each drilling location based on an Environmental Impact Report prepared for that site.

**Project Name:** Limestone Ridge 1      **General Location:** Otway Basin SA  
**Permit:** PEL32      **Project Manager (Responsible Person):** Ross Naumann  
**Date Checklist 13 completed:** \_\_\_\_\_ **Signature:** \_\_\_\_\_  
**SEO Reference:** \_\_\_\_\_ **EIR Reference:** \_\_\_\_\_

Issue	Actions that may resolve the issue	How / was this achieved?
<b>DRILLING PAD &amp; ACCESS ROAD CONSTRUCTION ON PRIVATE LAND</b>		
Avoid disturbance to known sites of Aboriginal and European heritage significance	Proposed well sites and access tracks scouted by appropriate personnel for sites of Aboriginal and European heritage significance	Inspected by Kungari representatives together with Origin representative - Chris Annear. May 2001
	Records for investigation retained	Invoice from Kungari Aboriginal Organisation
	Mechanism in place for response to discovery of sites of Aboriginal and European heritage significance	Yes
	Sites of Aboriginal and European heritage significance clearly identified or avoidance	No significant sites identified at this location
Avoid disturbance to rare and threatened flora and fauna species	Proposed well sites and access tracks scouted by appropriate personnel for rare & threatened species	EPBC check - results referred to HSE Dept - recommended non referral
	Sites of rare & threatened species clearly identified or avoidance	Photo of Litoria Raniformis frog on rigsite-crew to report sitings
	Records for investigation retained	Siting of frogs noted
Prevent the introduction and establishment of weed species and pathogens	Vehicles and equipment assessed for risk of weed or pathogens prior to entering the region	No known risk of weeds - all vehicles from within Otway Basin
	Notification of weed risks to landholders	Yes
	Nil detection of exotic weeds as a result of OERL activities	Landholder has been requested to advise of any weeds observed post rehab
	Landholder approval of procedures to manage risks	Yes
Minimise impact to soils	Soil not removed unless requested by landholder	Pad over top soil - geotextile laid over top soil
	Stockpiled soil returned to original stratigraphic level on restoration of drill site	To be partially completed in interim rehab in April/May 2002 - to convert drill pad to production pad area
	Landholder approval attained at completion	TBA
	Seepage of potential contaminants into soil underlying the drill pad or surrounding site prevented	Yes - geotextile in place
	Oil and grease spills confined and removed	Yes
	Bioremediation completed to required level per developed criteria, as required	N/A
Avoid initiating erosion on shallow limestone soil substrates and any area of relief such as palaeo-dunes	Topsoil restored to landholder satisfaction	April/May 2002 - partial rehab
	Minimised activity on fragile landforms as far as practicable	Traffic restricted to roads and pad
	Areas from which pad material removed, reseeded and rehabilitated to landowners satisfaction	April/May 2002 - partial rehab

Issue	Actions that may resolve the issue	How / was this achieved?
	Original drainage patterns restored or modified in accordance with landholders wishes	April/May 2002 - partial rehab
	Landholder approval attained at completion	TBA
Minimise impact on surface water and drainage patterns	Oil and grease spills confined and removed	Yes
	Assess track design and location to avoid water diversion that may cause erosion	Yes
	Culverts installed where necessary	Yes
	Where soil removal from drill pads required, soil respread and rolled over the disturbed area during restoration	April/May 2002 - soil only removed from sump area
	Areas from which pad material removed, reseeded and rehabilitated and original drainage patterns restored in accordance with landowners wishes and the SEO for Drilling and Well Operations	April/May 2002 - partial rehab
Conduct all operations in relation to landholder and access to the land according to the Act	Procedures relating to access to land and notification to landowners of proposed activities conducted in accordance with <i>Petroleum Act 2000</i> and Company Policy	Yes. Notice of Entry signed. Compensation agreement signed pre pad construction. Two landowners involved - one with access road only
Minimise risks to the safety of the public, employees and other third parties	Construction conducted without incident from third parties approaching the site	Yes
	Construction personnel aware of their responsibility to their own safety and that of co-workers	Yes - no reported incidents
Minimise impact on the environment of waste handling and disposal	Landholder approval attained at completion	April/May 2002 - partial rehab
	Waste generated recycled or disposed of at EPA licensed facility	All waste disposed by Northcott at approved sites - see dockets
<b>Avoid Adverse impacts on livestock</b>	Fenced off some areas involving moving machinery to avoid incidents with livestock	Entire pad and camp fenced off. Entire access road through 2 properties fenced off
	Operators aware of potential for startling stock with equipment and of the potential consequences	Yes
	Waste collected diligently so as to minimise risk of rubbish causing lacerations to stock	No rubbish in stock areas - all waste in designated bins - emptied at approved sites.
<b>In the event of an oil spill, minimise the impacts on fauna, flora, soil, livestock and surface and ground water</b>	In the event of a spill, contingency plan implemented	No spills
	Oil spill contingency plan in place in accordance with Regulation 31	
	Bio-remediation taken out on soil affected by on and off site as required	N/A
	Oil spill assessment criteria specific for the relevant environment developed.	N/A
<b>Control production and dispersal of dust on unsealed roads and drill lease area</b>	Roads lightly sprayed with water when dust problem identified	Generally damp conditions. Dust was not a problem.
	Weather conditions monitored and heavy vehicle operating procedures during periods of extremely still air and negligible wind regulated accordingly	N/A
	Vehicle speed limits established	Yes (refer photos of signs on site)
Control noise from road vehicles and machinery	Vehicle speed limits established	Yes (refer photos of signs on site)
	Personnel aware of requirement for noise control	Yes
	Loading and unloading conducted with minimal noise	Yes

Issue	Actions that may resolve the issue	How / was this achieved?
Plan vehicular movements and schedule activities as best as possible to minimise inconvenience to the local community	Induction on safe driving given to drivers	Yes - at prespud meetings
	Schedule deliveries during low periods of rural community activity on roads	Daylight deliveries where possible
	Nil complaints regarding vehicular impacts	No complaints received
Confinement of flammable sources, restrictions on certain procedures and ready access to suitable fire fighting equipment	Eliminated high levels of grass fuel in proximity to the site	Cleared pad with adequate fire break - also wet conditions
	Clearing performed in consultation with landowner	Yes
	Systems in place to highlight increased risk of fire on days of high wind and temperature	Yes - appropriate Fire Danger sign in place - similar sign to that used by Forrestry
	In the event of a fire, procedures implemented to protect plant operators in accordance with the Emergency Response plan	No fires
	Procedures in place to minimise risk of initiating and propagating fire during periods of high temperature and winds	Yes - no hot work permits issued on high fire danger days
	Risk of fire clearly defined to supply truck drivers	N/A
	Minimised movement of heavy vehicles on high risk days	N/A
	Contact with local Country Fire Service to keep roads clear during fire and to predict their likely movements	Yes - CFS aware of rigs presence
	Fire fighting equipment maintained in readiness during periods of high fire danger	N/A
<b>Drilling &amp; Well operations</b>		
Avoid disturbance to known sites of Aboriginal and European heritage significance	Activities that were assessed to potentially result in long-term harm in the regions defined in the scope of the SEO carried out with prior specific approval of the respective landowner and, where necessary, local authorities and/or state Government	No long term harm risk assessed
	Proposed well sites and access tracks scouted by appropriate personnel for sites of Aboriginal and European heritage significance before commencement of construction	Yes - Kungari Aboriginal Organisation
	Records for investigation retained	Invoice from Kungari Aboriginal Organisation
	Compliance with Aboriginal Heritage Act 1998	
	Personnel trained to identify and respond appropriately to sites discovered during construction and operation activities	Yes - Chris Annear supervised all excavations - contractor aware to look out for items of cultural significance
	Work on freehold land was to the satisfaction of the landowner unless it would have involved impact likely to contravene environmental State legislation	No complaints to date. Partial rehabilitation April/May 2002.
Avoided disturbance to rare, vulnerable and endangered flora and fauna species	Drilling pad and access road scouted for rare, vulnerable & endangered flora & fauna species by appropriately trained and experienced personnel before commencement of construction	EPBC search

Issue	Actions that may resolve the issue	How / was this achieved?
	Areas affected by construction of the campsite, sump and flare pit scouted for rare, vulnerable & endangered flora & fauna species by appropriately trained and experienced personnel before commencement of construction	EPBC search
	Sites of rare, vulnerable & endangered flora & fauna species clearly identified or avoidance	None identified
	Records for scouting retained	N/A
Prevent the introduction and establishment of weed species	Vehicles and equipment assessed for risk of weeds or plant pathogens prior to entering the region	Assessed as no risk - all vehicles of local (Otway) origin
	Records related to equipment and vehicle inspection retained	N/A
	Nil detection of exotic weeds as a result of OERL activities	Yes
	Landholder aware of the risk and approved of procedures	Yes
Minimised impacts to soil	Soil only removed when required for the building of a sump and flare pit	Yes
	Soil removed in construction of sump and flare pit stored on site and returned to original stratigraphic level on restoration of drill site	Due in April/May 2002 - partial rehab - production pad to remain in place
	Restoration of drill site approved by landowner or in accordance with landowners wishes where retention of specific parts of the pad requested	April/May 2002 - partial rehab - production pad to remain in place
	Landholder approval attained at completion	April/May 2002 - will request interim sign off
	Nil seepage into soil underlying or surrounding the sumps	Lined sump - pits drained for disposal, liner removed
	Oil and grease spills at campsite generators confined and removed, as required	Yes
	Hazardous material stored, used and disposed of in accordance with relevant state legislation on dangerous substances	Yes - Northcott docket for sump disposal
	MSDS available on the well site	Yes
	Oil-spill bioremediation, as required meets end point assessment criteria	N/A
	Oil spill end point assessment criteria specific for the relevant environment developed (use Victorian EPA limit until developed)	N/A
Avoid initiating erosion on shallow limestone soil substrates and any area of relief such as palaeo-dunes	Soil not removed from drill pad and access track in accordance with landowner wishes	Yes
	Soil removed during construction of the sump and flare pit respread and rolled over the disturbed area during restoration	April/May 2002 - partial rehab
	Area artificially elevated via pad or access track construction lowered by removal of compacted material unless retention requested by landowner	April/May 2002 - partial removal of drill pad to production size
	Areas from which pad material removed, reseeded and rehabilitated in accordance with landowners wishes	April/May 2002 - partial removal of drill pad to production size

Issue	Actions that may resolve the issue	How / was this achieved?
	Original drainage patterns restored or modified in accordance with landholders wishes	April/May 2002 - partial removal of drill pad to production size
	Landholder approval attained at completion	April/May 2002 - will request interim sign off
Minimise loss of reservoir and aquifer pressures and contamination of freshwater aquifers	<b><u>Drilling &amp; Completion Activities</u></b>	
	Casing design (including setting depths) carried out in accordance with the well's Drilling Programme and Company defined procedures which satisfy worst case expected loads and environmental conditions determined for the well	Yes
	Casing set in accordance with design parameters, the Drilling Programme and Company approved procedures and records kept	Yes - refer casing reports
	Sufficient isolation between formations listed in the adjacent column - where present -substantiated	Yes - surface casing cemented to surface - see cementing report
	Where isolation of formations was not established sufficient evidence available to demonstrate that they are in natural hydrologic communication	N/A
	Where isolation of formations was not established and formations are not in a natural hydrologic communication remediation action taken in accordance with Company procedures to ensure cement squeezed and circulated to achieve sufficient isolation	N/A
	<b><u>Well Abandonment Activities</u></b>	
	Plugs set to isolate aquifers through the well bore designed and set in accordance with defined procedures to satisfy worst case expected loads and downhole environmental conditions	N/A - well was cased and suspended awaiting production operations and testing - refer daily drilling report
	Plugs set to isolate aquifers which are present and which are not in a natural hydrologic communication nor have been isolated by cement behind casing	N/A
	Where isolation of formations behind casing was not established and formations are not in a natural hydrologic communication remediation action taken in accordance with Company procedures to ensure cement squeezed and circulated to achieve sufficient isolation	N/A
Records of plug depths and interval retained	N/A	
Avoid contamination of aquifers and minimise impact on surface water and drainage	MSDS relating to mud chemicals readily accessible on the rig	Yes, plus wall plaque and CD
	Mud pit fluids pumped out and disposed of at an EPA approved facility on completion of drilling	Yes - refer Northcott dockets
	Sump allowed to dry out then backfilled level with surrounding landscape	Sump was pumped out by contractor, residual fluid absorbed in sawdust and the sump back filled
	Drill solids trucked to an EPA approved facility for disposal	Yes - refer Northcott dockets
	In the unlikely event that soil removed from drill pad or access tracks, soil respread and rolled over the disturbed area during restoration	N/A

Issue	Actions that may resolve the issue	How / was this achieved?
	Area artificially elevated via pad or access track construction lowered by removal of compacted material unless retention requested by landowner	Due April/May 2002- partial removal of drill pad to production size
	Areas from which pad material removed, reseeded and rehabilitated in accordance with landowners wishes	Due April/May 2002 - partial removal of drill pad to production size
	Original drainage patterns restored in accordance with landholders wishes	Due April/May 2002 - partial removal of drill pad to production size
	Fluid loss control maintained in drilling mud according to good industry practice	Yes - refer Drilling Fluid reports
Conduct all operations in relation to landowners and access to the land according to the Act	All procedures related to access to land and notification to the landowner of proposed activities conducted in accordance with the Petroleum Act 2000 and Company policy of best practice	Yes
Minimise risks to the safety of the public, employees and other third parties	<b><u>Unauthorised Access by Third Parties</u></b>	
	No Entry signs warning of dangers associated with drilling rigs placed at the entry to the rig access road	Yes - all visitors advised to report to rig office. Must have PPE.
	Drill crew instructed to report to the Drilling Supervisor and Drilling Contractor Rig Manager if third parties approach the rig	Yes
	Rig Supervisor and Drilling Contractor Rig Manager given authority to request unauthorised parties to leave the rig site	Yes
	<b><u>Drilling &amp; Completion Activities</u></b>	
	Casing design (including setting depths) carried out in accordance with Company approved procedures which satisfy worst case expected loads and environmental conditions determined for the specific geology intercepted by the well	Yes
	Casing set in accordance with design parameters and Company approved procedures	Yes
	Maximum cement bond with the formation ensured by the use of centralisers, cement grade and volumes excess to calculated requirements	Yes - cement to surface on 9 5/8" surface casing. A Cement Bond Log will be run through the 7" casing prior to completion operations
	Blow out prevention precautions in place and operational in accordance with defined procedures and appropriate to the expected loads and downhole environmental conditions	Yes - BOP tests conducted
	<b><u>Well Abandonment Activities</u></b>	
	Downhole abandonment of well carried out in accordance with Company approved procedures to satisfy worst case expected loads and downhole environmental conditions	N/A - well was cased and suspended for production operations and testing
	Effective isolation maintained between aquifers to prevent cross flow between zones and over-pressuring of shallow aquifers	Yes - all aquifers isolated behind cemented casing
	<b><u>Well site Restoration Activities</u></b>	
	Assessment of the threats to third party safety from well completion or downhole abandonment conducted	Yes
Necessary measures taken to prevent the public accessing wellhead equipment and waste relating to the well	Yes. Well head area is fenced off. When installed, the Xmas tree will have a protective fence.	

Issue	Actions that may resolve the issue	How / was this achieved?
	Effective rehabilitation of the rig site to remove potentially dangerous perturbations in ground level	Yes - initial rehabilitation after drilling - interim rehabilitation to production pad in April/May 2002
Minimise impact on the environment of waste handling and disposal	Landholder approval attained at completion	April/May 2002 - will request interim sign off
	Waste generated on well site (excluding grey water) recycled or disposed of at EPA licensed facility	Yes - removal by contractor
	Records show that sewerage at drilling camp stored and disposed of in a manner that posed no risk to human health or hygiene	Yes - covered septic system - regular disposal by Northcott contractors.
	MSDS readily available on well site	Yes
<b>Avoid Adverse impacts on livestock</b>	Mud pits and/or flare pits and moving machinery fenced off to avoid incidents with livestock	Yes - entire drilling pad fenced. Entire access road fenced off through 2 properties
	Drill crews aware that sudden starting of machinery or vehicular motion may promote panic in stock and consequent collision with other animals, fences or other solid objects	Yes
	Rubbish collected diligently so that stock do not come into contact with waste material or objects likely to cause lacerations	Yes - dedicated rubbish bins on site - emptied regularly
	For producing well, well cellar, rat hole and mouse hole made safe for livestock through appropriate covering or fencing	Rat hole and mouse hole filled after drilling. Cellar to remain in place for service rig operations - pad area fenced off
	For an abandoned restored well site, the cellar was backfilled to a level with the surrounding landscape	N/A
<b>Avoid spills of oil or hazardous material outside of impermeable sumps or other areas designed to contain such spills</b>	No spills that pose a significant threat to aquifers and immediate drainage system outside containment areas	No spills
	MSDS available for all chemicals likely to be in a spill	Yes

	Vehicle mishaps on tracks and access roads minimised by driver induction and education program	All vehicle access restricted to pad area and designated access road
<b>In the event of an oil spill, minimise the impacts on fauna, flora, soil, livestock and surface and ground water</b>	In the event of a spill, contingency plan implemented	No spills
	Results of emergency response procedures carried out in accordance with Regulation 31 show that oil spill contingency plan in place in the event of an oil spill is adequate and necessary remedial action to the plan taken promptly by the licensee as required	Drains were constructed to direct any potential spills to the containment area of the sump
	Bio-remediation undertaken on affected soil, on or off site as required	N/A
	Oil spill bioremediation meets end point assessment criteria developed specifically for the relevant environment	N/A
	Oil spill end point assessment criteria specific for the relevant environment developed (use Victorian EPA limit until this developed)	N/A
<b>Control production and dispersal of dust on unsealed roads and drill lease area</b>	Roads lightly sprayed with water when dust problem identified	Damp conditions throughout the program - no dust problem
	Weather conditions monitored and heavy vehicle operating procedures during periods of extremely still air and negligible wind regulated accordingly	N/A
	Vehicle speed limits established	Yes
Control noise from road vehicles and machinery	Drill crews aware of requirement for noise control, especially while 'tripping-out', laying out drill pipe or running casing	Yes
	Rig service necessary if brake noise excessive	Yes
	Supply truck drivers aware of need to control noise when approaching and leaving drill site	Yes
	Loading and unloading conducted with minimal noise	Daylight deliveries programmed
	Vehicle speed limits established	Yes
Plan vehicular movements and schedule activities as best as possible to minimise inconvenience to the local community	Drivers aware of risks of intersections	Yes - additional Caution signs placed on road adjacent to access track
	Schedule deliveries during low periods of rural community activity on roads	Yes - all drivers advised to give way to school bus
Minimise chance of fire by clearing of dry pasture around facilities	Eliminated high levels of grass fuel in proximity to the rig and flare pit	Yes - fire break area around rig pad - also damp ground conditions
	Clearing activities performed in consultation with landowner	Yes
	In the event of a fire approaching or being initiated on the drilling rig, implemented procedures for protection of drill crew in accordance with Emergency Response Plan	Evacuation plan was in place
Confinement of flammable sources, restrictions on certain procedures and ready access to suitable fire fighting equipment	Systems in place to highlight increased risk of fire on days of high wind and temperature	Yes - High Fire danger sign on site
	In the event of a fire approaching or being initiated on the drilling rig, planning for the safety of the rig personnel in place	Yes - Fire drill - crews to muster at the assembly point
	Procedures in place to minimise risk of initiating and propagating fire during periods of high temperature and winds	Yes- no Hot Work permits to be issued on High Fire danger days.

	Risk of fire clearly defined to supply truck drivers	Yes
	Minimised movement of heavy vehicles on defined high risk days	There were no high fire danger days on the well
	Contact with local Country Fire Service to keep roads clear during fire and to predict their likely movements	Yes - CFS contacted
	During periods of high fire danger, maintained pumps and water supply in readiness	N/A but abundant water supply on site
	Informed the Country Fire Service that a volume of water in the "Turkeys Nest" suitable for high extraction rates should it be required	Yes
Other		
Other		

Accepted by Drilling Manager: \_\_\_\_\_

Signature: \_\_\_\_\_

Date \_\_\_\_\_

# APPENDIX 3

## INVESTIGATION OF THE LTI 28<sup>TH</sup> JULY 2001 AND SUBSEQUENT CORRECTIVE ACTIONS TAKEN

**O.D. & E. PTY LIMITED**

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**FACSIMILE MESSAGE**

**DATE:** Friday, 10 May 2002

**PAGE 1 OF 2**

**FAX #** 07 3369 7840

**TO:** Oil Company of Australia

**ATTENTION:** Ross Naumann

**FROM:** Neil Dean

**RE:** EXECUTIVE SUMMARY - INCIDENT AUS 30 28/07/01 01063 LTI

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**Introduction**

At approximately 1730 hours on the 28<sup>th</sup> July 2001, a Floorman (Greg Rohlach) on OD&E Rig 30 suffered a finger injury when running casing on the Rig floor. In the words of the Assistant Driller and Floorman "Everything was running well" and "We were working the floor at a slow pace". At the time of the incident the crew was on the 32<sup>nd</sup> joint.

At the time of the incident Greg Rohlach was stabbing the casing and using a tag line attached around the base of the casing. The Assistant Driller had moved over to assist Greg and the Lead Floorman was operating the power tong.

When the 32<sup>nd</sup> joint of casing came up the V-Door the tag line, which is tied to one hold back post and around another, slipped off the casing allowing it to swing towards the stump. Greg Rohlach attempted to hold the casing back using his hand to hold onto it. The casing swung in and hit the edge of the power tong and trapping Greg's finger.

**Nature of Injury**

A crush injury was sustained to the right hand middle finger. The injury was first treated on site and the employee was then transported to Penola Hospital. A Doctor treated the injury and referred the injured employee to a Surgeon at Mount Gambier Hospital. The employee was transported to Mount Gambier and underwent surgery on Sunday the 29<sup>th</sup> July.

Surgery resulted in partial amputation of the finger (Finger Tip). Greg was released from hospital on Monday the 30<sup>th</sup> July and was flown back to Adelaide.

The employee presented himself for examination at the Work Health Clinic in Adelaide on Tuesday the 31<sup>st</sup> July. The employee is classed as "Unfit for Work" and as such the injury is classified a "Lost Time Injury".

## Incident Investigation

An investigation team was formed comprising:

- Daryl Whitbread                      Tour Pusher
- Steven Bailey                         Rig Manager
- Matthew Vella                         Floorman

With input and guidance from Brad Richards - Group OHSE Manager and James Van Rooen - Area Manager SA.

## Investigation Findings

- The task at hand at the time of the incident is considered to be a part of "normal operations".
- A Pre-Tour Safety Meeting was held with all concerned and the likely hazards to be encountered were discussed.
- Prior to commencing the task of running the casing another meeting was held to reiterate hazards and controls.
- Greg Rohlach had not run casing before and he was specifically targeted during the safety meetings to ensure that he was aware of the procedures and controls required.
- There is no evidence of "Time pressure" or "Rushing the Job".
- With the assistant driller working on the floor there was a full complement of crew and they had settled into a smooth running pattern prior to the incident.
- The Rig Manager left the floor as the operation was run smoothly to unload a trailer of 7" casing.
- The immediate cause is attributed to Greg Rohlach maintaining a hold on the swinging casing regardless of warning/instruction to "Let it go".
- An underlying cause is attributed to the injured employee's relative inexperience.
- A further underlying cause is the arrangement that led to the tag line slipping down the hold back post and then slipping from the casing joint.

### 4.5 Corrective Actions

- Operations were ceased immediately and a Safety Meeting was held to discuss the incident.
- A hazard hunt was conducted and the method of securing the tag line was specifically examined.
- A Modification Proposal for V-Door Posts has been submitted to allow for better securing of the tag line.
- A continued focus on training of new rig personnel with an added focus on hand hazard awareness.
- The injured employee will be interviewed / counselled at Adelaide office and his condition will be monitored with a view to returning him to work (Initially Restricted Duties) as soon as practical.

Regards,



**NEIL DEAN**  
**Operations Manager - Australia & NZ**