



**PEL 95
Cooper / Eromanga Basin
South Australia**

Annual Report

Licence Year 6

First Renewal Term

30 October 2011 to 29 October 2012

Beach Energy Limited (Operator)

Strike Energy Limited

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1 Introduction

Petroleum Exploration Licence (PEL) No. 95 was granted to Beach Petroleum NL and Magellan Petroleum (NT) Pty Ltd on 30 October 2001. The licence is located on the southern margin of the Cooper/Eromanga Basin, South Australia.

This Annual Report details the work conducted by the PEL 95 Joint Venture for the 12 months commencing 30 October 2011 which represents Licence Year 6. The Annual Report for PEL 95 has been prepared in accordance with Regulation 33 of the *Petroleum and Geothermal Energy Act 2000* (the Act).

2 Licence Summary

PEL 95 was originally granted on 30 October 2001 to:

- Beach Petroleum NL (Operator) 50.0%
- Magellan Petroleum (NT) Pty Ltd 50.0%

The first renewal of PEL 95 was awarded on 4 December 2006 (effective from 30 October 2006) to:

- Beach Petroleum Limited (Operator) 50.0%
- Magellan Petroleum (NT) Pty Ltd 50.0%

Strike Energy Limited acquired Magellan's interest in the Licence on 17 March 2010. The current registered interests in PEL 95 are:

- Beach Energy Limited (Operator) 50.0%
- Strike Energy Limited 50.0%

There were no changes in licensees or interests during the current year.

Minimum work commitments

The minimum work commitments for PEL 95 are shown in Table 1. There were no work program variations applied for or granted during the current year.

Suspension / Extension

A six month suspension and extension of the licence condition was approved by DMITRE on 4 April 2012 for the period 30 April 2012 to 29 October 2012. The suspension / extension means the first renewal term of PEL 95 expired on 29 October 2012 (see Table 1).

An extension of time to apply for renewal of the licence was granted on 29 August 2012. The Joint Venture submitted an application to renew the permit on 26 October 2012.

Table 1 - Work Program Commitments by Licence Year

Licence Year	Licence Dates	Minimum Work Program
Year 1	30 Oct 2006 - 29 Oct 2007	Geological and Geophysical studies
Year 2	30 Oct 2007 - 29 Oct 2008	Acquire 100km 2D seismic; Geological and Geophysical studies
Year 3	30 Oct 2008 - 29 Oct 2009	Acquire 50km 2D seismic; Geological and Geophysical studies
Year 4	30 Oct 2009 - 29 April 2011	Geological and Geophysical studies
Year 5	30 Oct 2010 - 29 Oct 2012	Drill one well

Table 2 summarises the work completed by the Joint Venture as at 29 October 2012. The seismic work commitments for the first renewal term have been met with the acquisition of 167 km Scutus 2D Seismic Survey during Licence Year 1 of the permit. The well commitment has been met with the drilled of Marsden-1.

Table 2 - Final Work Program and Work Completed by Licence Year

Licence Year	Minimum Work Program	Actual Work
Year 1	Geological and Geophysical studies	Acquired 167 km Scutus 2D seismic; 130 km 2D seismic reprocessing; Geological and Geophysical studies
Year 2	Acquire 100km 2D seismic; Geological and Geophysical studies	Geological and Geophysical studies
Year 3	Acquire 50km 2D seismic; Geological and Geophysical studies	Geological and Geophysical studies
Year 4	Geological and Geophysical studies	Geological and Geophysical studies
Year 5	Drill one well	Marsden-1 C&S for future testing

3 Regulated Activities

Pursuant to Regulations 33(2) (a), an Annual Report must include:

“a summary of the regulated activities conducted during the licence year.”

3.1 Drilling and Related Activities

Marsden-1 was spudded on 9 February 2012. Marsden-1 was drilled as a vertical exploration well to evaluate the unconventional deep coal seam gas potential of the Permian interval within the Battunga Trough.

Marsden-1 reached a total depth of 2625 mRT in the Tirrawarra Formation. The well was cased and suspended for future evaluation.

Table 3 – Summary of Wells Drilled in PEL 95 in Year 6

Well Name	Marsden-1
Type of well	Exploration well
Contractor / Rig	Ensign International - Ensign Rig 18
Date Spudded	22 February 2012
Formations Intersected	Full representation of Eromanga and Cooper Basin strata was intersected. The depths at which each of the formation tops was intersected is provided to DMITRE in the Well Completion Report.
Evaluated hydrocarbon pay	The well intersected thick coal seams and shales through the Toolachee, Roseneath Shale, Epsilon, Murteree Shale and Patchawarra formations. Evaluation of the hydrocarbon content and other properties is ongoing through laboratory analysis of samples and cores.
Status	Cased and Suspended
Rig release date	18 April 2012
Track and Pad construction	Earthworks for Marsden-1 access and lease commenced on 3 February 2012. An alternate access track was subsequently constructed due to localised flooding
Borrow Pit construction	Borrow pits were constructed in accordance with the SEO for drilling and well operations.

3.2 Seismic Data Acquisition

No seismic data was acquired in PEL 95 during the reporting period.

3.3 Seismic Data Processing and Reprocessing

No seismic data was processed or reprocessed in PEL 95 during the reporting period.

3.4 Geochemical, Gravity, Magnetic and other Surveys

There were no Geochemical, Gravity, Magnetic or other surveys conducted in PEL 95 during the reporting period.

3.5 Geological and Geophysical Studies

Geological and Geophysical Studies focused on a prospectivity review of the permit, both in terms of play definition and ranking the prospect and lead seriatim. The play types reviewed for PEL 95 included conventional oil plays in both the Permian and Jurassic/Cretaceous intervals, and multiple unconventional plays, including the Shale Oil and Shale Gas plays within the Permian Shales and the Coal Seam Gas potential in the Permian, Cretaceous and Tertiary coals.

Studies also focused on developing the well proposal and drilling program for Marsden-1.

4 Compliance Issues

Pursuant to Regulations 33(2) (b) & (c), an Annual Report must include:

“A report for the year on compliance with the Act, these regulations, the licence and any relevant statement of environmental objectives;” and

“A statement concerning any action to rectify non-compliance with obligations imposed by the Act, these regulations or the licence, and to minimise the likelihood of recurrence of any such non-compliances.”

4.1 Licence and Regulatory Compliance

There were 2 cases during the current reporting period in which the PEL 95 Operator did not provide data submissions within the required timeframes pursuant to section 39 and section 48 of the of the Petroleum and Geothermal Energy Regulations 2000 (the Regulations). A summary of the non-compliances is provided in Table 4.

There were no other instances during the current reporting period in which the PEL 95 licensees failed to comply with the requirements of the Licence, the *Petroleum and Geothermal Energy Act 2000*, the *Petroleum and Geothermal Energy Regulations 2000*.

Table 4 - Regulatory non-compliances in Licence Year 6

Activity	Details of Non-Compliance	Rectification of Non-Compliance
Submission of Wireline logs	Regulation 39 – Marsden-1 wireline logs submitted 5 days late due to late submission of data from contractor	Ongoing discussions with contractors regarding resourcing issues. Operator to apply for an extension of time to avoid non-compliance
Submission of Well samples	Regulation 48 – Marsden-1 well samples submitted 6 days late	Operator to apply for an extension of time to avoid non-compliance

4.2 Compliance with Statement of Environmental Objectives

There were no instances during the reporting period Licence in which the PEL 95 licensees failed to comply with the environmental objectives specified in *"Cooper Basin Drilling and Well Operations Statement of Environmental Objectives - November 2009"*.

A detailed report of compliance against the SEOs for Drilling and Well Operations is provided in Appendix 1.

4.3 Management System Audits

Pursuant to Regulation 33(2) (d) under the Act, an annual report must include:

"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 actions that have, or will be taken".

No Management System Audits were undertaken during the current reporting period that were specific to exploration activities on PEL 95.

4.4 Report and Data Submissions

Pursuant to Regulation 33(2) (e) under the Act, an annual report must include:

"A list of all reports and data relevant to the operation of the Act generated by the licensee during the licence year".

A list of the reports and data generated in relation to the operations undertaken during Year 6 of the first renewal of the Licence is provided in Table 5.

Table 5 - Reports and Data Submissions to DMITRE

<i>Description of Report/ Data</i>	<i>Date Due</i>	<i>Date Submitted</i>	<i>Compliant/ Non-Compliant</i>
Annual Report for Year 5 of the first renewal term of PEL 95	29 Dec 2011	25 Nov 2011	<i>Compliant</i>
Resubmission Annual Report for Year 5 of the first renewal term of PEL 95	20 July 2012	29 June 2012	<i>Compliant</i>
Notice of Activity for Marsden-1	13 January 2012	20 DececeMBER 2011	<i>Compliant</i>
Marsden-1 Wireline logs	14 June 2012	19 June 2012	<i>Non-Compliant⁽¹⁾</i>
Marsden-1 well samples	18 October 2012	24 October 2012	<i>Non-Compliant⁽²⁾</i>
Marsden-1 Well Completion Report	18 October 2012	12 October 2012	<i>Compliant</i>

⁽¹⁾ submission 5 days late

⁽²⁾ submission 6 days late

4.5 Incidents

Pursuant to Regulation 33(2) (f), an annual report must include:

“In relation to any incidents reported to the Minister under the Act and these Regulations during the relevant licence year –

- (i) an overall assessment and analysis of the incidents, including the identification and analysis of any trends that have emerged; and*
- (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 minimise the risk of recurrence of any such non-compliance”.*

There were no incidents arising from the operations undertaken on PEL 95 during the reporting period.

4.6 Threat Prevention

Pursuant to Regulation 33(2) (g) under the Act, an annual report must include:

“a report on any reasonably foreseeable threats (other than threats previously reported on) that reasonably presents, 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 are no threats foreseeable to any future exploration activities in PEL 95.

4.7 Future Work Program

Pursuant to Regulation 33(2) (h) under the Act, an annual report must include:

“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 PEL 95 Joint Venture has applied for a further 5 year renewal of the permit.

5 Expenditure Statement

Pursuant to Regulation 33(3) (h) under the Act, an annual report must contain:

“An annual report must be accompanied by a statement of expenditure on regulated activities conducted under the licence for the relevant licence year, showing expenditure under each of the following headings:

(a) drilling activities;

(b) seismic activities;

(c) technical evaluation and analysis;

(d) other surveys;

(e) facility construction and modification;

(f) operating and administration expenses (not already covered under another heading)”.

An Expenditure Summary for the Licence for the period 30 October 2011 to 29 October 2012 is presented as Appendix 2.

APPENDIX 1

Compliance with the SEO for Drilling and Well Operations PEL 95 Licence Year 6 of First Renewal Term

Beach’s strategies for achieving each of the SEO objectives during the drilling of Marsden-1 are outlined in Table below.

Note: The Santos SEO for Drilling and Well Operations has been adopted by Beach Energy Limited for its Drilling and Well Operations in the South Australian sector of the Cooper Basin. References to 'Appendix 1 Table A2' and 'Appendix 1 Table A3' refer to tables included in Santos' "South Australia Cooper Basin Statement of Environmental Objectives: Drilling and Well Operations November 2009"

Table A1-1 SEO for Cooper Basin Drilling Operations			
Objective	Assessment Criteria	Compliant / Non-compliant	Comments
<p><u>Objective 1:</u> Minimise risks to the safety of the public and other third parties.</p>	<p>Reasonable measures implemented to ensure no injuries or health risks to the public or to third parties.</p>	<p>Compliant</p>	<p>Communication of all potential hazards to safety associated with drilling and other well site operations including the rig move to all affected parties, prior to the commencement of such activities. Beach maintained regular contact with the landholder and associated stakeholders during drilling operations.</p> <p>The design and operation of the PEL 95 activities was undertaken in accordance with Beach safety policies, standards and guidelines. All employees visiting or working on the Ensign 18 rig undertook a safety induction prior to commencing work in the field and will undertake a refresher course if/when required. Beach's Permit to Work System was in operation during drilling operations to control potentially dangerous situations. Appropriate Personal Protective</p>

			<p>Equipment (PPE) was issued to all personnel involved in the drilling operations. Accident / incident reporting systems were in place as defined in the Beach Drilling Operation Manual. Records are reviewed regularly to assess trends.</p> <p>Beach Safety Management Plans are updated and reviewed on a regular basis. The Beach Emergency Response System which includes; Emergency Management Manual, Site Emergency Response Plans and Emergency Management Initial response guidelines were reviewed during 2009 with documentation being updated to meet the changing roles and responsibilities in the organisation.</p> <p>Signage was erected along the access road to advise that only authorised personnel are permitted on to the well site.</p>
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Objective	Assessment Criteria	Compliant / Non-compliant	Comments
<p><u>Objective 3</u></p> <p>Avoid the introduction or spread of pest plants and animals and implement control measures as necessary.</p>	<p>No weeds or feral animals are introduced to, or spread in, operational areas as a consequence of activities.</p>	<p>Compliant</p>	<p>Rigs and associated equipment is washed down prior to entering and leaving different state borders as per Beach Policy.</p>
<p><u>Objective 4</u></p> <p>Minimise disturbance to drainage patterns and avoid contamination of surface waters and shallow ground resources</p>	<p><u>Well Lease and Access Track Construction</u> Well sites and access tracks are located and constructed to maintain pre-existing water flows (i.e. channel contours are maintained on floodplains and at creek crossings).</p> <p><u>Drilling Mud Sumps and Flare Pits</u> No overflow of drill cuttings, muds and other drilling fluids from mud sumps. No waste material disposal to sumps and flare pits.</p> <p><u>Well Heads (Oil and Gas Systems)</u> No leaks/spills outside of areas designed to contain them.</p>	<p>Compliant</p> <p>Compliant</p> <p>Compliant</p>	<p>No significant drainage features were identified at the Marsden site. The Strzelecki Creek is located approximately 18 km to the east and there is no obvious connection to flood flows from the Strzelecki or Cooper Creek systems.</p> <p>All drill cuttings, muds, and non toxic drill fluids were contained within designated mud sumps with adequate freeboard at the completion of operations to allow for a 1m cover of clean fill at remediation.</p>

	<p><u>Well Blowdown/Production Testing</u> No water (surface or groundwater) contamination as a result of production testing or well blowdown operations.</p> <p><u>Fuel/Chemical Storage and Handling</u> No water (surface or groundwater) contamination as a result of fuel or chemical storage and handling.</p> <p><u>Waste Management</u> Refer to Assessment Criteria for Objective 11.</p>	<p>Compliant</p> <p>Compliant</p> <p>Compliant</p>	<p>Waste was removed from the well site. Bins are covered to prevent access by wildlife and prevent spread of rubbish by wind.</p> <p>Non-putrescible waste material (including hazardous material) was stored safely on site for later removal to an EPA approved disposal facility.</p>
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Objective	Assessment Criteria	Compliant / Non-compliant	Comments
<p><u>Objective 8</u></p> <p>Minimise air pollution and greenhouse gas emissions.</p>	<p>Compliance with EPA requirements.</p>	<p>Compliant</p>	<p>No production testing was undertaken at Marsden-1.</p>
<p><u>Objective 9</u></p> <p>Maintain and enhance partnerships with the Cooper Basin community.</p>	<p>No unresolved reasonable complaints from the community.</p>	<p>Compliant</p>	<p>Beach maintained regular contact with the landholder and associated stakeholders prior to, and while undertaking drilling operations.</p> <p>Beach enhances partnerships with the local community through various events and sponsorships.</p>

Objective	Assessment Criteria	Compliant / Non-compliant	Comments
<p><u>Objective 10</u></p> <p>Avoid or minimise disturbance to stakeholders and/or associated infrastructure</p>	<p>No reasonable stakeholder complaints left unresolved.</p>	<p>Compliant</p>	<p>Beach maintained regular contact with the landholder and associated stakeholders prior to and while undertaking drilling at all well sites. Discussions will be undertaken with the landowner to determine whether he wishes to have any rehabilitation work undertaken on the access track.</p> <p>Signs advising of no unauthorised entry to the well sites were erected at the beginning of each access track.</p> <p>At the completion of the operations, temporary cattle proof fencing was erected to isolate any pits or plant remaining on site. The fencing will be kept in place until rehabilitation operations on the well site resume.</p>
<p><u>Objective 11</u></p> <p>Optimise (in order of most to least preferable) waste avoidance, reduction, reuse, recycling, treatment and disposal</p>	<p>All wastes to be disposed of at an EPA licenced facility in accordance with criteria developed with the exception of the National Environment Protection Measure for contaminated sites, and wastewater (see below).</p> <p>Wastewater (sewage and grey water) disposed of in accordance with the Public and Environmental Health (Waste Control) Regulations 1995 or to the Department of Health's satisfaction.</p> <p>Attainment of GAS criteria for "Site to be left in left in clean, tidy and safe</p>	<p>Compliant</p>	<p>Waste was removed from the well sites in accordance with Beach's policy set out prior to final restoration. Bins are covered to prevent access track and rig site. Non-putrescible waste material (including hazardous material) was stored safely on site for later removal to an EPA approved disposal facility.</p> <p>Beach conducts post drilling audits to ensure drill sites and associated tracks are free of waste materials and left in a tidy and safe condition.</p>

	<p>condition" objective during well site restoration (refer Appendix 1 Table A2):</p> <ul style="list-style-type: none"> - "To minimise the visual impact" - "The revegetation of indigenous species" 		
<p><u>Objective 12</u></p> <p>Remediate and rehabilitate operational areas to agreed standards.</p>	<p>No unresolved reasonable stakeholder complaints.</p> <p><u>Contaminated Site Remediation</u> Contaminated sites are remediated to a level as determined by the approved SHI process.</p> <p>Prior to the finalisation and approval of the SHI process, contaminated sites are remediated in accordance with criteria developed with the principles of the National Environment Protection Measure for contaminated sites, and in consultation with the EPA.</p> <p><u>Well Site and Access Track Restoration</u> The attainment of 0, +1 or +2 GAS criteria for the objectives (refer Appendix 1 Table A2):</p> <ul style="list-style-type: none"> - "To minimise the visual impact" - "The revegetation of indigenous species" 	<p>Compliant</p> <p>Compliant</p> <p>Compliant</p>	<p>Following testing of Marsden-1, the lease will be rehabilitated in consultation with landowners.</p> <p>Contaminated sites are remediated in accordance with Beach Guidelines and Industry Standards.</p> <p>Beach will complete post operations audit of each wellsite after rehabilitation work has been completed.</p> <p>Borrow pits will be rehabilitated and restored using effective contouring in accordance with the guidelines set down in DMITRE's Field Guide for the Environmental Assessment of Abandoned Petroleum Wellsites in the Cooper Basin, South Australia, to attain the highest feasible GAS rating.</p>

	<p><u>Borrow Pit Restoration</u> The attainment of 0, +1 or +2 GAS criteria for (refer Appendix 1 Table A3):</p> <ul style="list-style-type: none"> - "Rejuvenation of indigenous species" - "Minimise impact on soil" - "Minimise visual impacts" - "Site to be left in a clean and tidy condition" <p><i>Note: Well abandonment issues are addressed under Objective 6.</i></p>	Compliant	
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