



**PEL 94**

**Annual Report**

**5 May 2011 to 4 May 2012**

**Cooper / Eromanga Basins  
South Australia**

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## **1 Introduction**

Petroleum Exploration Licence 94 (PEL 94) was granted on 5 November 2001. The Licence is located on the south western margin of the Cooper/Eromanga Basins, South Australia.

The Annual Report for PEL 94 details the work conducted for the period 5 May 2011 to 4 May 2012. This Annual Report has been prepared in accordance with the requirements of section 33 of the Petroleum and Geothermal Energy Regulations 2000.

## **2 Permit Summary**

PEL 94 was originally granted on 5 November 2001 to:

- Beach Petroleum NL 50%
- Magellan Petroleum (NT) Pty Ltd 50%

Victoria Oil Exploration acquired a 15% interest in the Licence from Magellan Petroleum in September 2005.

The licence was renewed for a further five year term effective 5 May 2007.

Strike Energy Limited acquired Magellan's interest in the Licence on 17 March 2010. The current registered interests in PEL 94 are:

- Beach Energy Limited 50%
- Strike Energy Limited 35%
- Victoria Oil Exploration (1977) Pty Ltd 15%

Beach Energy Limited is the Operator of PEL 94.

The work commitments for the first renewal term of PEL 94 are detailed in Table 1. There has been no variation to the approved work program.

**Table 1:** Original Work Program Commitments for the first renewal term of PEL 94 commencing 5 May 2007

Licence Year	Minimum Work Program
Year 1 (firm)	Geological & Geophysical Studies
Year 2	Geological & Geophysical Studies
Year 3	Geological & Geophysical Studies
Year 4	Geological & Geophysical Studies
Year 5	Drill one well and Geological & Geophysical Studies

On 25 May 2010, a suspension of the work commitments was granted for the period 5 May 2011 to 4 November 2011 and extended the licence term by the corresponding period of the suspension. The first renewal term of PEL 94 will expire on 4 November 2012. The Licence carries the rights to one further renewal subject to the provisions of the *Petroleum and Geothermal Energy Act 2000*.

Table 2 details the minimum work program and the work completed by the PEL 94 Joint Venture as at 4 May 2012. The drilling of Davenport-1 in April/May 2012 satisfies the Year 5 work commitments.

**Table 2:** Final Work Program Commitments and Work Completed (as at 4 May 2012) by Licence Year

Licence Year	Permit Year Start	Permit Year End	Minimum Work Program	Work Completed
1	5 May 2007	4 May 2008	G & G Studies	G & G Studies
2	5 May 2008	4 May 2009	G & G Studies	G & G Studies
3	5 May 2009	4 May 2010	G & G Studies	G & G Studies
4	5 May 2010	4 Nov 2011	G & G Studies	G & G Studies
5	5 May 2011	4 Nov 2012	Drill one well G & G Studies	Davenport-1 (drilling ongoing)

### 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

Davenport-1 was spudded on 25 April 2012. Davenport-1 was drilled as a vertical exploration well to evaluate the unconventional deep coal seam gas potential of the Permian interval within the Milperra Trough.

Davenport-1 reached a total depth of 2102 mRT in the Tirrawarra Formation. A side track well was also drilled to a depth of 2057 mRT to obtain cores in the primary Patchwarra coal objectives. The well was cased and suspended for future evaluation and production testing.

**Table 3 – Summary of Wells Drilled in PEL 94 in Year 5**

<b>Well Name</b>	<b>Davenport-1 and Davenport-1ST1</b>
<b>Type of well</b>	Exploration well
<b>Contractor / Rig</b>	Ensign International - Ensign Rig 18
<b>Date Spudded</b>	25 April 2012 (Davenport-1ST1 spudded 8 May 2012)
<b>Formations Intersected</b>	Full representation of Eromanga and Cooper Basin strata was intersected. The depths at which each of the formation tops was intersected will be provided to DMITRE in the Well Completion Report (due Nov 2012).
<b>Evaluated hydrocarbon pay</b>	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.
<b>Status</b>	Cased and Suspended – 22 May 2012
<b>Rig release date</b>	22 May 2012
<b>Track and Pad construction</b>	Earthworks for Davenport-1 access and lease commenced on 20 February 2012
<b>Borrow Pit construction</b>	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 94 during the reporting period.

### 3.3 Seismic Data Processing and Reprocessing

No seismic data was processed or reprocessed in PEL 94 during the reporting period.

### 3.4 Geochemical, Gravity, Magnetic and other Surveys

There were no Geochemical, Gravity, Magnetic or other surveys conducted in PEL 94 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 94 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 the drilling and testing program for Davenport-1.

## **4 Compliance Issues**

### 4.1 Licence and Regulatory Compliance

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."*

There were no instances during the current reporting period in which the PEL 94 licensees failed to comply with the requirements of the Licence, the *Petroleum and Geothermal Energy Act 2000*, the *Petroleum and Geothermal Energy Regulations 2000*.

### 4.2 Compliance with Statement of Environmental Objectives

There were no instances during the reporting period Licence in which the PEL 94 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 94.

#### 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 4 of the first renewal of the Licence is provided in Table 4.

Table 4: List of Reports and Data Submissions for the Current Reporting Period

<b><i>Description of Report/ Data</i></b>	<b><i>Date Due</i></b>	<b><i>Date Submitted</i></b>	<b><i>Compliant/ Non-Compliant</i></b>
Annual Report for Year 4 of the first renewal term of PEL 94	4 July 2011	4 July 2011	<i>Compliant</i>
Resubmission Annual Report for Year 4 of the first renewal term of PEL 94	31 Jan 2012	13 Jan 2012	<i>Compliant</i>
Notice of Activity for access and lease construction for Davenport-1	30 Jan 2012 <sup>(1)</sup>	23 Dec 2011	<i>Compliant</i>
Notice of Activity for Drilling Davenport-1	4 Apr 2012 <sup>(1)</sup>	11 Jan 2012	<i>Compliant</i>

<sup>(1)</sup> 21 days prior to commencement of activities

#### 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 94 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 94.

#### 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 future work for the remaining 6 months of the first renewal term will focus on the evaluation of Davenport-1 and the unconventional potential of the Permit and the preparation and execution of a relinquishment and renewal strategy, subject to agreement by the PEL 94 licensees.

## 5 Expenditure Statement

Pursuant to Regulation 33(3) 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 5 May 2011 to 4 May 2012 is presented as Appendix 2.

## APPENDIX 1

### Compliance with the SEO for Drilling and Well Operations PEL 94 Licence Year 5 of First Renewal Term

Beach’s strategies for achieving each of the SEO objectives during the drilling of Davenport-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"*

<b>Table A1-1 SEO for Cooper Basin Drilling Operations</b>			
<b>Objective</b>	<b>Assessment Criteria</b>	<b>Compliant / Non-compliant</b>	<b>Comments</b>
<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 94 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 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</p>

			<p>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 Davenport 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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<b>Objective</b>	<b>Assessment Criteria</b>	<b>Compliant / Non-compliant</b>	<b>Comments</b>
<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 Davenport-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>Beach negotiated agreement with Epic Energy, owners/operators of gas pipeline, to cross the easement/pipeline to access the Davenport-1 location.</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>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>Attainment of GAS criteria for “Site to be left in left in clean, tidy and safe condition” objective during well site restoration (refer Appendix 1 Table A2):</p> <ul style="list-style-type: none"> <li>- “To minimise the visual impact”</li> <li>- “The revegetation of indigenous species”</li> </ul>		
<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"> <li>- “To minimise the visual impact”</li> </ul>	<p>Compliant</p> <p>Compliant</p> <p>Compliant</p>	<p>Following testing of Davenport-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>

	<ul style="list-style-type: none"> <li>- "The revegetation of indigenous species"</li> </ul> <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"> <li>- "Rejuvenation of indigenous species"</li> <li>- "Minimise impact on soil"</li> <li>- "Minimise visual impacts"</li> <li>- "Site to be left in a clean and tidy condition"</li> </ul> <p><i>Note: Well abandonment issues are addressed under Objective 6.</i></p>	Compliant	
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