



# Monthly Drilling Report

September 2017

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## DEVELOPMENT – COOPER AND EROMANGA BASINS

### South Australian Oil – Cooper Basin JV

*(Fixed Factor Area JV: Beach 20.21%, Santos 66.6% and operator, Origin 13.19%)*

A four-well oil appraisal and development campaign continued in the Merrimelia Field, located approximately 35 kilometres north of the Moomba processing facility. The campaign includes two development wells, Merrimelia-65 and Merrimelia-66. Merrimelia-65 was drilled to develop additional Birkhead Formation reserves on the southwest flank of the field. The well intersected 7.7 metres of net oil pay in the target zone and was cased and suspended as a future producer. Merrimelia-66 is a lateral well on the southeast flank of the field targeting the Murta Formation. The well spudded on 30 September 2017 and is drilling ahead.

### Queensland Gas – Cooper Basin JV

*(Southwest Queensland JV: Beach 23.2%, Santos 60.06% and operator, Origin 16.74%)*

A two-well gas development campaign was successfully completed in the Roti Field, located approximately 35 kilometres east of the Ballera processing facility. The campaign follows successful drilling in the Roti South and Windigo fields in 2016 and subsequent mapping using updated depth conversions. Roti-5 and Roti-6 are located in the central section of the field and targeted gas reserves in the Epsilon and Patchawarra formations. Both wells were cased and suspended as future producers. Roti-5 intersected 8.5 metres of net gas pay in a 92 metre gross section of the Patchawarra Formation. Roti-6 intersected 2.4 metres of net gas pay in a 25 metre gross section of the Epsilon Formation, and 9.6 metres of net gas pay in an 82 metre gross section of the Patchawarra Formation.



## EXPLORATION AND APPRAISAL – COOPER AND EROMANGA BASINS

### **Western Flank Oil – ex PEL 91**

*(Beach 100%)*

Beach continued its FY18 operated Birkhead oil exploration and appraisal campaign. The Birkhead Formation is a proven oil reservoir in Western Flank fields, however has not been subjected to play-wide, focused exploration and appraisal. The FY18 program aims to establish commerciality and size of existing discoveries, appraise field extensions, discover new accumulations and design cost effective development programs.

The second vertical well of the campaign, Goldsmith-1, was drilled four kilometres north of Kangaroo-1 to test a potential northern extension of the Kangaroo Field. Oil shows were intersected in the target interval, however low reservoir quality resulted in side-tracking of the well approximately 400 metres west of the original target. The side-track did not intersect reservoir in the target interval and Goldsmith-1 was subsequently plugged and abandoned.

The first two vertical exploration wells of the FY18 Birkhead campaign, Goldsmith-1 and Donington-1, were designed to test the true up-side of the Kangaroo Field. Based on the results, future drilling will be focused on the lower risk area in closer proximity to the Kangaroo Field. This will be appraised and developed along with existing Birkhead oil discoveries in the Stunsail, Pennington, and Stanleys fields. Horizontal development wells are planned for H2 FY18 and will commence upon completion of Beach's operated gas exploration campaign.

### **Western Flank Gas – ex PEL 92**

*(Beach 75% and operator, Cooper Energy 25%)*

Beach commenced its FY18 operated gas exploration and appraisal campaign, which is focused on the Southwest Patchawarra (SWP) and Permian Edge (PE) play fairways. Both fairways contain combination structural and stratigraphically trapped conventional gas targets in the Patchawarra Formation.

The first exploration well of the campaign, Louth-1, is located in ex PEL 92, approximately 5 kilometres west of the recent Mokami discovery. The well was drilled to test the most westerly extension of the PE play fairway, which is a relatively underexplored western pinch-out of the Patchawarra Formation. Despite encouraging gas shows, reservoir quality was deemed insufficient for commerciality and the well was plugged and abandoned. Results will be analysed to confirm optimal locations for upcoming wells.

### **Western Flank Gas – PRL 26**

*(Beach 100%)*

The second gas well of the FY18 operated exploration and appraisal campaign, Lowry-1, is located in the SWP play fairway approximately two kilometres northwest of the Middleton processing facility. The well is targeting stratigraphically trapped gas within the sands of the Patchawarra Formation. Lowry-1 spudded on 28 September 2017 and at month-end was drilling ahead at 929 metres.



### **South Australian Oil – Cooper Basin JV**

*(Fixed Factor Area JV: Beach 20.21%, Santos 66.6% and operator, Origin 13.19%)*

The four-well oil appraisal and development campaign in the Merrimelia Field includes two appraisal wells, Merrimelia-63 and Merrimelia-67. Merrimelia-63 tested reservoir limits of the Birkhead Formation along the northeast flank of the field as a primary objective, and the Mackunda and Murta formations as secondary objectives. The well intersected 1.2 metres of net oil pay in the primary target and was cased and suspended as a future producer. Merrimelia-67 was drilled on the southwest flank of the field and targeted the Murta Formation as a primary objective with secondary targets in the Mackunda, Birkhead, McKinlay and Namur reservoirs. The well intersected 3.3 metres of net oil pay in the primary target and was cased and suspended as a future producer.

### **Queensland Gas – Cooper Basin JV**

*(Southwest Queensland JV: Beach 23.2%, Santos 60.06% and operator, Origin 16.74%)*

A four-well gas appraisal and development campaign commenced on the Costa / Judga Complex, located approximately 20 kilometres east of the Ballera processing facility. The first appraisal well of the campaign, Judga-4, was drilled to test the northern extent of the Judga Field and targeted the Patchawarra Formation as a primary objective and the Toolachee and Epsilon formations as secondary objectives. The well intersected 11 metres of net gas pay in a 229 metre gross section of the primary target. Judga-4 was cased and suspended as a future producer.

## **EXPLORATION AND APPRAISAL – OTWAY BASIN**

### **South Australian Gas – PPL 62**

*(Beach 100%)*

Beach commenced drilling operations in the onshore Otway Basin with spudding of Haselgrove-3, a conventional gas exploration well. Haselgrove-3 is located on state forestry land approximately eight kilometres south of Penola. The well is proximal to Beach's Katnook gas processing facility and pipeline network, and the SEA Gas transmission system.

Haselgrove-3 is targeting a 34 Bcf<sup>1</sup> conventional gas and gas liquids prospect in the Pretty Hill and Sawpit sandstones. The well will not require fracture stimulation. At month-end, Haselgrove-3 was drilling ahead at 798 metres, with a total vertical depth target of approximately 3,900 metres.

Drilling of Haselgrove-3 is being supported by the South Australian Government through the Plan for Accelerating Exploration gas grant scheme, which aims to bring new gas to market within three years. Under the terms of the \$6 million grant, if a discovery at Haselgrove-3 is deemed to be commercial, Beach will enter bilateral negotiations with prospective South Australian customers for supply of gas at prevailing market terms. For further information, refer to the announcement of 17 March 2017.

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<sup>1</sup> Best unrisks estimate of prospective resource using the probabilistic methodology; Beach assigns a ~32% probability of success. Refer competent persons statement for further disclosures. The estimated quantities of petroleum that may potentially be recovered by the application of a future development project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Monthly Drilling Report – Period ended 06:00, 1 October 2017

Well	Participants	Progress and Summary	Primary Targets
<b>Cooper Basin Operated</b>			
<b>Goldsmith-1 DW1</b>	BPT* 100.00%	Drilling this month: 1,302 metres	Birkhead Formation
PRL 156 Oil exploration C/E Basin, SA		Current depth: 1,886 metres (total depth) Status: Plugged and abandoned	
<b>Louth-1</b>	BPT* 75.00% COE 25.00%	Drilling this month: 2,469 metres	Patchawarra Formation
PRL 102 Gas exploration C/E Basin, SA		Current depth: 2,469 metres (total depth) Status: Plugged and abandoned	
<b>Lowry-1</b>	BPT 100.00%	Drilling this month: 929 metres	Patchawarra Formation
PRL 26 Gas exploration C/E Basin, SA		Current depth: 929 metres Status: Drilling ahead	
<b>Otway Basin Operated</b>			
<b>Haselgrove-3</b>	BPT* 100.00%	Drilling this month: 798 metres	Sawpit Sandstone Lower Pretty Hill Sandstone
PPL 62 Gas exploration Otway Basin, SA		Current depth: 798 metres Status: Drilling ahead	
<b>Cooper Basin Non-operated</b>			
<b>Merrimelia-65</b>	BPT 20.21% STO* 66.60% ORG 13.19%	Drilling this month: 1,986 metres	Birkhead Formation
PPL 17 Oil development C/E Basin, SA		Current depth: 1,986 metres (total depth) Status: Cased and suspended as a future Birkhead Formation oil producer	
<b>Merrimelia-66</b>	BPT 20.21% STO* 66.60% ORG 13.19%	Drilling this month: 68 metres	Murta Formation
PPL 17 Oil development C/E Basin, SA		Current depth: 68 metres Status: Drilling ahead	
<b>Roti-5</b>	BPT 23.20% STO* 60.06% ORG 16.74%	Drilling this month: 2,094 metres	Epsilon Formation Patchawarra Formation
PL 287 Gas development C/E Basin, QLD		Current depth: 2,609 metres (total depth) Status: Cased and suspended as a future Permian gas producer	
<b>Roti-6</b>	BPT 23.20% STO* 60.06% ORG 16.74%	Drilling this month: 2,663 metres	Epsilon Formation Patchawarra Formation
PL 287 Gas development C/E Basin, QLD		Current depth: 2,663 metres (total depth) Status: Cased and suspended as a future Permian gas producer	
<b>Merrimelia-63</b>	BPT 20.21% STO* 66.60% ORG 13.19%	Drilling this month: 744 metres	Birkhead Formation
PPL 17 Oil appraisal C/E Basin, SA		Current depth: 2,024 metres Status: Cased and suspended as a future Birkhead Formation oil producer	
<b>Merrimelia-67</b>	BPT 20.21% STO* 66.60% ORG 13.19%	Drilling this month: 2,160 metres	Murta Formation
PPL 17 Oil appraisal C/E Basin, SA		Current depth: 2,160 metres (total depth) Status: Cased and suspended as a future Murta Formation oil producer	
<b>Judga-4</b>	BPT 23.20% STO* 60.06% ORG 16.74%	Drilling this month: 2,546 metres	Patchawarra Formation
PL 62 Gas appraisal C/E Basin, QLD		Current depth: 2,546 metres (total depth) Status: Cased and suspended as a future Permian gas producer	

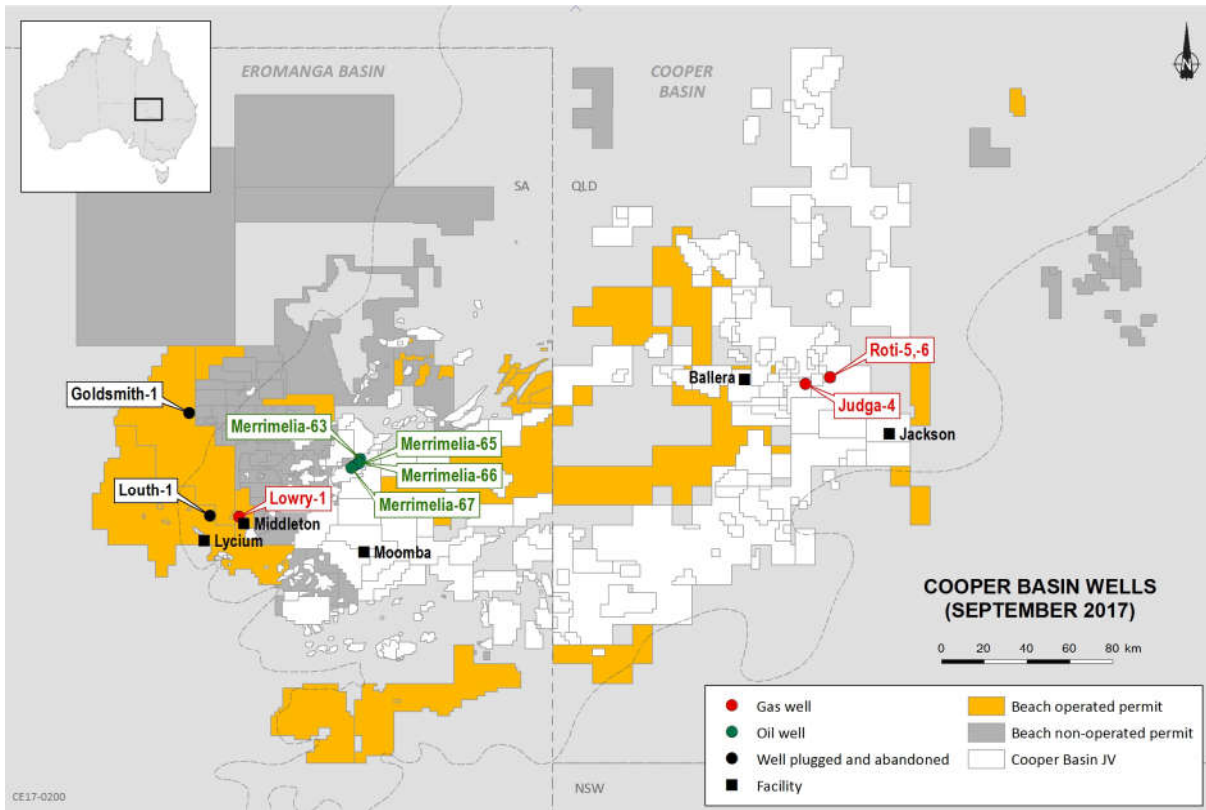
(\*) Operator

BPT Beach Energy Ltd  
STO Santos Ltd

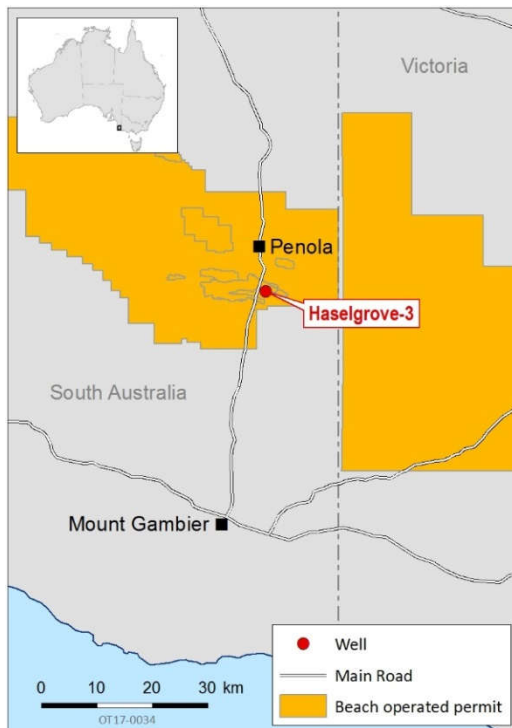
COE Cooper Energy Ltd  
SXY Senex Energy

ORG Origin Energy Ltd

### Cooper Basin



### Otway Basin



A handwritten signature in blue ink, appearing to read "Jeff Schrull".

**Jeff Schrull**

Group Executive Exploration and Development

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**Competent Persons Statement**

The reserves and resources information in this announcement is based on, and fairly represents, information and supporting documentation prepared by, or under the supervision of, Mr Tony Lake (Manager Gas Development). Mr Lake is an employee of Beach Energy Ltd and has a BE (Mech) degree from the University of Adelaide and is a member of the Society of Petroleum Engineers. The reserves and resources information in this announcement has been issued with the prior written consent of Mr Lake in the form and context in which it appears.