



CARNARVON
PETROLEUM LTD

Q2

Quarterly Report
31 December 2015
Carnarvon Petroleum Limited



Quarter Highlights:

- **Roc-1 exploration well a condensate rich gas discovery**
- **A\$100.0 million held in cash plus future cash flows due of up to US\$31.3 million**
- **Approximately A\$30m to A\$40m (gross) farm out carry remains available for any Roc-2 well**

Managing Director's Comments

I believe it is a great result that we have drilled two exploration wells and achieved two important discoveries in our Phoenix project; namely the Roc-1 condensate rich gas discovery this quarter and the Phoenix South-1 light oil discovery in 2014. The preliminary view is that the condensate from Roc could be extracted and sold with the light oil from Phoenix South, meaning these two discoveries are not necessarily independent in any development consideration.

In terms of the Roc-1 well, the hydrocarbons in the targeted Phoenix South-1 equivalent reservoir section were not significant, but were sufficient to warrant drilling ahead to where condensate rich gas was discovered. The process to quantify the expected range of recoverable gas and condensate volumes has commenced and we expect to announce these to the market in late February or early March 2016 as we advised on 18 January 2016.

Once the joint venture partners have had the opportunity to consider the results of the Roc-1 well, I expect a meeting will be arranged to discuss the timing and location of follow up wells to further explore and appraise this resource. At the time of writing this report, the joint venture partners were in the process of considering the well data and have not met to consider the results or discuss future actions.

As advised on 18 January 2016, the Roc-1 well was drilled safely and on budget. Consequently, approximately A\$30m to A\$40m of the farm-out carry was not used and is available to be applied to any future drilling and testing activities within the WA-437-P permit (the Roc structure resides within WA-437-P).

Overall I'm very happy with our Phoenix project exploration results, recognising that further drilling is required to more fully define the resource. Whilst we take a bullish view on long term oil prices, the inclusion of a potential domestic gas (domgas) project into the portfolio is also appealing. It could provide us with commodity price diversification, once we're able to demonstrate a commercial resource exists.

Carnarvon remains in a strong financial position with cash of approximately A\$100.0 million, with additional cash of up to US\$31.3 million coming from future Thailand oil production receipts, approximately A\$30m to A\$40m carry available for Roc-2 drilling and no debt or significant commitments.

The Company is focused on its strategy of building a North West Shelf oil and gas business utilising the technical expertise of its team. We are making solid progress in achieving this objective with two consecutive discoveries and the Cerberus blocks being re-risked following the results of the Roc-1 well.

Challenging market conditions have presented us with several interesting opportunities on the North West Shelf, which the Company has been assessing with the goal of introducing at least one new project into the business in the near future.

Phoenix South Light Oil

(Carnarvon 20%, Finder Exploration 20%, JX Nippon 20%, Quadrant 40% and Operator)

The Phoenix South-1 well, drilled in 2014, was the first well to be drilled in the Bedout Sub Basin for almost 30 years and was only the eighth well in the history of the basin. The well was drilled to a total depth (“TD”) of 4,595m and discovered oil across an overall sand rich package between 4,160m and TD. Six samples of high quality 46 to 48 degree API oil were recovered from the well.

This well is significant because it opened up the prospectivity of an entirely new and largely unexplored hydrocarbon province in the North West Shelf. Equally importantly it demonstrated that there is a new play concept in the North West Shelf. This was the first time in the North West Shelf an oil discovery has been made in the Lower Keraudren reservoir interval which sits in the Lower Triassic aged sediments.

Ongoing test data results from rock and oil samples collected from the Phoenix South-1 well continue to provide important new data to update exploration models, volume estimates and assumptions in the basin.

DeGolyer and MacNaughton were engaged by Carnarvon to provide an independent assessment of prospectivity and volumes in the area. They assessed the best estimate of recoverable oil at Phoenix South to be 19 million barrels*.

Importantly the report by DeGolyer and MacNaughton also assessed that Phoenix-1 drilled in 1980 by BP was an oil discovery that contains a best estimate of recoverable oil of 9 million barrels*. This independently validates two proven discoveries with a total contingent resource of 31 million barrels (best case, aggregated 2C resource estimate) *.

Roc Condensate Rich Gas

(Carnarvon 20%, Finder Exploration 20%, JX Nippon 20%, Quadrant 40% and Operator)

The Roc-1 well commenced operations on 24 November 2015 and drilled down to a total depth of 4,943 metres before leaving location on 17th January 2016.

Initial results from the Roc-1 well include:

- 40 metre gross gas condensate bearing hydrocarbon column;
- 140 metre gross reservoir sands with ~ 10% porosity and 10-100 mD permeability; and
- Six gas samples recovered to surface with 36 to 39.5 bbls per scf measured flash condensate to gas ratio and low CO₂

The Roc-1 well was designed to test the Phoenix South-1 oil sands at the Roc-1 location. The Roc-1 well encountered the sands as expected in the shallower section of the well, but these were deemed to contain insignificant hydrocarbons on test.

A deeper sand package was encountered at around 4,380 metres with a total of 134 metres of gross sand being interpreted from wireline logs. The top 40 metres of this sand package was found to be hydrocarbon bearing with a net hydrocarbon pay of 10 metres. The sand package was of good reservoir quality with porosities around 10 percent and permeabilities inferred from pressure testing in the range of 10 to 100 millidarcy.

Six gas samples in the net hydrocarbon bearing sands were recovered to surface from four different locations. Laboratory sampling confirmed a rich gas condensate with flashed product ratios in the range of 36 to 39.5 barrels of condensate for every million standard cubic feet of gas. The ratio of condensate to gas ratio for separator conditions is generally higher however the full laboratory results are not yet to hand to calculate this.

The Roc-1 well was not designed to test for these deeper gas-condensate sands and accordingly the joint venture partners made the decision to conclude drilling without undertaking testing operations. In additional seismic analysis suggests the crest of the structure could be up to 90m updip to the northeast. There is a level of confidence that a significant section of the 134 metres gross sandstone package will be above the interpreted gas-water contact seen in the well and the accumulation has the potential to host a significant resource.

Work has already commenced into assessing the range of possible volumes involved and the degree to which they could be commercially exploited. The Company expects to have initial volume estimates in the current quarter.

Towards the bottom of the Roc-1 well, good oil shows were encountered in an additional Milne sandstone section. While the sands encountered were of relatively poor quality, there were encouraging signs that the well had encountered a Turbidite section. Not only is this encouraging for the Greater Phoenix area, it also has positive implications for Carnarvon's other acreage in the Cerberus area.

Resources – Phoenix 3D Area

Following the Roc-1 result there will be an amendment to the Company's independent resource estimates as released on 7 April 2015.

The Contingent Resources for Phoenix South and Phoenix remain the same, however, the Company has commenced the process of obtaining independent Contingent Resource estimates for Roc following the Roc-1 condensate rich gas discovery.

The Prospective Resources for Bewdy, Bottler and Phoenix 2 Updip remain unchanged as a result of the Roc-1 well.

Table 1: Gross Contingent Resource estimate for Phoenix and Phoenix South

Field	Reservoir Interval	Contingent Resources (MM bbls)		
		1C	2C	3C
Phoenix South	Lower Keraudren	6	19	56
Phoenix	Lower Keraudren	3	9	28
Roc	Lower Keraudren	To be determined		
Total Contingent (i)		13	31	78

(i) Statistical aggregate of contingent resources

Table 2: Gross Prospective Resource estimates only within the Phoenix 3D area (unrisked)

Field	Reservoir Interval	Prospective Resources (MM bbls)			Probability of Geological Success
		Low	Best	High	
Roc	Lower Keraudren	Prospective Resource to be re-determined			
Bewdy	Lower Keraudren	3	9	26	42%
Bottler	Lower Keraudren	2	7	20	42%
Phoenix 2 Updip	Lower Keraudren	1	4	14	27%
Phoenix West	Lower Keraudren	Not yet determined			
Total Phoenix 3D Prospects (ii)		12	24	50	

(ii) Statistical aggregate of prospective resources

Table 3: Aggregated Contingent and Prospective estimates

Classification	Reference	Resources (MM bbls)		
		Low	Best	High
Contingent	Table 1	13	31	78
Prospective	Table 2	12	24	50
Total (arithmetic Sum)		25	55	128

Exploration – Greater Phoenix Area

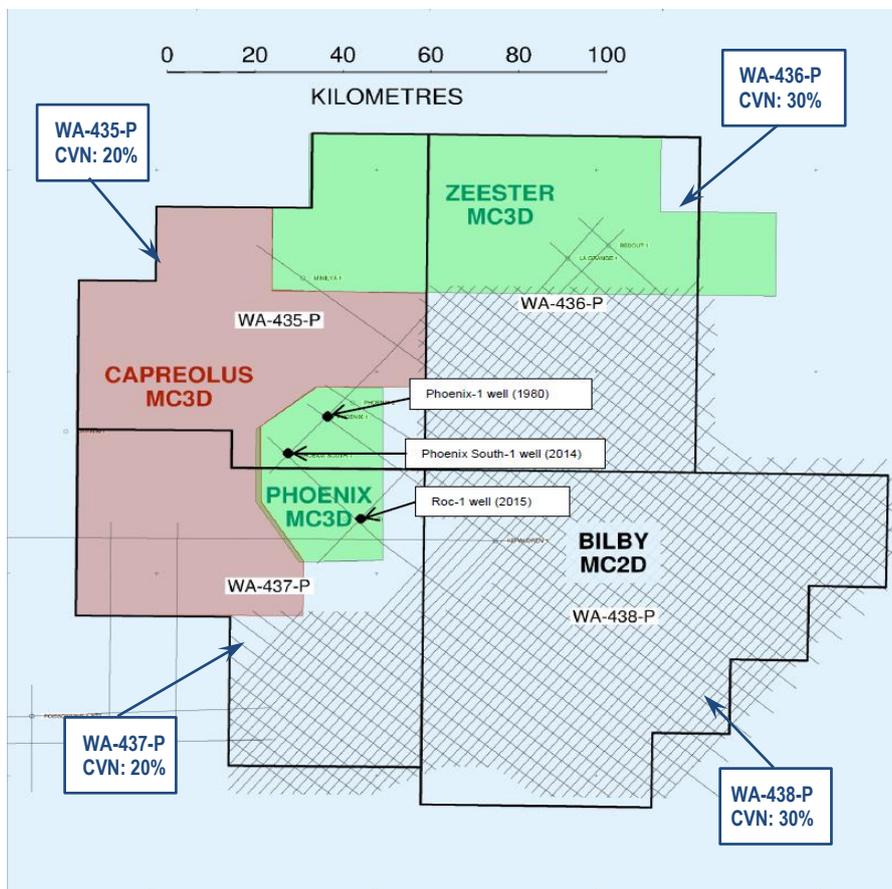
The Phoenix 3D covers an area of approximately 1,100 km² or approximately 5% of our total permit holding of 22,000 km². The discovery at Phoenix South-1 (and subsequently at Roc-1) proved there is a working petroleum system in this region and this has given the Joint Venture confidence to acquire further seismic data to identify additional leads and prospects in the Greater Phoenix Area.

Following the initial success in these permits, the Joint Venture has licenced the Zeester 3D seismic survey that covers the Northern parts of WA-436-P and WA-435-P. The Zeester survey covers an area of 3,854 km² and incorporates the very large Bandy lead amongst others. The interpretation of this seismic survey is underway and is expected to add to Carnarvon’s lead and prospect inventory.

The Joint Venture also acquired and licenced the Capreolus 3D. This survey will contain an additional 5,100 km² of 3D seismic coverage in the basin and is expected to reveal a number of new prospects and enable greater delineation of numerous leads that lie to the west of Phoenix South as identified on existing 2D data. This acquisition is complete at the time of writing and the data is currently being processed.

In addition to the Capreolus 3D seismic acquisition, the Joint Venture is acquiring and licensing approximately 10,000 km of 2D seismic data to further understand the prospectivity in the south eastern portion of the acreage. This acquisition is approximately 85% complete.

Given the results of Phoenix South and Roc, the next step is for the Joint Venture to interpret this large data set to identify both oil prospects and gas prospects. The timing for this interpretation is outlined in the latest investor presentation available on the Company’s website and 2015 AGM presentation.



Map showing the seismic acquisitions being undertaken by Carnarvon and its joint venture partners

Cerberus Blocks

EP-490, EP-491, EP-475 and TP/27

(Carnarvon 100%)

‘Cerberus Blocks’ is the collective term used by Carnarvon to describe the permits EP-490, EP-491, EP-475 and TP/27. These permits are situated on the eastern flank of one of Australia’s most prolific oil producing basins, the Carnarvon basin, and they cover a total area of around 3,700 km².

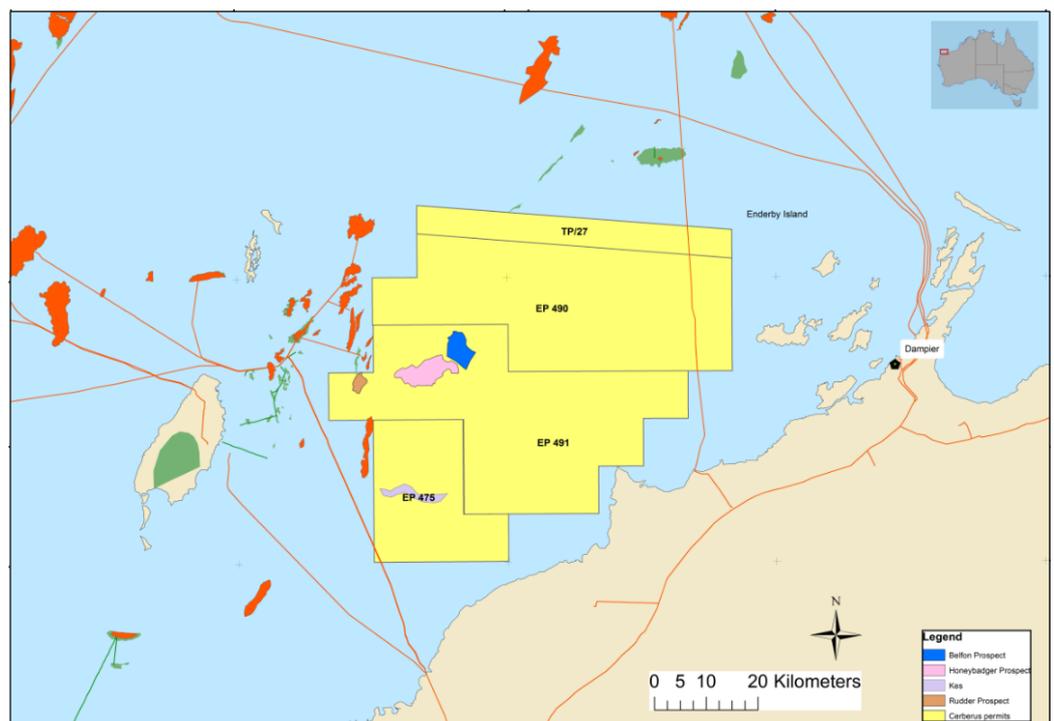
As part of the work program across these permits, Carnarvon has re-interpreted modern reprocessed 3D seismic data and has identified a number of new material oil prospects. These prospects are associated with Lower Triassic source rocks that have been identified in nearby wells through recently completed geochemistry, petrophysics and biostratigraphy studies. The Triassic source rocks are analogous to proven oil-prone source rocks at Phoenix and the Perth Basin. These Triassic sourced targets are in addition to the more traditional oil plays across the area, which are primarily sourced from the Jurassic and Cretaceous aged sediments like the Stag, Wandoo and Harriet oil fields nearby.

In particular, the Belfon (Upper Permian) and Honeybadger (Early Triassic) prospects are estimated to contain significant volumes of recoverable oil. Detailed analysis is ongoing to refine these prospect volume estimates and further updates are planned to provide shareholders with this information in due course. These prospects (Honeybadger and Belfon) have been de-risked following the results of the Roc-1 as the deeper Milne sands encountered in the latter well had encouraging oil shows, and were indicative of a channel cut system similar to that envisaged for the Honeybadger prospect. Five Jurassic prospects exist (1,000-1,500 meter target depths) with a further set of Cretaceous shallow (circa 500 metres target depth) oil prospects which could be large in the context of North West Shelf oil prospects and are the focus of the current stage of geoscience studies.

The investment case in this area is particularly attractive because of the combination of very sizable targets and low exploration costs. The shallow water depths (approximately 50m) and shallow oil target depths (500m - 3,000m) means drilling and development costs are expected to be low relative to normal expectations in the North West Shelf. Multiple development options are available due to shallow depths, proximity to shore and existing production infrastructure.

The Company is looking to progress its exploration plans with a partner with the intention of drilling one or more prospects while retaining a significant equity interest in the project.

Location map of the Cerberus blocks with Belfon, Honeybadger, Kes and Rudder prospects



Corporate / Financial

The Company's cash holdings at the end of the quarter were \$100.0 million, compared to \$103.2 million at the end of the previous quarter. At the end of the quarter, the Company's United States Dollar holdings were US\$68.0 million with the balance being Australian Dollars. The exchange rate at 31 December 2015 was 1 AUD = USD0.7298. At the exchange rate at the time of writing of 1 AUD = USD0.69 the reported cash holding would have been approximately A\$105 million. This demonstrates the sensitivity of Carnarvon's reported cash holdings to the AUD / USD exchange rate. Carnarvon retains the majority of its cash in USD as a natural hedge to likely future expenditures expected to be denominated in USD.

During the quarter \$1.5 million was spent on exploration activities in the North West Shelf and \$0.8 million was spent on business development and corporate costs. The Company also received proceeds of \$3.4m in research and development rebates, interest and royalties from Loyz Energy Limited. Separate to the above, the Company experienced an unrealised foreign exchange rate loss of \$4.3m during the quarter due to the strengthening of the Australian Dollar against the United States Dollar.

The final proceeds from the exercise of options of \$1.9m were received in January 2016 and are not reported in the cash balance for the December 2015 quarter.

Abbreviations

Bopd	Barrels of oil per day
Bwpd	Barrels of water per day
Bbls	Barrels of oil
OWC	Oil water contact
CVN	Carnarvon Petroleum Limited
JV	Joint Venture
Km	Kilometres
Km2	Square kilometres
m	Millions
Qtr	Quarter
Q/Q	Quarter on Quarter
Tcf	Trillion cubic feet (gas)
2D	Two dimension seismic data
MC2D	Multi-client 2D – seismic data acquired for multiple parties that require licensing
3D	Three dimensional seismic data
MC3D	Multi-client 3D – seismic data acquired for multiple parties that require licensing
US\$	United States of America dollar

About Carnarvon Petroleum

Carnarvon Petroleum Limited (Carnarvon) is a Perth based company listed on the Australian Securities Exchange (ASX: CVN). The Company's principal activity is oil and gas exploration.

Carnarvon's objective is to create material returns on its shareholder's investments, through delivering profitable and sustainable growth from the development, exploitation and commercialisation of oil and gas assets.

Carnarvon is focused on oil & gas exploration in the world-class province of the North West Shelf area off the coast of Western Australia.

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Cautionary Statement

There are numerous uncertainties inherent in estimating reserves and resources, and in projecting future production, development expenditures, operating expenses and cash flows. Oil and gas reserve engineering and resource assessment must be recognised as a subjective process of estimating subsurface accumulations of oil and gas that cannot be measured in an exact way. These prospective resource estimates have an associated risk of discovery and risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

***Resources**

All continent and prospective resources presented in this report are prepared as at 7 April 2015 per the DeGolyer and MacNaughton reports released to the ASX on 7 April 2015. The estimates of contingent and prospective resources included in this announcement have been prepared in accordance with the definitions and guidelines set forth in the SPE-PRMS.

Competent Person Statement Information

DeGolyer and MacNaughton is an independent international energy advisory group whose expertise is in petroleum reservoir evaluation and economic analysis. The continent and prospective resources presented in this report are based on information compiled by professional staff members who are full time employees of DeGolyer and MacNaughton.

The Resource estimates outlined in this report were reviewed by the Company's Chief Operating Officer, Mr Philip Huizenga, who is a full-time employee of the Company. Mr Huizenga has over 20 years' experience in petroleum exploration and engineering. Mr Huizenga holds a Bachelor Degree in Engineering and a Masters Degree in Petroleum Engineering. Mr Huizenga is qualified in accordance with ASX Listing Rules and has consented to the form and context in which this statement appears.

Forward Looking Statements

This document may contain forward-looking information. Forward-looking information is generally identifiable by the terminology used, such as "expect", "believe", "estimate", "should", "anticipate" and "potential" or other similar wording. Forward-looking information in this document includes, but is not limited to, references to: well drilling programs and drilling plans, estimates of reserves and potentially recoverable resources, and information on future production and project start-ups. By their very nature, the forward-looking statements contained in this news release require Carnarvon and its management to make assumptions that may not materialize or that may not be accurate. The forward-looking information contained in this news release is subject to known and unknown risks and uncertainties and other factors, which could cause actual results, expectations, achievements or performance to differ materially, including without limitation: imprecision of reserve estimates and estimates of recoverable quantities of oil, changes in project schedules, operating and reservoir performance, the effects of weather and climate change, the results of exploration and development drilling and related activities, demand for oil and gas, commercial negotiations, other technical and economic factors or revisions and other factors, many of which are beyond the control of Carnarvon. Although Carnarvon believes that the expectations reflected in its forward-looking statements are reasonable, it can give no assurances that the expectations of any forward-looking statements will prove to be correct.