

# Q1

## Quarterly Report 30 September 2017





## Quarter Highlights:

- Technical work on Buffalo project provides strong evidence of economically recoverable oil
- Best estimate resource (2C) of 31 million barrels of light premium oil independently audited by RISC
- Rig contract for Phoenix South-3 well signed with drilling to begin between 1 Feb and 1 April 2018
- A\$50 million held in cash after A\$1.3m exploration spend in the quarter

### Managing Director's Comments

During the quarter we were pleased to announce that the technical work on the Buffalo Project has demonstrated that the Buffalo Oil Field has an economic amount of recoverable oil remaining in the field. An independent audit of the Contingent Resources assigned to the Buffalo Oil Field has confirmed a best estimate resource (2C) of 31 million barrels of oil (refer to ASX announcement on 28 August 2017).

The independent audit of the remaining oil volumes in the Buffalo field has given Carnarvon the confidence to begin planning to redevelop the Buffalo Oil Field. This planning includes preparation for environmental and production approvals, field development concept selection and detailed economic assessment. Carnarvon's scoping economics demonstrate that the field is economic at the 1C resource level of 15.3 million barrels (refer to ASX announcement on 28 August 2017), meaning Carnarvon has a high degree of confidence in the quality of the project and its commerciality.

Additionally, Carnarvon and its Joint venture partner, Quadrant Energy, have secured a rig contract for the Phoenix South-3 well. The well is contracted to commence before April 2018 and is being designed as a re-drill of Phoenix South-2. Due to the circumstances where the Joint Venture was unable to complete the drilling of the Phoenix South-2 well as a result of elevated well pressures, a significant portion of the Phoenix South-3 well costs are expected to be covered by Carnarvon's insurance, which is currently in its final stages of completion.

Since our last quarterly the Company has continued to progress towards generating value from its suite of exciting early stage exploration projects, in addition to the Buffalo and Phoenix projects. Concurrently we continue to prudently maintain our financial position with a cash balance of A\$50 million as calculated at the end of the quarter.

### Buffalo Project – WA-523-P

(Carnarvon 100% and operator)

Carnarvon continues to advance work around the Buffalo Oil Field and has strong evidence that there is an economically recoverable amount of oil remaining in the field. At the completion of an independent audit of Carnarvon's technical work it is estimated that the field contains a Contingent Resource of 31 million barrels (2C) (refer to ASX announcement on 28 August 2017). At the best estimate (2C) of recoverable oil, the field has a revenue generating capacity of US\$1.5 billion, at current oil prices.

Through the use of Full Waveform Inversion technology, Carnarvon was able to produce improved seismic imaging and mapping, which has provided superior information around the Buffalo Oil Field. Previous seismic issues led to suboptimal well placement and the recent technical work has recognised a significant area of unswept oil. The original Buffalo Project was still producing 4,000 barrels of oil per day when production ceased. The utilisation of modern technology and computing power, not available at the time of the original field development, is what has enabled the identification of the unproduced oil in this world class reservoir, where in the original development the initial production from two wells was around 50,000 bopd.

The company is currently assessing options to redevelop the oil field. While substantial work is still required in order to quantify the value of the remaining volumes, Carnarvon is encouraged by the audited volumetric estimates to determine the optimum exploitation scheme to maximise value from the remaining oil.

### **Phoenix Project**

(Carnarvon 20%-30%; Quadrant Energy is the Operator)

During the quarter, the joint venture executed the contract to drill the Phoenix South-3 well with Transocean Limited for the GSF Development Driller-1, which is a sixth-generation semi-submersible drilling rig. The contract specifies that the well is to commence drilling between 1 February and 1 April 2018.

The Phoenix South-3 well is a redrill of Phoenix South-2, which discovered gas and condensate at the top of the Caley interval. The Caley structure is estimated to contain a gross mean recoverable prospective resource of 489 Bscf of gas and 57 million barrels of associated condensate, being 143 million barrels of oil equivalent ("boe"), gross, Pmean (refer to ASX Announcement on 28 March 2017).

The increased pressure encountered in the Phoenix South-2 well and earlier than planned termination of drilling led Carnarvon to submit cost recovery claims under its insurance policy. This claim is currently in the final stages of assessment by the insurance underwriters and as a result, proceeds from the claim will cover the majority of the cost of drilling the Phoenix South-3 well.

### **Labyrinth Project – WA-521-P**

(Carnarvon 100% and operator)

During the previous quarter, the Company completed its interpretation of the newly reprocessed 2D seismic data and has identified a number of significant prospects. In particular, the Labyrinth and Mouse prospects are estimated to contain approximately 400 million barrels of recoverable oil each at the Pmean confidence level. The Company has also identified numerous other high-graded prospects and leads within the block and the total recoverable prospective resources is estimated to be over 1.5 billion barrels of oil at the Pmean confidence level (refer to ASX announcement on 13 June 2017). This quarter Carnarvon has refined its technical work through source rock studies to help further de-risk the project.

### **Maracas Project – WA-524-P**

(Carnarvon 100% and operator)

The reprocessing of the existing 3D seismic data over the permit continued during the quarter. The reprocessing includes the application of FWI technology that has demonstrated clear improvements in both the Phoenix and Buffalo projects. The reprocessed data is expected to assist with the mapping of existing leads and identifying new prospects. It is also expected to enable the Company to study the potential for hydrocarbon bearing sands in the permit. The company expect to start seeing the FWI results for the project in early 2018.

**Outtrim East - WA-155-P(1)**

(Carnarvon 28.5%, Quadrant Energy is the Operator)

Carnarvon has progressed technical work in the Outtrim East area, particularly focusing on structures in the Triassic Mungaroo formation that comprises an extension of the Gorgon and Rankin trend. The company has identified the Belgravia prospect within the north westerly graticular block of the permit which contains an estimated recoverable 440 billion cubic feet of gas (Bcf) and 18 million barrels (Mmbbls) of condensate (gross Pmean) (refer to ASX announcement on 21 July 2017). The Belgravia prospect has a 45-square kilometre closure in water depths of less than 180 meters.

The results from the Woodside operated Swell-1 well, which commenced drilling towards the end of the quarter in the neighbouring acreage, may be instrumental in determining the next steps for this project. A successful discovery at Swell-1 would be particularly relevant to the Belgravia prospect due to their geological similarity, immediate proximity and the fact that Belgravia lies directly updip of the Swell prospect.

**Corporate / Financial**

The Company's cash holdings at the end of the quarter were \$50.0 million, compared to \$53.0 million at the end of the previous quarter.

During the quarter, Carnarvon entered into an agreement with Loyz Energy Limited ("Loyz") to complete the deferred consideration settlement with Carnarvon by receiving new shares in Loyz. In the settlement, Carnarvon will receive US\$3.95 million by way of an issue of 331,653,000 new shares in Loyz at S\$0.01615 per new share.

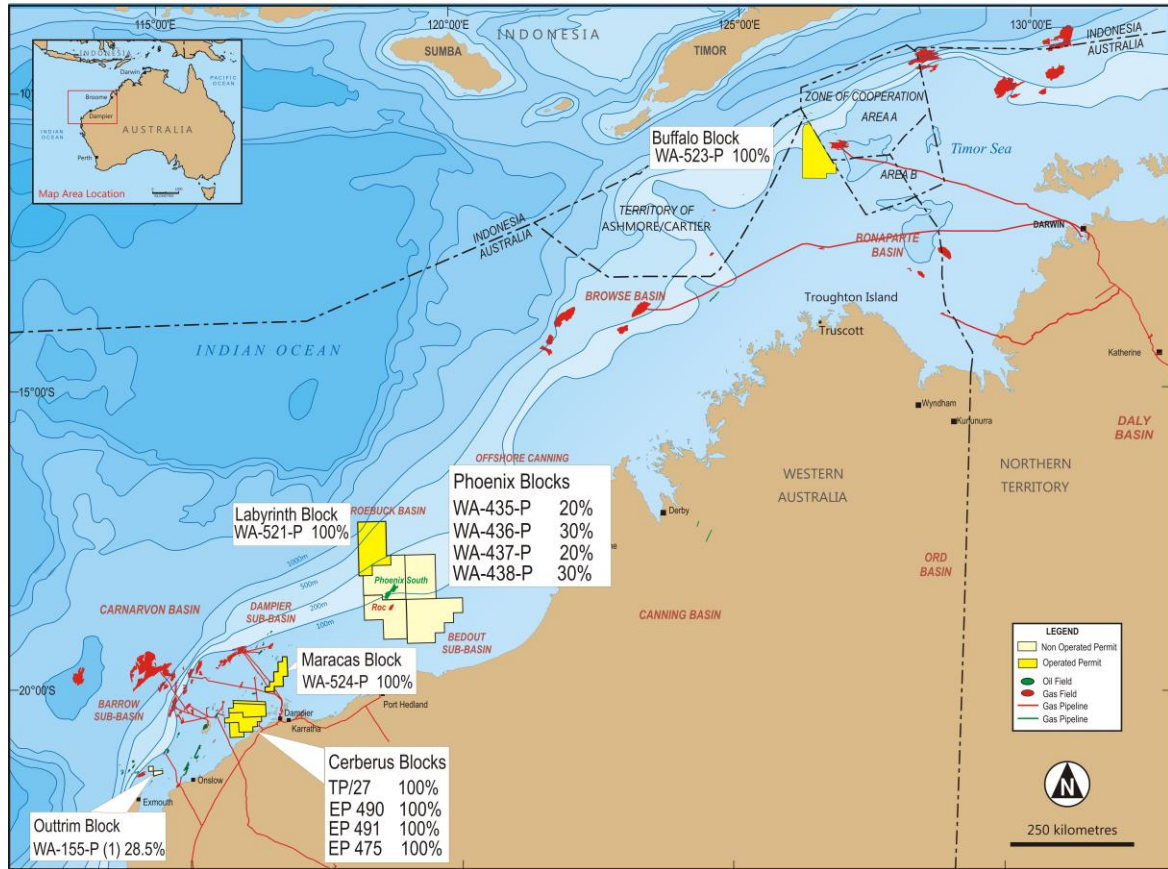
Carnarvon and Loyz originally reached an agreement to settle the deferred consideration for US\$4.0m on 2 May 2017 with a US\$50,000 deposit being received on the date of the agreement. The deferred consideration relates to the divestment of Carnarvon's Thai assets to Loyz in March 2014. The decision to settle was based on both the performance of the underlying oil field and the failure of Loyz to make the deferred consideration payment which was due in December 2016.

The Company's United States Dollar ("USD") holdings at the end of the quarter was US\$38.0 million with the balance being Australian Dollars. Carnarvon holds the majority of its cash in USD as a natural hedge to expected future USD denominated expenditures. The retention of predominantly US dollars influences Carnarvon's reported cash holdings due to AUD / USD exchange rates at each reporting period end.

A strengthening of the average Australian Dollar relative to the US dollar during the quarter resulted in a foreign exchange translation adjustment that decreased the Company's reportable cash holdings by A\$0.9 million.

During the quarter A\$1.3 million was spent on exploration activities in the North West Shelf which includes the technical work on the Buffalo Project, the Phoenix Project and Carnarvon's other exploration projects. In addition to this \$0.9 million was spent on business development and corporate costs.

**Project Map**



**Project Table**

Project	Permit(s)	Operator	Interest held	Interest acquired Q/Q
Phoenix	WA-435-P	Quadrant Energy	20%	-
Phoenix	WA-436-P	Quadrant Energy	30%	-
Phoenix	WA-437-P	Quadrant Energy	20%	-
Phoenix	WA-438-P	Quadrant Energy	30%	-
Labyrinth	WA-521-P	Carnarvon Petroleum	100%	-
Buffalo	WA-523-P	Carnarvon Petroleum	100%	-
Maracas	WA-524-P	Carnarvon Petroleum	100%	-
Outtrim	WA-155-P(1)	Quadrant Energy	28.5%	-
Cerberus	EP-490	Carnarvon Petroleum	100%	-
Cerberus	EP-491	Carnarvon Petroleum	100%	-
Cerberus	EP-475	Carnarvon Petroleum	100%	-
Cerberus	TP/27	Carnarvon Petroleum	100%	-

## Abbreviations

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

**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.

Prospective Resources are the estimated quantities of petroleum that may potentially be recovered by the application of a future development project and may relate to undiscovered accumulations. 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 contingent and prospective resources presented in this report are prepared as at 14 November 2016, 28 March 2017, 13 June 2017 and 28 August 2017 (Reference: CVN ASX releases of 14 November 2016, 28 March 2017, 13 June 2017 and 28 August 2017). 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 and have been prepared using probabilistic methods.

Carnarvon is not aware of any new information or data that materially affects the information included in this report and that all material assumptions and technical parameters underpinning the estimates in this presentation continue to apply and have not materially changed.

**Competent Person Statement Information**

The Resource estimates outlined in this report were compiled by the Company's Chief Operating Officer, Mr Philip Huizenga, who is a full-time employee of the Company. Mr Huizenga has over 25 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.