

# Quarterly Report



March 2011 Quarter

ASX: CVN

## Company

Carnarvon is an oil and gas exploration and production company with onshore and offshore interests in South East Asia and Australasia.

## Capital

	<u>At 31 Mar. 11</u>	<u>At 31 Dec. 10</u>
Share price	\$0.345	\$0.475
Market capitalisation	\$237m	\$326m
Net cash / (debt)	\$23.7m	\$28.8m

## Reserves (net to CVN)

	<u>At 31 Dec. 10</u>
Proved (1P)	4.7 mmbbls
Proved & Probable (2P)	20.4 mmbbls
Proved, Probable & Possible (3P)	51.9 mmbbls

## Production (net to CVN)

	<u>31 Mar. 11 Qtr</u>	<u>31 Dec. 10 Qtr</u>
Net average bopd	1,222	2,645
Average sale price	A\$90.82	A\$72.74
Net sales revenue	A\$10.0m	A\$17.7m

Carnarvon Petroleum Limited (ASX: CVN, "Carnarvon" or the Company) is pleased to provide shareholders with the March 2011 Quarterly Report, which details the progress made by the Company during the quarter.

Carnarvon has a 40% interest in the Phetchabun Basin onshore oil fields and exploration concessions in SW1, L33/43 and L44/43 on-shore Thailand. Pan Orient Energy is Carnarvon's 60% joint venture partner and operator.

Carnarvon also has exploration interests elsewhere in Thailand, in the Roebuck, Perth and Carnarvon Basins in Western Australia, the Taranaki Basin in New Zealand and the Rangkas PSC located onshore in West Java.

## SIGNIFICANT EVENTS DURING THE QUARTER

- Exploratory operations undertaken at L20/50 with two wells drilled
- Production for the Quarter was 109,960 barrels of oil net to Carnarvon
- Proved and probable reserves estimates announced of 20.4 million barrels in Thailand concessions
- Reserve estimates show increasing proportion of conventional sandstone reservoirs
- WBEXT production license granted, three temporarily shut-in wells were brought on-stream at reduced rates
- 3D and 2D seismic data acquisition programmes in the Phoenix permits in Western Australia completed on budget; processing work underway with interpretation and farm-out for drilling to follow later in the year
- 2D seismic data acquisition in the Rangkas PSC in Indonesia completed
- 3D seismic data acquisition in the WA-399-P exploration permit completed
- Joint Venture at L44/43 & L33/43 Concessions in Thailand committed to 34-well drill program in 2011

## CEO COMMENT

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Carnarvon had an active March quarter, particularly across our Thailand concessions where we undertook drilling operations at the Tapao Kaew and Krai Thong wells in the L20/50 concession within the Phitsanulok Basin. These wells were intended to test a number of different geological concepts that if successful would have facilitated the Joint Venture undertaking follow up activity. As outlined later, the outcomes were moderately successful and now require us to incorporate the well information into re-interpreted seismic data to determine what prospects warrant further exploration in the concession.

3D and 2D seismic data acquisition programmes in the Phoenix permits in Western Australia were completed during the quarter within budget and processing work has now commenced. This is an exciting programme with potentially significant upside for the company. A farm-out process is expected to commence late 2011 with drilling potentially occurring as early as 2012.

2D seismic data acquisition in the Rangkas PSC in Indonesia was also completed in April 2011, as was 3D seismic data acquisition in the WA-399-P exploration permit. These data will be processed and interpreted before undertaking further exploration activities on this acreage.

By far the most active area for Carnarvon was the Phetchabun Basin oil fields in Thailand, in which Carnarvon has a 40% equity interest in the SW1, L33/43 and L44/43 on-shore concessions (Pan Orient Energy 60% and operator).

Oil production from the L33/43 and L44/43 concessions was 109,960 barrels net to Carnarvon in the March quarter. This represented an average daily production of approximately 1,222 barrels of oil. These concessions have always had variable production flow rates due to the variability in reservoir properties of the fractured volcanics and it's something we have covered in previous market advice, although the March quarter production was notably affected by the shut-in of three key WBEXT wells.

These wells, being the WBEXT-1, WBEXT-1A and WBEXT-1B, were temporarily shut-in during the quarter as we awaited normal production licence processing to be completed by the Department of Mineral Fuels (DMF). Production was also affected by reduced oil production from the WBEXT-1C well as a result of water incursion as previously reported to the market.

Our Thailand production assets are important to Carnarvon providing us with valuable cash flow for reinvestment into new growth projects such as Phoenix. Whilst we are working hard towards improving oil production from our Thailand assets, we are also focusing on upside opportunities in terms of other exploration and exposure to additional production fields.

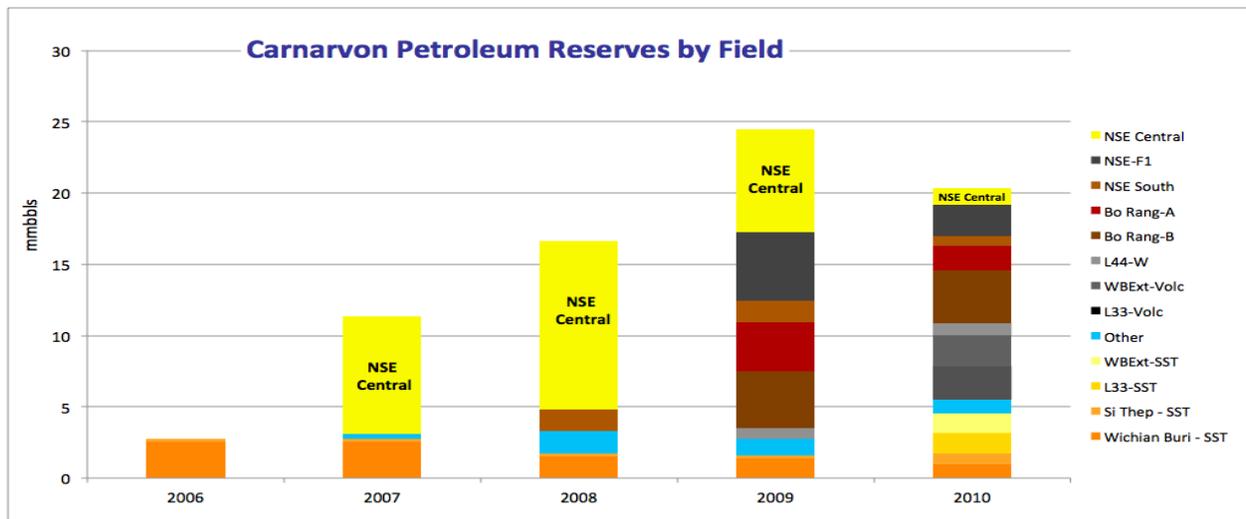
International energy consultants Gaffney, Cline and Associates ("GCA") also provided updated reserves estimates during the quarter which showed proved and probable reserves at Carnarvon's Thailand concessions totalling more than 20 million barrels net to Carnarvon. This comprised proved reserves of 4.7 million barrels plus probable reserves of 15.7 million barrels.

This updated assessment by GCA includes another year of production data and provides us with a much better understanding of this series of unconventional volcanic reservoir oil fields giving us greater confidence in the assessment of remaining oil. Importantly, a greater percentage of more conventional sandstone reservoirs were completed in the quarter which will mean a longer life of steady production for Carnarvon. The Joint Venture plans to bring more sandstone wells into production in the future to achieve a more steady production profile. However these wells produce at lower rates than wells producing from the fractured volcanic reservoirs and will take time to build on overall production levels.

During the June 2011 quarter the Joint Venture plans to drill six to eight wells in the L33/43 and L44/43 fields, as stipulated in the company's operations update, released 10 February 2011. As covered later in this report, Carnarvon's production is forecast to be less than its target of 1.0-1.5 million barrels during the June 2011 financial year.

## RESERVES IN THAILAND (IN L44/43 & L33/43 CONCESSIONS)

(Carnarvon 40% and non-operator)



*Reserves Summary showing the current spread of reserves more evenly distributed among the 12 major producing fields*

At the end of the 2010 calendar year, proved and probable reserves at Carnarvon's Thailand concessions were in excess of 20 million barrels. This comprised proved reserves of 4.7 million barrels plus probable reserves of 15.7 million barrels.

The independent auditors, Gaffney, Cline and Associates, estimate the net present value of proved and probable reserves for Carnarvon after tax for the three concessions in Thailand, using forecast oil prices and discounted at 10%, at A\$307 million. This represents A\$0.45 per Carnarvon share, based on the current 687.8 million shares outstanding and an exchange rate of A\$1.00 / US\$1.04.

Thailand proved plus probable crude oil reserves at 31 December 2010 reflect the following:

- Discovery in 2010 of the WBEXT field in Concessions L44/43 & L33/43 with oil sales commencing in August 2010 and 5.5 million barrels of proved and probable reserves assigned at 31 December 2010.
- Discovery in 2010 of the L33 oil field in Concession L33/43 with oil sales commencing in November 2010 and 1.9 million barrels of proved and probable reserves assigned at 31 December 2010.
- Downward reserve revisions to proved and probable reserves, mainly at Na Sanun East Central and NSE-F1 fields in Concession L44/43, of 10.5 million barrels at 31 December 2010. This downward revision was the result of lower than expected production performance related mainly to a higher than initially estimated oil / water contact throughout the Na Sanun East Central and NSE-F1 fields and a natural gas cap in the eastern portion of the NSE-F1 field.

## PRODUCTION REVENUE IN THAILAND (IN L44/43 & L33/43 CONCESSIONS)

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### (Carnarvon 40% and non-operator)

Oil sales and revenues net to Carnarvon for the past two quarters were as follows:

	Mar 11 Quarter	Dec 10 Quarter	Qrtly % Changes
Net sales revenue (A\$000)	9,987	17,706	(44%)
Net sales volumes (bbls)	109,960	243,366	(55%)
Average sale price achieved (A\$/bbl)	90.82	72.74	25%
Net average daily volume (bopd)	1,222	2,645	(54%)

As forecast, following strong quarterly production in the September 2010 and December 2010 quarters, production was lower in the March 2011 quarter. The reason this outcome was predicted was because Thailand's normal Government licence approval process required the shut-in of three key WBEXT production wells between the end of their production test period and the granting of their production licence.

Whilst these activities were included in Carnarvon's previous guidance and the granting of the production licence was as expected, the production rates from the wells, after they were reintroduced, were below the rates being produced when the wells were shut-in. There were two reasons for this outcome. Firstly, an operational decision was made to control the initial flow rates in an attempt to minimise the impact of water incursion. Secondly, production from the wells did not build up to the level expected and ultimately fell short of the rates achieved before the wells were shut in.

In addition to the WBEXT well results, production from the new wells drilled during the quarter were not sufficient to replace the production from natural field decline. Further information on the results of the wells drilled during the quarter are contained in the section headed "Drilling Activities in Thailand".

In light of recent well results and production outcomes, a number of studies have been commissioned to better understand the field's production characteristics and the factors impacting production. These studies will take some months to complete.

## **DRILLING ACTIVITIES IN THAILAND (IN L44/43 & L33/43 CONCESSIONS)**

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**(Carnarvon 40% and non-operator)**

Wells drilled and / or completed during Quarter:

<b>Well</b>	<b>Permit</b>	<b>Status</b>
WBEXT-1D	L44/43	Testing of sandstone reservoirs results in 0.7 MM scf/day of gas and separately 45 bopd oil
WBEXT-1C re-perforation	L44/43	Perforate new zone at 44 bopd
WBEXT-4A and Sidetracks	L44/43	Testing sandstone at 10 bopd oil
NSE-E4 and Sidetrack	L44/43	Testing of 10-25 bopd from volcanic reservoir
L44-F	L44/43	Discovered excellent thick sandstone reservoir No trapped oil at this location
L44-E	L44/43	Well suspended. To be deepened
Si Thep 3	L44/43	Suspended with oil and gas shows

During the March 2011 quarter eight individual boreholes (including sidetracks) were drilled and completed as outlined below. These were targeting a mix of appraisal and exploration targets.

The **WBEXT-1D** well, which was commenced prior to the Quarter, was drilled due east of the WBEXT-1 well pad with the primary objective of testing the multiple oil bearing sandstones encountered in the WBEXT-1B well at a subsurface location approximately 400 metres to the south. Initial testing was completed in two sandstone reservoirs with the lowermost zone testing gas at a maximum rate of approximately 0.7 million cubic feet per day (gross). A second shallower zone tested 35 degree API oil at approximately 37 BOPD (gross). Commingling of several reservoir sections has resulted in cyclic production of up to 75 bopd.

The **WBEXT-1C** discovery well that initially produced at approximately 3,500 bopd before starting to cut significant water, has been re-perforated in a new shallow zone resulting in stabilised rates of approximately 44 bopd. Plans are now to perforate the main WBEXT sand that was also encountered in WBEXT-1C and commingle it with the 44 bopd zone. This is an example where wells that have depleted or watered out can be re-perforated behind drill pipe at other reservoir levels where there is stacked pay.

**WBEXT-4A** and subsequent sidetrack **WBEXT-4AST1** were drilled targeting the as yet unproven WBV3 volcanic. The wells encountered the volcanic section with no oil shows or drilling fluid losses observed (likely low permeability) while drilling. Subsequent wire line logging confirmed the zone to be tight. Testing of one of the sandstone reservoirs has commenced with modest rates of around 10 bopd.

## **DRILLING ACTIVITIES IN THAILAND (IN L44/43 & L33/43 CONCESSIONS) continued**

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The **NSE-E4** well was drilled from the NSE-E well pad across a large bounding fault to the east targeting a potential volcanic reservoir underlying the main NSE Central volcanic reservoir. A 30 metre thick volcanic was encountered at a depth of 1,088 metres TVD exhibiting good oil shows and high mud gas readings over the top 10 metres of this interval. Testing resulted in the recovery of minor quantities of 34 degree API oil in the early stages of the test followed by only formation water. The well appears to have been drilled in close proximity to a possible oil water contact with the follow up potential in a structurally higher position currently being evaluated.

The **L44-F** well was drilled to target conventional sandstone and unconventional volcanic reservoirs within a large, approximately 11 square kilometre structural closure at the sandstone reservoir level and approximately 13 square kilometre structural closure at the volcanic target reservoir level. The well is vertical and located approximately 4.2 kilometres southwest of the Wichian Buri oilfield and 1.8 kilometres due west and 100 metres up-structure from the POE-7 well drilled by the Joint Venture in 2006 that encountered over 50 metres of high quality sand at the L44-F sandstone target level, with oil shows interspersed throughout. The L44-F well encountered the thickest sandstones ever drilled in concession L44/43, but with an associated complete lack of effective top seal resulting in only water bearing reservoir. Whilst disappointing that no commercial oil was discovered, the presence of good quality sandstone reservoirs is encouraging for future significant conventional oil discoveries.

The **L44-E** well was drilled approximately six kilometres north of L44-F, structurally up dip, targeting thinner sands with more effective seal than those observed at L44-F. A volcanic zone approximately mid way through the planned total depth of the well was encountered at 740 metres with drilling mud losses of approximately 24 barrels per hour and elevated mud gas readings near the top of the volcanic interval. The decision was made to stop drilling and test the well which resulted in the recovery of only minor quantities of formation water. The well has been suspended and, as originally planned, will be drilled to the deeper sandstone reservoir targets later in 2011.

The **Si Thep-3 (ST-3)** well was drilled to target a sandstone prospect with no currently assigned reserves due west and adjacent to the proven Si Thep field in the southern portion of concession L44/43. The well failed to encounter reservoir quality sands and will be abandoned.

## DRILLING ACTIVITIES IN THAILAND (IN L44/43 & L33/43 CONCESSIONS) continued

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Wells drilled and / or completed subsequent to Quarter:

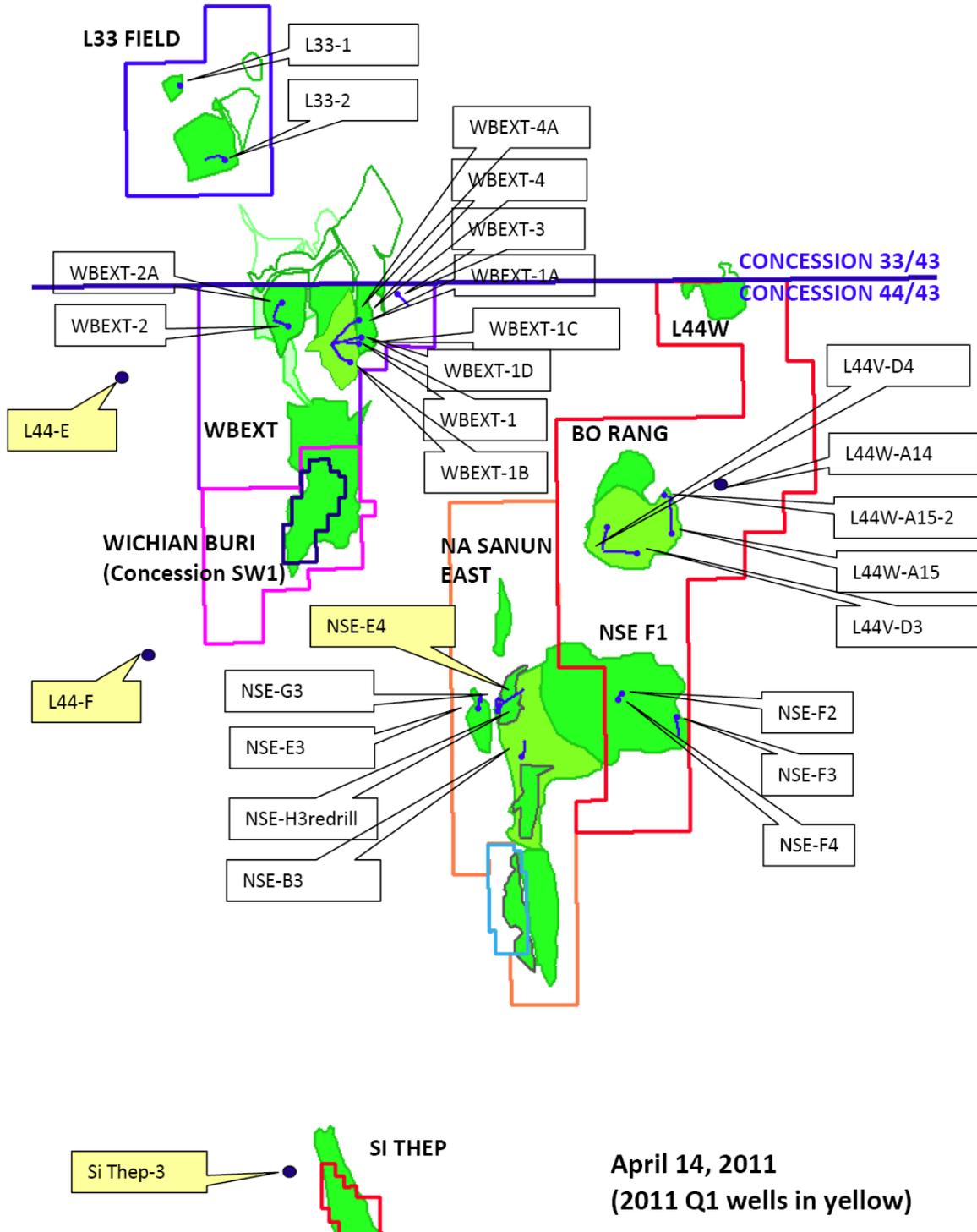
Well	Permit	Status
L33-2 Sidetracks	L33/43	Drilling on 2D seismic results in several unsuccessful sidetracks
L33-4	L33/43	Drilling ahead to WBV1 volcanic

The original **L33-2** discovery well was shut in at the end of the 90 production test at a rate of approximately 140 bopd with a high water cut. In order to quickly evaluate the WBV1 volcanic reservoir at a subsurface location 682 metres northeast and up structure from the WBV1 volcanic at L33-2 in an area defined as “prospective resources” in Gaffney Cline and Associates’ recent third party resource report, the original well was sidetracked, **L33-2 ST1**, with the primary volcanic reservoir encountered at a depth of 677 metres TVD, 28 metres high to the L33-2 discovery well, and exhibited high mud gas reading and oil shows over the upper 5 metres of a 37 metre thick volcanic section. Due to the lack of drilling fluid losses, the well was sidetracked again, **L33-2 ST2**, approximately 60 metres east to a location interpreted to be closer to the main bounding fault and more highly fractured. Unfortunately, the wellbore intersected to main bounding fault prior to encountering the top of the volcanic target as a result of poor fault resolution on the 2D seismic data that this well was drilled on.

A third sidetrack, **L33-2 ST3**, was drilled to the proven WBV1 reservoir 40 metres southeast of the original discovery well intersecting the WBV1 volcanic approximately 5 metres structurally lower than the original well but with drilling stopped 30 metres shallower than the base of the section encountered at L33-2. Testing resulted in initial oil cuts of approximately 30% that have since gone to 100% water. The well has been suspended.

The **L33-4** well, commenced subsequent to the Quarter, is currently drilling ahead towards the target WBV1 volcanic approximately 2.2 kilometres north of the L33-2 oil discovery, in an area assigned as prospective resources in Gaffney Clines most recent reserve report.

**Thailand 2010 Drilling – Concessions L33/43 & L44/43**



## EXPLORATION IN THAILAND

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### (a) L20/50 Concession – Thailand

(Carnarvon Petroleum 50% and Operator, Sun Resources 50%)

During the March 2011 quarter Carnarvon completed its drilling campaign in the L20/50 concession onshore Thailand. The drilling programme was designed to explore for technical outcomes that were intended to support further drilling in the concession. The results from the two wells were not as definitive as hoped but sufficient for the Joint Venture to review the existing seismic data in light of the well results with a view to determining future exploration in this concession.

The first well, Tapao Kaew, was plugged and abandoned after the well failed to encounter hydrocarbon bearing reservoirs. Several sands were intersected in the shallower sections however analysis of wireline logs, cutting samples, gas readings and other data indicates the sands are not hydrocarbon bearing.

The second well, Krai Thong, was plugged and abandoned after wireline testing of several zones of potential hydrocarbon bearing intervals proved water as the mobile fluid.

The third well, Chalawan, was deferred by the joint venture pending a review of the well results and reinterpretation of the seismic data in order to determine the next phase of exploration for this block. All three sites have been retained while the joint venture considers the program going forward.

Locations	Permit	Well Type
Tapao Kaew-1	L20/50	Unsuccessful exploration well – plugged and abandoned.
Krai Thong-1	L20/50	Unsuccessful exploration well – plugged and abandoned.
Chalawan-1	L20/50	Well deferred pending review of results to date.

### (b) L52/50 & L53/50 Concession Applications - Thailand

(Carnarvon Petroleum 50%, Pearl Energy 50% and Operator)

The Joint Venture continued to advance their exploration plans which include planning for the acquisition of 500 km of 2D seismic data across the two blocks to better delineate the hydrocarbon bearing potential of the sedimentary basin and also to investigate the numerous leads already identified. The acquisition of this seismic data is expected to commence mid-2011.

While both permits are lightly explored the potential is significant being on trend and in a similar basin to an offshore field that flowed up to 10,000 bopd from a single well, being the Nang Nuan-1 well.

The L52 and L53 Concession Applications were granted in February of 2010 and the first year work program, consisting primarily of studies, has been completed. The work to date, including detailed surface geological mapping and studies of surface oil seeps, has given the Joint Venture confidence in accelerating planned exploration programme.

## EXPLORATION IN AUSTRALIA

### (a) WA-435-P, WA-436-P, WA-437-P and WA-438-P – Australia Offshore NW Shelf (Carnarvon Petroleum 50%, Finder Exploration 50% and Operator)

The WA-435-P, WA-436-P, WA-437-P and WA-438-P permits contain the Phoenix-1 and Phoenix-2 gas discoveries that have the potential to contain several Tcf's of gas close to onshore pipeline infrastructure at Port Hedland. Central to the appraisal of these discoveries is the acquisition of new 3D and 2D seismic data.

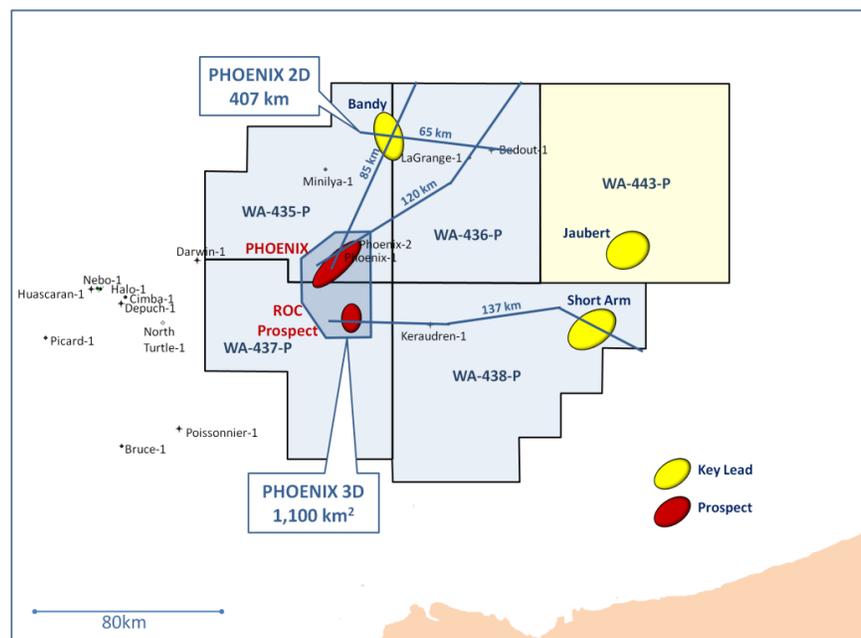
The Phoenix 3D & 2D seismic survey finished acquisition on 16 February 2011 with delivery of the processed 3D dataset expected in July 2011.

The 3D seismic data has been acquired specifically to assist in the appraisal of the Phoenix gas field in WA-435-P and to target other identified gas prospects in WA-435-P and the adjacent WA-437-P.

In conjunction with the 3D seismic programme, 407 km of 2D seismic data was also acquired, providing important well ties and new data over key leads in the area.

The operator of these permits, Finder Exploration, recently presented a pre-farm-out marketing presentation at the 2011 PESA Deal Day, held in conjunction with the APPEA conference. A copy of this presentation can be found on Carnarvon's website: [www.carnarvon.com.au](http://www.carnarvon.com.au) under the heading of Investor Updates.

The four permits are situated in the north-western part of the Bedout Sub-basin within the greater Roebuck Basin, offshore Western Australia. The blocks lie in an under-explored area that has received little recent attention, between the prolific Carnarvon Basin hydrocarbon province to the southwest and the Browse Basin to the northeast. The town of Port Hedland lies approximately 175 km to the south of the permits and Broome lies 250 km to the northeast. Water depths range from 35 to 265 metres and the permits cover a very large area of more than 21,000 km<sup>2</sup> (268 graticular blocks).



*Phoenix 3D & 2D seismic survey area*

## EXPLORATION IN AUSTRALIA

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Only six wells have been drilled in the permits to date. The two wells, Phoenix-1 and Phoenix-2, drilled on the large Phoenix structure in WA-435-P both intersected extensive gas columns of over 700m metres within lower-porosity, mid-Triassic stacked reservoirs. In particular, Phoenix-1 recorded 110 metres of net gas-bearing reservoir. However, further work is required to determine whether the gas discovery at Phoenix could flow at commercial rates. A larger, untested structure in WA-435-P, Phoenix South prospect, lies directly on trend with the Phoenix structure, 5 to 15 km to the southwest. Further to the southeast in WA-437-P lies yet another large, untested structure, the Roc prospect. Regional geology suggests that reservoir quality improves southward toward these prospects, but this model will need to be confirmed by drilling.

These Triassic structures have significant potential, of the order of several Tcf's of recoverable gas and if exploration and appraisal drilling are successful could add significantly to Carnarvon's share price..

### **(b) WA-443-P– Australia Offshore NW Shelf (Carnarvon Petroleum 100% and Operator)**

No previous drilling has taken place in the WA-443-P block. A large Middle Triassic prospect has been interpreted which is a faulted anticlinal closure. The structural form and size of the prospect are comparable to the adjacent Phoenix group of potentially large gas accumulations. Carnarvon secured this new permit with a firm programme over three years to reprocess and interpret 1,400 km of 2D seismic. Success at Phoenix would upgrade this permit considerably, with Carnarvon possessing 100% equity.

Geological and geophysical studies are being carried out in conjunction with similar work in the Phoenix permits.

### **(c) WA-399-P – Australia Offshore NW Shelf (Carnarvon Petroleum 13%, Apache Energy Limited 60% and Operator, Jacka Resources 15% and Rialto Energy 12%)**

The "Gazelle" 3D seismic acquisition programme covering the entire permit was completed on schedule on 11 March 2011. The full cost of the seismic data acquisition programme was funded by Apache Northwest Pty Ltd under a Farm-in Agreement previously notified to ASX on 14 July 2010.

The WA-399-P exploration permit is situated offshore Western Australia within the Carnarvon Basin. The block is adjacent to the Pyrenees Oil development, a Joint Venture between BHP Billiton and Apache PVG Pty Ltd, which commenced oil production in February 2010. Nearby, there are several producing oil fields including Enfield and Vincent/Van Gogh, as well as the Macedon gas field, currently under development, and a number of other oil and gas field discoveries.

The Joint Venture is currently awaiting the completion of the seismic processing and interpretation before considering the future exploration programme for this permit.

## **EXPLORATION IN NEW ZEALAND**

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### **PEP 38524 – Offshore New Zealand**

(Carnarvon Petroleum 10%, AWE 60% and Operator, ROC 20% and Kea Petroleum 10%)

The Joint Venture is currently assessing the results of the Tuatara-1 well drilled in the September 2010 quarter before determining the form in which further exploration activities will be undertaken.

## **EXPLORATION IN INDONESIA**

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### **Rangkas PSC – Onshore Indonesia**

(Carnarvon Petroleum 25%, Tap Oil 24%, Lundin Petroleum 51% and Operator)

During the March 2011 quarter the Joint Venture continued its planned acquisition of nearly 500 km of 2D seismic data. This programme was successfully completed on 1 April 2011.

These seismic data will enhance the 1,000 km of existing reprocessed 2D seismic data to refine geophysical mapping of some 11 significant leads. Seismic interpretation will also compliment a number of reservoir and basin modelling studies undertaken recently.

The Rangkas Concession covers an area of 3,977 km<sup>2</sup> and is located onshore west Java, southwest of Jakarta. Previous exploration seismic and drilling in the block, along with the presence of surface oil seeps, indicates the presence of an active petroleum system.

## **CORPORATE**

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### **Cash Balance**

Carnarvon's consolidated cash at the March 2011 quarter end was A\$23.7m, compared to A\$28.8m at the end of the previous quarter. These balances include cash held as security in relation to bank guarantees and minimum cash holding requirements by Thailand authorities. As at 31 March 2011 cash held as security in relation to bank guarantees and minimum cash holding requirements by Thailand authorities was \$1.3m.

The decrease in cash compared to the previous quarter was due mainly to exploration expenditure on the two L20/50 exploration wells in Thailand together with the cost of the Australian and Indonesian seismic activities.

Cash in the June 2011 quarter is expected to be lower than the March 2011 balance as a result of the completion of the Phoenix and Rangkas seismic programmes.

## OUTLOOK

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### (a) L44/43 & L33/43 Concessions - Thailand

During the June 2011 quarter the Joint Venture plans to drill six to eight wells from among the following locations:

Locations	Permit	Well Type
WBExt Sandstone	L44/43	3-8 wells – Appraisal of WBExt-1B (tested 550 bopd from sandstone)
WBExt Volcanic	L44/43	2-5 wells – Appraisal of WBV1 and WBV2 (tested up to 5,300 bopd)
L33-1 / L33-2	L33/43	4 well appraisal program
Na Sanun Volcanic	L44/43	Deeper volcanic below main producing volcanic in Na Sanun oil field
Bo Rang A	L44/43	Minimum two appraisal wells
Bo Rang B	L44/43	Appraisal well
NSE-F1 Area	L44/43	Horizontal appraisal well with follow up potential
NSE North	L44/43	Minimum two wells targeting appraisal of 2007 discoveries
NSE Central	L44/43	Appraisal of volcanic below main producing reservoir
NSE South	L44/43	Exploration and appraisal of shallow volcanic
L44-W	L44/43	Appraisal / development of 2009 discovery

*\* Final well numbers, locations and order of drilling are subject to ongoing Joint Venture discussion and Thai Department of Mineral Fuels approvals.*

The joint venture undertakes a continuous drilling campaign and has been using the Elite Drilling Rig (E-01) for the bulk of the work in the March 2011 quarter. This rig will continue drilling through the June 2011 quarter and likely the remainder of the 2011 calendar year. The rig is working efficiently and is under long term contract.

The near term focus will be further appraisal and development of reserves in and around the WBExt field (comprising sandstone and volcanic reservoirs in both the L33/43 and L44/43 exploration concessions), the L33-1 and L33-2 fields and the main Na Sanun East (NSE) oil field.

During the nine months to 31 March 2011 these fields have produced 597, 903 barrels net to Carnarvon. The company expects production in the June 2011 quarter to be in the range of 100,000 to 250,000 net to Carnarvon, resulting in financial year guidance in the range of 700,000 to 850,000 barrels net to Carnarvon. The outcome will be dependent on the results of the above wells and the performance from current wells.

## OUTLOOK

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Historically volcanic reservoir results have been difficult to predict accurately due to the variability in initial flow rates (with some producing as high as 5,300 bopd) and the variability in decline rates. The Joint Venture intends to introduce a greater proportion of production from sandstone reservoir wells to mitigate some of the variability arising from volcanic reservoir well production. These sandstone wells typically do not have the same high initial flow rates and hence short payback period, compared with the fractured volcanic reservoir wells, but do provide less volatility and greater levels of predictability. In the medium term Carnarvon is looking to work with the Operator to determine ways to increase production.

### **(b) WA-435-P, WA-436-P, WA-437-P and WA-438-P – Australia Offshore NW Shelf**

The seismic data is currently undergoing processing and it is anticipated that the data will be delivered in July 2011. The Joint Venture is also undertaking a rock physics analysis and reservoir characterisation study that is expected to be completed in August 2011. The Joint Venture will then oversee the processing and interpretation of these new seismic data before seeking a partner to drill a number of wells to test this potentially significant multi Tcf gas field. At this stage the farm-out process is anticipated to commence in the second half of 2011 with the objective of drilling the first well in 2012.

Ahead of marketing of the farm out, the operator of these permits, Finder Exploration, recently presented the farm-out opportunity at the 2011 PESA Deal Day, held in conjunction with the APPEA conference. A copy of this presentation can be found on Carnarvon's website: [www.carnarvon.com.au](http://www.carnarvon.com.au) under the heading of Investor Updates.

### **(c) L20/50 Concession - Thailand**

Well results are being incorporated into a seismic re-interpretation study to determine the next phase of exploration for this block. All three sites have been retained while the joint venture considers the program going forward.

## Abbreviations

API	American Petroleum Institute gravity measure
A\$	Australian dollars
Bopd	Barrels of oil per day
Bbls	Barrels of oil
CVN	Carnarvon Petroleum Limited
DMF	Department of Mineral Fuels Thailand
Km	Kilometres
Km <sup>2</sup>	Square kilometres
m	Millions
Qtr	Quarter
TVD	True vertical depth
Tcf	Trillion cubic feet (gas)