

# Roc-1 well update

18 January 2016



Carnarvon Petroleum Limited ("Carnarvon") (ASX:CVN) provides the following update on drilling operations as advised by the operator of the Roc-1 well, Quadrant Energy.

## Progress

Since the last report the wireline logging program has been successfully completed and the rig has left the Roc-1 location.

Laboratory analysis of the gas recovered from the well has confirmed condensate rich gas. Important information from the initial analysis is the confirmation of a condensate to gas ratio at the top end of the range previously announced of 20 to 40 barrels per million cubic feet of gas.

## Forward Plan

Carnarvon estimates it will be in a position to advise the market on the expected range of recoverable volumes of gas and condensate within the next six weeks.

Carnarvon's joint venture partner, privately owned Finder Exploration, recently released on its website preliminary information on the well results. In the interests of ensuring that stakeholders in the Roc-1 well possess similar information relating to the well, the release of Finder Exploration is attached for the information of Carnarvon shareholders. Carnarvon reiterates that the information provided is preliminary, subject to the completion of well data analysis and does not comply in all respects with the disclosure standards of information prepared for release to the market by Carnarvon. As such, shareholders should exercise caution in their use of the information released by Finder Exploration.

Appreciating the Roc-1 well has just completed and data from the well needs to be properly assessed, a decision on the timing and location of the Roc-2 well has not yet been considered by the joint venture. This will be done in due course and will be subject to joint venture and government approvals and rig availability.

## Cost Estimate

The cost for the Roc-1 well was on budget inclusive of success case logging, sampling and coring costs. Under previous farm-out agreements, in exchange for equity in the permits, Carnarvon bore no cost for this well.

Under the above mentioned farm-out agreements there remains a carry contribution towards any further drilling or testing in the WA-437-P permit of approximately A\$30 million to A\$40 million (gross).

## Managing Director's comment

Carnarvon's Managing Director, Adrian Cook in commenting on the well results said *"On behalf of the Carnarvon board and management I extend our appreciation to the Quadrant Energy team for their efforts in successfully executing these drilling operations in a safe, timely and cost effective manner."*

*I'm becoming increasingly encouraged by the initial well results that we've seen to date, particularly the new information pointing to a strong condensate to gas ratio. Whilst significant work will be undertaken in the coming months, a key priority will be to complete an estimate of the recoverable volumes involved, a process that is currently underway."*

## Location

The Roc-1 well is located in WA-437-P, approximately 20km south-east of the 2014 Phoenix South-1 oil discovery, and around 150km north of Port Hedland.

The equity interest holders in WA-437-P are:

<b>Carnarvon Petroleum</b>	<b>20%</b>
Quadrant Energy ( <i>Operator</i> )	40%
JX Nippon	20%
Finder Exploration	20%

Yours faithfully



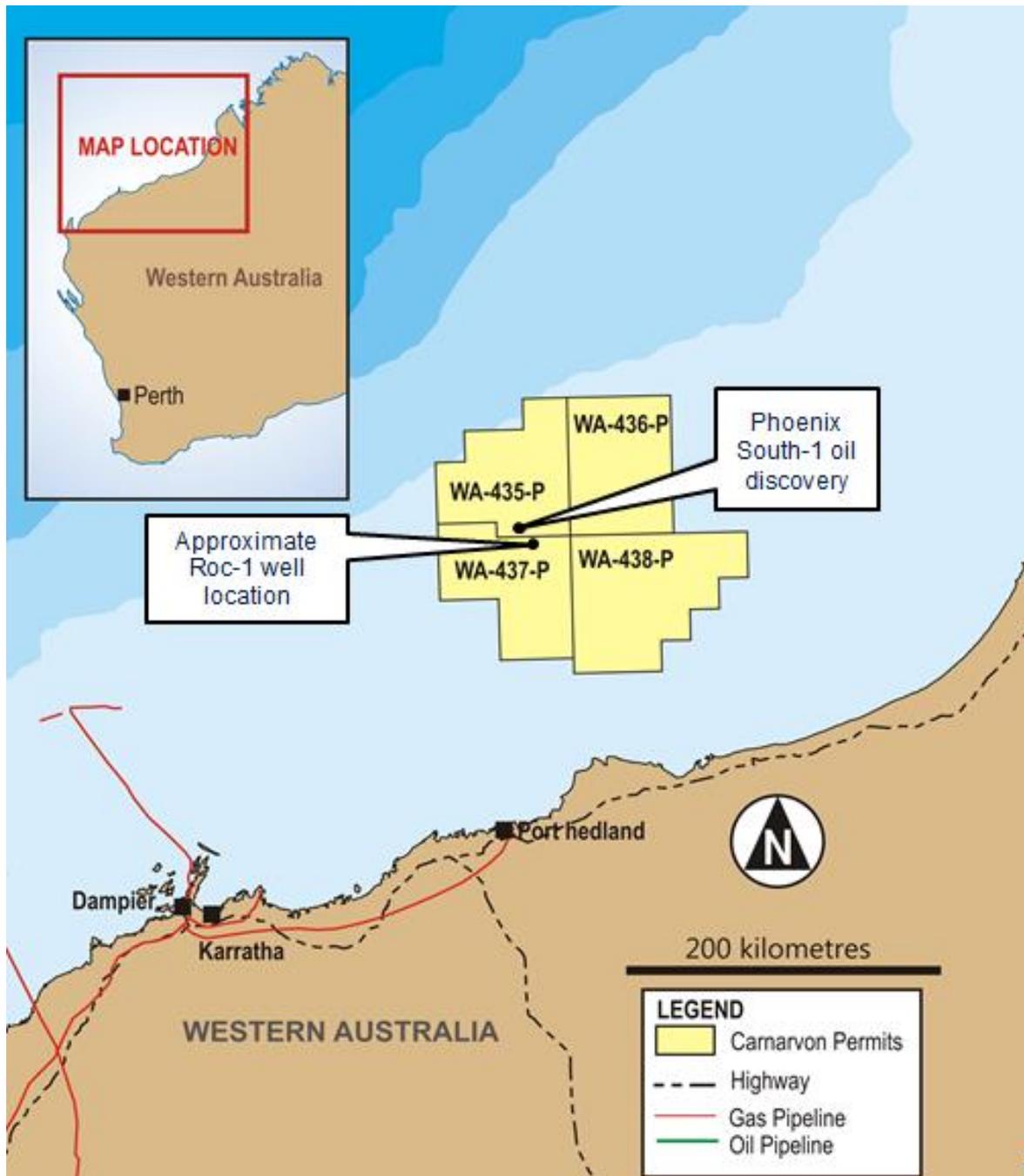
**Adrian Cook**  
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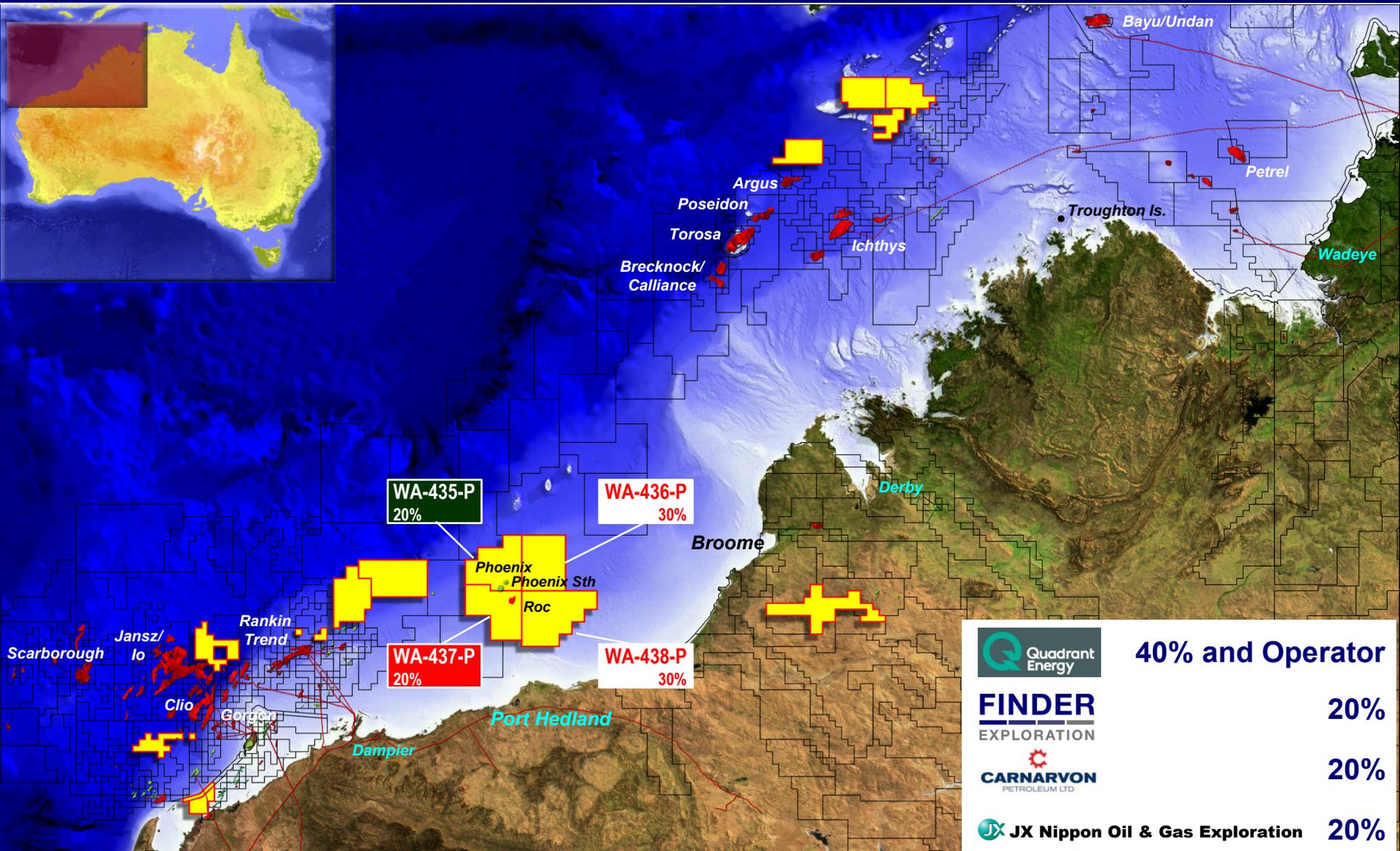




# Roc-1 preliminary results

January 2016

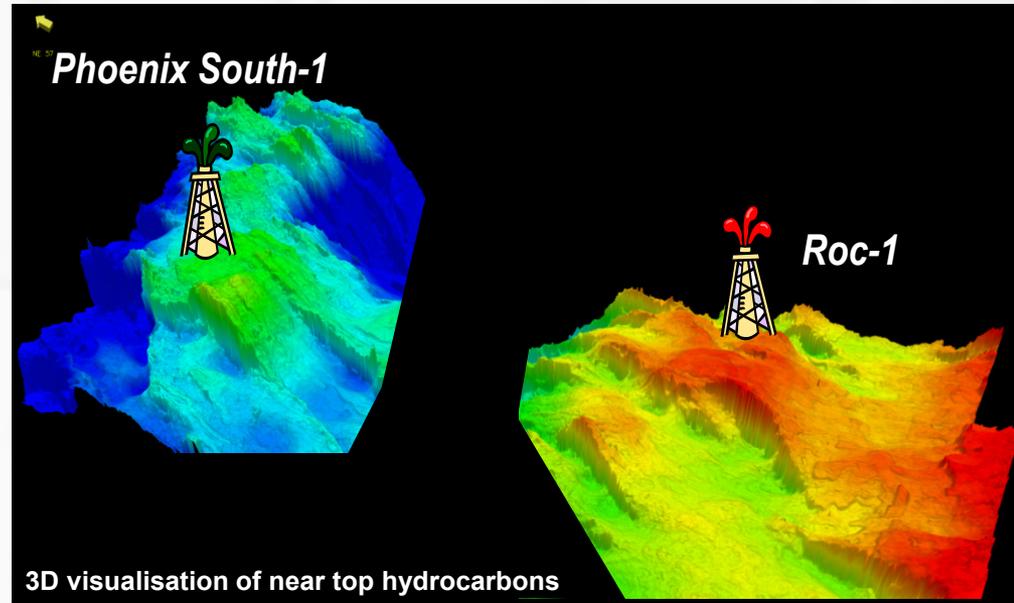
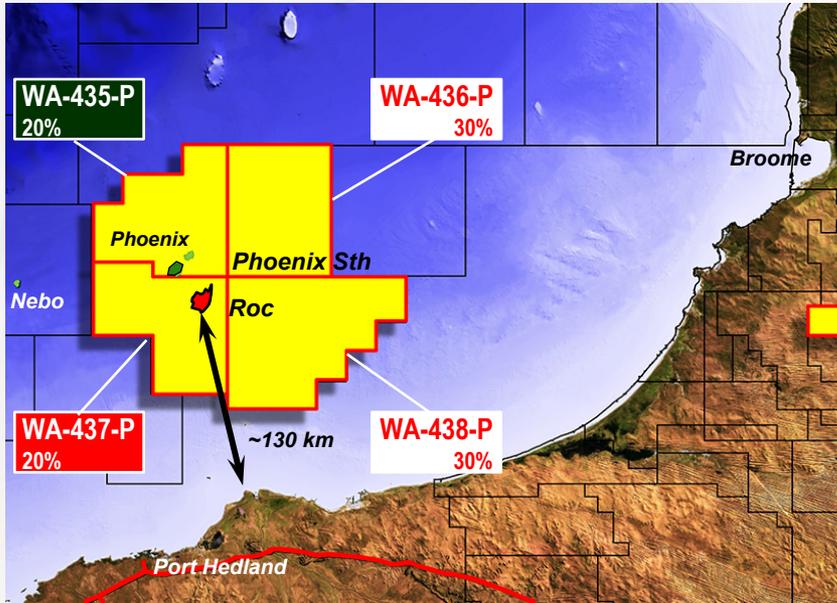
# Phoenix South oil field (2014) and Roc gas field (2015)



	<b>40% and Operator</b>
	<b>20%</b>
	<b>20%</b>
	<b>20%</b>

**Bedout Sub-basin – 100% success in emerging hydrocarbon province!!**

# Phoenix South oil field (2014) and Roc gas field (2015)



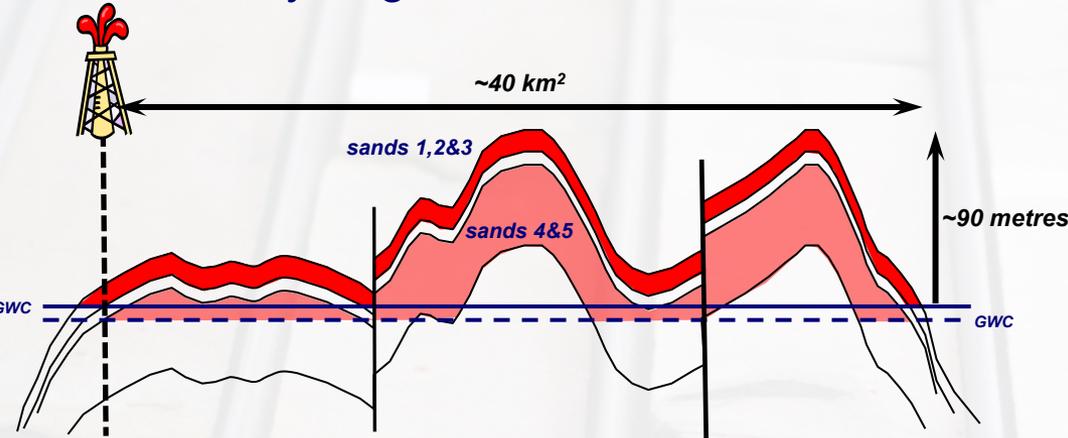
- all wells drilled on 3D seismic data within this emerging and prolific hydrocarbon province have been successes:
  - 2014 Phoenix South-1 **oil discovery (up to 300 mmstb OOIP\*)**
  - 2015 Roc-1 **gas discovery (up to 1.2 TCF OGIP\*)**
- **Roc-1 – proven gas**
  - reservoir sands of ~10%  $\phi$  with 10s -100 mD permeability & strong water drive
  - 3 gas columns intersected but pressure offset is only ~12 psi at 4,400 metres
  - initial assessment - liquids rich gas (40-60 bbls/mmcf) with low CO<sub>2</sub> & no H<sub>2</sub>S

\* OOIP is "Original Oil in Place" and OGIP is "Original Gas in Place"

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# Bedout Sub-basin – Roc-1 Finder’s initial assessment

- crestal test of primary target was water wet (Phoenix South oil pay level)
- wet gas pay was intersected at the secondary target

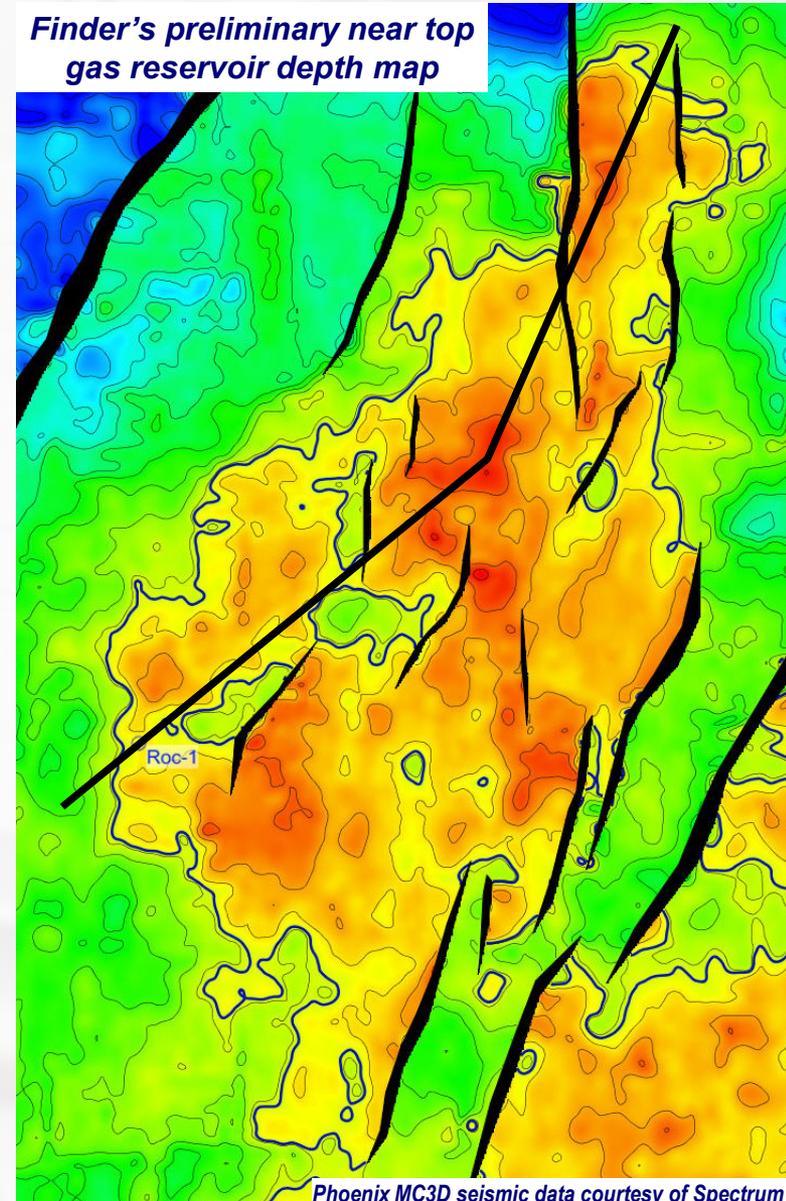


**Reservoir section schematic –**  
*Note: significant vertical exaggeration*

- intersection ~90 metres down-dip from crest with ~40 km<sup>2</sup> up-dip potential
  - 400 BCF OGIP\* in sands 1, 2 & 3
  - 1.2 TCF highside OGIP\* if deeper sand is gas filled up-dip (sands 4 & 5)
- determines the limits of the Roc gas field

\* OGIP is “Original Gas in Place”

**Finder’s preliminary near top gas reservoir depth map**

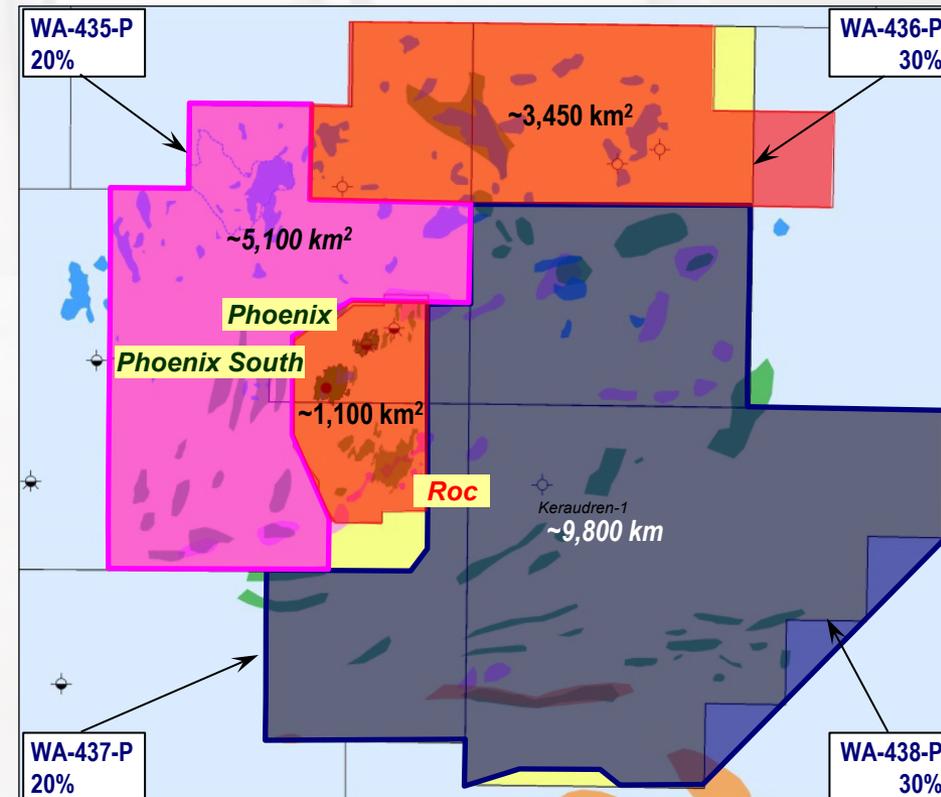


Phoenix MC3D seismic data courtesy of Spectrum

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# Bedout Sub-basin – significant upside and running room

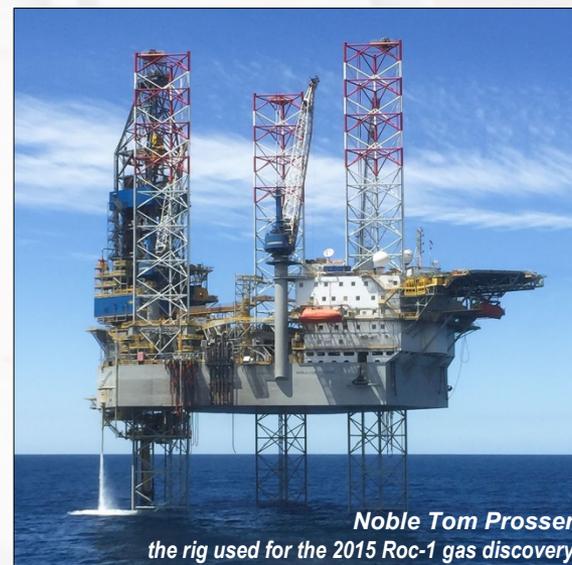
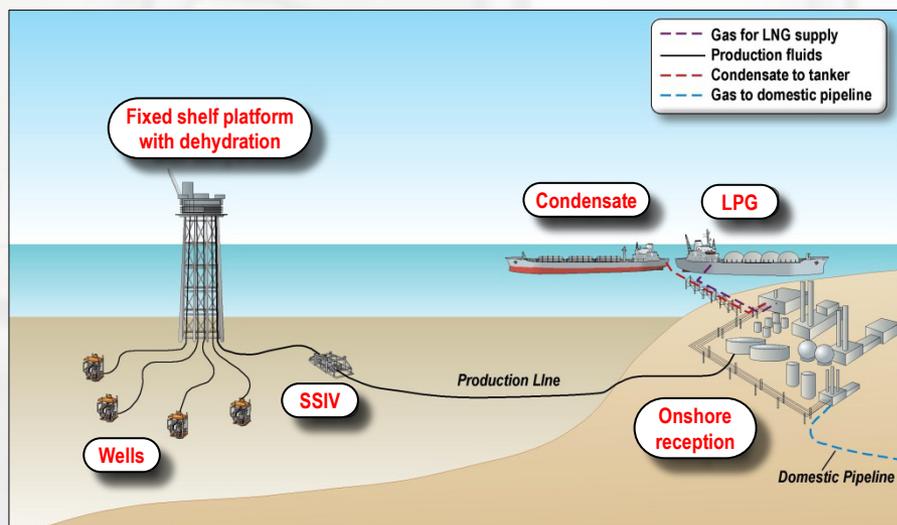
- significant oil in the system, ie
  - Phoenix South oil field
  - Roc-1 has excellent oil shows:
    - above the Phoenix South-1 pay levels;
    - in the gas reservoir; and
    - bottom 50 metres with possible sand development at TD!
- ~22,000 km<sup>2</sup> acreage captures the known limits of the petroleum system
- ~60 further prospects & leads > 10 km<sup>2</sup> currently identified
- ~4,600 km<sup>2</sup> of existing 3D data
- plus current data gathering phase:
  - ~5,100 km<sup>2</sup> new 3D seismic data &
  - ~9,800 km 2D data
- de-risked exploration & appraisal drilling – next step is Roc-2
- ~US\$5 million net drill carry remaining



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# Bedout Sub-basin – many commercialisation options

- Bedout Sub-basin offers a naturally hedged portfolio
  - gas for the domestic market and/or oil depending on the economic cycle
- Roc-1 commercial viability – simple, low cost development close to infrastructure
  - initial indications of high quality gas
  - jack-up water depth and ~130 km offshore from the coast north of Pt Hedland – similar to Quadrant’s Devil Creek Gas Plant and the 450 BCF Reindeer gas field



- Roc-1 commercialisation options
  - existing DomGas suppliers;
  - LNG producers with a DomGas obligations; plus
  - potential Pilbara resource ventures and local power generation

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