

## Xanadu Discovery Confirmed

25 September 2017

### HIGHLIGHTS

- Logs run over a 330m section of the Xanadu well confirm reservoir quality sand intervals throughout the Irwin River Coal Measures (IRCM) with porosities ranging 15% to 16%.
- Oil was obtained via a testing tool from 4.6m of net pay in the top 'A' sand, one of three discrete sand intervals (A, B, C) at top of IRCM.
- Analysis of oil samples obtained from Xanadu-1 expected to substantiate Cliff Head analogue with oil assay results expected by end of week.
- Norwest Energy to lodge Discovery Notice with Minister of Mines, Industry Regulation and Safety.
- The Joint Venture will now plan for a lateral well through the oil column.

"We are very excited that we have proven movable oil and can subsequently confirm Xanadu well as an oil discovery. We look forward to working with the JV partners to determine the best way to monetise the field." – David Messina, Managing Director, WBE.

### BACKGROUND

Xanadu-1 is a conventional oil well located in TP/15, an offshore permit located in WA state waters, approximately 1.3km from the coastline. Xanadu-1 is a deviated well, drilled from an onshore surface location situated approximately 40km south of the township of Dongara, Western Australia.

The Xanadu-1 well was spud on 4<sup>th</sup> September 2017, and reached a total depth of 2035mMDRT on Sunday 17<sup>th</sup> September, when it was confirmed that the Xanadu-1 well had intersected hydrocarbon bearing intervals as demonstrated by elevated gas readings, oil shows, fluorescence and cut-fluorescence whilst drilling.

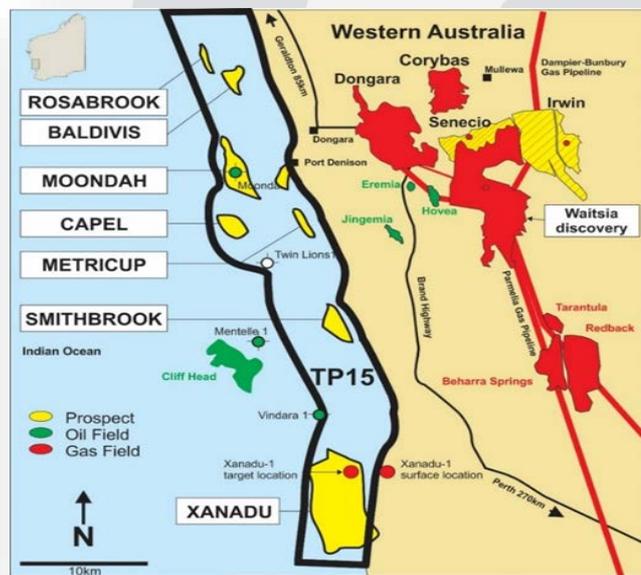


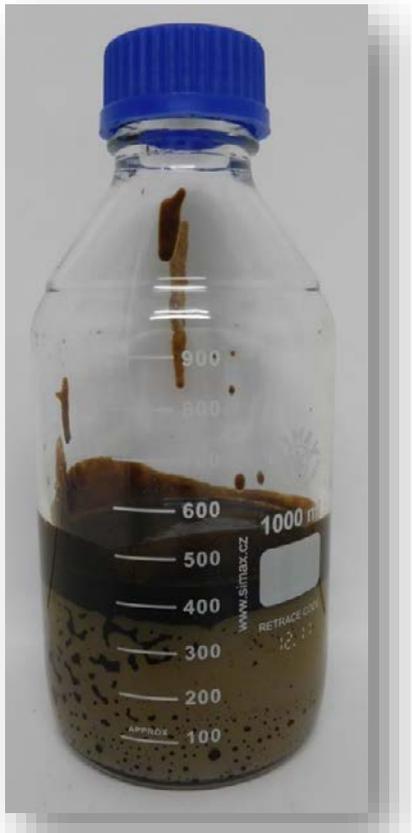
Figure 1 -Xanadu Location Map

## PROGRESS

Since the last report, a suite of logs over a 330m section of the well have been acquired by service provider Schlumberger. The logging suite included:

- Magnetic resonance logging in combination with MDT pressure and fluid sampling;
- Porosity logs;
- Full hole diameter 3D radial pressure and fluid sampling via the Schlumberger Saturn Probe tool.

This logging has delineated net and gross reservoir sections within the well, provided greater understanding of the reservoir characteristics and yielded quality oil samples.



*Figure 2 -Xanadu-1 oil and oil-cut mud recovered from 1576.9 mMDRT in the Irwin River Coal Measures "A" sand with the Schlumberger Saturn Probe tool. Oil samples from this zone have been sent for analysis in Perth.*

## RESULTS

The reservoir of interest is the top section of the Irwin River Coal Measures (IRCM). The Dongara Sandstone was not encountered at this well location, with the IRCM found directly below the base of the Kockatea Shale at 854mTVDSS. Reservoir quality sand intervals were encountered throughout the IRCM with porosities generally ranging from 15% to 16%.

Three discrete sand intervals ("A", "B" and "C") at the top of the IRCM have log-derived hydrocarbon saturations in excess of 40%. Fluorescence in rock cuttings observed while drilling and log-derived hydrocarbon saturations persist for 120m in sands below these upper zones but the lower intervals are water-bearing. MDT pressure sampling has established a high confidence water gradient and water was flowed and sampled via a wireline tool from the "B" sand despite the high oil saturation.

| Reservoir Unit | Gross True Vertical Thickness (m) | Net Sand True Vertical Thickness (m) | Oil Saturation | Porosity | Net Pay (m) |
|----------------|-----------------------------------|--------------------------------------|----------------|----------|-------------|
| "A"            | 7.7                               | 4.6                                  | 66%            | 15%      | 4.6         |
| "B"            | 6.0                               | 2.8                                  | 46%            | 16%      | N/A         |
| "C"            | 4.3                               | 2.7                                  | 41%            | 17%      | N/A         |

Oil was pumped from the "A" sand utilising the Schlumberger Saturn pressure and fluid sampling tool and three downhole samples collected. Based on the log data, pressure points and recovered fluid samples, a lowest known oil depth of 871.8mTVDSS and a highest known water depth of 880.2mTVDSS have been established for the Xanadu Field.

Seismic data indicate that it is possible to drill an up-dip location which could allow the higher quality sand units deeper in the section to be penetrated above the inferred oil-water contact. Erosion of the upper, poorer quality sands on a structural high similar to that observed at the Cliff Head Oil Field would further increase the chance of intersecting the oil column in better quality reservoir.

Excellent reservoir quality was also encountered in the High Cliff and Kingia Sandstone sections, although oil shows were not encountered in this interval. This does provide future exploration upside, with evidence that oil has passed through this system. These are the same reservoir units that host the Waitsia Gas Field operated by AWE Limited.

Results at Xanadu-1 indicate that the assumption of the producing Cliff Head Oil Field being the primary analogue are correct. Analysis of the oil samples obtained from Xanadu-1 is expected to substantiate this with oil assay results expected by the end of the week.



Figure 3 - Xanadu-1

## FORWARD PLAN

The Cliff Head Oil Field discovery well Cliff Head-1 identified a gross 4.8m oil column at the top of the IRCM below the Kockatea Shale – the same stratigraphy encountered at Xanadu-1. Cliff Head-1 was immediately side-tracked to a more favourable up-dip location where a 36m gross oil column was intersected.

Xanadu-1 was not initially designed to be completed as a producing well and now, with a better understanding of the stratigraphy, a side-track well similar to Cliff Head-1 is considered an excellent option, with the top section down to 971mMDRT already cased and cemented in place (approximately 250m vertically above the zone of interest).

The rig is currently in the process of suspending the well. Based on results, and armed with much greater knowledge, the Joint Venture is planning to drill an up-dip side-track appraisal well from the casing shoe, with the potential to be completed as a commercially producing well. The opportunity to also drill a horizontal production well from this location will be studied, with results depending on a final determination of reservoir and oil properties feeding into a production model and cash-flow forecast.



Figure 4 - Enerdrill Rig-3 - Xanadu-1

Based on the current understanding of the structure, there is an excellent chance of finding a significantly thicker column in an up-dip location which can be reached from the current drilling pad.

The Operator is in the process of lodging a Discovery Notice with the Minister for Mines, Industry Regulation and Safety. This is a requirement under the Guidelines to Petroleum and Geothermal Energy Resources and Petroleum (Submerged Lands) Regulations 2015.

## WELL DETAILS

|                             |  |
|-----------------------------|--|
| <b>Permit</b>               | TP/15                                  |
| <b>Well Name</b>            | Xanadu-1                               |
| <b>Well Location</b>        | GDA 94: 29°33'29.117"S114°58'42.074"E  |
| <b>Type of Well</b>         | Deviated                               |
| <b>NWE Working Interest</b> | 25%                                    |
| <b>Geology</b>              | Interbedded sequence of shale and sand |

## TP/15 JOINT VENTURE

| <b>JV Participant</b>                         | <b>ASX Code</b> | <b>Percentage Interest</b> |
|---|-----------------|----------------------------|
| Norwest (via subsidiary) (Operator)           | ASX:NWE         | 25%                        |
| Triangle (Global) Energy Ltd (via subsidiary) | ASX:TEG         | 30%                        |
| Whitebark Energy Ltd (via subsidiary)         | ASX:WBE         | 15%                        |
| 3C Group IC Limited (via subsidiaries)        |                 | 30%                        |

### For further information:

David Messina

Managing Director

Ph: +61 8 6555 6000

E: david.messina@whitebarkenergy.com

### Media enquiries:

Andrew Rowell

Cannings Purple

Ph: +61 8 6314 6300

E: arowell@canningspurple.com.au

## About Whitebark Energy

Whitebark Energy Limited (ASX: WBE) is a Perth-based company with production and exploration assets in Canada and Australia.

In Canada, the Company holds a 20% working interest in the producing Point Loma joint venture project in the state of Alberta, via an unincorporated joint venture with TSXV-listed Point Loma Resources Limited.

The Point Loma project is a well-established producer, with existing gas processing facilities and transport pipelines into commercial markets. Whitebark's aim for the brownfields Point Loma project is for a significant increase in low-cost oil and gas production through the workover and tie-in of behind-pipe reserves and horizontal development drilling.



In Western Australia, the Company has agreed to fund 20% of the Xanadu-1 exploration well in the Perth Basin to earn 15% of the Xanadu prospect and permit TP/15. The Joint Venture with permit partners Norwest Energy, Triangle Energy Group and 3C Group spud Xanadu-1 on 4 September 2017.

Through wholly owned subsidiary Latent Petroleum, Whitebark holds a majority interest (57%) in the 1.5tcf (refer ASX release dated 19 November 2015) undeveloped Warro Gas Project, about 200km north of Perth. Alcoa of Australia is Latent's joint venture partner and holds 43% of the Warro project equity. The farm-in program includes a drilling program and seismic surveys which could see Alcoa earn a total 65% interest, with Latent retaining 35%.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of contingent resource estimates that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

|                       |             |                                   |                |
|-----------------------|-------------|-----------------------------------|----------------|
| <b>ASX Code:</b>      | <b>WBE</b>  | <b>Market Capitalisation:</b>     | <b>A\$11.5</b> |
| <b>Issued Shares:</b> | <b>835m</b> | <b>Cash (as at 30 June 2017):</b> | <b>A\$5m</b>   |