OIL BASINS LIMITED
ABN 56 006 024 764

18 December 2012

ASX Markets Announcements
Australian Stock Exchange Limited
10th Floor, 20 Bond Street
Sydney NSW 2000

Dear Sirs

## *CYRANO OIL FIELD R3/R1*
## *INDEPENDENT REVIEW CONFIRMS SIGNIFICANT INCREASE IN BARROW GROUP RESOURCES*

### *ASX & MEDIA ANNOUNCEMENT*

The directors of Oil Basins Limited (ASX codes **OBL** & **OBLOB** or the **Company**) are pleased to make the following ASX and Media Announcement.

OBL holds 100% of Retention Lease R3/R1 in the offshore Carnarvon Basin (Figure 1). The lease covers approximately 80 $km^2$ in relatively shallow water (~15m) – refer to Figure 1.

There are four wells in the permit: Cyrano-1 and Cyrano-2, Fennel-1 and Lindsay-1. The two Cyrano wells define an oil field containing heavy biodegraded oil (22.8 degree API) with a relatively high oil viscosity (3.95 cp) within Mardie Greensand and Barrow Group reservoirs. The majority of recoverable oil is contained within Barrow sandstones with good (porous and permeable) reservoir properties for oil production while gas occurs mostly within the overlying Mardie Greensand which has marginal reservoir properties.

The oil at Cyrano-1 is the same as that recovered from the Nasutus Oil Field (defined by the Nasutus-1 and Nares-1 discoveries in adjacent Retention Lease R5) that extends into the R3/R1 lease from the north. Fennel-1 and Lindsay-1 have only minor hydrocarbon shows.

## *KEY POINTS:*

- A new independent resource assessment was conducted by 3D-Geo Pty Ltd (3D-Geo) for Oil Basins Limited (OBL) to define the resources in the Cyrano and Nasutus oil fields in the R3/R1 lease

- The study was comprehensive and encompassed new petrophysical evaluation of wells, identification of oil and gas pay, stratigraphic correlation, reservoir characterization and petroleum reservoir engineering with seismic interpretation, mapping and depth conversion of 3D seismic data within the R3/R1 Lease and adjacent areas.

- An important result was re-assignment of the Airlie Sandstone interpreted at Cyrano-1 and Cyrano-2 to the Barrow Group. Stratigraphic correlation with Nasutus-1 which was almost fully cored and its reservoir properties analysed, now suggests that this important reservoir unit is instead part of an Upper Barrow Group transgressive sequence with much better reservoir properties than previously assigned.

- Interpretation and mapping differ from those of the former operator and previously published geophysical work. The mapping indicates that the Barrow reservoir oil resources over Greater Cyrano are split into three (3) discrete oil pools comprising: Cyrano Central, Cyrano East and Cyrano West.

- Additional oil resources are contained in the extension of the Nasutus Oil Field into the R3/R1 Lease area from the northeast.

- The assessment resulted in a 105% increase of the Contingent **(2C) P50** resource in the Cyrano and Nasutus oil fields within Barrow Group reservoirs to **1.09 MMbbls**.

- Exploration upside in the Barrow reservoir has been delineated in the newly defined Elimia Prospect (previously defined as part of the Cyrano Oil Field) which is located on-trend and up-dip west of Greater Cyrano.

- The Contingent plus Probable **(1C plus 1P) P90** oil resource in the Barrow reservoir for Cyrano, Nasutus and Elimia is now assessed as **1.19MMstb** while the **(2C plus 2P) P50** is now assessed as **2.02 MMstb**.

- This work relates to Barrow reservoirs only and excludes possible additional contingent resources in the overlying Mardie Greensand reservoir.

- OBL believes that improved booked resources coupled with good reservoir properties in the Barrow Group sandstones are likely to lead to a de-risking of the preferred development method of this marginal oil field via utilisation of a stand-alone Extended Production Test (EPT) and modern development and completion technologies including deployment of a Mobile Offshore Production Unit (**MOPU**).

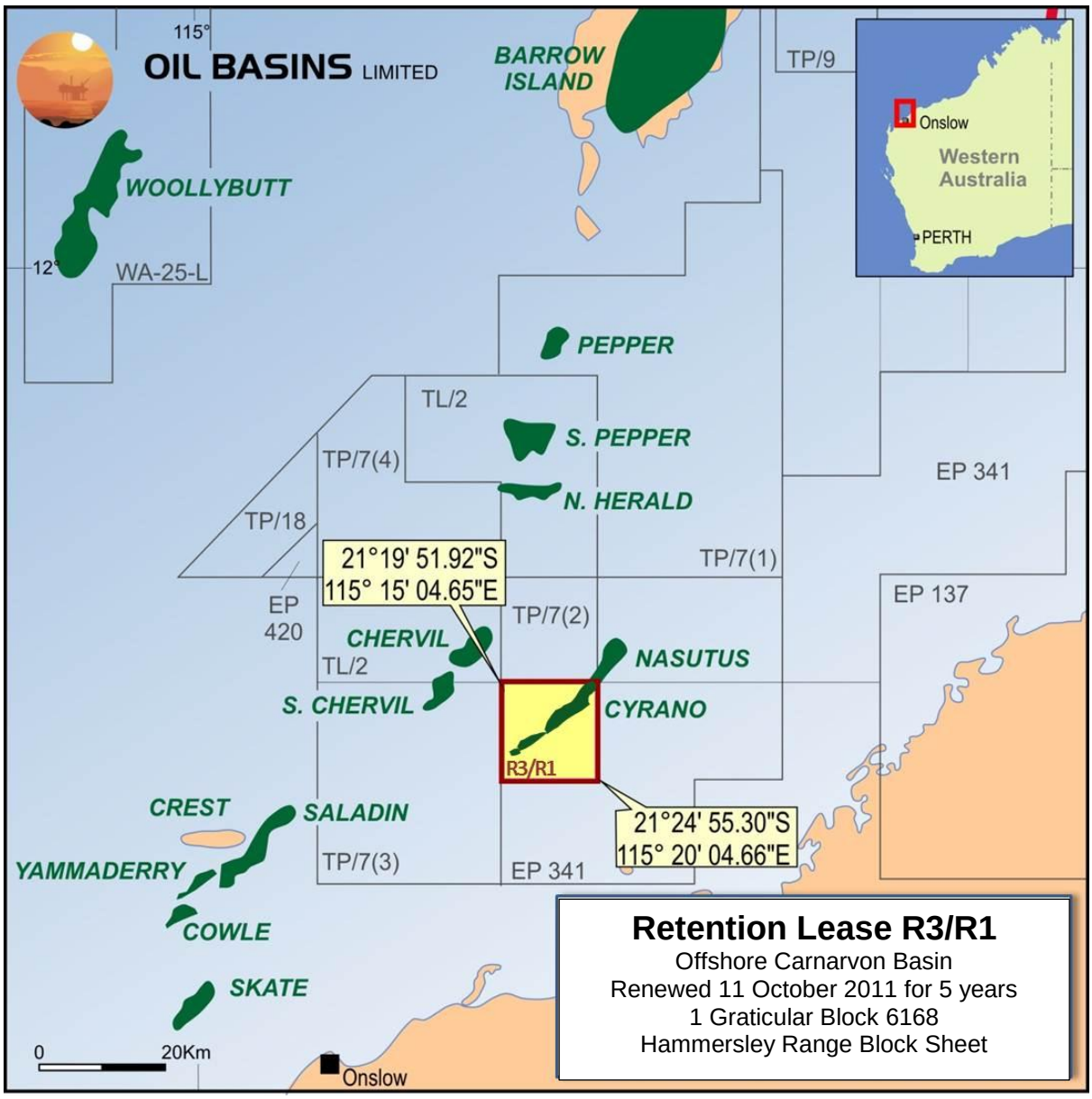



**Figure 1:** Location map of Retention Lease R3/R1

### *Previous Work by OBL during 2011*

Immediately upon transfer of the title to OBL in March 2011, OBL commissioned an independent review of the Cyrano Oil Field (OBL, 2011)*. This resulted in a booked 1C, 2C, 3C contingent resource for combined Mardie Greensand and Airlie/ Barrow Sandstone reservoirs based upon an estimated conservative recovery factor (**RF**) of 15% as shown in **Table 1**. The reservoir splits underlying these assessed contingent resources are shown in **Table 2**.

** Refer to the OBL ASX Announcement dated 2 April 2011*

| | Contingent Resources - Oil (MMstb) | | |
|---|---|---|---|
| **Reservoir Horizon** | **1C** | **2C** | **3C** |
| **Mardie/Airlie/ Barrow** | 0.55 | 1.57 | 3.80 |

**Table 1:** Cyrano Oil Field combined contingent oil resource *(OBL, 2011)*

| | Contingent Resources - Oil (MMstb) | | | Contingent Resources – Raw Gas (Bscf) | | |
|---|---|---|---|---|---|---|
| **Reservoir Horizon** | **1C** | **2C** | **3C** | **1C** | **2C** | **3C** |
| **Mardie Greensand** | 0.37 | 1.04 | 2.60 | 1.16 | 2.29 | 4.38 |
| **Airlie/ Barrow** | 0.18 | 0.53 | 1.20 | 0.08 | 0.27 | 0.85 |

**Table 2:** Cyrano Oil Field contingent oil and gas resources by reservoir *(OBL, 2011)*

The 2011 assessment found that the Mardie Greensand contained most (>60%) of the combined contingent resource. This was consistent with the view of the former operator. The Mardie Greensand also contained the majority of the raw gas resource.

This assessment indicated that the Mardie Greensand unit is a relatively tight reservoir unit. Consequently the independent expert concluded that development wells would need to be produced with very low pressure-drawdown to delay gas or water break-through and recommended against deployment of electric submerged pumps.

After renewal of the Retention Lease in early October 2011, OBL commissioned drilling engineers Du-El Drilling Services Pty Ltd (**Du-El**) to prepare a Development Scoping Report for development of the Cyrano Oil Field to ascertain what would be required to develop the field economically as a standalone project.

The key recommendation of the Du-El study was that the best option for a standalone, low-cost development (the Basic Concept) was an Extended Production Test **(EPT)**. The EPT would be operated either from a central Hub or as series of EPT's using functional removable and re-deployable equipment.

The first phase of development called for the use of horizontal wells using modern Electric Submersible Progressing Cavity Pumps **(ESPCPs**) to increase production rates of the heavy oil in the low pressure reservoirs. In addition, Du-El indicated that recovery factors **(RFs)** would be considerably improved if horizontal extended reach drilling (**ERD**) technology, combined with the ESPCPs and using both gas and water injectors were utilized.

Du-El concluded that the most cost effective development would be using a Jack-up Rig or Barge with a modular rig to drill and production test with ERDs an approximate 1000 m horizontal section of the wells, possibly producing to an un-manned Jack-Up Storage Barge. For this initial phase of the

development Du-El recommended a smaller Barge be mobilised in order to reduce the EPT operating costs. Bringing in a Jack-up Storage Barge with the capacity of 60,000 barrels would in addition reduce the costs of a Floating Storage and Offloading (FSO) vessel on site full-time.

*Refer to the comprehensive OBL ASX Announcement dated 26 October 2011.*

The final report was received by OBL in June 2012. It indicated that marginal oil fields such as Cyrano could be produced economically with properly sized mobile equipment and modern completion technologies. Du-El recommended that a further comprehensive assessment of the Cyrano oil reservoirs be undertaken to high-graded potential development zones with better reservoir properties to be drilled. This would assist the deployment of the ESCPs.

## New Work by OBL

Encouraged by the key findings of the Du-El Scoping Report, OBL commissioned a new independent engineering evaluation of R3/R1 by 3D-Geo in late August 2012.

The scope of work aimed at examining all available geological, geophysical and engineering data to comprehensively reassess the recoverable hydrocarbon potential of R3/R1. The data set included the well data in R3/R1 and nearby oil fields and recently acquired new data including the Flinders 3D Seismic Survey now on public file in its entirety.

***This work encompassed:***

- Remapping (in TWT) of the Flinders 3D Seismic Survey.
- Depth conversion using seismic velocities tied to wells.
- Stratigraphic re-evaluation.
- Correlation of well stratigraphy.
- Wireline log evaluation (petrophysics) with net pay (oil and gas) identification.
- Reserve estimation with Contingent and Probable resource allocation in accordance with SPE-PRMS Guidelines (see Appendix 2).
- Petrophysical reservoir characterisation.
- Monte Carlo simulation performed in Petrel across a range of key reservoir variables in the assessment of each resource category using 500 simulations performed per data point.
- All Barrow Group RF assessments assuming water injection. The low case assumes relatively cheap vertical wells and the medium and high cases assume deployment of ESPCPs and in addition the medium case assumes short reach horizontals and the high case assumes long reach horizontals by ERD. In addition, there is presently un-assessed scope for deployment of gas-lift sourced from raw gas from the shallower Mardie Greensand.

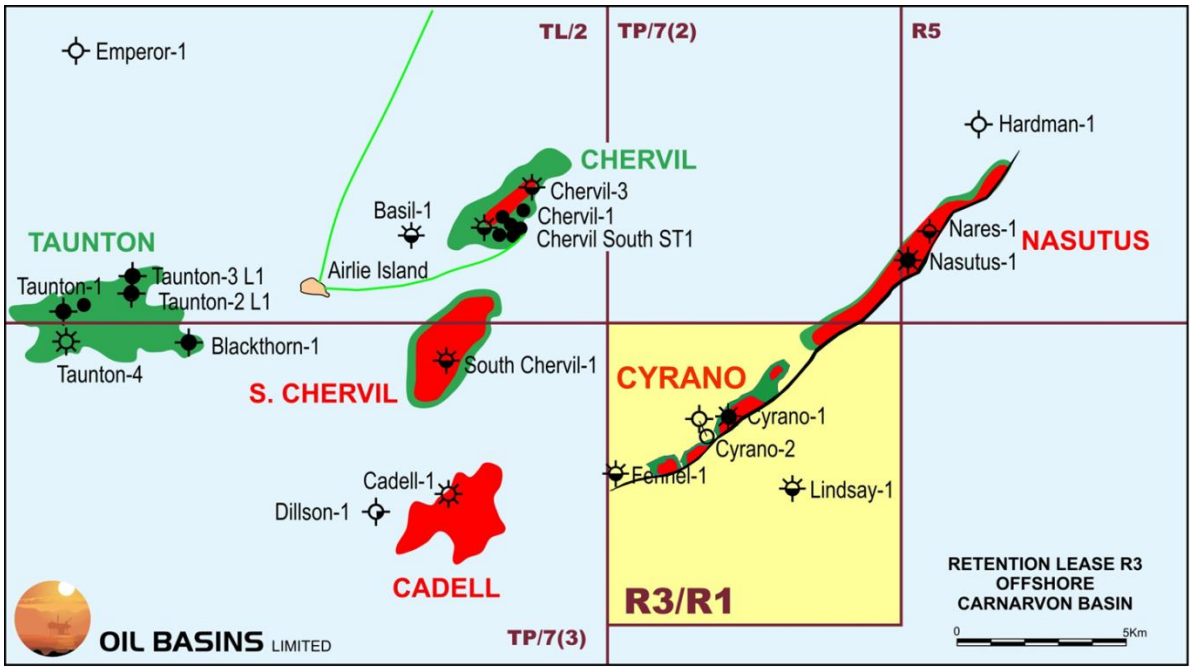



**Figure 2:** Regional Location of R3/R1 and Latest View of Cyrano Oil Field (Top of Barrow Group)

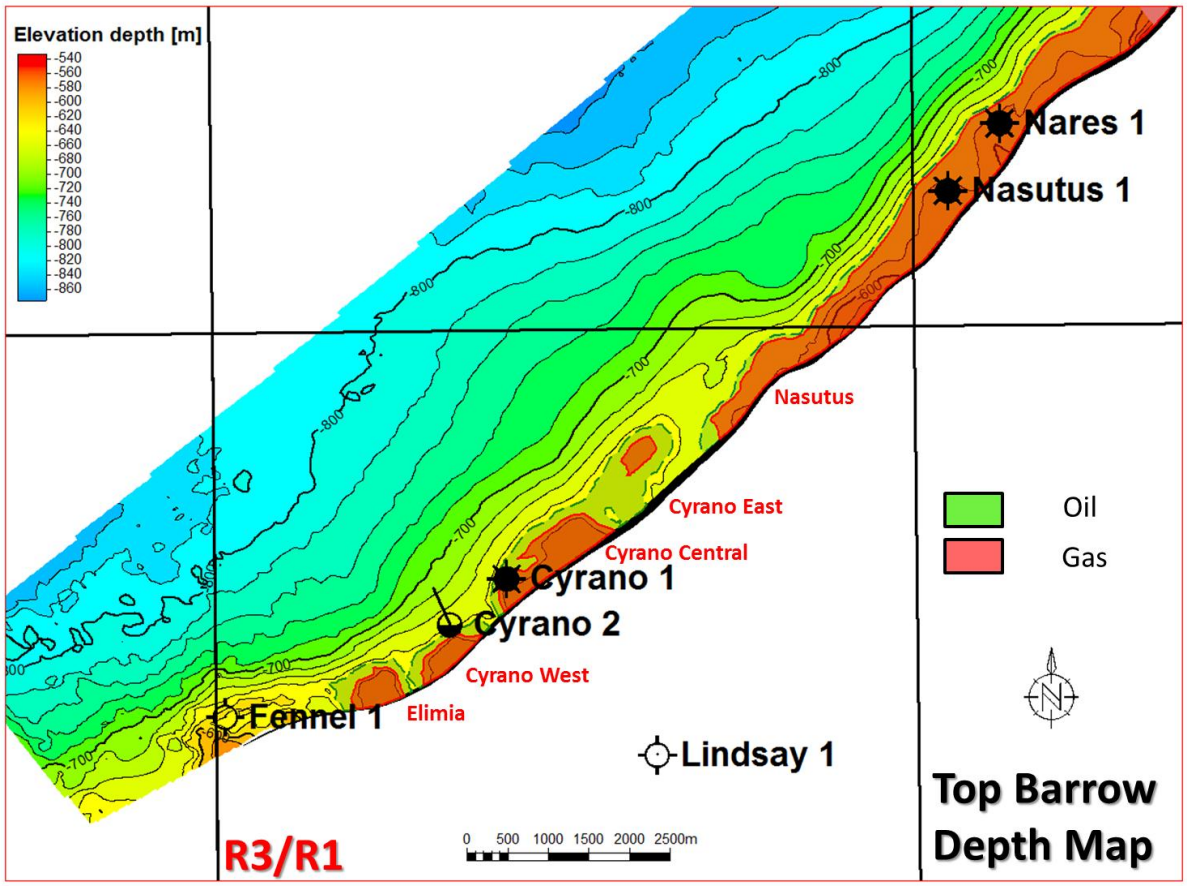



**Figure 3:** Latest Top Barrow Depth Map showing Cyrano Central (oil discovery), the Cyrano East and Cyrano West oil pools, Nasutus Oil Field Extension into R3/R1 and the new Elimia oil prospect.

One of the important findings of the evaluation was recognition of the Barrow Group reservoir as the principal oil reservoir in both the Cyrano and Nasutus oil fields. Stratigraphic correlation of Cyrano-1 and Cyrano-2 with Nasutus-1 (which was almost fully cored and palynology for age dating defined and its reservoir properties analysed for porosity and permeability) now suggests that the Airlie Sandstone (as previously defined) is likely to be part of an Upper Barrow Group transgressive sequence with much better reservoir properties than previously assigned.

Seismic Interpretation and mapping differ from those of the former operator and previously published geophysical work. The new mapping indicates that the Barrow reservoir oil resources over Greater Cyrano are split into three (3) discrete oil pools: comprising Cyrano Central, Cyrano East and Cyrano West delineated by two wells Cyrano-1 and Cyrano-2. Additional oil resources are contained in the extension of the Nasutus Oil Field into the R3/R1 Lease area from the northeast (**Figures 2 and 3**).

Exploration upside in the Barrow reservoir has been delineated in the newly defined Elimia Prospect (previously part of the Cyrano Oil Field) which is located on-trend and up-dip west of Greater Cyrano.

***Principal findings of the 3D-Geo independent review are:***

- Interpretation and mapping of the Flinders 3D Seismic Survey coupled with new petrophysics has confirmed that most of the recoverable oil resources in R3/R1 are contained in the Barrow Group reservoir.

- The Mardie Greensand with its poor reservoir properties may not contribute significantly to overall reserves – addition work is required to better define its potential.

- The Airlie Sandstone at Cyrano is now correlated with the upper part of the Barrow Group.

- New petrophysical and engineering studies and correlation with core from Nasutus-1 suggests much better reservoir properties in the Barrow reservoir (which includes the Airlie Sandstone as previously defined) are expected at Greater Cyrano, the Elimia Prospect and the Nasutus Oil Field than previously considered.

- The oil recovery factor of the Barrow Group sandstones has been assessed at being similar to the former operator (P50 oil RF = 30%) and double that of the previous 2011 study (P50 oil RF = 15%).

- Recovery Factors for the Barrow Group (Airlie / Barrow) have been re-estimated as follows:
  - ***Low 17%***
  - ***Medium 30%***
  - ***High 45%***

- The present 3D-Geo view is that the tight zone between the Mardie and Airlie probably acts as least as a production barrier or is possibly a seal. Consequently, the oil in the highly permeable Barrow Group is geologically isolated from the overlying Mardie gas-cap. The Barrow gas-cap is likely to be small and have little adverse impact on oil recovery from the underlying Barrow reservoir.

- The previous assessment (OBL, 2011) treated the Airlie and Top Barrow reservoirs oil in an oil rim with reservoir characteristics and recovery factors similar to those of the Mardie Greensand.

- This work relates to the Barrow reservoirs only and excludes possible additional Contingent and Probable resources in the overlying Mardie Greensand reservoir.

## Summary of Assessed Resources – Barrow Group

The previously assessed booked 1C, 2C, 3C contingent resources attributable to the Airlie/Top Barrow Sandstone (re-defined as Barrow Group reservoir by 3D-Geo) in the Cyrano Oil Field are found in **Tables 1 and 2**.

### *Cyrano Central (Cyrano-1 discovery)*

The new 3D-Geo assessment of contingent resources within R3/R1 is presented in **Appendix 1 (Table 8)**. With respect to the Cyrano Central (Cyrano-1 discovery) the assessed contingent resources within the prognosed productive Barrow reservoir is presented in **Table 3**.

All assessments assume a 60/40 split or oil fill versus gas fill as suggested by Cyrano-1.

When excluding contingent resources in the Mardie Greensand, this new assessment for the Barrow reservoir in Cyrano Central increases 2C contingent resources **by 43% from 0.53 MMstb to 0.76 MMstb.**

| | **Cyrano Central Contingent Resources - Oil (MMstb)** | | |
|---|---|---|---|
| **Reservoir Horizon** | **1C** | **2C** | **3C** |
| **Barrow** | 0.48 | 0.76 | 1.00 |

**Table 3:** Cyrano Central Contingent oil resources

### *Nasutus Extension*

This is the first assessment of the Nasutus Extension into R3/R1 from neighbouring Permit TP/7 (2) and Retention Lease R5 (**Figure 1**). Excluding potential Mardie Greensand Contingent resources, 3D-Geo assessed 1C, 2C, and 3C Contingent resources within the highly productive Barrow Group are shown below in **Table 4**.

When including the Nasutus Extension, the booked 2C contingent resources within the Barrow reservoir increased **by 105% from 0.53 to 1.09 MMstb (Table 8)**.

| | Nasutus Contingent Resources - Oil (MMstb) | | |
|---|---|---|---|
| **Reservoir Horizon** | **1C** | **2C** | **3C** |
| **Barrow** | 0.20 | 0.33 | 0.49 |

**Table 4:** Nasutus Contingent oil resources.

### *Greater Cyrano Oil Field*

Overall risked Greater Cyrano Oil Field (Cyrano Central, Cyrano East and Cyrano West) Probable resources within the Barrow reservoir are shown in **Table 5**.

| | Greater Cyrano Probable Resources - Oil (MMstb) | | |
|---|---|---|---|
| **Reservoir Horizon** | **1P** | **2P** | **3P** |
| **Barrow** | 0.79 | 1.38 | 2.01 |

**Table 5:** Greater Cyrano Probable oil resources.

### *Elimia Prospect*

The new Elimia Prospect mapped by 3D-Geo has some 35 m of vertical closure. Risked Probable resources within the Barrow reservoir are shown in **Table 6**.

| | Elimia Prospect Probable Resources - Oil (MMstb) | | |
|---|---|---|---|
| **Reservoir Horizon** | **1P** | **2P** | **3P** |
| **Barrow** | 0.20 | 0.31 | 0.49 |

**Table 6:** Elima Prospect Probable oil resources

### *Overall Barrow Group Contingent and Probable Resources contained within R3/R1*

The 3D-Geo independent resource assessment of the overall Barrow reservoir for Contingent and Probable resources contained within R3/R1 is shown in T**ables 7 and 8**.

These reserve numbers do not consider (exclude) possible additional Mardie Greensand Contingent and Probable resources.

| | R3/R1 Total Contingent & Probable Resources - Oil (MMstb) | | |
|---|---|---|---|
| **Reservoir Horizon** | **P90** | **P50** | **P10** |
| **Barrow** | **1.19** | **2.02** | **2.99** |

**Table 7:** R3/R1 total Contingent and Probable oil resources

### Impact of New Assessment

The Directors of OBL believe this new independent study, with the primary focus on assessing the possibility of high-grading recoverable resources within the highly productive Barrow Group, to be a major upgrading of the Cyrano Oil Field for possible development. Subject to further reservoir simulation studies planned in 2013, this should greatly enhance the ability of early development of this marginal oil field via the preferred development option of an Extended Production Test (**EPT**) and a stand-alone development (*refer to OBL ASX Release dated 26 October 2011*).

- New petrophysical studies and correlation with core from Nasutus-1 suggests much better reservoir properties in the Barrow reservoirs at Cyrano than previously contemplated. Reservoir properties and hence the recovery factor for the Barrow Group are significantly greater than previous assessments.

- The 3D-Geo independent resource assessment for the stand-alone Cyrano Central (Cyrano-1 discovery) of the Barrow oil pool increased 2C contingent resources 43% from 0.53 to 0.79 MMstb. Inclusion of the Nasutus Oil field extension increased 2C contingent resources by 105% from 0.53 to 1.09 MMstb.

- Excluding possible additional contingent resources in the Mardie Greensand, the 3D-Geo resource assessment of the overall Barrow reservoir (combined contingent plus probable resources) for P90, P50 and P10 cases contained within the R3/R1 Lease was assessed at 1.19, 2.02 and 2.99 MMstb respectively.

- In OBL's opinion, the improvement in reservoir combined with the resource increase has made it possible to consider a much simpler first stage EPT development program focused initially on Cyrano Central. This could use cheaper vertical wells fitted with modern ESPCPs that can handle associated gas.

- All new Barrow reservoir Recovery Factor (RF) assessments assume water injection. The low case assumes relatively cheap vertical wells while the medium and high cases assume deployment of ESPCP's. The medium case assumes short-reach horizontals and the high case assumes long-reach horizontals by ERD. In addition, there exists un-assessed scope for deployment of gas-lift using gas sourced from the shallower Mardie Greensand unit.

- OBL believes that improved booked resources coupled with good reservoir properties in the Barrow Group reservoir sandstones are likely to lead to a de-risking of the preferred development method of this marginal oil field. This would involve a stand-alone EPT with modern development and completion technologies including the potential for a possible deployment of a modern Mobile Offshore Production Unit (**MOPU**).

- Oil Basins believes that this study has de-risked previous reservoir uncertainties at Cyrano Central. This will greatly assist in concept planning for an initial multi-staged EPT oil development using Cyrano Central as a potential Hub location. In addition, the study has defined the upside incremental recoverable resources potential of the field extensions and a prospect.

Yours faithfully

Neil Doyle SPE
Director & CEO

## APPENDIX 1:

**Retention Lease R3/R1**
**OBL Net Contingent Resources &**
**Probable Resources as at 14 December 2012**
(Ignoring Mardie Greensand Raw Oil & Gas Potential)

| | Contingent Resources - Oil MMstb | | | Contingent Resources - Raw Gas Bscf | | |
|---|---|---|---|---|---|---|
| **Barrow Group Sandstone Only** | **1C** | **2C** | **3C** | **1C** | **2C** | **3C** |
| Cyrano Central Oil Pool | 0.48 | 0.76 | 1.00 | 0.32 | 0.47 | 0.65 |
| Nasutus - Extension (R3/R1) | 0.20 | 0.33 | 0.49 | 0.50 | 0.80 | 1.20 |
| Sub-total | 0.68 | 1.09 | 1.49 | 0.82 | 1.27 | 1.85 |

| | Probable Resources - Oil MMstb | | | Probable Resources - Raw Gas Bscf | | |
|---|---|---|---|---|---|---|
| **Barrow Group Sandstone Only** | **P90** | **P50** | **P10** | **P90** | **P50** | **P10** |
| Cyrano East Prospect | 0.13 | 0.36 | 0.63 | 0.01 | 0.02 | 0.09 |
| Cyrano West Prospect | 0.19 | 0.26 | 0.39 | 0.09 | 0.14 | 0.20 |
| Sub-total | 0.31 | 0.62 | 1.01 | 0.10 | 0.16 | 0.29 |
| Elimia Prospect | 0.20 | 0.31 | 0.49 | 0.12 | 0.18 | 0.27 |

| | Total Contingent & Probable Resources - Oil MMstb | | | Total Contingent & Probable Resources - Raw Gas Bscf | | |
|---|---|---|---|---|---|---|
| **Barrow Group Sandstone Only** | **P90** | **P50** | **P10** | **P90** | **P50** | **P10** |
| Greater Cyrano | 0.79 | 1.38 | 2.01 | 0.42 | 0.63 | 0.94 |
| Elimia Prospect | 0.20 | 0.31 | 0.49 | 0.12 | 0.18 | 0.27 |
| Nasutus - Extension (R3/R1) | 0.20 | 0.33 | 0.49 | 0.50 | 0.80 | 1.20 |
| Total R3/R1 | 1.19 | 2.02 | 2.99 | 1.04 | 1.61 | 2.41 |

**Table 8:** Contingent Resources and Probable Resources – Barrow Group only

## APPENDIX 2

### ABOUT OIL BASINS LIMITED

Oil Basins Limited (ASX codes: **OBL**, **OBLOB**) is involved in exploration and development of oil and gas in the offshore Gippsland Basin, Victoria, the onshore Canning Basin of Western Australia and the offshore Carnarvon Basin, Western Australia.

### ABOUT 3D-GEO PTY LTD

3D-GEO Pty Ltd is a seismic and structural modeling consultancy based in Melbourne, Australia. With a collaborative mixture of petroleum industry experience and academic rigour, 3D-GEO provides innovative solutions to a broad range of clients across the Australasia region and the Middle East. 3D-GEO has extensive exploration experience in fold and thrust belt structural analysis, as well as demonstrated expertise in the extensional basins of Austral-Asia and the Sub-continent.

### COMPETENT PERSON STATEMENT

Information on the Reserves and Resources in this release is based on an independent evaluation conducted by 3D-Geo Pty Ltd (3D-Geo). 3D-Geo is a private consultancy. The work was undertaken by a team of petroleum engineers, reservoir engineers, geoscientists and petrophysicists and is based on data supplied by OBL. The technical assessment was performed primarily by Mr Hadi Nourollah, Director 3D-Geo. Mr Nourollah holds the qualification MSc (Petroleum Geosience) from Imperial College London, has over 10 years of experience as a geophysicist and is a Member of Society of Exploration Geophysicists (SEG). 3D-Geo's approach has been to review the data supplied by OBL for reasonableness and then independently estimate ranges of in-place and recoverable volumes. We have estimated the degree of uncertainty inherent in the measurements and interpretation of the data and have calculated a range of recoverable volumes, based on predicted field performance for the property. 3D-Geo and Mr Nourollah have given their consent at the date of the release to the inclusion of this statement and the information in the form and context in which they appear in this release.

### APPLICABLE RESERVES & RESOURCES REPORTING GUIDELINES & DEFINED TERMS

In the determination and classification of Reserves and Resources, Oil Basins Limited applies the Society of Petroleum Engineers Petroleum Resources Management System (**PRMS Guidelines**). The terms "Contingent Resources" and "Prospective Resources" used in this release are as defined by the PRMS Guidelines (relevant extracts as provided below):

### PROVED RESERVES

Proved Reserves are those quantities of petroleum, which by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods, and government regulations.

If deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. The area of the reservoir considered as Proved includes:

- the area delineated by drilling and defined by fluid contacts, if any, and
- adjacent undrilled portions of the reservoir that can reasonably be judged as continuous with it and commercially productive on the basis of available geoscience and engineering data.

Often referred to a P1, sometime referred to as "proven".

### PROBABLE RESERVES

Probable Reserves are those additional Reserves which analysis of geoscience and engineering data indicate are less likely to be recovered than Proved Reserves but more certain to be recovered than Possible Reserves.

It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated Proved plus Probable Reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate. Probable Reserves may be assigned to areas of a reservoir adjacent to Proved where data control or interpretations of available data are less certain. The interpreted reservoir continuity may not meet the reasonable certainty criteria. Probable estimates also include incremental recoveries associated with project recovery efficiencies beyond that assumed for Proved.

## POSSIBLE RESOURCES

Possible Reserves are those additional Reserves which analysis of geoscience and engineering data indicate are less likely to be recoverable than Probable Reserves

The total quantities ultimately recovered from the project have a low probability to exceed the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate. Possible Reserves may be assigned to areas of a reservoir adjacent to Probable where data control and interpretations of available data are progressively less certain. Frequently, this may be in areas where geoscience and engineering data are unable to clearly define the area and vertical reservoir limits of commercial production from the reservoir by a defined project. Possible estimates also include incremental quantities associated with project recovery efficiencies beyond that assumed for Probable.

## CONTINGENT RESOURCES

Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable due to one or more contingencies. Contingent Resources are a class of discovered recoverable resources.

Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

## PROSPECTIVE RESOURCES

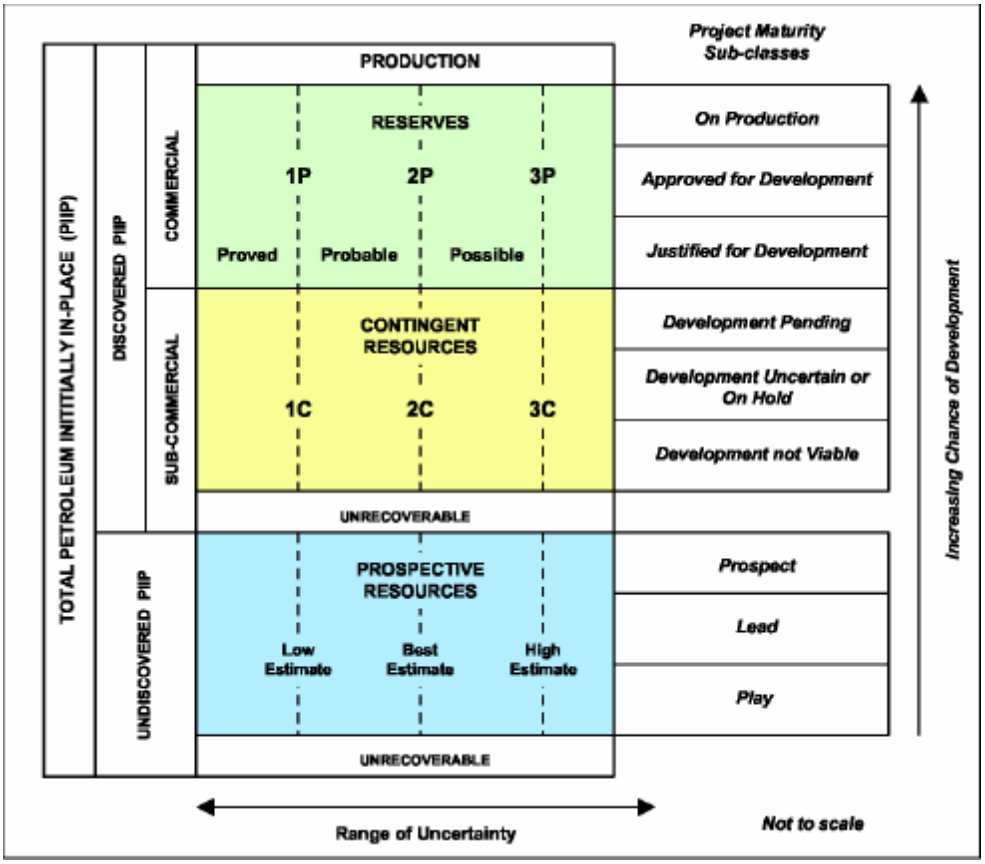
Those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.

Potential accumulations are evaluated according to their chance of discovery and, assuming a discovery, the estimated quantities that would be recoverable under defined development projects. It is recognized that the development programs will be of significantly less detail and depend more heavily on analogue developments in the earlier phases of exploration.

**Prospect** – A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target. Project activities are focused on assessing the chance of discovery and, assuming discovery, the range of potential recoverable quantities under a commercial development program.

**Lead** – A project associated with a potential accumulation that is currently poorly defined and requires more data acquisition and/or evaluation in order to be classified as a prospect. Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to confirm whether or not the lead can be matured into a prospect. Such evaluation includes the assessment of the chance of discovery and, assuming discovery, the range of potential recovery under feasible development scenarios.

**Play** – A project associated with a prospective trend of potential prospects, but which requires more data acquisition and/or evaluation in order to define specific leads or prospects. Project activities are focused on acquiring additional data and/or undertaking further evaluation designed to define specific leads or prospects for more detailed analysis of their chance of discovery and, assuming discovery, the range of potential recovery under hypothetical development scenarios.




## GLOSSARY & PETROLEUM UNITS

| | |
|---|---|
| **M** | Thousand |
| **MM** | Million |
| **B** | Billion |
| **bbl** | Barrel of crude oil (ie 159 litres) |
| **stb** | Stock tank barrel – barrel of stabilised crude oil at atmospheric pressure |
| **PJ** | Peta Joule (1,000 Tera Joules (TJ)) |
| **Bcf** | Billion cubic feet |
| **Tcf** | Trillion cubic feet (ie 1,000 Bcf) |
| **Bscf** | Billion standard cubic feet (raw gas) |
| **BOE6** | Barrel of crude oil equivalent – commonly defined as 1 TJ equates to circa 158 BOE – approximately equivalent to 1 barrel of crude equating to 6,000 Bcf dry methane on an energy equivalent basis) |
| **PSTM** | Pre-stack time migration – reprocessing method used with seismic. |
| **PSDM** | Pre-stack depth migration – reprocessing method used with seismic converting time into depth. |
| **AVO** | Amplitude versus Offset, enhancing statistical processing method used with 3D seismic. |
| **TWT** | Two-way time |
| **CSG** | Coal seam gas (CSG) or alternatively known as coal seam methane (CSM) is natural gas sourced from coal. Methane = CH4 = H-H-C-H-H, which is the same as: conventional gas, landfill gas, peat gas. CSM is produced during the creation of coal from peat. The methane in CSM is adsorbed onto the surface of micropores in the coal. The amount of methane adsorbed increases with pressure. CSM is expelled from the seam over geologic time because coal has the capacity to hold only about a tenth of the methane it produces. Apart from power station applications, high quality methane can be used as a valuable feedstock for petrochemical plants such as urea, ammonia, ammonium nitrate, gas to liquids (diesel) and LNG production. |
| **USG** | Unconventional Shale Gas |
| **STOIIP** | Stock Tank Oil Initially In Place – stabilised crude at atmospheric pressure |

## DISCLAIMER

Prospective Resources are those quantities of petroleum which are estimated, on a given date, to be potentially recoverable from undiscovered accumulations. Investors should not infer that because "prospective resources" are referred to that oil and gas necessarily exist within the prospects. An equally valid outcome in relation to each of the Company's prospects is that no oil or gas will be discovered.

Technical Reserves in this preliminary assessment are considered similar to the definition of Contingent Resources (ie Low Estimate and High Estimate) with the following important caveat - it must be appreciated that the risked volumes as reported in terms of undeveloped Contingent Resources and Prospective Resources are risk assessed only in the context of applying 'Geological Chance of Success'. This degree of risk assessment does not incorporate the considerations of economic uncertainty and commerciality and consequently no future commercial development as such can be assured.

The technical information quoted has been complied and/or assessed by Company Director Mr Neil Doyle who is a professional engineer (BEng, MEngSc - Geomechanics) with over 31 years standing and a continuous Member of the Society of Petroleum Engineers since 1981 (SPE 30 Year Club Member) and by Mr Geoff Geary who is a professional geologist (BSc – Geology) with over 28 years standing and who is also a Member of the Petroleum Exploration Society of Australia. Both Mr Doyle and Mr Geary have consented to the inclusion in this announcement of the matters based on the information in the form and context in which they appear.

Investors should review the ASX materials and independent expert reports previously quoted and the important definitions and disclaimers contained there-in.