

18 April 2018

**Mosman Oil and Gas Limited  
("Mosman" or the "Company")**

**Welch Project Proved Reserves**

Mosman Oil and Gas Limited (AIM: MSMN) the oil exploration, development and production company, is pleased to announce Proved Reserves at the Welch Permian Basin Project ("Welch") in Texas.

**Highlights**

- Welch Proved Reserves (1P) of 234,000 barrels oil (gross) with a NPV10% value of USD \$2.007 million.
- Included in the Proved Reserves at Welch are incremental Proved Undeveloped Reserves of 102,000 barrels with and NPV10% value of USD \$0.597 million for a single proposed horizontal oil well, that represents an encouraging potential development opportunity.
- Welch meets the Company's stated strategy of delivering operating cash flow and having development upside.

**Moyes & Co's Reserves Report on Welch**

Independent expert, Moyes and Co, has reported the Proved Reserves at Welch under the under SPE PRMS definitions to be 234,000 barrels of oil (gross).

The identified incremental Proved Undeveloped Reserves for a horizontal well represent an encouraging development opportunity for Mosman. In parallel with continuing to operate Welch to optimise cash flow, Mosman will progress with the previously announced economic evaluation of a horizontal well development programme in support of a drilling decision in 2018.

Only one horizontal well has been included in the Moyes and Co reserves report at Welch but the Company believes up to three horizontal wells may be possible. A final decision by the Board on a horizontal well is subject to completion of the Company's economic evaluation, a development plan, permitting, prevailing economic conditions and funding alternatives.

Summary details of the Proved Reserves at Welch are as follows:

	<b>Proved Reserves at Welch*</b>			
<b>Category</b>	<b>Oil (Gross) (BBL 000)</b>	<b>Natural Gas (MMcf)</b>	<b>Oil (Net) (BBL 000)</b>	<b>Net Present Value 10% discount rate(US\$000)</b>
Proved Developed Producing	109	0	84	1,162
Proved Developed Non-Producing	23	0	19	247
Proved Undeveloped	102	17	79	597
<b>Total Proved (1P)</b>	<b>234</b>	<b>17</b>	<b>182</b>	<b>2,007</b>



Notes (\*):

- i. Source: Moyes & Co Reserves Report on the Welch Project dated 17 April 2018
- ii. Operator: Mosman Oil and Gas Limited
- iii. Company's Working Interest: 100%
- iv. NPV10%: Uses a USD \$65 per barrel flat WTI oil price assumption and unescalated gas price of \$2.80 per MMBTU. The potential economic value of the above Reserves will, in part, depend on the Company's chosen field development plan and operating strategy which is currently being evaluated.
- v. The estimates of proved reserves and future revenue in this report have been prepared in accordance with the SPE/WPC/SPEE PRMS guidelines.

Moyes & Co's Reserves Report on Welch will shortly be available on the Company's website.

**John W Barr, Chairman, said:** "Welch meets the stated strategy of delivering operating cash flow and having development upside.

"We are pleased to achieve this milestone of Proved Reserves that underpins our view that Welch was a sound acquisition, at the right time, and where we have added value in less than 12 months. Importantly, the Proved Reserves identified at Welch should provide a basis for being able to obtain bank debt to assist in funding further production growth. Looking forward at Welch, we continue to evaluate horizontal wells with the objective of having a development plan to put before the Board later in 2018."

**Competent Person's Statement**

*The information contained in this announcement has been reviewed and approved by Andy Carroll, Technical Director for Mosman, who has over 35 years of relevant experience in the oil industry. Mr. Carroll is a member of the Society of Petroleum Engineers.*

**Market Abuse Regulation (MAR) Disclosure**

*Certain information contained in this announcement would have been deemed inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 until the release of this announcement.*

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[www.mosmanoilandgas.com](http://www.mosmanoilandgas.com)

## Glossary

The following Glossary and definitions of oil and gas reserves is extracted from the Moyes & Co Reserves Report on the Welch Project dated 17 April 2018. All figure numbers and page references herein refer to that Report.

### Definitions of Oil and Gas Reserves

Adapted from the 2007 Petroleum Resources Management System (PRMS) Approved by the Society of Petroleum Engineers (SPE)

#### Petroleum Resources Classification Framework

Petroleum is defined as a naturally occurring mixture consisting of hydrocarbons in the gaseous, liquid, or solid phase. Petroleum may also contain non-hydrocarbons, common examples of which are carbon dioxide, nitrogen, hydrogen sulfide and sulfur. In rare cases, non-hydrocarbon content could be greater than 50%.

The term “**resources**” as used herein is intended to encompass all quantities of petroleum naturally occurring on or within the Earth’s crust, discovered and undiscovered (recoverable and unrecoverable), plus those quantities already produced. Further, it includes all types of petroleum whether currently considered “conventional” or “unconventional.”

Figure 1-1 is a graphical representation of the SPE/WPC/AAPG/SPEE resources classification system. The system defines the major recoverable resources classes: Production, Reserves, Contingent Resources, and Prospective Resources, as well as Unrecoverable petroleum.

The “**Range of Uncertainty**” reflects a range of estimated quantities potentially recoverable from an accumulation by a project, while the vertical axis represents the “Chance of Commerciality, that is, the chance that the project that will be developed and reach commercial producing status. The following definitions apply to the major subdivisions within the resources classification:

**TOTAL PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum that is estimated to exist originally in naturally occurring accumulations. It includes that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production plus those estimated quantities in accumulations yet to be discovered (equivalent to “total resources”).

**DISCOVERED PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production.

**PRODUCTION** is the cumulative quantity of petroleum that has been recovered at a given date. While all recoverable resources are estimated and production is measured in terms of the sales product specifications, raw production (sales plus non-sales) quantities are also measured and required to support engineering analyses based on reservoir voidage (see Production Measurement, section 3.2 of the official PRMS document).

Multiple development projects may be applied to each known accumulation, and each project will recover an estimated portion of the initially-in-place quantities. The projects shall be subdivided into Commercial and Sub-Commercial, with the estimated recoverable quantities being classified as Reserves and Contingent Resources respectively, as defined below.

**RESERVES** are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: they must be discovered,



recoverable, commercial, and remaining (as of the evaluation date) based on the development project(s) applied. Reserves 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 development and production status.

**CONTINGENT RESOURCES** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. 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 subclassified based on project maturity and/or characterized by their economic status.

**UNDISCOVERED PETROLEUM INITIALLY-IN-PLACE** is that quantity of petroleum estimated, as of a given date, to be contained within accumulations yet to be discovered.

**PROSPECTIVE RESOURCES** are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.

**UNRECOVERABLE** is that portion of Discovered or Undiscovered Petroleum Initially-in-Place quantities which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to physical/chemical constraints represented by subsurface interaction of fluids and reservoir rocks.

**Estimated Ultimate Recovery (EUR)** is not a resources category, but a term that may be applied to any accumulation or group of accumulations (discovered or undiscovered) to define those quantities of petroleum estimated, as of a given date, to be potentially recoverable under defined technical and commercial conditions plus those quantities already produced (total of recoverable resources).

In specialized areas, such as basin potential studies, alternative terminology has been used; the total resources may be referred to as Total Resource Base or Hydrocarbon Endowment. Total recoverable or EUR may be termed Basin Potential. The sum of Reserves, Contingent Resources, and Prospective Resources may be referred to as "remaining recoverable resources." When such terms are used, it is important that each classification component of the summation also be provided. Moreover, these quantities should not be aggregated without due consideration of the varying degrees of technical and commercial risk involved with their classification.

### **Resources Categorization**

The horizontal axis in the Resources Classification (Figure 1.1) defines the range of uncertainty in estimates of the quantities of recoverable, or potentially recoverable, petroleum associated with a project. These estimates include both technical and commercial uncertainty components as follows:

- The total petroleum remaining within the accumulation (in-place resources).



- That portion of the in-place petroleum that can be recovered by applying a defined development project or projects.
- Variations in the commercial conditions that may impact the quantities recovered and sold (e.g., market availability, contractual changes).

Where commercial uncertainties are such that there is significant risk that the complete project (as initially defined) will not proceed, it is advised to create a separate project classified as Contingent Resources with an appropriate chance of commerciality.

### **Range of Uncertainty**

The range of uncertainty of the recoverable and/or potentially recoverable volumes may be represented by either deterministic scenarios or by a probability distribution (see Deterministic and Probabilistic Methods, section 4.2 of the official PRMS document).

When the range of uncertainty is represented by a probability distribution, a low, best, and high estimate shall be provided such that:

- There should be at least a 90% probability (P90) that the quantities actually recovered will equal or exceed the low estimate.
- There should be at least a 50% probability (P50) that the quantities actually recovered will equal or exceed the best estimate.
- There should be at least a 10% probability (P10) that the quantities actually recovered will equal or exceed the high estimate.

When using the deterministic scenario method, typically there should also be low, best, and high estimates, where such estimates are based on qualitative assessments of relative uncertainty using consistent interpretation guidelines. Under the deterministic incremental (risk-based) approach, quantities at each level of uncertainty are estimated discretely and separately (see Category Definitions and Guidelines, section 2.2.2 of the official PRMS document).

These same approaches to describing uncertainty may be applied to Reserves, Contingent Resources, and Prospective Resources. While there may be significant risk that sub-commercial and undiscovered accumulations will not achieve commercial production, it is useful to consider the range of potentially recoverable quantities independently of such a risk or consideration of the resource class to which the quantities will be assigned.

### **Category Definitions and Guidelines**

Evaluators may assess recoverable quantities and categorize results by uncertainty using the deterministic incremental (risk-based) approach, the deterministic scenario (cumulative) approach, or probabilistic methods. (see "2001 Supplemental Guidelines," Chapter 2.5). In many cases, a combination of approaches is used.

Use of consistent terminology (Figure 1.1) promotes clarity in communication of evaluation results. For Reserves, the general cumulative terms low/best/high estimates are denoted as 1P/2P/3P, respectively. The associated incremental quantities are termed Proved, Probable and Possible. Reserves are a subset of, and must be viewed within context of, the complete resources classification system. While the categorization criteria are proposed specifically for Reserves, in most cases, they can be equally applied to Contingent and Prospective Resources conditional upon their satisfying the criteria for discovery and/or development.

For Contingent Resources, the general cumulative terms low/best/high estimates are denoted as 1C/2C/3C respectively. For Prospective Resources, the general cumulative terms low/best/high estimates still apply. No specific terms are defined for incremental quantities within Contingent and Prospective Resources.

Without new technical information, there should be no change in the distribution of technically recoverable volumes and their categorization boundaries when conditions are satisfied sufficiently to reclassify a project from Contingent Resources to Reserves. All evaluations require application of a consistent set of forecast conditions, including assumed future costs and prices, for both classification of projects and categorization of estimated quantities recovered by each project (see Commercial Evaluations, section 3.1 of the official PRMS document).

The following summarizes the definitions for each Reserves category in terms of both the deterministic incremental approach and scenario approach and also provides the probability criteria if probabilistic methods are applied.

- **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.
- **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.
- **Possible Reserves** are those additional reserves which analysis of geoscience and engineering data suggest 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) Reserves, which is equivalent to the high estimate scenario. In this context, 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. Based on additional data and updated interpretations that indicate increased certainty, portions of Possible and Probable Reserves may be re-categorized as Probable and Proved Reserves.

Uncertainty in resource estimates is best communicated by reporting a range of potential results. However, if it is required to report a single representative result, the "best estimate" is considered the most realistic assessment of recoverable quantities. It is generally considered to represent the sum of Proved and Probable estimates (2P) when using the deterministic scenario or the probabilistic assessment methods. It should be noted that under the deterministic incremental (risk-based) approach, discrete estimates are made for each category, and they should not be aggregated without due consideration of their associated risk (see "2001 Supplemental Guidelines," Chapter 2.5).

### **Commercial Evaluations**

Investment decisions are based on the entity's view of future commercial conditions that may impact the development feasibility (commitment to develop) and production/cash flow schedule of oil and gas projects. Commercial conditions include, but are not limited to, assumptions of financial conditions (costs, prices, fiscal terms, taxes), marketing, legal, environmental, social, and governmental factors. Project value may be assessed in several ways (e.g., historical costs, comparative market values); the guidelines herein apply only to evaluations based on cash flow analysis. Moreover, modifying factors such contractual or



political risks that may additionally influence investment decisions are not addressed. (Additional detail on commercial issues can be found in the "2001 Supplemental Guidelines," Chapter 4.)

### **Cash-Flow-Based Resources Evaluations**

Resources evaluations are based on estimates of future production and the associated cash flow schedules for each development project. The sum of the associated annual net cash flows yields the estimated future net revenue. When the cash flows are discounted according to a defined discount rate and time period, the summation of the discounted cash flows is termed net present value (NPV) of the project. The calculation shall reflect:

- The expected quantities of production projected over identified time periods.
- The estimated costs associated with the project to develop, recover, and produce the quantities of production at its Reference Point (see section 3.2.1 of the official PRMS document), including environmental, abandonment, and reclamation costs charged to the project, based on the evaluator's view of the costs expected to apply in future periods.
- The estimated revenues from the quantities of production based on the evaluator's view of the prices expected to apply to the respective commodities in future periods including that portion of the costs and revenues accruing to the entity.
- Future projected production and revenue related taxes and royalties expected to be paid by the entity.
- A project life that is limited to the period of entitlement or reasonable expectation thereof.
- The application of an appropriate discount rate that reasonably reflects the weighted average cost of capital or the minimum acceptable rate of return applicable to the entity at the time of the evaluation.
- While each organization may define specific investment criteria, a project is generally considered to be "economic" if its "best estimate" case has a positive net present value under the organization's standard discount rate, or if at least has a positive undiscounted cash flow.

### **Economic Criteria**

Evaluators must clearly identify the assumptions on commercial conditions utilized in the evaluation and must document the basis for these assumptions.

The economic evaluation underlying the investment decision is based on the entity's reasonable forecast of future conditions, including costs and prices, which will exist during the life of the project (forecast case). Such forecasts are based on projected changes to current conditions; SPE defines current conditions as the average of those existing during the previous 12 months.

Alternative economic scenarios are considered in the decision process and, in some cases, to supplement reporting requirements. Evaluators may examine a case in which current conditions are held constant (no inflation or deflation) throughout the project life (constant case).

Evaluations may be modified to accommodate criteria imposed by regulatory agencies regarding external disclosures. For example, these criteria may include a specific requirement that, if the recovery were confined to the technically Proved Reserves estimate, the constant case should still generate a positive cash flow. External reporting requirements may also specify alternative guidance on current conditions (for example, year-end costs and prices).

There may be circumstances in which the project meets criteria to be classified as Reserves using the forecast case but does not meet the external criteria for Proved Reserves. In these specific circumstances, the entity may record 2P and 3P estimates without separately



recording Proved. As costs are incurred and development proceeds, the low estimate may eventually satisfy external requirements, and Proved Reserves can then be assigned.

While SPE guidelines do not require that project financing be confirmed prior to classifying projects as Reserves, this may be another external requirement. In many cases, loans are conditional upon the same criteria as above; that is, the project must be economic based on Proved Reserves only. In general, if there is not a reasonable expectation that loans or other forms of financing (e.g., farm-outs) can be arranged such that the development will be initiated within a reasonable timeframe, then the project should be classified as Contingent Resources. If financing is reasonably expected but not yet confirmed, the project may be classified as Reserves, but no Proved Reserves may be reported as above.

### **Economic Limit**

Economic limit is defined as the production rate beyond which the net operating cash flows from a project, which may be an individual well, lease, or entire field, are negative, a point in time that defines the project's economic life. Operating costs should be based on the same type of projections as used in price forecasting. Operating costs should include only those costs that are incremental to the project for which the economic limit is being calculated (i.e., only those cash costs that will actually be eliminated if project production ceases should be considered in the calculation of economic limit). Operating costs should include fixed property-specific overhead charges if these are actual incremental costs attributable to the project and any production and property taxes but, for purposes of calculating economic limit, should exclude depreciation, abandonment and reclamation costs, and income tax, as well as any overhead above that required to operate the subject property itself. Operating costs may be reduced, and thus project life extended, by various cost-reduction and revenue-enhancement approaches, such as sharing of production facilities, pooling maintenance contracts, or marketing of associated non-hydrocarbons (see Associated Non-Hydrocarbon Components, section 3.2.4 of the official PRMS document).

Interim negative project net cash flows may be accommodated in short periods of low product prices or major operational problems, provided that the longer-term forecasts must still indicate positive economics.

### **Determination of Reserves and Cash Flows**

Proved Developed Producing ("PDP") reserves were determined using decline curve analysis based on historical gross production rates. As of April 1, 2018 five of the six leases were producing, with the Britt 65 lease offline awaiting well repairs. Mosman reports seven currently producing wells on the five leases. Production data was provided on a per lease basis and individual well production histories were not available. All wells currently produce from the San Andres M2 zone in the San Andres formation which is productive across much of the Midland Basin.

**Proved Non-Producing ("PDNP")** reserves are associated with the repair/replacement of tubing and rods in four currently non-producing wells. Mosman has estimated the gross cost of repairs for these four wells to be approximately \$50M. These reserves are associated with the Marr-2, Drennan-8 and Britt 65 1 & 2 wells. There are two additional wells which Mosman has identified as needing repairs, however no work plan was provided for these wells (Fortenberry-3, Welch Townsite-2) and these wells are not included in the reserves estimate.

**Proved Undeveloped ("PUD") reserves** are associated with the proposed drilling of an approximately 3,500 ft lateral horizontal well within the productive San Andres reservoir zone present throughout the lease hold and the entirety of the Welch Field. This horizontal has been designed to develop the undrained southern portions of the Drennan and Welch Townsite units. The proposed drilling unit is approximately 59 acres. Estimated ultimate recoveries from the proposed horizontal well were estimated based on volumetrics using reservoir data



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provided by Mosman. Mosman provided drilling and completion (fracture treatment) cost estimates totaling approximately \$1.5MM. Mosman intends to spud the well in the summer, with first production forecasted to occur in September of 2018.

The average annual unadjusted prices used in this analysis are detailed in the tables on the following page along with the associated pricing differentials and BTU adjustments where applicable. Mosman does not currently sell gas from the lease and any gas produced from the Proved Undeveloped location has not been included in net reserves or revenue. Operating costs were derived from LOE data and estimates provided by Mosman and are estimated at a fixed cost of \$1,339/well/month with variable operating costs of \$2.84/BBL of oil and \$0.50/BBL of water. Fixed operating costs for the horizontal PUD location are estimated at \$8,000/month for the first six months of production, decreasing to \$3,000/month thereafter. Variable operating costs are assumed to be the same for the horizontal well. The current MosmanWI and NRI for each lease are also displayed on the following page.