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# **East Midlands Shale Oil Report**

## **Prepared for Union Jack Oil plc**

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#### **Executive Summary**

This report has been prepared for Union Jack Oil plc (Union Jack) to examine the shale resource potential within the UK onshore licence PEDL201, in which Union Jack holds a 10% interest.

Molten's review and analysis of available information and data can be summarised as follows:

- Predominantly within the north of licence PEDL201 there exists an area with significant thicknesses of Upper and Lower Bowland Shale. The geological history, limited well data, and the proximity of shallower oil field developments nearby lead Molten to believe that these shales are most likely oil bearing.
- Molten calculates the mean deterministic un-risked in place volumes within that shale area of approximately 5.4 billion barrels of oil and over 2.7 trillion standard cubic feet of gas.
- Union Jack's 10 percent interest of the mean volumes identified would amount to approximately 540 million stock tank barrels of oil initially in place (STOIIP) and approximately 270 billion standard cubic feet of gas initially in place (GIIP).
- Early indications from research by public bodies suggest that the UK's
  geology is favourable to shale resource production. Further exploration
  and appraisal is required to obtain a complete picture of the UK's
  geology. To be prudent this report has published neither risked volumes
  nor valuations.
- Elsewhere in the world, the combination of the technologies of horizontal drilling and hydraulic fracturing has permitted extensive shale developments, most notably in the US. Although relatively recent in the history of the oil and gas industry, developments such the Bakken oil play in the US have been producing for over 19 years. Shale oil recovery factors in the US have ranged from approximately 1 percent to nearly 10 percent.
- If recovery factors even at the low end of those achieved in the US can be realised in the UK, these volumes would represent significant economic developments.

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#### **Forward-looking Information**

Certain statements contained are forward-looking statements. Forward-looking information typically contains statements with words such as "intends," "anticipate," "estimate," "expect," "potential," "could," "plan" or similar words suggesting future outcomes.

Readers are cautioned not to place undue reliance on forward-looking information. It is possible that expectations, predictions, forecasts, projections and other forms of forward-looking information will not be achieved by Union Jack. By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties. A change in any one of these factors could cause actual events or results to differ materially from those projected in the forward-looking information. Although Union Jack believes that the expectations reflected in such forward-looking statements are reasonable, Union Jack can give no assurance that such expectations will prove to be correct.

Forward-looking statements are based on current expectations, estimates and projections that involve a number of risks and uncertainties which could cause actual results to differ materially from those anticipated by Union Jack and described in the forward-looking statements or information. The forward-looking statements are based on a number of assumptions, which may prove to be incorrect. In addition to other assumptions identified herein, Union Jack has made assumptions regarding, among other things: market costs and other variables affecting operating costs, the ability of partners to obtain equipment, services and supplies, including labour, in a timely and cost-effective manner, the availability and costs of financing, oil and gas prices, foreign currency exchange rates and hedging risks, government regulations and royalty regimes, and the degree of risk that governmental approvals may be delayed or withheld. Other specific assumptions, key risks and uncertainties are described elsewhere in this document and in Union Jack's filings with the AIM Exchange.

Readers should be aware that the list of assumptions, risks and uncertainties set forth herein are not exhaustive. Readers should refer to Union Jack's documentation for a detailed discussion of these assumptions, risks and uncertainties. The forward-looking statements or information contained in this document are made as of the date hereof.

Molten undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise, unless so required by applicable laws or regulatory policies.

### **Standards**

The evaluation of undiscovered gas initially in place in this report has been assessed in accordance with the current version of the 2007 Petroleum Resources Management System prepared by the Oil and Gas Reserves Committee of the Society of Petroleum Engineers (SPE) and reviewed and jointly sponsored by the World Petroleum Council (WPC), the American Association of Petroleum Geologists (AAPG) and the Society of Petroleum Evaluation Engineers (SPEE).

This report has been prepared to the standards of a Competent Person's Report (CPR) as set out in the AIM Note for Mining, Oil and Gas Companies, except that the report contains no valuation and no risk factors. No shale oil production has yet occurred in the UK, therefore Molten has not attempted to risk the in place volumes nor attempted a valuation of the shale prospect.

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