

# 21 December 2015

# Icewine #1 Drilling Update

88 Energy Limited ("88 Energy", "the Company", "Operator") (ASX, AIM: 88E) is pleased to provide the following drilling update.

# Highlights

- Currently at 11,180' approaching Total Depth
- Increased heavy gas observed whilst coring HRZ interval
- 96% recovery (87' of 90' recovered) in first HRZ core (11,075'-11,165')
- Cut / fluorescence observed while coring HRZ not evident in core chips at surface
- Second HRZ core currently underway
- Early interpretation large portion of HRZ at Icewine in thermal maturity sweetspot
- Initial log analysis high-grades conventional potential on acreage

## Overview

Core was successfully acquired in the HRZ interval from 11,075' – 11,165' with a 96% recovery factor. Whilst coring the HRZ interval, a pronounced increase in heavy gas fractions was exhibited in both the gas chromatograph and mass spectrometer. Additionally, oil shows with cut and fluorescence were observed in cuttings returned to surface.

Once the core was laid down and cut into 3' intervals for transportation, an additional analysis of rock chips taken directly from the core was undertaken. No cut or fluorescence was observed in these samples.

The contra indicative heavy gases / shows whilst drilling versus the lack of cut / fluorescence at surface may be the result of contamination (oil, grease buildup) in the mud system. The core, isotubes of gas collected from the formation while drilling and mud samples have been mobilised to the lab for analysis. The reason for the contradictory results will be determined in due course, along with results from the planned evaluation program on the core.

At this stage, it is too early to make any definitive statements regarding the thermal maturity of the HRZ at the Icewine#1 location; however, it is likely that a gas/condensate phase has been encountered, which bodes well for the thermal maturity model at Project Icewine, in a general sense.

The well continues to remain within budget.

# **Current Operations**

As at 20<sup>th</sup> December 13:00 (AK time), an additional core barrel had taken 15' of core (11,165'-11,180') in the base HRZ interval. Coring operations are continuing.



### **Forward Plan**

The forward plan is to finalise the current coring operation and then conduct the statutory Blow Out Preventer test before making a decision on whether to deepen the well to intersect the Kuparuk sands.

The well is planned to a Total Depth of 11,600' and was scheduled to take 30 days of drilling to complete. The primary objective of the well is the HRZ shale formation, targeting a huge unconventional resource prize.

Please refer to the presentation released 5<sup>th</sup> November 2015 for more details on the well, look-forward operations and evaluation program.

Further updates will be made in a timely fashion as information becomes available.

## Early Conventional Insights – Icewine Conventional Potential High-Graded

The HRZ remains the primary target at Icewine and results to date are encouraging for the play in the project area, although full evaluation will not be complete for several months. Additionally, preliminary petrophysical analysis of the logs acquired in the intermediate section from 3,500' – 8,500' are encouraging for Brookian conventional potential at Icewine#1 and across the leasehold.

For example, one of several conventional zones of interest in the Brookian sequence at Icewine#1 extends from approximately 4,000' to 4,400' and comprises a series of three stacked fine grained sandstone to siltstone sequences within the Schrader Bluff Formation. The sequences range from 61' to 110' in gross thickness with net:gross ranging from 78% – 100%. The average porosities of the clastic sequences are within the range of 18% - 19% with peaks of up to 28% porosity. Preliminary petrophysical analysis supports oil saturations in these sandstone units above 60% and up to 75%. Hydrocarbon shows whilst drilling this interval encountered mud log gas shows comprising predominantly C1 and minor oil shows, likely due to the fact that this interval is not within closure.

The commercial implications of these hydrocarbon bearing Brookian sandstones will be fully investigated following the completion of the well. The indications of significant volumes of oil in the system and excellent reservoir are highly encouraging on a regional basis. The challenge is now to find the oil within closure on the Project Icewine leasehold, which requires 3D seismic.

Managing Director of 88 Energy Limited, Dave Wall commented: "Preliminary results remain supportive of the HRZ play at Project Icewine; however, evaluation has only just commenced and uncertainty remains high.

The 96% recovery factor of the first core in the HRZ interval provides us with an excellent opportunity to evaluate the potentially huge HRZ prize over the coming weeks.

Early interpretation of the conventional potential at Project Icewine has been high-graded with evidence of significant amounts of oil and excellent reservoir in the region. Acquisition of 3D seismic will be crucial to unlocking this potential and, with the success of the recent placement and share purchase plan, the Company is well placed to execute its seismic strategy in the near term."

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# **Photos of Coring Operations**

NOTE: Fluid above and below is drilling mud



Link to drone video of drilling operations at site: http://88energy.com/media-releases/drone-video-of-drilling-operations/

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# Fig 1. Kuukpik Rig 5 On Location



Upon completion of drilling, certain data will be available immediately and will be reported to the market after internal examination; however, the definitive testing of the HRZ shale potential will take several months of data analysis. The pivotal focus will be an extensive evaluation of core material by specialist laboratories, which will cover a number of parameters considered critical for the success of the play.

Conventional potential may also exist in shallower (Brookian) and deeper (Kuparuk) horizons and the well has been designed such that testing of these horizons is possible, if warranted. The drilling of Icewine #1 will deliver first insight to the conventional prospectivity of 88 Energy's acreage to be matured up by the potential acquisition of 3D seismic in the near term. The conventional horizons that will be encountered in Icewine #1 have not been delineated by 3D seismic and remain secondary to the primary target, that being the HRZ shale.

Regular announcements will be made during the course of drilling, as appropriate.

Yours faithfully

Dave Wall Managing Director 88 Energy Ltd

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## **Project Icewine Highlights**

In November 2014, the Company entered into a binding agreement with Burgundy Xploration (BEX) to acquire a significant working interest (87.5%, reducing to 78% on spud of the first well on the project) in a large acreage position on a multiple objective, liquids rich exploration opportunity onshore Alaska, North America, referred to as Project Icewine. In November 2015, the gross acreage position was expanded by 174,240 acres (to be awarded in due process by the State of Alaska)..

88 Energy has a 272,422 gross contiguous acre position with 212,489 acres net to the Company, located on an all year operational access road with both conventional and unconventional oil potential. The primary term for the State leases is 10 years with no mandatory relinquishment and a low 16.5% royalty.

The unconventional oil play will be tested by the recently spud Icewine #1 exploration well, scheduled to be completed in November 2015.



**Figure 1: Project Icewine Location** 

Generous exploration incentives are provided by the State of Alaska with up to 85% of exploration expenditure in 2015 cash refundable, dropping to 75% mid 2016 and thereafter 35%.

The primary objective is an untested, unconventional liquids-rich shale play in a prolific source rock, the HRZ shale, (Brookian Sequence), that co-sourced the largest oil field in North America; the giant Prudhoe Bay Oil Field Complex. Internal modelling and analysis indicates that Project Icewine is located in a high liquids vapour phase sweetspot analogous to those encountered in other Tier 1 shale plays e.g. the Eagle Ford, Texas.

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Conventional play potential can be found at Project Icewine within the same Brookian petroleum system and shallow to the HRZ shale and includes high porosity channel and deep water turbiditic sands. The Brookian conventional play is proven on the North Slope; the USGS (2013) estimate the remaining oil potential to be 2.1 billion barrels just within the Brookian sequence. Additional conventional potential exists in the deeper Kuparuk sands and the Ivashuk Formation.

Drilling, (2012), in the adjacent acreage to the north confirmed that the HRZ shales, along with the underlying Kingak & Shublik shales, were all within the oil window which is extremely encouraging for the unconventional potential at Project Icewine. In addition, a conventional oil discovery was reported in the Kuparuk sandstones.

A Prospective Resources Report by DeGolyer and MacNaughton, was commissioned by 88 Energy to evaluate the unconventional resource potential of Project Icewine in early December 2014 and was released to the market on 19 January 2015.

**About 88 Energy**: 88 Energy has a 78% working interest and operatorship in ~272,000 acres (~174,000 acres subject to formal award) onshore the prolific North Slope of Alaska ("Project Icewine"). The North Slope is the host for the 15 billion barrel Prudhoe Bay oilfield complex, the largest conventional oil pool in North America. The Company, with its Joint Venture partner Burgundy Xploration, has identified three highly prospective play types that are likely to exist on the Project Icewine acreage – two conventional and one unconventional. The large resource potential of Project Icewine was independently verified by leading international petroleum resource consultant DeGolyer and MacNaughton. In addition to the interpreted high prospectivity, the project is strategically located on a year-round operational access road and only 35 miles south of Pump Station 1 where Prudhoe Bay feeds into the TransAlaska Pipeline System. The Company plans to progress drilling and seismic acquisition in the near term to take advantage of the globally unique fiscal system in Alaska, which allows for up to 85% of CY2015 exploration expenditure to be rebated in cash.

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