

Alameda-2: First Production Results

Highlights

- Production test of Unit 1A (the shallowest unit of the upper Amistad interval) flowed oil to surface unassisted, demonstrating moveable hydrocarbons at this level
- Recovering oil unassisted from this shallow depth (hence lower pressure) was only given a low chance and therefore did not materially contribute to the previous resource estimate
- With a productive interval of 63 metres TVD this interval now needs to be reconsidered and may, with engineering solutions, lend itself to future development
- Now drilling ahead to the deeper more prospective units to take cores, logs and flow and sample the oil in the next interval - Unit 1B

Melbana Energy's Executive Chairman, Andrew Purcell, commented: "We are pleased with the results of this first appraisal of the uppermost portion of the Amistad reservoir section. We took the opportunity to evaluate the unit whilst drilling through the formation, as is good oilfield practice, but had low expectations given the shallow depth and associated low reservoir pressure and temperature. As such, no resource was included from this interval in our estimates of the most likely oil resource estimate for Unit 1. What we have found is typical of the quality of crude found in Cuba at shallow depths but having it flow to surface unassisted from a depth of about 500 metres exceeded our expectations. Given this significant interval of oil rich fractured carbonate it will now need to be factored into potential field development planning once we have completed testing Units 1B, 2 and 3 - the deeper targets for Alameda-2 which we regard as more prospective.

This first appraisal well has a long way to go with multiple exciting intervals still to be tested, even before we commence the second appraisal well (Alameda-3) later this year."

SYDNEY, AUSTRALIA (5 July 2023)

Melbana Energy Limited (ASX: MAY) (**Melbana** or **Company**), a 30% interest holder in and operator of Block 9 PSC onshore Cuba, advises that testing of the first and shallowest unit of the Amistad interval, designated Unit 1A, has been completed.

Two whole rock cores were taken within the upper portion of the reservoir at separate intervals between 476 - 481 mMD and 505 - 508 mMD. The presence of black oil was noted in naturally fractured limestone in both cores (see Figure 1).

Flow testing operations of Unit 1A then commenced over a gross open hole interval of 63 metres (445 - 508 mMD) with the upper packer set within the casing. Black oil flowed to surface after a 5-hour period through a 32/64" choke, but not at a measurable rate and with a maximum well head pressure at surface of 125 psi. The maximum well head pressure measurement has been calculated to be the equivalent of the interval pressure supporting a column of dead oil in the string and accounts for the low flow rate seen at the surface. A total volume of 40 barrels of oil were recovered at surface and samples sent for laboratory analysis (see Figure 2). Initial results indicate that the oil recovered has an API gravity of 11.7° (at standard temperature), a typical quality for shallow oil given bacteria that removes the lighter end of the hydrocarbon chain can exist at the temperatures there. Viscosity was 3783 cP at 50°C.

Such API and viscosity values are similar to other shallow oil fields in the northern Cuban fold belt where more than 200 million barrels of oil has been produced over the past 20 years. Production from these fields use a combination of various pumping methods and free flow.

Testing operations for this first and shallowest unit are now complete and results are being evaluated. Preparation is underway to re-commence drilling the 8½" hole to the next core point in Unit 1B at 929 mMD.



Figure 1 - Core showing the presence of black oil in naturally fractured limestone



Figure 2 - Sampling oil recovered at surface for lab analysis

ABOUT THE BLOCK 9 APPRAISAL WELL PROGRAM

Block 9 PSC is a large onshore area of more than 2,300km² located on the north coast of Cuba in a proven hydrocarbon system and along trend with the multi-billion barrel Varadero oil field. Melbana's technical team has identified 19 structural prospects and leads within the block (see Figure 3).

Melbana completed an initial two well exploration program in 2022, the first of which (designated Alameda-1) encountered three geologically independent oil-bearing intervals, each with moveable oil accompanied by high pressure, that were subsequently independently estimated to contain oil in place of 5.0 billion barrels for a Prospective Resource of 267 million barrels (gross unrisked best estimate)^{*,1} - an 89% increase of the predrill prognosis.

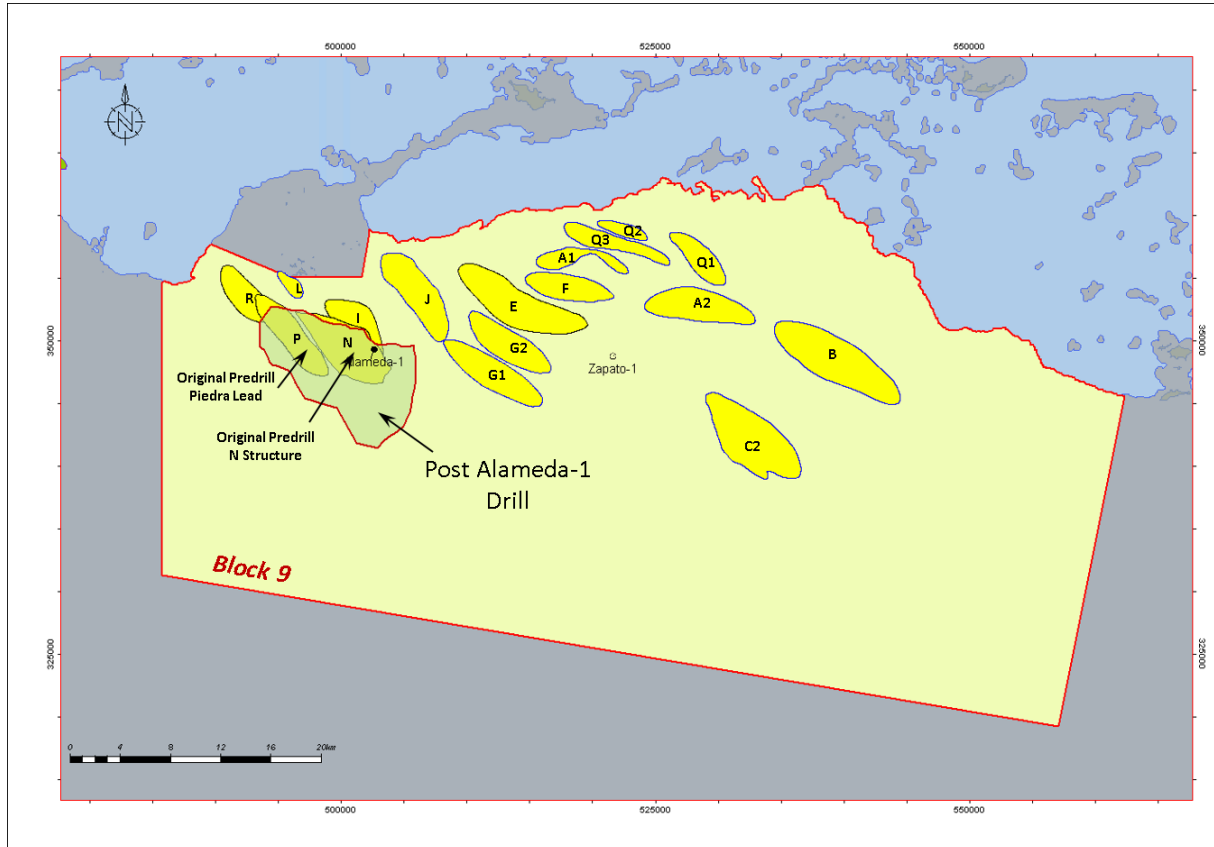


Figure 3 - Block 9 structural prospects and leads

Melbana then designed a two well appraisal program to better understand the characteristics of these intervals and their production potential (see Figure 4 on page 4). The first of these appraisal wells, designated Alameda-2, will test the three oil bearing units of the shallowest interval called Amistad. Drilling of Alameda-2 commenced in June 2023.

Following the completion of Alameda-2, the second appraisal well (designated Alameda-3) will test the two deeper intervals called Alameda and Marti. The scope of these appraisal wells includes coring, wireline logging, flow testing and quality analysis.

*** Prospective Resources Cautionary Statement** - The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Future exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

¹ See ASX announcement dated 1 August 2022

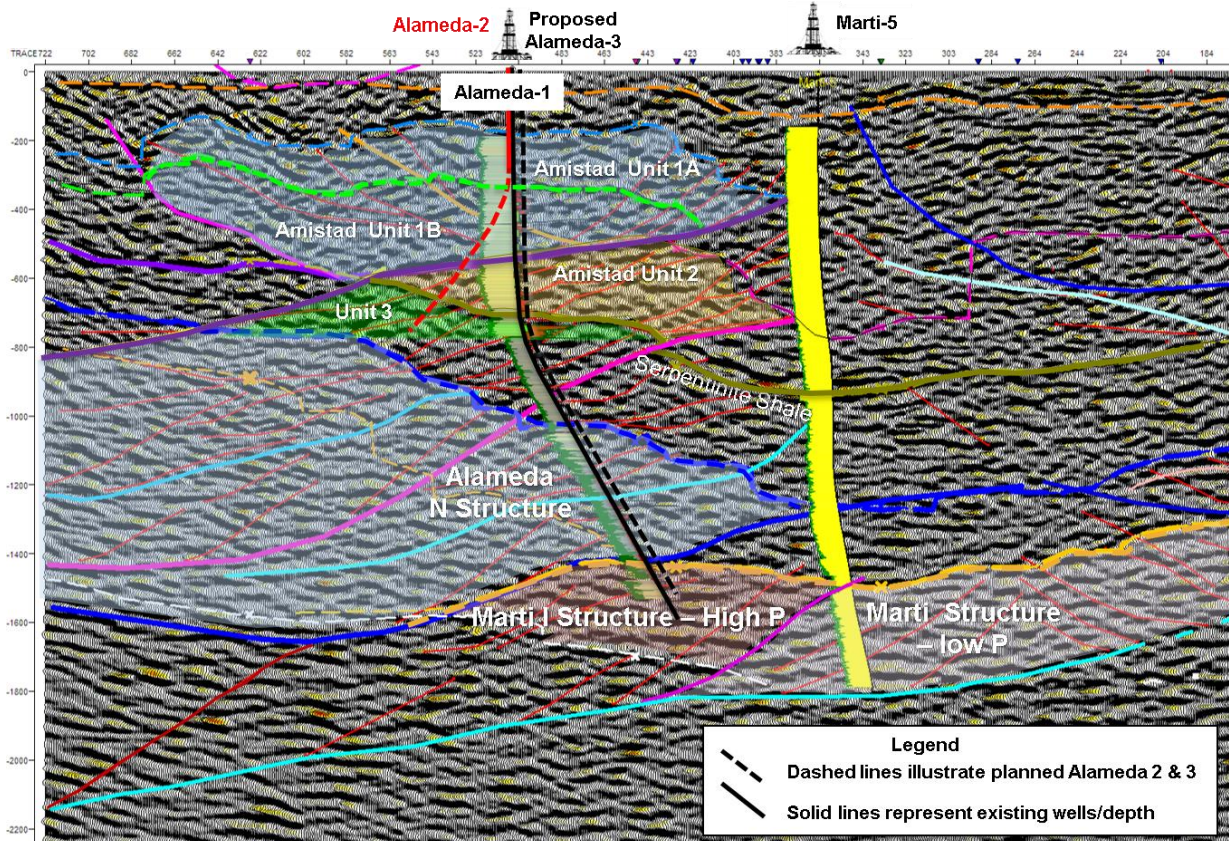


Figure 4 - Targets, trajectories and progress for the two appraisal wells (Alameda-2 and Alameda-3)

ENDS.

For and on Behalf of the Board of Directors:

Andrew Purcell
Executive Chairman

For further information please contact

Cate Friedlander
Company Secretary
+61 2 83 23 66 00

APPENDIX A
DISCLOSURES UNDER ASX LISTING RULE 5

ALAMEDA-2: UNIT 1A	
LR 5.30 (a)	Alameda-2 appraisal well, conventional oil
LR 5.30 (b)	Block 9 PSC, onshore Cuba about 140 km east of the capital, Havana
LR 5.30 (c)	Melbana Energy holds a 30% interest and operatorship
LR 5.30 (d)	No updated gross or net pay is being reported for Unit 1A in Alameda-2 as no wireline logs were run over this interval. In Alameda-1 a total of 3.1 metres of net pay was recorded from the available logs from an interval of 306 metres.
LR 5.30 (e)	Fractured limestone and interbedded chert
LR 5.30 (f)	Unit tested over a 63 metre interval from 445 mMD to 508 mMD
LR 5.30 (g)	An open hole test was undertaken and the cumulative flow period was 16 hours.
LR 5.30 (h)	Black dead oil was flowed to surface.
LR 5.30 (i)	The BSW was 26% (25% water and 1% sediment). No gas was encountered.
LR 5.30 (j)	Choke size varied from 32/64" to 8/64". Flow rate was too small to measure at surface and 40 barrels of dead oil was recovered.
LR 5.30 (k)	No stimulation techniques have been used for this test.
LR 5.30 (l)	No gases were recovered in this test.
LR 5.30 (m)	Oil quality has been measured at 11.7° API at 60°F. Viscosity was 3783 cP at 50°C.

Table 1 - Glossary of Key Terms

Term	Meaning
Barrel	One barrel of oil; 1 barrel = 35 imperial gallons (approx.) or 159 litres (approx.); 7.5 barrels = 1 tonne (approximately, depending on the oil density); 6.29 barrels = 1 cubic metre.
BBL	Barrels
BOE	Barrels of oil equivalent
BSW	Basic sediment and water
Carbonate	Class of sedimentary rocks which mainly contains calcite, aragonite and dolomite.
COS	Geological chance of success
cP	Centipoise
M	Thousands
MM	Millions
mMD	Metres, Measured Depth
P10	the term used to describe the volume of hydrocarbons defined as having a better than 10% chance of occurrence.
P50	the term used to describe the volume of hydrocarbons defined as having a better than 50% chance of occurrence.
P90	the term used to describe the volume of hydrocarbons defined as having a better than 90% chance of occurrence.
Prospect	A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target.
Prospective Resources	Those quantities of petroleum that are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.
Stock Tank Oil	Volume of oil at nominal atmospheric storage pressure and temperature (as opposed to reservoir conditions).
STOOIP	Stock tank oil originally in place.
TVD	Trued vertical depth
Unrisked	Prior to taking into account the chance of discovery.