



BEETALOO OPERATIONS UPDATE – C-3H AND C-2H

13 OCTOBER 2022

- **Carpentaria-3H (“C-3H”), Empire’s second horizontal appraisal well with a planned 2,000m horizontal section targeting the Velkerri B shale, has commenced drilling**
- **C-2H average production rate over the first 51 days of testing was 2.2 million standard cubic feet (mmscf) per day, equivalent to 2.4 mmscf per day per 1,000 metres of horizontal section**
- **C-2H tracer data analysis has commenced, with results to be used to inform C-3H completion and fracture stimulation design**
- **Carpentaria-4V (“C-4V”) to be drilled after the drilling of C-3H**
- **Cash at bank at 30 September 2022 was \$32.7 million**

Comments from Managing Director Alex Underwood:

“The Empire team continues to be highly encouraged by the results we have seen at C-2H, characterised by relatively low decline rates and average production rates that give us increasing confidence we will be able to economically develop our significant gas resource in EP187 and across the Beetaloo Basin.

Preliminary tracer data indicates that all stimulated stages are contributing, albeit some stages are producing significantly more gas than others. The data we continue to collect and analyse will inform the completion design for the C-3H well, with fracture stimulation planned for later this year.

Despite weak equity market conditions, we are experiencing strong macro tailwinds for our large scale, low CO₂ Beetaloo gas project. Federal Resources Minister Madeleine King last week publicly predicted that gas prices are very unlikely to ever return to levels below \$10 / GJ, and the ACCC continues to forecast material supply shortfalls in years ahead. This underscores the critical importance of increased gas supply into Australia’s domestic market and that of the broader Asian region. We are well placed to respond to these challenges as we target commercial production by 2024 / 2025.”

Empire Energy Group Limited (“Empire”) is pleased to provide shareholders with this update of operations in Empire’s 100% owned and operated EP187 tenement, located onshore Northern Territory in the Beetaloo Sub-basin (“Beetaloo”).

Carpentaria-3H

The C-3H well has commenced drilling. Empire has contracted Schlumberger Land Rigs 185 to drill both C-3H and C-4V. C-3H will be a horizontal well with a planned 2,000 metre horizontal section that will be fracture stimulated. The well is being drilled from the same pad as C-2H, also targeting the B Shale of the Velkerri Formation but going downdip in the opposite direction. C-3H will further de-risk the project and optimise production rates by applying learnings from the fracture stimulation and flow testing of C-2H.



Schlumberger Land Rigs 185 on location at the Carpentaria-2H / 3H well pad

Carpentaria-2H Operations

Flow back of stimulation fluids commenced at C-2H on 1 August 2022, immediately following placement of the well's 21 hydraulic stimulation stages. Gas flow commenced on 5 August 2022 with a period of significant but unmeasurable gas rates due to slug flow (gas with water production). Gas flow measurement began on 7 August 2022 and has flowed continuously since then, except for a 2-day operational shut-in to replace the hydraulic stimulation surface pipework with production pipework. Following that shut-in, a peak rate of >11 mmscf per day was achieved. The gas has been flowing through 4 ½" casing. Production tubing was not required.

The average production rate over the first 51 days was 2.2 mmscf per day (a normalised rate of 2.4 mmscf per day per 1,000 metres of horizontal section). C-2H was producing at a rate of 1.82 mmscf per day prior to the recent shut-in.

C-2H has been shut-in as planned to monitor pressure build-up and evaluate the impact on well productivity following a period of "soaking". Soaking is the practice of shutting in a well for a period of time following fracture stimulation to seek to improve long-term productivity through redistribution and/or interaction of the residual water with the rock. Productivity improvements have been achieved at other Beetaloo wells and in analogous US shale plays following the execution of such a strategy.

Evaluation of production tracer data to understand how each of the 21 hydraulically stimulated stages at C-2H has contributed to the overall production has commenced. Results are expected to be available prior to the commencement of the fracture stimulation of C-3H. Learnings acquired from C-2H will be applied and adapted at C-3H to optimise completion and fracture stimulation design.

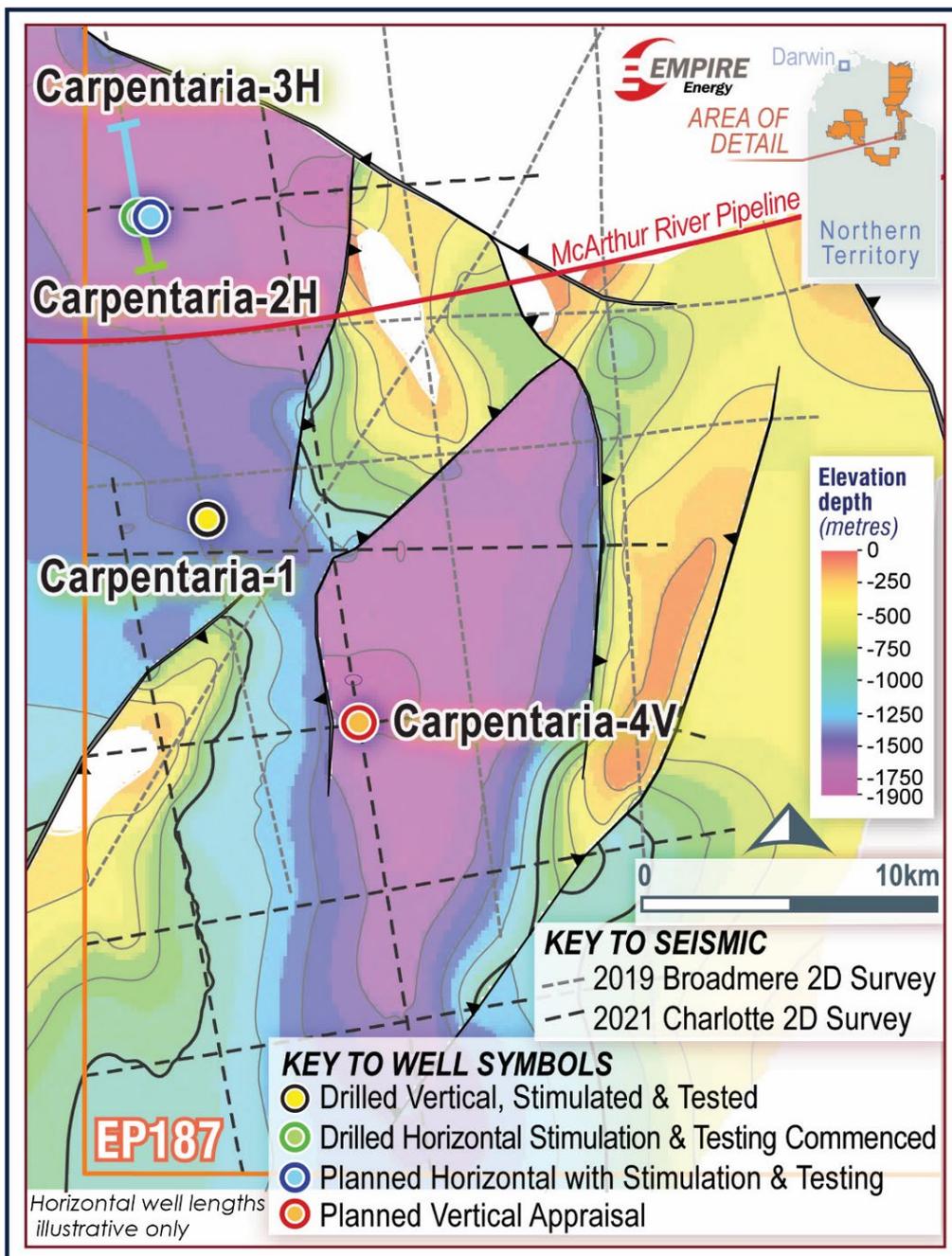
The success of C-2H is an extremely encouraging step towards commerciality. It provided key information for future wells including:

- Beetaloo-specific horizontal well drilling methods;
- enhancement of Beetaloo-specific hydraulic stimulation fluid selection, perforation strategy, proppant concentration and pumping techniques;
- refinement of the target window for landing a Velkerri B Shale horizontal section; and
- understanding the high-calorific gas composition at Carpentaria.

Empire is using this technical data to develop an early production type curve for development planning.

Upcoming Work Program

C-4V will be drilled in the Carpentaria East Area (an adjacent area defined by the seismic program) targeting the Velkerri Formation shales to convert Prospective Resources to Contingent Resources and further delineate the EP187 Velkerri Formation. Following extensive formation evaluation, the vertical well will be suspended as a potential future horizontal development well.



Disclosures under ASX Listing Rule 5

- LR 5.30 (a) Carpentaria-2H is a shale gas well
- LR 5.30 (b) Carpentaria-2H is located in Empire's wholly owned and operated EP187 tenement, located in the Beetaloo Sub-basin in the Northern Territory
- LR 5.30 (c) Empire holds a 100% working interest and operatorship in Carpentaria-2H
- LR 5.30 (d) N/A
- LR 5.30 (e) The Carpentaria-2H horizontal section has been drilled in the B Shale of the Velkerri Formation
- LR 5.30 (f) The depths of zones tested range from 1,585 to 1,594 metres True Vertical Depth (TVD) referenced to Rotary Table (6.9m above ground level). The zones tested are along a 927 metre stimulated horizontal section
- LR 5.30 (g) Flow testing of the well following the hydraulic stimulation of Carpentaria-2H. 51 days duration (as of 6am Australian Central Standard Time on Thursday 29th September 2022)
- LR 5.30 (h) Gas recovery - mole %: Methane 83.17, Ethane 11.95, Propane 1.47, Butane 0.3, Pentane and Higher 0.06
- LR 5.30 (i) 31,880 barrels of flowback fluid (including coiled tubing cleanout volume) has been recovered to date, representing 38% of total injected water. During the 51 days of measured gas flow, the rate of fluid flowback declined from ~1,500 bbl. / day to ~80 bbl. / day
- LR 5.30 (j) The orifice plate size is 2 1/8"
- Gas flow from Carpentaria-2H averaged at a rate of 2.2 mmscf / day metres (a normalised rate of 2.4 mmscf per day per 1,000m) across the stimulated horizontal section of 927 metres over the first 51 days. After 51 days the well was producing at an actual rate of 1.82 mmscf per day
- LR 5.30 (k) Wellhead pressure has ranged from 117 psi – 1,275 psi. Test duration 51 days (as at 6am Australian Central Standard Time on Thursday 29th September 2022)
- LR 5.30 (l) 21 stages along an effective stimulated horizontal length of 927 metres (3,041 ft). 7 slickwater stages, 8 crosslink stages, 4 hybrid stages and 2 HVFR stages were executed with a total of 6,283,200 lbs. of proppant (sand) placed representing proppant concentration of 2,066 pounds per foot
- LR 5.30 (m) Mole %: Helium 0.16%, Carbon Dioxide 0.88% and other Inert volume 2.01%
- LR 5.30 (n) N/A

This ASX release has been authorised by the Managing Director

For queries about this release, please contact:

Alex Underwood, Managing Director

Ph: (02) 9251 1846

info@empiregp.net