

ASX:EEG

NT Operations Update

1 July 2020



Highlights

Empire Energy Group Limited (“Empire”) is pleased to update shareholders regarding the upcoming EP187 ‘Carpentaria-1’ exploration drilling campaign in the Northern Territory’s Beetaloo sub-Basin.

Highlights include:

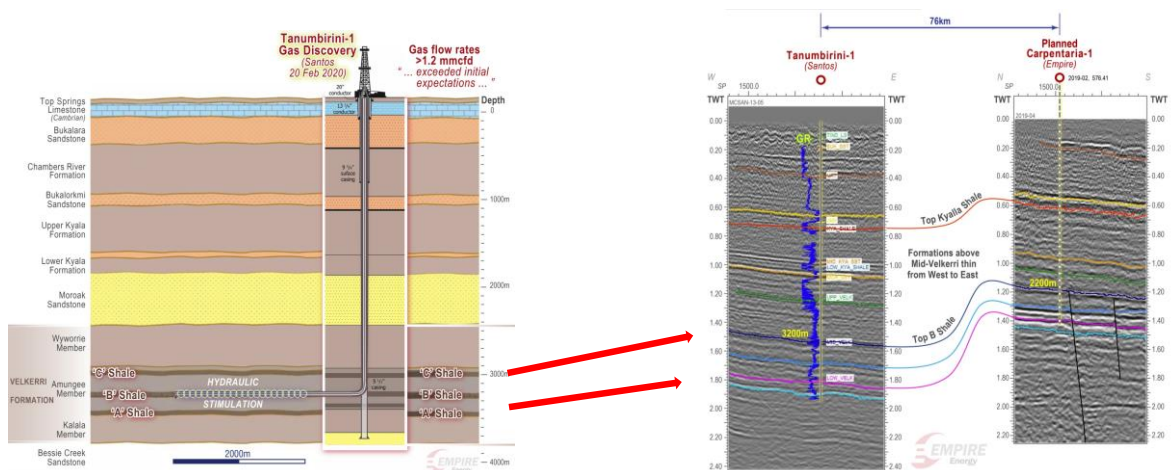
- **The drilling location for Carpentaria-1 has been selected**
- **Empire has selected a preferred drilling contractor** and commercial negotiations for the drilling contract are well advanced
- **Long lead items have been ordered** including the well head and casing
- **The well design has been finalised** to allow for evaluation of the Velkerri Shale and Kyalla Shale and future production testing
- **COVID-19 protocols in place to allow resumption of planned field activities**
- **Drilling is presently planned to commence in Q3 2020**

Target Shale Horizons and Carpentaria-1 Drilling Location

The Velkerri Shale and Kyalla Shale, Empire’s primary and secondary targets for 2020 drilling, are ~1.4 billion years old and were deposited in an equatorial marine setting. Significant organic material is entrapped in the shales and with maturation over time has created a significant unconventional hydrocarbon resource play.

As previously reported, Empire’s late 2019 2D seismic program has been instrumental in demonstrating the depth, formation thickness and lateral extent from offset data sets of the established hydrocarbon-bearing shales of the Beetaloo Sub-basin within Empire’s EP187 tenement. The target shales are interpreted to be buried to an ideal depth for both gas and liquid hydrocarbon generation for potential future commercial extraction.

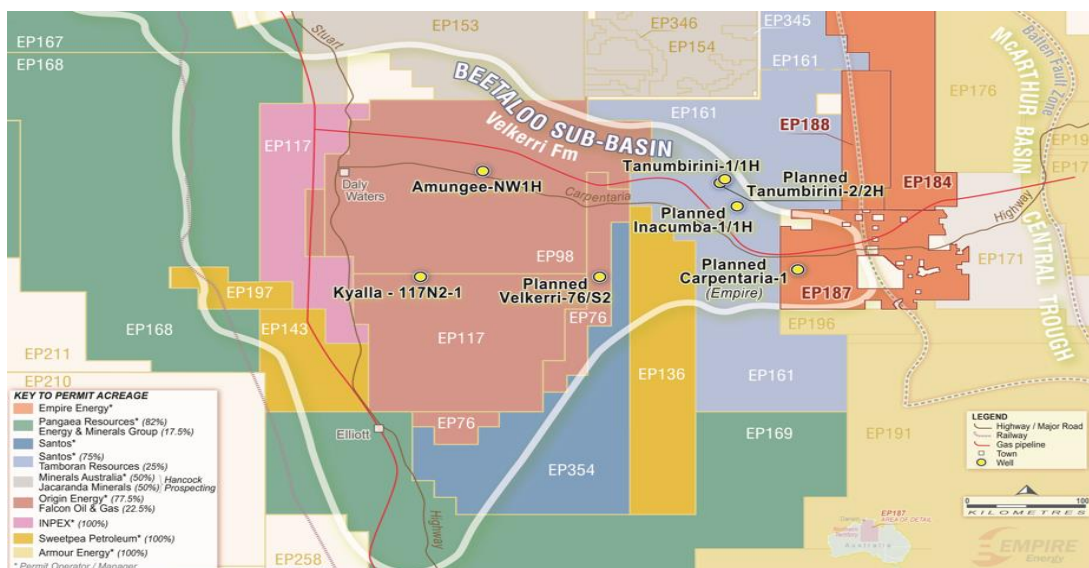
Empire’s interpretation demonstrates that the gross interval of the Velkerri Shale, Empire’s primary EP187 objective, extends from ~2,200 metres depth to ~2,800 metres depth at our proposed drilling location, Carpentaria-1, and the secondary objective liquids-rich/gas bearing Kyalla Shale is prognosed to be present at ~1,400 metres depth, over a 100m interval.



These schematics demonstrate the correlation and interpreted continuation of the Velkerri and Kyalla Shales from Santos' Tanumbirini-1 well location¹ to Empire's EP187 proposed drilling location

The Company's new seismic data has delineated an easterly extension of the Beetaloo sub-Basin into EP187 comprising two prospects, one of approximately 40,000 acres (~160km²), and a second prospect which extends across approximately 25,000 acres (~100km²). Using the results of the seismic program, Netherland, Sewell and Associates International, Inc. ("NSAI") generated an independent prospective resource estimate on Empire's Velkerri and Kyalla Shale holdings in EP187 with a best estimate prospective resource of 2.4 TCF. Empire's Carpentaria-1 drilling program will target these shales in EP187.

Empire's Northern Territory total property package has been independently assessed by NSAI with a total best estimate prospective resource of 13.46 TCF gas.



Beetaloo sub-Basin map showing major operator planned activities including the location of Empire's Carpentaria-1 drilling location which will target the Velkerri and Kyalla Shales

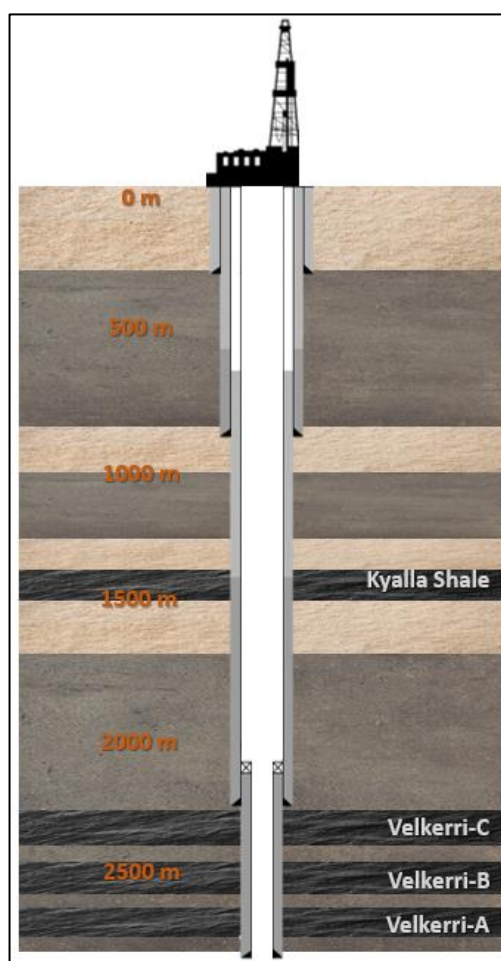
¹ Based on Empire analysis of Empire technical data and 3rd party seismic data now on 'open file' in Northern Territory Government records

Carpentaria-1 Well Design

Empire's Carpentaria-1 well will be drilled to a planned depth of 2,900m, which will allow Empire's technical team to fully evaluate the Velkerri Shale and the Kyalla Shale. This includes an extensive formation evaluation programme, coring and wireline logging, coupled with a series of 'Injection Fall-Off Tests' to identify the most productive horizons for planned hydraulic stimulation for Carpentaria-1 next season.

The goals of the Carpentaria-1 Q3 2020 drilling program will be:

1. To identify and prove the extension, depth and thickness of the Kyalla and Velkerri Shales in EP187;
2. To generate a detailed assessment of rock properties, hydrocarbon content, formation permeability and reservoir pressure with a view to high-grading intervals in the target shales for vertical hydraulic stimulation and testing, and subsequent horizontal well design and placement and extended production testing; and
3. To formulate a strategy to achieve best appraisal results in the proposed 2021 hydraulic stimulation program with a view to early production.



The well design schematic for the Carpentaria-1 2020 drilling program is shown above. Casing and a wellhead have been ordered for delivery to the wellsite.

After Carpentaria-1 reaches the target depth and the formation evaluation program is completed, the well will be temporarily suspended over the NT Wet Season. The well will then be re-entered early in the 2021 NT Dry Season (Q2 2021) (subject to Board and Government approvals) to carry out the vertical fracture stimulation program and production flow testing. This work is analogous to the vertical fracture stimulation and

flow test recently carried out by Santos on Tanumbirini-1 which exceeded initial expectations with gas flow rates of over 1.2 mmcf / day².

Carpentaria-1 Drilling Program Execution

Subject to drilling contract completion, Empire currently expects to commence drilling operations in Q3 2020. The drilling of the Carpentaria-1 well to 2,900m and formation evaluation program is expected to take ~45 days. Empire will keep the market informed as final preparations for, and execution of, the drilling program progress.

As previously advised, Empire's Environment Management Plan ("EMP") for the drilling of Carpentaria-1 was approved by the Northern Territory Department of Environment and Natural Resources ("DENR") in Q1 2020. The EMP is for Dry Season drilling, so Empire has submitted a revision to the EMP with provisions to continue drilling if the program is not complete by the end of the Dry Season. DENR has confirmed that the approved Dry Season EMP will remain valid while the revision is assessed which will allow Empire to commence drilling in Q3 2020.

Empire has a COVID-19 Management Plan approved by the NT Chief Medical Officer in place that includes exemptions to Northern Territory border and movement restrictions. However, with the Northern Territory border planned to be reopened on 17 July 2020, it is likely that the COVID-19 Management Plan will not be required.

Empire has initiated the regulatory approval process for the vertical stimulation of Carpentaria-1, which is expected to be executed in Q2 2021 (subject to Board and Government approvals). The vertical stimulation and flow testing program will provide appraisal data to allow Empire to select the optimal depth to drill a horizontal section and carry out a multi-stage horizontal stimulation appraisal.

The horizontal drilling and multi-stage stimulation phase will likely be carried out late in 2021 (subject to Board and Government approvals).

This ASX release has been approved by the Board of Directors

For queries about this release, please contact:

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² Santos ASX announcement 22 January 2020 "Fourth Quarter Activities Report"