Case study

Revolution centralizers deliver world record!

Client
Vermilion O&G Australia

Project location
Wandoo Platform - Western Australia

Product
Matrix “Revolution” Ultra Low Friction Advanced Polymer Centralizers (multiple Sizes)

Construction year
2016

BACKGROUND

In May 2016 Matrix Ultra-Low Friction Max-R ‘Revolution’ Centralisers were used by Vermilion Oil and Gas Australia to aid the deployment of a lower completion string made up of a selection of varying OD sand control screens with ICD’s and blank pipe, along with strategically placed swell packers. Vermilion used a tapered sting design, combining 4-1/2”, 5-1/2” and 6-5/8” pipe sizes to ensure that the required levels of flexibility and stiffness were provided for along the open hole section.

WELL DESIGN AND DELIVERY

The B11ST1 extended reach well was drilled and completed on the Wandoo Platform situated offshore Western Australia.

With a true vertical depth of 636.6 meters below rotary and a total measured depth of 3,710.28 meters, the geosteered trajectory was uniquely challenging, with a drilling step-out ratio of 5.14:1 (new world record), a directional difficulty index of 7.31 and a cumulative tortuosity of 324.05. The well was completed as a TAML Level 5 multilateral, hence getting the lower completion string to depth was critical to success. This required significant planning, together with thorough scrutiny of the completion design and the drag reduction equipment that would be utilised to aid installation.

The knowledge gained from previous campaigns allowed the lower completion string design to be optimised and ensured appropriate friction reduction product selection. The Matrix Revolution Centralisers were once again selected by the Vermilion team to assist the deployment of the lower completion, with it reaching the required depth without mechanical assistance.

SUMMARY

The team at Matrix Composites and Engineering, based in Henderson Western Australia, worked closely with Vermilion in the early stages of development and testing of the centraliser materials for ERD projects. Matrix also provided bespoke design 4-1/2" centralisers for the lower tapered section to enable adequate standoff in 8- 1/2" open hole.

Jason Kent, Matrix Well Construction Product Line Manager commented on the success of the operation, *"We are deeply proud of our relationship with Vermilion and the part we played in providing a solution that enabled the successful delivery of a technically challenging operation. Our involvement adds further depth to the growing list of technical success achieved by our range of Max-R Low Friction Centralisers, of which over 166,000 have been deployed globally to date. We congratulate the Vermilion team on another successful operation and look forward to continuing working with them further in future projects."*

Vermilion B11ST1 well design specification:

- **Directional Difficulty Index (DDI):** 7.31
- **Drilling step out ratio:** 5.14:1
- **Cumulative tortuosity:** 324.05
- **Lower completion step out ratio:** 5.02:1
- **Lower completion in open hole:** 2929.75m MD
- **Total lower completion length:** 2967.15m MD
- **Average open hole TVD:** 636.6m TVDRT
- **Min open hole TVD:** 629.68m TVDRT
- **Max open hole TVD:** 650.64m TVDRT
- **Top Window:** 780m MDRT (638.19m TVDRT)
- T**D Well:** 3783m MDRT (650.64m TVDRT)
- **TD Lower completion:** 3709.75 MDRT (647.32m TVDRT)
- **Unwrapped well horizontal departure:** 3275.95m
- **Unwrapped lower completion horizontal departure:** 3200m
- **RT-AHD:** 54.14m

To find out more, visit our website, email matrix@matrixengineered.com or call:
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