



DST'S DISCOVER NEW RESERVOIR IN OMAN, TRIPLING JUNIOR OPERATOR'S PRODUCTION

CHALLENGE

Test multiple zones to determine the best candidate(s) for subsequent horizontal drills.

In February 2019, Hydrocarbon Finder (HCF) mobilized Northstar to their Sahma East 2 Well in Block 7 in Oman to help them with a problem; wire-line logs had proven misleading and were not able to differentiate between viable and non-viable zones.

SOLUTIONS

1. Open Hole Inflate Straddle DST configuration to individually isolate and test each reservoir of interest.
2. Capture downhole samples, flow rate and shut-in reservoir pressure for subsequent data analysis and reservoir characterization.

HCF CEO, Mohammed Al Jahwari, was adamant that the only way to proceed was to test and prove moveable oil in the virgin reservoir condition prior to casing the well.

"DST's were used to evaluate the hydrocarbon potential of the Hasirah reservoir to determine productivity and fluid properties prior to side-tracking the well. It gave us a much better understanding of the reservoir." - Explains HCF geologist Muhammad Farooq.

RESULTS

Two Northstar Drill Stem Tests (DST) determined that the intended primary target did not contain moveable oil, while the secondary target was surprisingly an excellent candidate for a horizontal well.

Critical information acquired included:

1. Hydrocarbon flow rates
2. Oil samples
3. Permeability

OPTIMIZING RESERVOIR EVALUATION

NORTHSTAR PROVIDES HARD EVIDENCE FOR **CONFIDENT** DECISIONS

At nearly 4,000m depth, bottom hole temperature over 120°C and a washed-out borehole; the conditions posed challenges.

The liquid recovery from the inflate straddle test proved that higher concentrations of oil were present than the log data had suggested.

*“Based upon the DST, we learned that our reservoir is hydrocarbon bearing and there is no water production. A horizontal well targeting the top part of the reservoir was drilled and completed, and we are now getting production of 1200 bbl/d (191 m3/d) through a 16/64” choke. The DST built our **confidence** in an exploration well that went deeper than the offset wells.”* Says Farooq.



DRILL STEM TESTING



PROVE RESERVES



RESERVOIR DATA BEFORE COMPLETION

WHY USE DRILL STEM TESTING?

For decades, the industry has turned to drill stem testing to determine the feasibility of oil and gas reservoirs. Thanks to advancements in technology, drill stem testing has evolved to provide valuable information beyond conventional applications and is also used for:

- ↓ Geothermal projects
- ↓ Acidizing and stimulation wells
- ↓ Potash operations
- ↓ Disposal wells
- ↓ Exploration wells
- ↓ Unconventional applications

Information obtained from drill stem testing helps to:

- ↓ Reduce finding costs
- ↓ Improve efficiency
- ↓ Guide future testing
- ↓ Maximize output
- ↓ Indicate reservoir's commercial productivity

Drill stem testing provides you with the data you need to make crucial decisions about your well before you take costly, irreversible steps. DST informs your production vs. abandonment vs. intervention decision, saving you time and money.

NORTHSTAR
DOWNHOLE SPECIALISTS

LEADING INNOVATION IN DRILL STEM TESTING

Northstar's world-class service and innovative technology combined with our unparalleled field expertise allow us to

develop state-of-the-art downhole solutions to the challenges you face, unlocking the full potential of your reservoir.

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