

Robust QUANTUM RH Packer Enables Underbalanced Perforating and Saves USD 700,000 for PDO

Retrievable hydraulic-set sealbore production packer saves rig days and eliminates post-perforating interventions, Oman

CHALLENGES

- Enhance productivity by minimizing reservoir damage caused by kill fluid across the perforation zones.
- Mitigate possibility of unsettling completion packer due to gun shock.

SOLUTION

Deploy the QUANTUM RH* retrievable hydraulic-set sealbore production packer to absorb high shock and enable easy recovery after the perforation operation.

RESULTS

- In the first well, increased productivity by 87.5%, from 240 to 450 m³/d and saved 2 days of rig time.
- Increased production by an average of 200 m³/d for all seven wells.
- Saved an estimated USD 135,000 in total operating costs for the first well and USD 700,000 for all seven.



Improve production with high drawdown and clean perforation tunnel

Petroleum Development Oman (PDO) was drilling in the Sadding area in the Al Wusta region and wanted to decrease its operation time while completing a vertical well. With a potentially high volume of oil located within the Khaleel (Karim) reservoir, the common completion strategy has yielded a flow rate of 240 m³/d. The operator conducted additional studies on ways to produce more from this reservoir. A clean perforation tunnel can be achieved using high-pressure drawdown and has been proven as a key contributor to improve the productivity up to 450 m³/d, a 87.5% increase in comparison with previously used completion strategies.

Deploy robust packer to minimize release risk from gun shock

Schlumberger recommended using the robust QUANTUM RH retrievable hydraulic-set sealbore production packer, which features superior strength constraint in comparison with conventional retrievable or permanent packers and enables reliable, easy completion string recovery. In addition, an automatic gun release system was used to immediately drop the guns and begin producing the well after the perforation was established. A completion fluid was used to create a static underbalance condition during perforation that maximized perforation tunnel clean out and enabled well flow to surface.

Save USD 700,000 in operating costs and increase oil production

Combining the well completion strategy with tubing-conveyed perforation in a “shoot and drop” operation saved two days in rig time with a single trip downhole. The automatic gun release system eliminated the need to initiate well production after a planned CT operation, resulting in a combined estimated total of USD 135,000 in operational cost savings for the well.

The technology was then used in six additional wells, increasing production by an average of 200 m³/d of oil per well and saving a total of USD 700,000 in associated well costs for all seven wells.



QUANTUM RH packer.