Operator Quadruples Production and Cuts 5 Days in Rig Time and Associated Costs

Falcon uncemented multistage stimulation system streamlines operations in Indonesia

**CHALLENGE**
Find cost-effective, efficient alternative to conventional plug-and-perf method of hydraulic fracturing in multilayered reservoir.

**SOLUTION**
Use Falcon* uncemented multistage stimulation system to streamline fracturing process.

**RESULTS**
Quadrupled production and saved more than 5 days and USD 45,000 in associated rig costs.

**Operator seeks more efficient technique**
A consolidated sandstone formation in Indonesia characterized by low overall porosity and permeability (10 mD) required hydraulic fracturing. The operator needed a more cost-effective alternative to the conventional plug-and-perf method it had been using, which for a five-stage well had taken 10 days and a total of 20 runs to complete. Selective production was required because of variations in water breakthrough in the multiple zones.

**Multistage stimulation system is compared with conventional plug-and-perf**
To streamline fracturing operations in the five-stage openhole well, Schlumberger advised using its Falcon multistage stimulation system for uncemented wells. The Falcon system requires only a single trip for installation, minimizing rig time and associated risks. Multiple zones are fractured sequentially after each previous stage has been pumped and the respective balls have been dropped. The ball seats are designed to allow the balls to easily flow back to the surface without sticking during production, minimizing the need for milling runs. Selective zonal isolation and stimulation optimize production.

**Falcon system greatly decreases operation and quadruples production**
The Falcon system completed the entire five-stage operation in less than 5 days and took eight runs, including perforating, cleanup, running the QUANTUM* gravel-pack packer, and running the fracture string. For a similar well with five stages, the conventional plug-and-perf system had taken 10 days and 20 runs.

Because of the selective zonal stimulation, use of the Falcon system quadrupled production — from an estimated 90 bbl/d for the plug-and-perf well to 370 bbl/d. The operator saved USD 45,000 in rig-related costs and completed the well 5 days ahead of schedule. As a result, the operator has continued to use the Falcon system in all its multistage stimulation operations.

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