Case Study: Flow Activated Valve (FAV)

Challenge

The client's multi-lateral, oil producer with downhole zonal control well was put on production in June 2013 but after excess water production, required a re-completion. This re-completion was quite complex, it involved operations never been done before and had a very short planning time. The planning team needed to push the technological boundaries and look into innovative solution to reduce both time and costs. A few new technologies were successfully tried and the Interwell Flow Activated Valve (FAV) technology was a key component.

Solution

The FAV is both a ball-drop and a flow activated open/close valve (dependent on preference). Interwell ran a 3.25" FAV mounted below a 572-700 ME packer. The FAV was run-in open and closed permanently by dropping a 2" ball. It is also possible to close the FAV by increasing the flow rate through the unit to above a predetermined value, thereby allowing for extra flexibility and contingency.

The FAV was used as a shallow barrier and was tested and qualified in accordance with ISO 14310:2008 Vo up to 345 bar. The valve was pre-installed and made-up onshore to save additional time, and run in with the top completion. The valve and plug provided a shallow barrier for nippling XMT/ BOP. It was consequently retrieved on wireline.

Value Created

A ball drop valve is a common industry technology, but Interwell has improved upon it and modified it for the operator's applications, which saved rig time and considerable costs. Interwell also worked to extremely short deadline and the product was ready for operation five weeks after approval of concept.

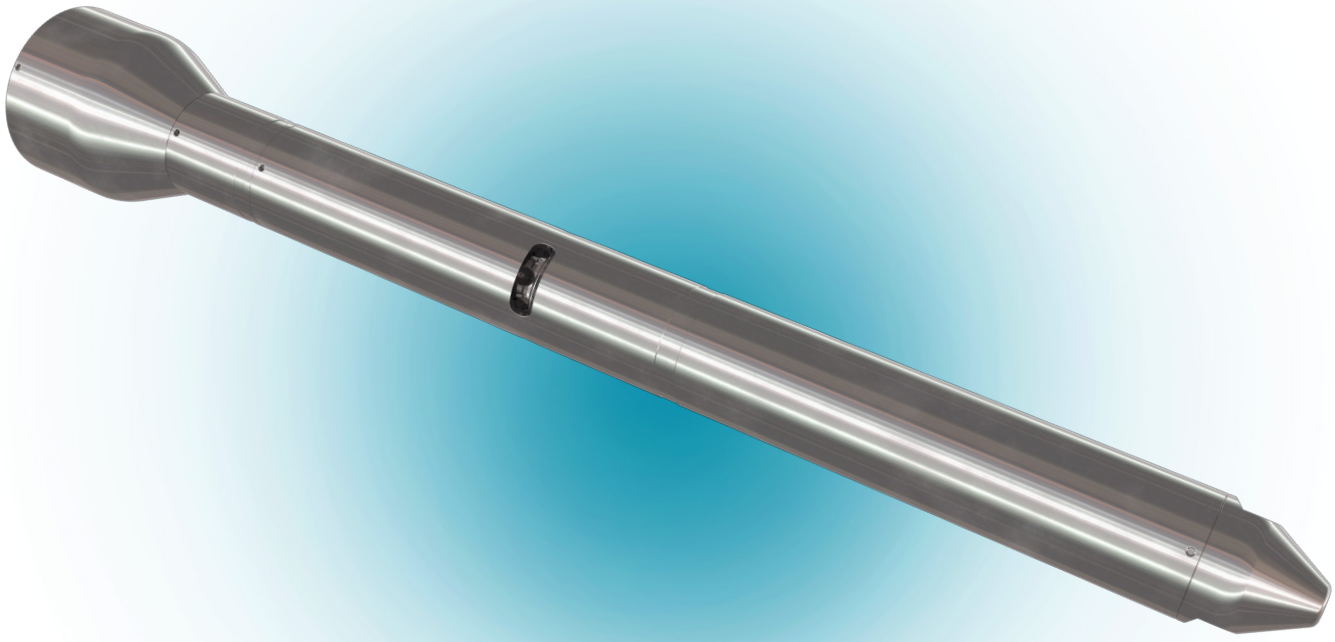
The well was 25% below target time and helped the platform achieve rig of the month.

Date:
December 2014

Region/Field:
Norwegian North Sea

Key Capabilities:

- ISO Vo qualified: 345 bar, 4-40˚C
- Adjustable closing flowrate
- Adjustable sizes
- Adaptable to different packers by using an interface
- Resistant to closing in an event of reverse flow to kill the well
- Optional ball drop closure



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