Case Study:

Successful Water Shut-off Operations in Horizontal Wells using High Expansion Bridge Plugs

Date: Dec 2022
Region: Kazakhstan, Uralsk

Product Capabilities

- High expansion, retrievable bridge plug
- Short tool length
- Ideal for workover applications: tubing barrier, packer for injection valve, and fixed choke
- Slim design (small OD)

Challenge

An operator in the Uralsk region of Kazakhstan was seeing increased water production from two of their best producing horizontal wells. With a minimum ID of 2.562" (BR nipple), the client needed a solution that could pass the full length of the 3.5" tubing and set the plug in the 4.5" liner above the water producing zones.

Solution

To permanently isolate the lower water producing zones, Interwell recommended installing a High Expansion Retrievable Bridge Plug (HEX) in each well, these were set in the 4.5" Liner above the water producing zones. The HEX plugs were run on Coil due to the high deviation angle of the wells and successfully set without any issues.

Both plugs were run in combination with a modified 1.75" HRT tool with the ball seat sub removed, avoiding the need to pump large amounts of liquid through the Coil into the formation. A combination of liquid and nitrogen was used to activate the HRT.

Value Created

The ability of the HEX plug to pass through very narrow wellbore restrictions made it the perfect candidate for this operation with the restriction in completion and when no other option was economically feasible. The combined solution of the HEX and HRT kept operational complexity to a minimum, ultimately saving significant time and costs for the operator.

High Expansion Retrievable Bridge Plug (HEX).

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