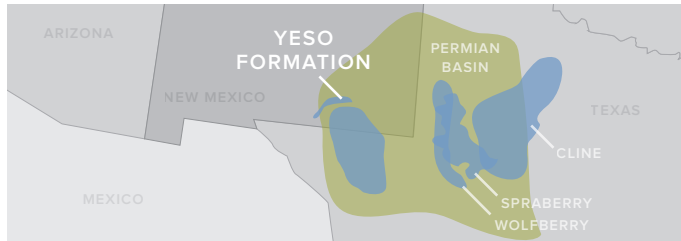


Float installations lower costs in extended reach laterals

Yeso Formation, New Mexico, USA



A major challenge of extended reach lateral completions is during the installation, where it may be difficult to run the system to the planned depth. By combining the Packers Plus StackFRAC® HD system with an innovative installation method, an operator working in several formations throughout the US was able to efficiently install 3 StackFRAC® HD systems in shallow, extended reach laterals.

CHALLENGE

Installing a completion system in an extended reach lateral is particularly challenging when the lateral section is longer than the vertical depth. In these shallow wells, the downward force from the weight of the tool string in the vertical section – needed to push the system to depth – is noticeably lacking. Drilling techniques such as jarring and rotating cannot be used during installation due to the possibility of packer damage.

In a typical installation, the tool string is filled with fluid while it is run into the wellbore. It is pushed through the horizontal section with a combination of hydraulic force and fluid weight. However, if these forces cannot overcome the friction caused by the drag of the tool string along the bottom of the wellbore, it may become stuck. Operators can pull out the system and ream the wellbore before re-installing, or simply set the system as is, abandoning lower stages. These solutions incur additional costs or revenue losses.

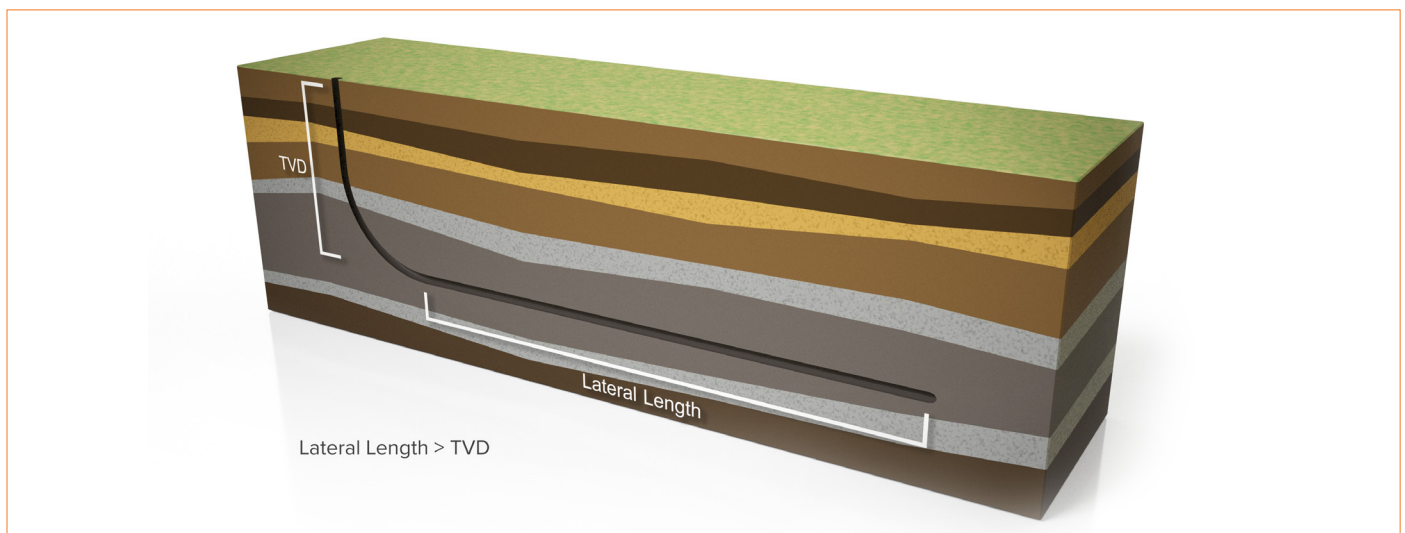
SOLUTION

One operator planned to complete 3 shallow extended laterals in the Yeso formation and wanted assurance that the 27- and two 35-stage StackFRAC HD systems would be installed smoothly.

To alleviate friction during installation, the AirSPAN Floatation Sub was designed to prevent fluid from entering the lower tool string so that it would be full of air during installation. The increased buoyancy of the tool string would require less weight for installation, while fluid in the vertical section provides extra weight to “float” the system to the desired depth.

At the planned depth, when the glass barrier is broken with hydraulic pressure, fluid fills the system and all other installation and stimulation operations proceed as usual.

Continued on reverse



An extended reach lateral typically has a longer lateral section than the vertical depth. These wells are challenging for installation because of the reduced downward force available to push the system to depth.

RESULTS

Packers Plus used torque and drag calculations to optimize the location for the Float Subs for the 27- and two 35-stage StackFRAC HD tool strings.

All 3 systems were floated into two-mile laterals to planned depth and the subs burst as designed. The wells were stimulated in continuous pumping operations that were also done without incident.

The operator was impressed and surprised at the ease and efficiency of running the system into the wellbore using the AirSPAN Floatation Subs.

The innovation of the Float Sub for installations increased the buoyancy of the tool string, maximizing the effectiveness of the available fluid weight from the vertical column and lowering drag friction along the horizontal section. The operator gained significant cost savings by reducing rig time and increasing operational efficiency.

Packers Plus continually innovates to develop completion solutions that meet the specific needs of the industry. Their field-proven and cost-effective systems have been the solution to many complex projects around the world, including offshore, geothermal, and multi-lateral wells.

For more information about specialized completion solutions, see packersplus.com.