Case Study

TREX Setting Sleeve Simplifies Re-fracturing Operations to Reduce Time, Cost and Risk

UNITED STATES, EAGLE FORD
TREX SETTING SLEEVE

Packers Plus collaborated with an operator to develop a solution for improving the efficiency of their longstring re-fracturing operations, and reduce cost and risk. The TREX™ Setting Sleeve was developed to simplify re-entry by providing a pre-determined depth for the top of the liner after cementing operations and a known transition profile for stimulation. This simplified re-entry method using the TREX Setting Sleeve saved 4 to 6 days of operation time and reduced risk compared to previous methods.

Challenge

Re-fracturing is a common technique used to extract additional pay from legacy wells. One rapidly increasing method used to refracture longstring or monobore wells is to mechanically isolate the wellbore by cementing a new liner inside the existing completion string. This technique of cementing a new liner in the wellbore has many benefits and

additional applications, which include:

-Improving control of refrac treatment to increase recovery of bypassed reserves
-Extending the shoe track to salvage lost borehole below production casing, if landed shallow during drilling
-Restoring integrity in wells where casing damage or corrosion is detected prior to the initial stimulation
-Restoring integrity in drilled but uncompleted (DUC) wells if corroded after long delay between installation and stimulation

After cementing operations and waiting for the cement to cure, a bond log is run to determine the depth of the top of the cement and then the liner is cut above the top of the cement. This process is estimated to take 4 to 6 days of daylight-only operations (or an average of 3 days with 24-hour operations), as well as the cost of the bond log, rental of the casing cutting equipment and cleanout. This operational time, as well as associated costs, can quickly increase if issues arise. Some challenges that have occurred include: cutting through the liner into the original casing, requiring multiple runs to successfully cut the new liner and losing the cutting tool or parts of the tool string downhole.

Solution

The Packers Plus TREX Setting Sleeve provides an effective and economic option when preparing a well for re-fracturing operations. The TREX Setting Sleeve is combined with the TREX Running Tool to provide a system that disengages from the liner without a cutting tool to provide an effective transition option at a pre-determined depth, rather than relying on cement tops to dictate the transition point.

The system is installed using standard rig operations and the TREX Setting Sleeve is compatible with conventional liner wiper plugs to ensure maximum wiping efficiency and cement displacement, while the tool's large inside diameter enables stimulation at high pump rates. After stimulation, the TREX Setting Sleeve provides a 6-ft tie-back sleeve that can be used to seal production tubulars and replace the need for a production packer.

In addition to operational benefits, deploying the TREX Setting Sleeve on a smaller workstring enabled the operator to better manage its inventory of 4.0-in. casing.

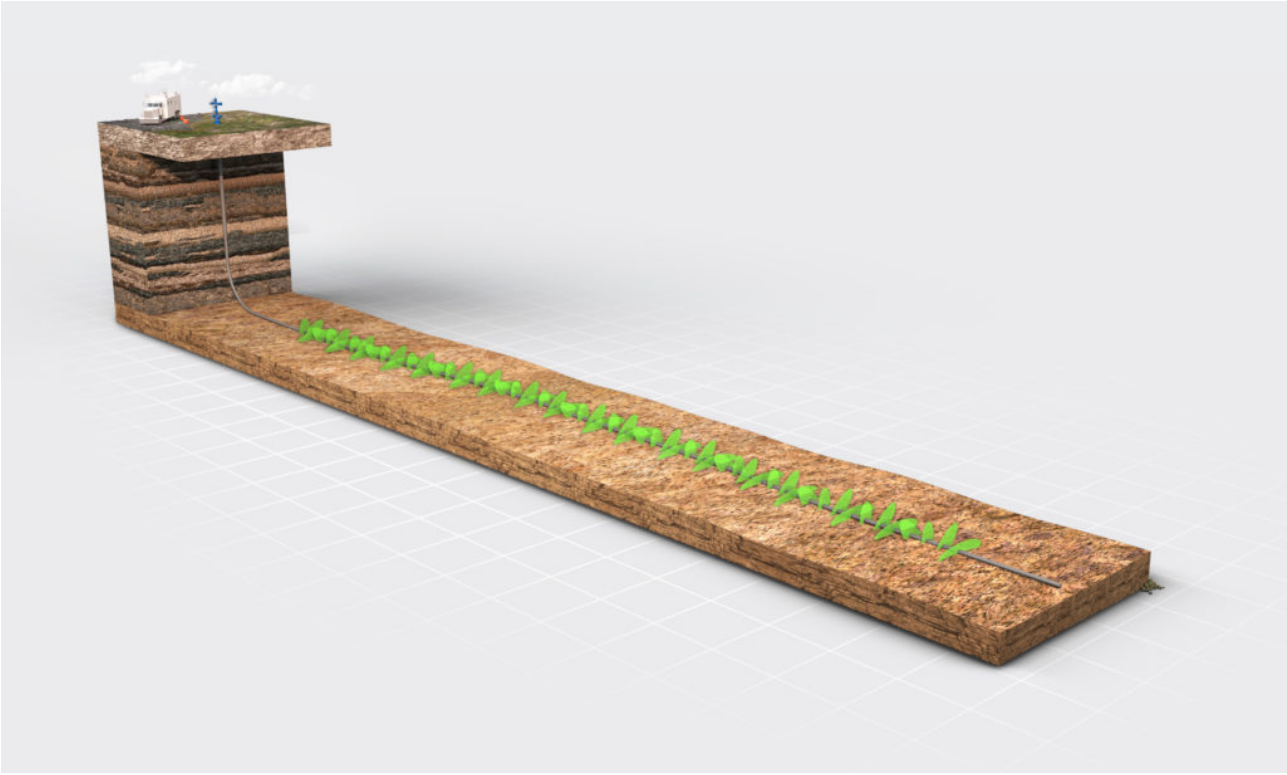
Results

An operator working in the Eagle Ford formation wanted to re-fracture its longstring wells

for additional production gains. To recomplete the wells, a cleanout and gauge run was performed on the original 5.5-in. casing before a new 4.0-in. inner completion string was installed via the TREX Setting Sleeve.

After reaching the planned depth, the running tool was rotated under compression to release from the setting sleeve. The cementing operations were carried out as planned, excess cement was circulated out of the annulus and the running tool was pulled out of hole. An inspection onsite and at the Packers Plus facility, confirmed proper tool function during install and ready to be redressed for the next job.

The TREX Setting Sleeve significantly reduced well preparation time for these wells in the Eagle Ford and provided simplified re-entry operations for re-fracturing the longstring wells. “This simple and effective tool has aided in providing step-changing performance in our refrac program and has the flexibility for additional applications,” says the Refrac Intervention Engineer overseeing the project. “We are grateful to have partnered with Packers Plus to swiftly design and implement a much-needed solution.”



Packers Plus is the innovator of multi-stage completion systems, providing field-proven and cost-effective solutions through a range of applications worldwide. For more information about the TREX Setting Sleeve or other solutions, go to packersplus.com.