

Liner System Saves Cost and Improves Productivity

Operator completes well faster and cheaper with production liner systems from NOV

Background

With the limited supply of suitable casing, drastically increasing casing prices, and long lead times for casing materials, it has become increasingly important for operators to revisit their well designs in order to limit the amount of casing required to complete the well.

Additionally, mono-bore production casing limits the available ID for future re-entry operations. For example, setting a whipstock and opening a lateral into 7-in. or 7.625-in. casing is preferred compared to 5.5-in. casing. Mono-bore casing to surface also greatly limits the ability to optimize completion and post-completion (artificial lift) designs that would maximize productivity for a given well.

Case study facts

Location: US Land

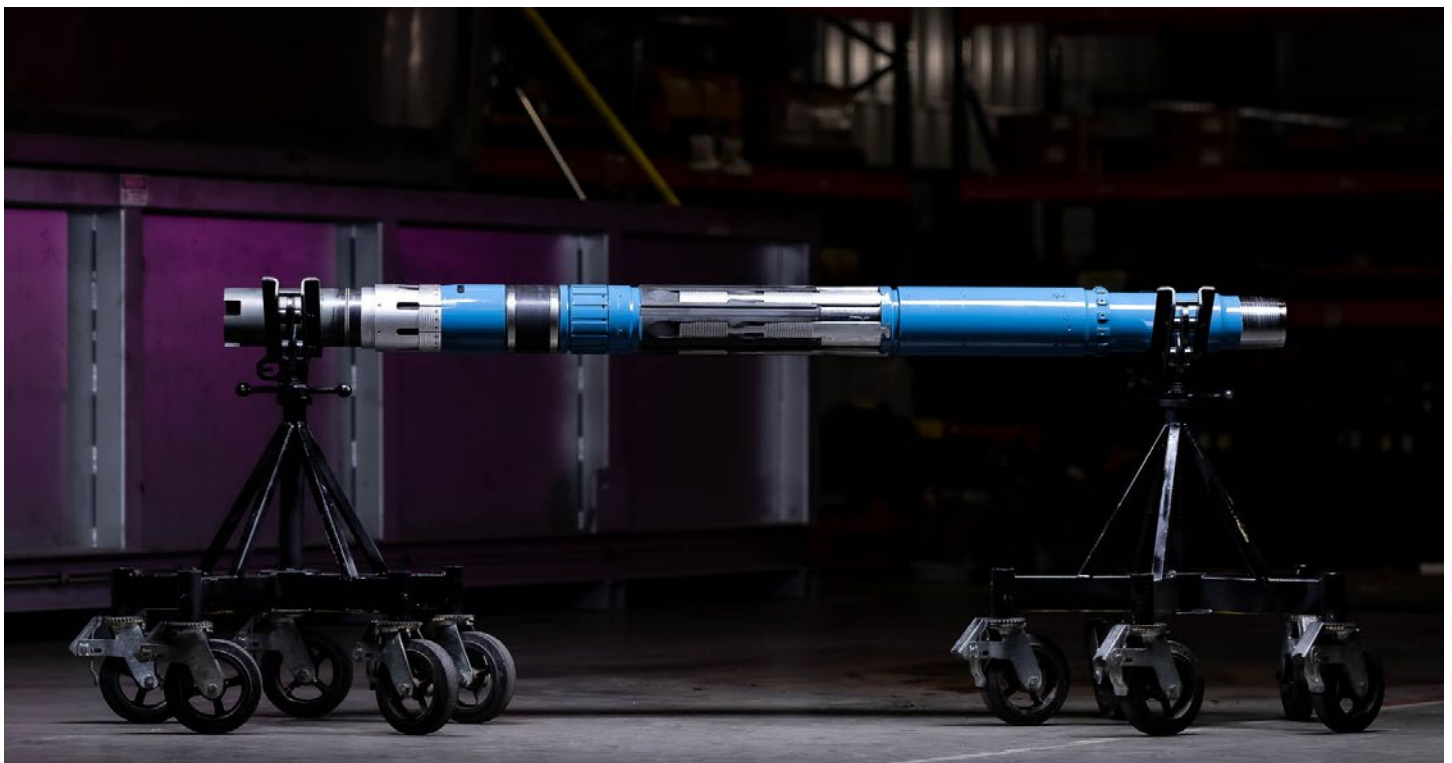
Products

- SURESET™ liner hanger packer
- Burst Port System (BPS™)
- i-Opener™ toe sleeve

Sizes

- 3.5-in. x 7-in.
- 4.5-in. x 7-in.
- 5-in. x 7-in.
- 5.5-in. x 7.625-in.
- 7-in. x 9.625-in.
- 7.625-in. x 9.625-in.

Multiple weight ranges available upon request



Case Study

Solution

Our liner hanger packer system reduces the casing required to complete the well by suspending and isolating production casing (typically 4.5, 5, or 5.5 in.) inside the intermediate casing (typically 7, 7.625, or 9.625 in.). The SURESET system tested to API 19LH V2 standards delivers the hanger and packer on a single body capable of hanging over 400K lb of load and 10,000-psi pressure. This system can save 30% to 50% of total casing length for a typical US land well profile while ensuring complete integrity for the well.

In addition to reducing the production casing length required to complete the well, operators now have a larger ID available from surface to the heel of the well for installing the most efficient artificial lift systems. If a mono-bore ID is desired for fracturing operations, a tieback seal assembly capable of holding 10,000 to 15,000 psi can be installed with the tieback casing that can be retrieved post fracturing and used for completion in coming wells.

Furthermore, choosing our liner system enhances the capability to deploy casing to total depth (TD). Whether running in conjunction with a URFC-II flotation device or taking advantage of lowered equivalent circulating densities (ECDs) when circulation is needed, the complete system provides better chances to reach TD in the most difficult of wellbore conditions.

Due to regulations and/or to ensure the integrity of the liner systems, a special liner top pressure test up to 10,000 psi is often needed. NOV provides multiple options that meet the most stringent requirements:

- BPS provides accurate burst capability at the toe, allowing pressure testing the entire casing prior to opening the toe to initiate fracturing operations
- i-Opener TD-II provides the time delay feature to test casing to high pressures, followed by requiring a minimal opening pressure with prescribed time lapses.
- PBR pack-offs or dissolvable balls provide liner top testing capability in a single trip when installing the liner system with zero interventions.

Results

Our liner system removed the bottle-neck on liner system capabilities previously available and increased the number of wells that may be completed with the same amount of casing. From toe to liner top, the entire system is designed to meet the technical requirements necessary to execute the well completion operations with minimal costs, improved ROI, and faster RIH time. Bundled with our multi-stage fracturing equipment including dissolvable frac plugs, toe initiators, floats and cementing accessories delivers the most effective and compatible portfolio to complete wells.

