

# Expandable Liner Hanger Solution Reduces Repsol's Cumulative NPT from 542 Hours to ZERO in the Caipipendi Block

## VERSAFLEX® AND XTREMEGRIP® EXPANDABLE LINER HANGER SYSTEMS DELIVER OUTSTANDING PERFORMANCE, IN SELECTED WELL CONDITIONS, REPLACE CONVENTIONAL SYSTEMS

SANTA CRUZ, BOLIVIA

### CHALLENGES

- » Reduce NPT due to equipment delivery delays and conventional liner hanger failures
- » Minimize risks during liner hanger operations
- » Ensure reliable performance in HP/HT conditions

### SOLUTIONS

- » VersaFlex® ELH system
- » XtremeGrip® ELH system for HP/HT wells

### RESULTS

- » Zero NPT
- » Delivered remaining project wells flawlessly
- » Improved performance metrics

### OVERVIEW

In 1997, Repsol Bolivia S.A. began drilling in the Caipipendi Block located in the Bolivian Sub-Andean Zone, kicking off development in 2003. Operations in this highly complex zone can be challenging due to intercalations of hard and abrasive formations. In addition, well depths with high pressure require appropriate liner hanger equipment to avoid excessive loads on the rig and high casing costs.

Repsol initially selected conventional liner hangers but soon experienced problems — all of which resulted in significant non-productive time (NPT).

As drilling continued and well depths increased, exposure to higher pressures and temperatures necessitated a more robust and efficient liner hanger system than the conventional system could provide.



### CHALLENGES

Conventional liner hanger limitations in the challenging well environment led to difficulty setting the hangers, slow tripping speed, high pressures during circulation, longer circulation times, longer cement operations, and poor cement jobs. Repsol needed to reduce NPT and the amount of risk involved during liner hanger operations, as well as a system suited for high-pressure/high-temperature (HP/HT) conditions and long liner deployment in deeper wells.

### SOLUTIONS

Halliburton approached the operator and proposed the VersaFlex® expandable liner hanger (ELH) portfolio, noting the number of successful installations and previous experience deploying ELH technology in the region. After initial discussion with onsite personnel, Repsol requested a meeting to review the VersaFlex ELH options. During this information exchange, which also included drilling, reservoir, completions, and management representatives, Repsol decided to continue operations using VersaFlex ELH systems.

The diverse VersaFlex ELH portfolio offers systems suited for various applications. The all-in-one integral hanger/packer systems are designed with no moving parts, which improves reliability and helps minimize costly tool failures associated with conventional liner hangers. A smooth-form exterior facilitates hanger deployment to total depth, safely and quickly, and allows higher circulation and pressure rates without damaging the tool.

For the HP/HT wells, Halliburton recommended the XtremeGrip® ELH system, which offers enhanced capabilities and a simplistic design that minimizes the operating steps typically required to set a liner in elevated pressure and temperature environments.

### RESULTS

Halliburton delivered the planned ELH installations flawlessly. Compared to the competitor's conventional systems, using VersaFlex and XtremeGrip ELH technology improved operation efficiency, saving Repsol significant time and maximizing asset value:

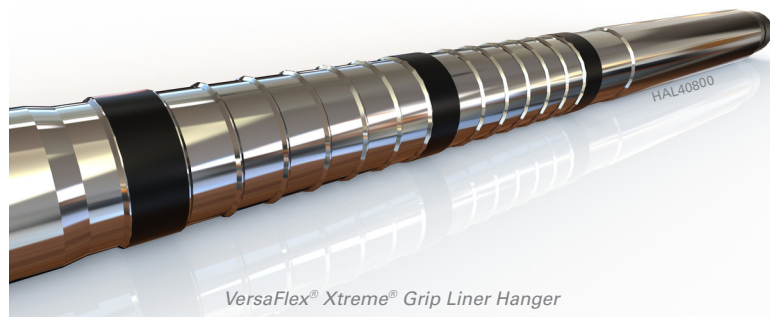
- » Average liner running time reduced from 175.73 to 136.35 m/h = 22.41 %
- » Average cementing operations time reduced from 3.31 to 2.93 hours = 11.48%
- » Average hanger setting time reduced from 3.17 to 2.17 hours = 31.54%
- » Zero NPT — a 100% reduction over competitor's technology

The proven reliable technology delivered with superior service quality exceeded Repsol's expectations, increasing confidence in Halliburton ELH solutions and ultimately displacing the conventional system provider. Subsequently, based on Repsol's experience in Bolivia as a leverage Halliburton has been awarded an expandable liner hanger contract in a major project with similar well conditions in the same LA region.

The engineered liner hanger solution addressed the reservoir conditions on a short timescale, while reducing the impact of future NPT, helping the customer to maximize asset value.



**Superior Technology +  
High Service Quality Delivery**



*VersaFlex® Xtreme® Grip Liner Hanger*

[www.halliburton.com](http://www.halliburton.com)

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014116 12/21 © 2021 Halliburton. All Rights Reserved.

**HALLIBURTON**