

**Case study:** Oklahoma, United States

# Versa-Drive service milled 49 frac plugs with zero short trips

A customer working in Oklahoma contacted Baker Hughes to mill out 49 composite plugs set inside 5 1/2-in casing in a 9,000-ft (2,743-m) lateral section.

The customer wanted to mill all of the plugs in one run and without short trips or chemicals to significantly reduce costs related to coiled tubing (CT) footage charges and fluid system additives. To achieve the customer's objectives, Baker Hughes recommended a **Versa-Drive™ plug milling service**, which leverages a full kit of fit-for-purpose tools backed by accurate modeling to get customers to total depth (TD) in smooth, single-trip runs, reliably and cost effectively.

The Baker Hughes team proposed a bottomhole assembly (BHA) consisting of a 2 7/8-in outside diameter (OD) **Versa-Drive X-treme™ workover motor**, a 2 7/8-in OD **HydroPull extended-reach tool\***, and a rock bit. This durable, high-performance milling BHA would allow the customer to sustain a flow rate of 4 bbl/min through the motor for the entire operation, helping to improve hole cleaning and to increase milling rate of penetration.

The Versa-Drive service milling BHA was deployed and successfully removed all 49 composite frac plugs in a single run. No short trips or chemicals were required, and the plugs were milled in an average of only four minutes each. The Versa-Drive service exceeded the customer's expectations, completing the job ahead of schedule and saving approximately \$25,000 USD in operational costs.

This was the first time that TD had been achieved in a single run on 2 3/8-in CT in Oklahoma's Luther oil and gas field.

## Challenges

- Mill all frac plugs in one run
- Eliminate CT and fluid system costs

## Results

- Reached total depth in the 9,000-ft lateral using 2 3/8-in CT—a first in the Luther oil and gas field
- Milled all 49 plugs in one run
- Required no short trips or chemicals
- Achieved an average millout time of four minutes per plug
- Saved the customer more than \$25,000 USD

\*The HydroPull extended-reach tool is a registered product of Tempres Technologies, Inc.