



ACTIVATESM Refracturing Service

Halliburton helps Montney operator increase production from primary completion well by more than 300%

Location: Montney Basin, British Columbia, Canada

Overview

Over the last decade, hundreds of horizontal completions have been performed in the Montney Basin in Canada. Many of these wells, however, were stimulated with early frac designs that left bypassed reserves in the ground. One operator saw an opportunity to increase production from wells that had been understimulated during the primary completion treatment.

Halliburton engaged its ACTIVATESM refracturing service to select the best candidate wells and determine the economic viability of the refracture treatment. The initial candidate well was originally completed in 2011 as a low-rate, 12-stage openhole ball drop system. Subsurface data indicated that the well was significantly understimulated compared with the operator's current completions.

In the design phase, AccessFrac[®] stimulation service was used to design the refracture treatment and place an additional 22 proppant cycles into the formation. To ensure that the new stimulation treatment extended fully into the openhole lateral, Halliburton's Pressure Sink Mitigation process was executed. During the slickwater operation, more than 1,900 tonnes of proppant were pumped into the formation. After the refrac, production logging and proppant tracers confirmed the effectiveness of the refracture treatment, showing proppant coverage along the entire lateral, from heel to toe.

As a result, the ACTIVATE service helped the operator maximize the reservoir contact area and increase production by 300% compared to the original completion without mechanical intervention.

300%
PRODUCTION
INCREASE



HAL41015

DID YOU KNOW

The ACTIVATESM service involves four steps:

01
SCREEN

SCREEN the best candidate wells based on reservoir and completion quality

02
DESIGN

DESIGN the optimal refrac treatment to connect existing fractures and place new fractures with the FracInsight[®] service and proprietary Pressure Sink Mitigation process

03
EXECUTE

EXECUTE the refrac treatment for full lateral coverage with AccessFrac[®] stimulation service

04
DIAGNOSE

DIAGNOSE refrac efficacy and optimize refrac design for future pads with the Integrated Sensor Diagnostics service and FiberCoil[™] tubing

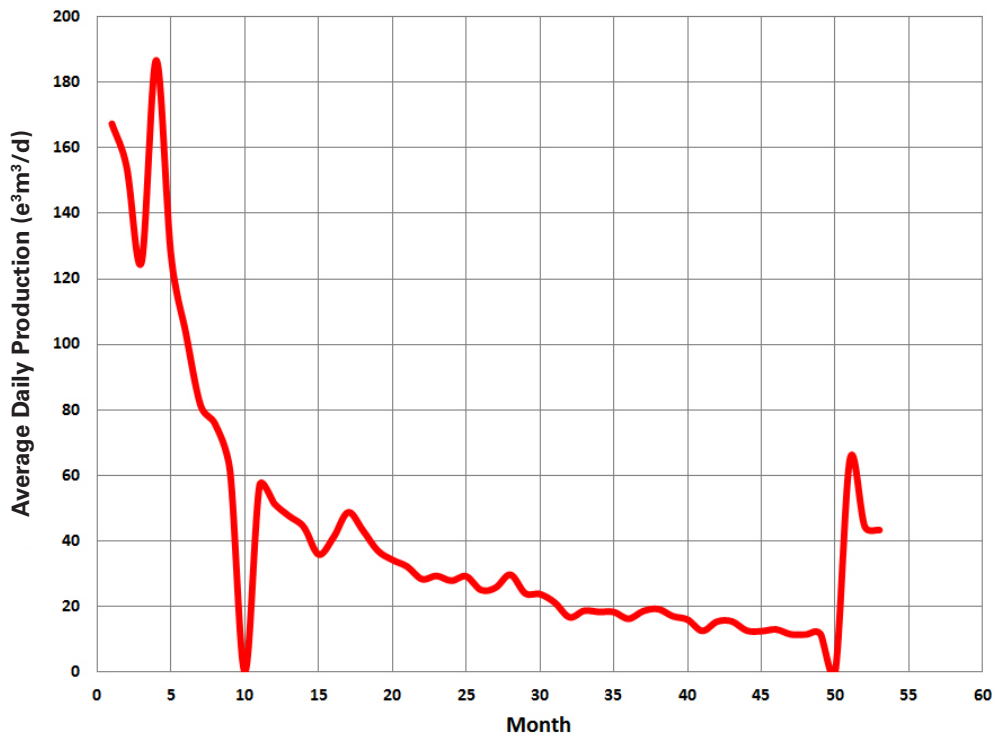
Predictable refrac wells can enable operators to build a balanced portfolio of new wells, infills, and refracs, and to reduce the cost per BOE break-even point of their specific acreage. Refracs also allow operators to book incremental reserves.

In basins where we have delivered the ACTIVATE service, operators have seen up to:

- **80% increase in estimated ultimate recovery (EUR)** per well
- **25% increase in oil recovery factor** with balanced portfolio
- **66% reduced cost per BOE** compared to new drills

CHALLENGES	SOLUTIONS	RESULTS
Refracture a 1,500-m+ openhole lateral, preventing leakoff and maximizing lateral coverage.	Proprietary Pressure Sink Mitigation process was used to condition the well for the refracture treatment, controlling leakoff, and ensuring that proppant was pumped as designed.	Proppant pumped into 22 separate fractures as designed, avoiding screen-outs and increasing effectiveness of the stimulation treatment.
Stimulate new rock along the entire horizontal.	AccessFrac service was used to isolate each proppant cycle and place fractures as designed.	Post-job production logging and proppant tracers confirmed full-lateral stimulation coverage, with production increase by more than 300%.

Montney Operator's Average Daily Production



This chart shows the daily average production from the legacy openhole well before and after the refracture treatment. After five months, production decreased steeply up to 50 months. Upon the refracture treatment, production spiked, increasing initial production from 11 e³m³/d to 65 e³m³/d, resulting in more than a 300% increase.

For volume production increases and better wells, turn to Halliburton

Contact Halliburton to see how the ACTIVATE service can help you build a balanced portfolio and recover bypassed reserves predictively and repeatedly.