

Packers Plus achieves top producing well for operator in the Niobrara

[United States, Niobrara](#)
[StackFRAC HD System](#)

Background

The Niobrara, located throughout the Rocky Mountains with activity focused in Colorado and Wyoming, is a diverse formation varying in depth and lithology. There is widespread production of both oil and gas throughout the formation and within multiple basins. The Denver-Julesburg Basin (D-J Basin) has a reputation of being the sweet spot of the Niobrara and has become a focus for oil and gas producers. In the D-J Basin, the Niobrara formation consists of a series of chalky shale and limestone layers.

The Niobrara was previously vertically drilled; however, with substantially higher initial production rates, producers are now using horizontal wells to better drain the formation. Despite this evolution in drilling practices, low permeability and porosity demand specific considerations for completion techniques. At a depth of approximately 7,000 ft, the chinks have an average porosity of 6% and very low permeability, indicating the need for multi-stage fracturing to ensure economic production.



Challenge

The challenge is to effectively capitalize on the multiple natural fractures found throughout the formation, while establishing communication with the rest of the rock. Hydraulic fracturing is essential to achieve this communication and attain higher ultimate production. Operators working in the Niobrara are focusing on effective placement of hydraulic fracture stages to ensure positive economics on their wells. The cost of a well completion is defined largely by the time spent on the well; therefore, efficient completions are critical to the success of a well.

Solution

A major operator in the Niobrara wanted to optimize production from their wells in Weld County within the D-J Basin. Initially, they used Packers Plus StackFRAC® HD systems with up to 20 stages in laterals of over 5,000 ft; however, this has since increased to using up to 40 stages in laterals of over 9,500 ft. The operator chose the StackFRAC HD system because completing the wells open hole allowed for contact with the entire length of the wellbore ensuring access to the natural fractures.

With high fracture stage density, the StackFRAC HD system provides maximum drainage of the formation. The system also enables efficient fracture treatment of the entire lateral via a single, continuous pumping operation. The system allows operators to achieve immediate

flowback, which puts the well on production quicker and further improves well economics.

Results

With 60,000 BOE in its first 60 days, one of the initial wells completed with the StackFRAC HD system produced up to 1,110 BOE/d and over 100,000 BOE in four months. The operator continues to be an active producer in the Niobrara and has found success using Packers Plus technology in this formation. They have also used the technology to maximize their assets in the Cleveland Sand formation.