

BroadBand Services' Composite Fracturing Fluid Enables 64% Increase in Oil Production

Slickwater and thin linear-gel-base composite fracturing fluid provide significant improvements in tight oil formation, Permian basin

CHALLENGE

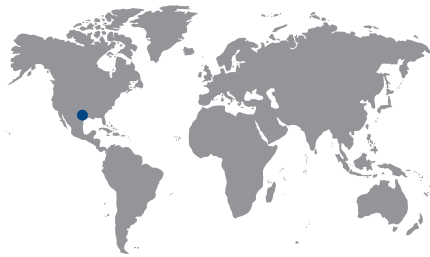
Enhance well productivity in the Bone Spring Formation with maximum proppant placement per foot of lateral while minimizing guar polymer use.

SOLUTION

Use BroadBand* unconventional reservoir completion services' composite fracturing fluid to minimize potential screenouts and optimize proppant distribution.

RESULTS

- Delivered the best-performing stimulated well in comparison with offset wells completed conventionally.
- Achieved 64% increase in production in comparison with the highest-producing offset well.



Operator experiences poor fracture coverage using slickwater

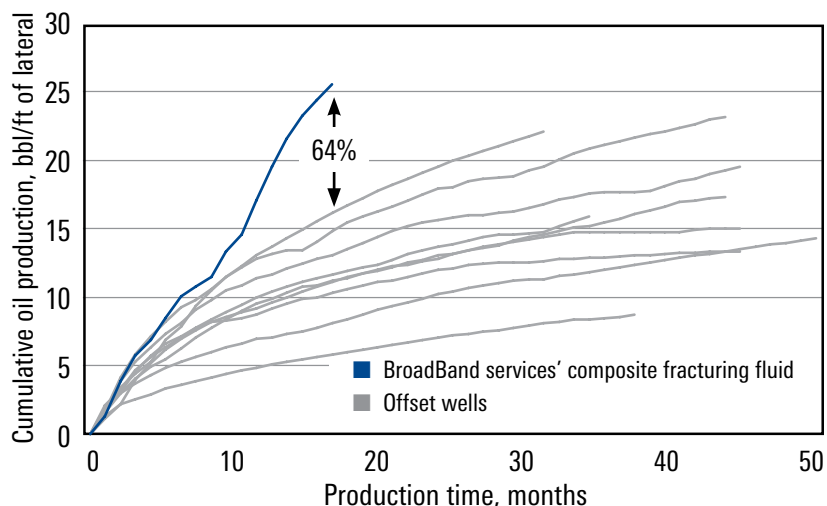
Comprising sandstone layers separated by carbonaceous and shaly siltstones, the Bone Spring Formation is primarily developed using horizontal wells with multiple fractures. For a particular well, an operator needed to maximize the proppant amount per foot of lateral while reducing the fracture face damage caused by guar polymer presence in the fracturing fluid. Slickwater, while less damaging than other fluids, is an ineffective fluid transporter that leads to proppant settling on the fracture bottom close to the wellbore. Its use had led to poor fracture height coverage and limited the formation-to-fracture contact areas, which are essential for production in tight formations.

Schlumberger deploys composite fracturing fluid to effectively stimulate well

To resolve the issue, Schlumberger proposed using BroadBand services' composite fracturing fluid, which features next-generation fibers and is applied in high-frequency sweeps to minimize potential screenouts. A total of 32 fracturing stages out of 33 were pumped with the service's composite fracturing fluid—80% slickwater tailing with 10-lbm linear gel—with 2 lbm of proppant added per gallon of fluid. Additionally, asymmetric pulses—30 seconds of slurry for every 10 seconds of clean fluid—were applied.

Effective proppant placement improves well production

The well was stimulated as designed, and no operational issues were reported. In comparison with offset wells treated with similar amounts of proppant and water, the well treated with BroadBand services' composite fracturing fluid had effective vertical proppant distribution with an enlarged reservoir contact area, which led to a 64% production improvement over that of the best-performing offset well. Due to the success of this operation, the operator plans on using BroadBand services' composite fracturing fluid when developing future wells in the Bone Spring Formation, Permian basin.



In comparison with the offset wells completed using slickwater and similar proppant amounts, the BroadBand services' well outperformed all the offset wells by more than 64%.

slb.com/BroadBand

Stimulation