

# Clayton Williams Uses BroadBand Sequence Service to Stimulate 2,500-ft Lateral Despite Casing Leak

Fracturing service eliminates need to abandon lateral and restores production

## CHALLENGE

- Avoid abandoning lateral because of a casing leak.
- Evaluate risk versus reward of running plugs and tools in lateral portion with low integrity.

## SOLUTION

- Stimulate the entire interval using BroadBand Sequence\* fracturing service.
- Select placement of perforation clusters with ThruBit\* through-the-bit logging services.

## RESULTS

- Eliminated risk and potential costs of stimulating the second half of the lateral using the plug-and-perf method.
- Eliminated need to abandon approximately 2,500 ft [762 m] of lateral.
- Achieved similar production to field average of conventionally completed wells.



## Casing leak prompts Clayton Williams to seek novel stimulation method

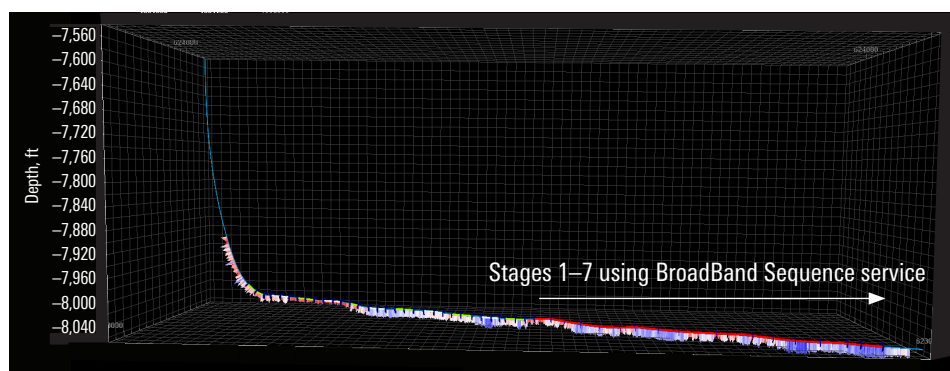
In the Permian basin, Clayton Williams Energy was unable to complete approximately 2,500 ft of a Wolfcamp Shale lateral using conventional plug-and-perf methodology because of a casing leak that occurred after fracturing the first stage. The operator considered setting casing patches, attempting a cement squeeze job, and redrilling the lateral. However, after a caliper log was run, the casing integrity beyond the leak was questionable, and the interval was too long to be repaired using a casing patch or cement squeeze job.

## BroadBand Sequence service selected to stimulate 2,500-ft horizontal section

Clayton Williams used ThruBit logging services measurements to identify low-, medium-, and high-stress intervals that the company used to reliably select perforation placement and model the number of stages and pills for the section. On the basis of these measurements, Clayton Williams deployed the BroadBand Sequence service to stimulate the entire interval without additional intervention. Clayton Williams was able to complete the portion of the lateral past the leak using a fracture design that consisted of 7 proppant ramps and 6 composite pills of BroadBand Sequence service pumped continuously over an 11-hour period.

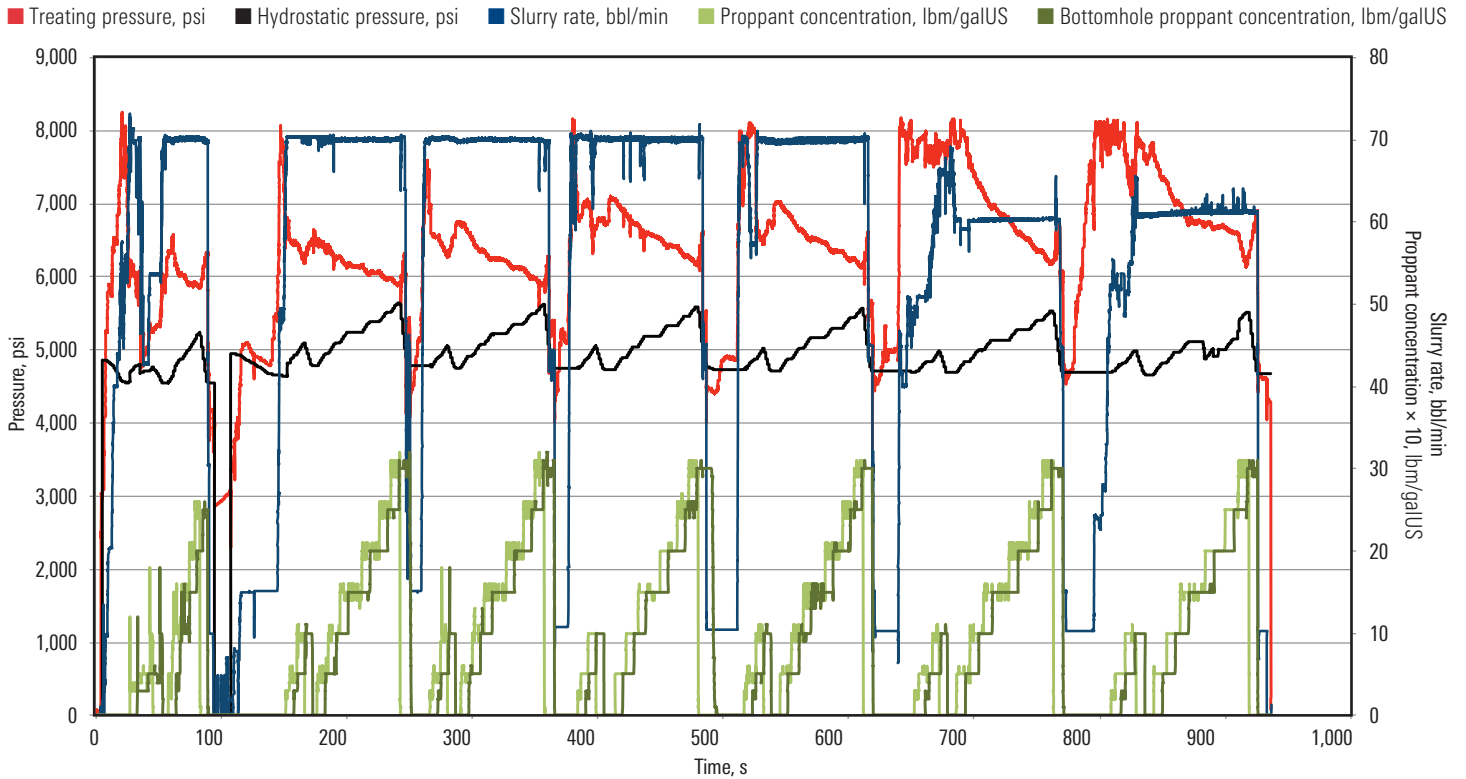
## Successful diversion resulted in production similar to field average

During the operation, pressure response and treating pressure after each pill showed indication of successful diversion. After the first 125 days in production, the well is producing on par with, if not slightly better than, the field average. Abandoning the lateral and drilling a new lateral would have cost approximately USD 1 million.

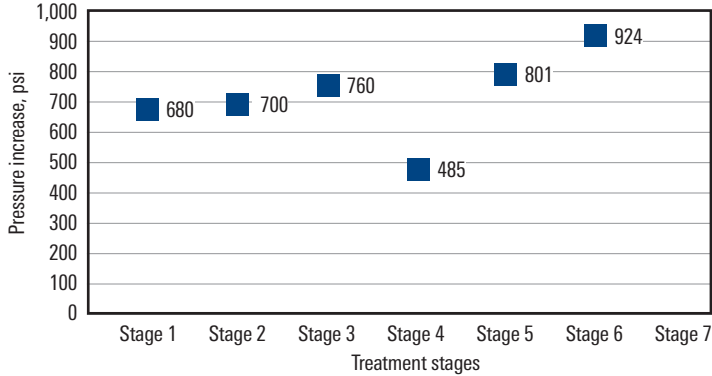


Wellbore schematic from Petrel\* E&P software platform showing engineered BroadBand Sequence service interval with the addition of ThruBit logging services measurement. Relative dimensions are shown in feet.

# CASE STUDY: BroadBand Sequence service saves 2,500-ft lateral and restores production, Permian basin



Treating plots for remedial operation using BroadBand Sequence service on the 2,500-ft lateral section.



Diversion pressure measured when each pill for BroadBand Sequence service was pumped through the perforations.

[slb.com/BroadBandSequence](http://slb.com/BroadBandSequence)

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