



HydroPull™



65 Composite Plugs Drilled in Midland Basin with Oil States Motors and a HydroPull™ Tool

Case Study, Spraberry Trend, Midland County, TX

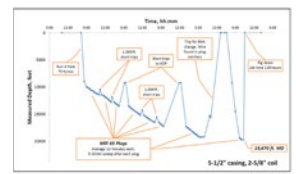
- Casing 5 1/2-in. 20 lb./ft.
- KOP 9,031 ft. TVD; PBTD 19,760 ft. MD
- 2 5/8-in. Coil Tubing
- 65 Composite Plugs

Oil States motors and the Tempres HydroPull™ tool milled a total of 65 composite bridge plugs from a horizontal lateral almost 10,000 ft. long to a total measured depth of 19,760 ft. The liner was 5 1/2-in. and the job was run on 2 5/8-in. coiled tubing. The 3 1/8-in. BHA consisted of a weld-on coil connector, a dual back pressure valve, a set of jars, a hydraulic disconnect, a ball-actuated annular velocity tool, a screen sub, a 3 1/8-in. High Flow-High Impact Tempres HydroPull™, a 3 1/8-in. Oil States Energy Services motor and a 4 5/8-in. tri-cone rock bit. Water with pipe-on-pipe friction reducer was pumped at 4.0 bpm increasing to 4.75 bpm during the final sweep and just prior to pulling out of the hole. All 65 plugs were milled while utilizing four 1,000 ft. short trips and two short trips to the vertical section to ensure adequate hole cleaning and debris removal.

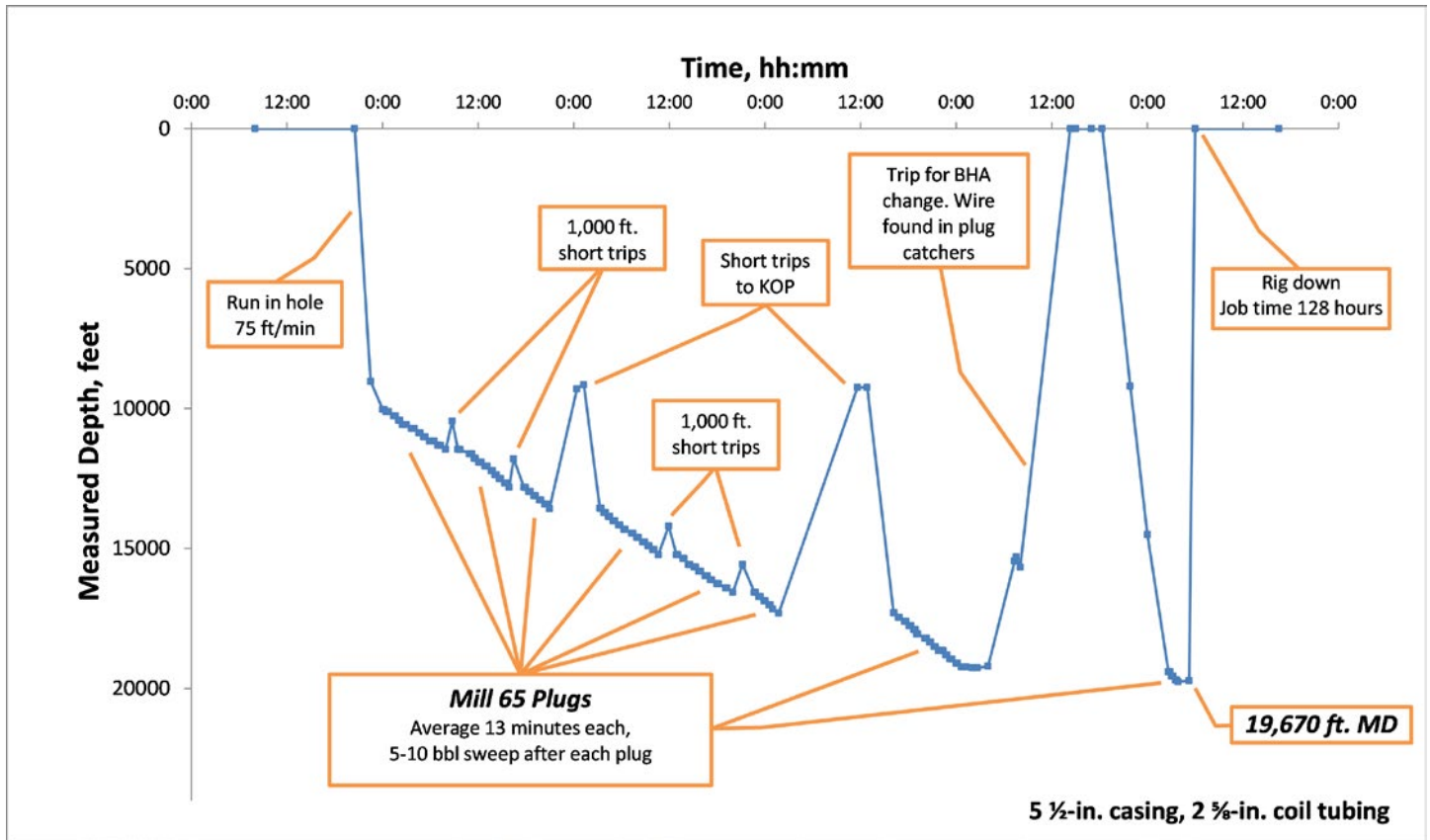
Gel sweeps in volumes ranging from 5-10 bbl followed the milling of each plug. The wellhead pressure ranged from 1,300 psi to 1,700 psi and the pump pressure ranged from 2,900 psi to 4,700 psi.

This job was completed in 128 hours, including a cautionary round trip due to wire pieces discovered in the plug catchers. The average plug milling time was 13 minutes per plug.

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OIL STATES Energy Services