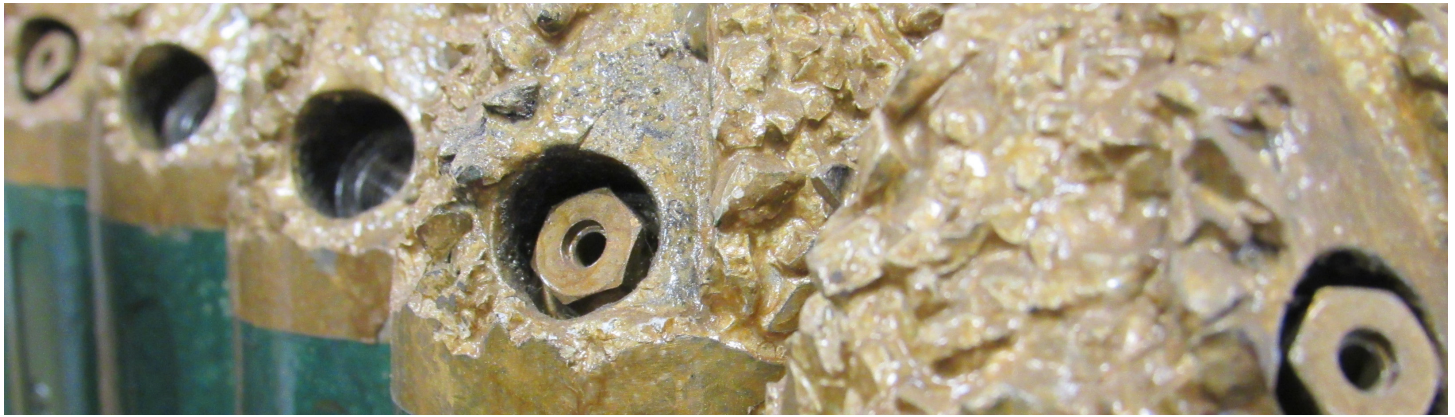


# Case History: HydroPull™



## Tempress Leads the Competition with 71 Frac Plugs Drilled in Eagle Ford Shale with a HydroPull™ Tool in a Single Run

Case Study, Eagle Ford Shale, Burleson County, TX

- Casing 5 ½-in. 23 lb./ft.
- PBDT 15,092 ft. MD
- 2 ¾-in. Coiled Tubing
- **71 Frac Plugs**

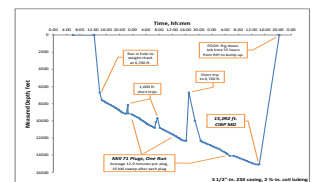
The Tempress HydroPull milled a total of **71 composite frac plugs** from a horizontal lateral almost 7,400 ft. long to a total measured depth of 15,092 ft. The casing was 5 ½-in. and the job was run on 2 ¾-in. coiled tubing. The 3 ½-in. BHA consisted of a weld-on coil connector, a dual back pressure valve, a set of hydraulic jars, a hydraulic disconnect, a Tempress Screen Sub, a 3 ½-in. High Flow-Medium Impact Tempress HydroPull, a 3 ½-in. high torque motor and a 4-in. 5-bladed reverse clutch mill.

High viscosity gel sweeps in volumes of 10 bbls followed the milling of each plug and were utilized in conjunction with the powerful annular pulses generated from the HydroPull to clean debris from the wellbore at 4.5 to 5.0 bpm. Two 1,000 ft. short trips and a short trip to the kickoff point were utilized after plugs 16, 31, and 45 respectively. A 10/10/10 bbl – sweep/spacer/sweep was pumped as the final sweep just prior to pulling out of the hole.

All **71 plugs** were milled with zero motor stalls aided by a consistent 1,000 lbs. set down weight supplied by the HydroPull tool. The well-head pressure ranged from 1,900 to 2,400 psi and the pump pressure ranged from 4,900 to 6,600 psi.

All **71 plugs** were milled in 55 hours at an average plug milling time of 12.9 minutes per plug.

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