

	HydraShock Coiled Tubing		Treatment Date
			July 18, 2017
HYDRASHOCK™	Run-in-place CT Case History		Pages
			1/1
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Time stuck: 1 day operations was 26,000lbs over pulling weight
Location: Midland/TX (61,000lbs). The HydraShock hotline was called per
Formation: Delaware Basin the company rep, and the HydraShock operations
 began.

Scope of Work:

Remove 2.375" CT string stuck during a frac plug millout.

Treatment:

There were many attempts to free the tubing, via surging the well, and working the pipe. This only resulted in losing returns at surface. A "Blue" Control ΔnBall was pumped with the coiled tubing at -5,000lbs. Next, a "Red" ΔnBall was extruded at 5,200psi. Three ball clusters were used, due to the reel volume. ΔnBalls #6-8 (Black) were fired with the CT in tension, bringing the CT 68' uphole to maintain 45,000lbs tension. The next 6 "Yellow" ΔnBalls moved the CT 25ft uphole. When switching back to compression for the next wave of ΔnBalls, the tubing started moving down freely, and the 3 "Yellow" ΔnBalls in the reel were passed through at a high pump rate. In total, the tubing went inhole 204ft. After attempting to POOH, the CT became stuck again, and more "Black" ΔnBall clusters were extruded. The next "Black" ΔnBall cluster left the CT at 8,176ft, with returns and sand coming up the annulus. The last cluster of ΔnBalls (White) was fired in compression. After ΔnBall #28/30 extruded, the circulating pressure dropped by more than 200psi, signifying a change in conditions downhole. The CT was then picked up and began to move freely uphole. The next two "White" ΔnBalls did not extrude. Once the CT was at surface, an 8in gash along the weld seam was discovered 7in above the CT connector. This illustrates how the HydraShock prevented costly fishing trips associated with the unpredictable breaking of microbiologically induced corrosion (MIC) affected tubing.

Background:

Workstring: 2.375" / 0.189 - 0.203 Wall
 HydraShock: 500 Series HydraShock Run-in-Place
 Immediate Concerns: Not getting dyed gel sweeps to surface | stuck with no perfs above BHA | tight perf spacing
 SICP: 310psi
 Completion Specifics:

- 5.5" 17.0lb P110 | PBTD - 13,519'
- Up Wt - 10,000lbs | Up Wt - 35,000lbs
- Stuck Depth Counter Reading - 8,348'
- BHT - 140°F | BHP - 2012psi
- Obstruction - plug parts or sand since returns had become only fluid

The job began as a routine frac plug millout in a newer operating basin for this customer. The recent activity in this formation has been wrought with stuck tubulars in both drilling and completions. Initially, the tubing became stuck, with returns coming back mostly fluid. After milling up plug #30, the coiled tubing became stuck during the short trip. Within 3 hours, none of the dyed gel sweeps were coming back to surface. Eventually, all returns were lost as well as the ability to pump down the annulus into the formation. The max overpull applied before the TENAX tool technician took over