HYDRASHOCK™	HydraShock Coiled Tubing		Treatment Date
			January 2, 2017
	Run-in-place CT Case History		Pages
			1/1
Document Number	Approver Position	HydraShock CT Product Line Manager	
RIPCT-000003	Approver Name	Lauren Mendenhall	

Days stuck before called: 2 days
Location: Midland / TX
Formation: Wolfcamp

Scope of Work:

Assist in removing a coiled tubing string stuck in the wellbore while performing a millout.

Background:

Workstring: 2.625" CT (0% Fatigue @ Job start)
HydraShock: 500 Series HydraShock Run-in-Place
Immediate Concerns: 4.5" perforated into 7" | 4.5" dead but 7" pressured up
SICP: 0psi
Completion Specifics:

- 4.5" 11.6lb / 4.5" 12.75#
- 90° - 12,054'
- PBTD - 17,738'
- Stuck Depth Counter Reading - 13,615'
- BHT - 185°F
- Obstruction - wellbore material

The operating company had rigged up a 2.625" coiled tubing unit with a standard milling BHA to mill out 20 frac plugs. The 2.625" CT became stuck inside of the 4.5" 11.6# casing during a short trip off plug 17. During the fracturing operations, the bottom 7 zones had went on a vacuum, which encompassed plugs 15-21. The job was made more difficult by the use of nitrogen down the 7" casing through perforations at 10,300' to aid in annular velocities. It was not noticed initially that sweeps were not coming back in the returns. A few max pulls were made prior to the deployment of the HydraShock Δnballs, 96,359lbs being the greatest of these (38,000 lbs over string weight).

Treatment:

The HydraShock specialist was contacted at 10:37 on 1/2/17. The initial ball dropped was Red, and it extruded at a lower pressure than it is designed to, showing that the fluid level was 837' below surface. We started releasing Δnballs in series with 20bbl spacers of fluid, the coiled tubing in compression, and a surface weight reading of negative 15,000lbs. The first series was Red, Red, Yellow. The Δnball firing pressure differential was becoming less with each extrusion. After the third set of Δnballs were dropped, Yellow, Yellow, Yellow, the 7" casing pressured up to 3500psi, while the 4.5" casing stayed at 0psi. This helped us to identify communication between the top set of perforations and the bottom of the 7" casing. We then started pumping from surface to charge the 4.5" by way of the already pressured up 7". The next series of Δnballs dropped White, White, White, extruded closer to the designed pressure. After that, we decided to change the coiled tubing position, by bringing the coil up to a surface weight indicator reading of 40,000lbs. The next series of balls was White, White. After ball 14, we noticed a drop in circulating pressure. We extruded the last ball, and the coiled tubing was pulled free on the first try. We pulled out of hole directly with a surface weight indicator reading of 60,000lbs, and a post job fatigue of 3%.