

UNION PACIFIC 10-21 - SIDETRACK IN THE WEBER, RUN LINER IN PRODUCTION ZONE, PERF, FRACTURE STIMULATE AND RETURN TO PRODUCTION

- 1 MIRU PLS & install a 1.81" tubing plug in profile @ 5665', POOH & RD PLS.
- 2 MI & RU Workover Rig. ND Well head and NU BOP (7-1/16" 5K Class II modified), test BOP and circulating manifold.
- 3 Release from On/Off tool, POOH & LD IPC Tbg (**PLAN TO RE-RUN PRODUCTION TUBING**) & On/Off Skirt @ 5557'.
- 4 PU & RIH w/ On/Off skirt & work string, latch on to On/Off tool stub. POOH w/ Work string & LD Top Pkr.
- 5 PU & RIH w/ Mill, Wash Pipe & work string, CO to bottom packer, POOH.
- 6 RIH w/ Overshot, DCs & Jars to fish bottom Packer. RU PLS & POOH & LD Tubing plug. RD PLS. POOH & LD PKR & tailpipe.

Step Option: Plug Back the Weber Section & Prep for Side track & recompletion.

- 7 PU & RIH w/ 7" CICR & set @ 5800' to plug the Weber Section.
- 8 MIRU Cementer to P&A Weber Section:
Pump 11 bbls or 41 sxs cement, Leave 50' above 5" liner top, Reverse out excess cement & POOH.
- 9 RIH tag cement top. RIH w/ 6-1/2" bit & tag TOC, dress as needed to build a base for Whipstock in the middle of the casing joint (use collar locator).

Step Phase 2: Set Whip Stock, Drill new Hole, Install liner & recomple (secure Zonal Pressures)

- 10 PU & RIH w/ 6-1/8" bit, 7" scraper, (2) 6-1/8" Water mellon Mill (WMM), (1) FLEX jnt 2-7/8" 10.5 #/ft American Open Hole DP, (3) 4-3/4" DCs, (30) jnts XT30 HWDP & 2-7/8" 10.5 #/ft American Open Hole DP and circulate clean w/ 10 ppg brine to the cement or **Bridge Plug at 5800'**, POOH.
>> MI has Poly Swell on hand <<.
- Whipstock available from fishing companies: KR, Graco & Tripole H.
- 11 RIH w/ 3-1/2" IF Orientation sub & set whipstock on top of **CICR @ 5800'**, Orient (High side to natural drift, drops in the Moenkopi) w/ Scientific, cut window on 7" csg w/ 3° whipface starter mill. Dress window & drill 15' into new openhole - **>> Single Trip? << POOH L/D 7" scraper, (2) 6-1/8" Water mellon Mill (WMM) & (1) FLEX jnt 2-7/8" 10.5 #/ft American Open Hole DP.**
- 12 RIH w/ **6 1/8" PDC bit, Straight Hole Motor, (3) 4-3/4" DC's, (30) 2-7/8" HWDP & 2-7/8" AOH DP** - drill new 6 1/8" hole from **window @ 5750' to 6510' (TVD)** (estimate 5-6 drilling days). taking surveys as required by regulatory agency- circ clean - pull BHA.
- 13 Prepare to RIH w/ ~760' of 5" L80 Hydril Liner & liner hanger. **Notify COGCC representative of cement job, options below:**
- Need to round-up Hydril handling tools & float equipment.
- Baker or Brown Oil Tool conventional Hanger (Burt Key, Miller Packers @ 970-6574-8166)
- 14 MI Liner & Prep for installation. On Drill Pipe w/ liner hanger setting tool, run float equipment & 5" L80 Hydril liner from **5700' to 6505' TD.**
- 15 Cement liner in place w/ 207 sxs (30% excess) BONDCEM™ SYSTEM - 50% POS / 50% ASPN TYPE V cement w/ 0.2% HR-5 Retarder. Set Liner Hanger, Sting out of Liner and Reverse out cement & POOH LD DP, HWDP, DCs & Setting tool.
- 16 PU & RIH w/ 4-1/8", (4) 3-1/8" DC, 2-3/8" WS, drill out Float Collar, POOH.
- 17 PU & RIH w/ 5" RBP & 7" PKR to test liner lap
- 18 Run Directional Survey, GR/CBL/CCL from 6505', PBTD to 5" hanger. **Geologists pick Tops from GR & confirm perms w/ Engineer.**
- 19 MIRU & RIH to Perforate as requested, POOH, LD tools & RDMO Wireline unit.

Step FRAC Procedure:

- 20 POOH & LD the BHA & Work String.
- 21 PU RIH w/ 7" Packer & 4-1/2" Frac String & set @ 20' above the liner top..
- 22 ND BOPS & NU Frac Valve, RDMO.
- 23 MIRU Halliburton to Frac as follows: **NEED FRAC PLAN**

Step Cleanout & Return to Production

- 24 MI & RU Workover Rig. RD WH and NU BOP (7-1/16" 5K Class II modified), test BOP and circulating manifold.
- 25 Release Packer, POOH & LD Frac string & Packer.
- 26 PU & RIH w/ bit & WS to clean out to PBTD. POOH Lay Down Work String.
- 27 PU & RIH w/ **RE-RUN Production** tubing, POOH.
- 28 PU & RIH w/ ESP & Production Tubing, Land ESP @ 50' above liner top (Confirm w/ PE & ALCR). (May RIH w/ pkr and let flow)
- 29 ND BOPS & NU Well head, RDMO.

IF YOU HAVE ANY QUESTIONS CONCERNING THIS PROCEDURE, PLEASE CONTACT CHEVRON PETRO ENG ROY CRAMER AT 970-675-3719