

Judy 1-30 Workover Prognosis

Objective: Convert to SWD in Dakota and Lakota

Preliminary procedure. Steps are subject to change.

- 1). Pressure test casing to 4500 psig.
- 2). NU 5,000 psig frac valve and BOP. Function test and pressure test frac valve and BOP.
- 3). MIRU e-Line unit with 5,000 psig lubricator. RIH with gauge ring/junk basket to PBTD.
- 4). RIH w/ perforation guns (60 deg phasing, 4 SPF). Correlate to CBL and perforate Dakota and Lakota as follows:

STAGE 1								
Top		Btm						
7,830'	-	7,902'	4	spf	72'	288	holes	Lakota
7,729'	-	7,776'	4	spf	47'	188	holes	Dakota
TOTAL			119'	476	holes			

POOH and ensure all shots fired.

- 5). RDMO e-Line unit.
- 6). Set 4 frac tanks and 1 flowback tank. Rack and tally 2-7/8" work string. MIRU workover rig and pump.
- 7). Swab test well and catch fluid samples.
- 8). MIRU acid stimulation company and associated equipment. Acidize Dakota and Lakota with 12,000 gals 15% NE-Fe HCl + 500 7/8" 1.3 sg balls for diversion. Pump job at 5-8 bpm. Flush with 2 x tubing capacity. Max Treating Pressure = 5,000 psi.
- 9). Flow and swab back load to tank. Once load is recovered, catch additional fluid sample.
- 10). Release packer. POOH with packer and tubing, laying down.
- 11). Unload and tally injection string.
- 12). RIH with 7" 10,000 psig AS-IX (or equivalent) pkr on injection string. Set packer at +/- 7700'. Load backside with packer fluid. Set packer and land tbg in wellhead. Pressure test pkr and annulus. Bleed off pressure.
- 13). ND FV and BOP. NU Injection tree. RDMO workover rig.
- 14). Notify COGCC and schedule MIT. Perform MIT by pressuring up annulus to 300 psig over expected injection pressure (3500 psig for MIT on Vaneta) and holding for 15 minutes. Bleed off pressure.
- 15). MIRU pump trucks. Pump step rate test utilizing at least 3 rates below and 3 rates above fracture opening pressure. SD and forward data to OKC.
- 16). Shut in well and wait on approved injection permit.