

Engineer: Alex Caravaggio  
Cell Phone Number: 213-880-8119

**UPRR 43 PAN AM M 1**

- | Step | Description  |
|------|--|
| 1.   | Provide 48 hour notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Notify Automation Removal Group at least 24 hours prior to rig move. Request they catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU.   |
| 2.   | MIRU Slickline . Pull production equipment and tag bottom. Record tag depth in Open Wells. Gyro was ran in Nov 2012. RDMO Slickline .  |
| 3.   | Prepare location for base beam equipped rig. Install perimeter fence as needed.  |
| 4.   | Verify COAs before RU.   |
| 5.   | Upon RU, check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.   |
| 6.   | MIRU WO rig. Spot a min of 25 jts of 2-3/8" 4.7#, J-55, EUE tbg. Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unland tbg using unlanding joint and LD. Release packer set at 7279'.   |
| 7.   | TOOH and SB 8260' 2-3/8" tbg. LD packer and any remaining tbg.   |
| 8.   | PU and TIH with (4-1/2", 10.5#) Bit and Scraper on 2-3/8" tbg to 8260'. TOOH.  |
| 9.   | MIRU WL. PU and RIH with (4-1/2", 10.5#) CIBP and set at +/- 8250'. POOH. RIH and dump 2 sx cement on CIBP. POOH.  |
| 10.  | PU and RIH with (4-1/2", 10.5#) CIBP and set at +/- 7800'. POOH. RDMO WL.  |
| 11.  | TIH with 2-3/8" tbg to 2500'. Load hole with biocide treated fresh water and circulate all gas out of well. PT CIBP to 500 psi for 15 minutes. TOOH and SB 2-3/8" tbg.   |
| 12.  | MIRU WL. RIH and run CBL from 7800' to surface. Forward CBL to Platteville office. Cementing plans may change depending on CBL results.  |
| 13.  | RIH and dump 2 sx cement on CIBP. POOH. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 7200' and 4' of squeeze holes at 6800'. RDMO WL.   |
| 14.  | MIRU hydrotesters. PU and TIH with (4-1/2", 10.5#) CICR on 2-3/8" tbg while hydrotesting to 3000 psi. Set CICR at 6830'. RDMO hydrotesters.  |
| 15.  | MIRU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water space.<br><b>Pump Niobrara Suicide Squeeze:</b> Pump 160 sxs (242cf), assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 370' below the CICR inside 4-1/2", 10.5# production casing with no excess, 400' in the 4-1/2" 10.5# annulus assuming 7.88" bit size with 60% excess, and 190' on top of the CICR to cover top perfs. RD cementers. |
| 16.  | Slowly pull out of the cement and TOOH to 5500'. Reverse circulate using biocide treated fresh water, to ensure the tubing is clean. TOOH and SB 3630' of 2-3/8" tbg. LD remaining tbg.  |
| 17.  | MIRU WL. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 4000' and 4' of squeeze holes at 3600'. RDMO WL.  |
| 18.  | PU and TIH with (4-1/2", 10.5#) CICR on 2-3/8" tbg. Set CICR at 3630'.   |
| 19.  | Establish circulation to surface with biocide treated fresh water, and pump 100 bbls to clean up hole.   |

20. RU Cementers. Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water space. **Pump Sussex Suicide Squeeze:** 160 sxs (242cf) with 0.25 lb/sk polyflake, assuming 15.8 ppg & 1.51 cf/sk. Underdisplace by 3 bbls. Volume is based on 370' below the CICR inside 4-1/2", 10.5# production casing with no excess, 400' in the 4-1/2", 10.5# annulus assuming 7.88" bit size with 60% excess and 190' on top of the CICR to cover top perfs. RD cementers.
21. Slowly pull out of the cement and TOO H to 2940'. Reverse circulate to ensure no cement is left in the tbg. TOO H, SB 1130' of 2-3/8" tbg. LD remainder.
22. MIRU WL. PU and RIH with two 3-1/8" perf guns with 3 spf, min 0.5" EHD, 120° phasing. Shoot 2' of squeeze holes at 1500' and 4' of squeeze holes at 1100'. RDMO WL. PU and TIH with (4-1/2", 10.5#) CICR on 2-3/8" tbg. Set CICR at 1130'.
23. Establish circulation to surface with biocide treated fresh water.
24. RU Cementers. **Pump FHM Suicide Squeeze:** Pump 10 bbls (min) of pre-flush, followed by 5 bbls fresh water space. 185 sxs (278cf) with 0.25 lb/sk Polyflake, assuming 15.8 ppg & 1.50 cf/sk. Pump 150 sx (225cf) suicide squeeze, then sting out and pump 35 sx (53cf). Volume is based on 370' below the CICR inside 4-1/2", 10.5# production casing with no excess, 400' in 4-1/2", 10.5# annulus assuming 7.88" bit size with 60% excess, and 488' on top of the CICR to cover top perfs and surface casing. The plug is designed to cover 1500'-642'. RDMO cementers. Notify engineering if circulation is ever lost during job.
25. Slowly pull out of the cement and TOO H to 100'. Reverse circulate using biocide treated fresh water, to ensure the tubing is clean. TOO H, LD all 2-3/8" tbg and stinger.
26. MIRU WL. Tag cement as needed. RIH 4-1/2", 10.5# CIBP to 80'. RDMO WL and WO rig.
27. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hours of completion of the job.
28. Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
29. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
30. Capping crew will set and secure night cap on 8-5/8", 24# casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
31. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
32. Welder cut casing minimum 5' below ground level.
33. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
34. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
35. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
36. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
37. Back fill hole with fill. Clean location, and level.
38. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.