

Moser 28-7: Plug & Abandonment

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- 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.). Call automation removal group at least 24 hours prior to rig move. Request they catch and remove plunger, isolate production equipment, and remove any automation equipment prior to MIRU.
- 2 MIRU slickline. RIH to retrieve production equipment and tag for fill (last cleaned out to 7,188' on 3/15/04). Note tagged depth in OpenWells. RDMO slickline.
- 3 Prepare location for base beam equipped rig. Install perimeter fence as needed.
- 4 Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level. (Note: Bradenhead Pressure: Surface csg produced 20+ gallons of water during the Form 17 test on 10/13/14. Surface casing was shut in for 15 min. and pressure built back up to 95 psi.)
- 5 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 6 Unland 1.66" tbg (216 total joints landed at 7,133') and TOO H standing back 7,040' of 1.66" tubing.
- 7 MIRU wireline. RIH with junk basket/gauge ring (2-7/8" 6.5#) to 7,050' (seating nipple located at 7,053'). POOH. PU and RIH with CIBP (2-7/8", 6.5#) to set at 7,040' (collars at 7,016' and 7,047'). POOH.
- 8 MIRU VES. Run gyro survey from 7,050' (~100' above top Codell perms) to surface with stops every 100'. Forward gyro survey data and invoices to Sabrina Frantz. RDMO wireline and VES.
- 9 MIRU hydrotester. Hydrotest 1.66" tubing to 3,000 psi while TIH open ended. Tag CIBP set at 7,040'. PUH just above CIBP and circulate all gas out of the hole. Pumping water with biocide, pressure test the CIBP and production casing to 3,000 psi for 15 minutes. **If pressure test passes, proceed to next step; otherwise contact engineering.**
- 10 MIRU cementing services. Establish circulation with water and pump 20 sx Class "G" cement with 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R3 (to achieve 2.5 hr. pump time) mixed at 15.8 ppg and 1.38 cuft/sx (cement volumes based on 2-7/8" 6.5# casing capacity from 7,040' to 6,480' with ~6 sx excess). Displace cement to estimated TOC at 6,190' using approx. 11.4 bbls water. TOO H and LD 1.66" tubing so EOT at +/- 5,990'. Reverse circulate using approx. 23 bbls water (2 times tubing volume) or until returns are clean. RDMO cementing services.
- 11 TOO H and LD all 1.66" tubing.
- 12 PU and RIH with 1-11/16" perf guns and shoot squeeze holes at 4,300' using 6 SPF, 0.37" EHD, 1' net, 6 total shots. POOH with perf guns. RDMO wireline.
- 13 Establish circulation through squeeze holes to surface with water. **If circulation is established, proceed to next step; otherwise contact engineering for revised procedure steps.**
- 14 MIRU cementing services on the 2-7/8" production casing. Establish circulation with water and pump 20 bbls sodium metasilicate, 5 bbl water spacer, and 140 sx Class "G" cement with 0.4% CD-32 and 0.4% ASA-301 mixed at 15.8ppg and 1.15 cuft/sx (cement volumes based on 8.5" caliper plus 40% excess from 4,300' to 4,000' and 2-7/8" 6.5# casing capacity from 4,300' to 4,000'). Drop wiper plug and displace to 4,000' using 23 bbls water. RDMO cementing services. WOC to set up per cementing company recommendation.
- 15 MIRU wireline. RIH to tag cement plug @ +/- 4,000'. If cement is not above 4,000' contact engineer, otherwise proceed to next step.
- 16 RIH and jet cut 2-7/8" production casing at 1,310'. RDMO wireline. Circulate bottoms up and continue circulating to remove any gas from wellbore.
- 17 ND BOP. Install BOP on surface casing head with 2-7/8" pipe rams. Install 3,000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.

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- 18 MIRU cementing services. Establish circulation through 2-7/8" casing with water and pump 10 bbls SAPP mud flush, 20 bbls fresh water spacer, then balanced stub plug using 300 sx Type III cement with cello flake and 2% CaCl₂ (to achieve 1-1/2 hr pump time), mixed at 14.8 ppg and 1.33 cuft/sx (cement volumes based on 605' in 8.5" hole with 40% excess, and 200' in 8-5/8" surface casing). RDMO cementing services.
- 19 TOO H with 2-7/8" casing until end of casing is at +/- 200'. Circulate down 2-7/8" production casing and up surface casing/production casing annulus until returns are clean to ensure CIBP can be set in clean surface casing. Finish TOO H with 2-7/8" casing. ****SHUT WELL IN LEAVING 60 PSI ON WELL**** WOC to set up per cementing company recommendation.
- 20 PU and TIH with 2-7/8" workstring to tag cement plug at +/- 500'. If cement is not above 605' contact engineer, otherwise proceed to next step.
- 21 MIRU wireline. PU and RIH with CIBP (8-5/8", 23#/ft). Set CIBP at 80' and pressure test the CIBP to 1,000 psi for 15 mins. If pressure test fails contact engineering, otherwise proceed to next step.
- 22 RDMO wireline. RDMO WO rig.
- 23 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 job.
- 24 Supervisor submit paper copies of all invoices, logs, and reports to Engineering Specialist.
- 25 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 26 Excavate hole around surface casing enough to allow welder to cut casing minimum of 5' below ground level.
- 27 Welder cut casing minimum of 5' below ground level.
- 28 Fill casing to surface using 4,500 psi compressive strength cement (NO GRAVEL).
- 29 Spot weld on steel marker plate. Marker should contain well name, well number, legal location (1/4 1/4 descriptor), and API number.
- 30 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com
- 31 Properly abandon flowline per Rule 1103. File electronic Form 42 once abandonment complete.
- 32 Back fill hole with fill. Clean and level location.
- 33 Submit Form 6 to COGCC ensuring to provide "As Performed" WBD identifying operations completed.