

Mayer 14-22A: Plug & Abandonment

- 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 IOC (970-506-5980) 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. Note tagged depth in OpenWells. Run pressure bomb survey and obtain pressure gradient survey from surface to 7573' making gradient stops every 1000'. Forward pressure bomb results to Evans Engineering. RDMO pressure bomb services. MIRU VES and run gyro survey inside 2-3/8" 4.7# production tubing from seating nipple at +/- 7573' to surface with stops every 100'. Forward gyro survey data and invoices to Sabrina Frantz. RDMO slickline and VES.
- 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.
- 5 MIRU WO rig. Kill well as necessary with water and biocide. ND wellhead. NU BOP.
- 6 Unland 2-3/8" tbg (241 total joints landed at 7575') and TOO H standing back 7540' 2-3/8" tubing. LD extra tubing.
- 7 MIRU wireline. RIH with junk basket/gauge ring (4-1/2" 11.6#) to 7590'. POOH. PU and RIH with CIBP (4-1/2", 11.6#) to set at 7540' (collars at 7518' and 7560'). POOH. RDMO wireline.
- 8 MIRU hydrotester. Hydrotest 2-3/8" tubing to 3000psi while TIH open ended. Tag CIBP set at 7540'. PUH just above CIBP and circulate all gas out of the hole. Pumping water with biocide, pressure test the CIBP and production casing to 1000psi for 15 minutes. **If pressure test passes, proceed to next step; otherwise contact engineering.**
- 9 MIRU cementing services. Establish circulation with water and pump 70 sx Class "G" cement with 20% silica flour, 0.4% CD-32 and 0.4% ASA-301 mixed at 15.8ppg and 1.38 cuft/sx (cement volumes based on 4-1/2" 11.6# casing capacity from 7540' to 6510' with no excess). Displace cement to estimated TOC at 6430' using approx. 24.5 bbls water. TOO H and stand back 2-3/8" tubing so EOT at +/- 6230'. Reverse circulate using approx. 50 bbls water (2 times tubing volume) or until returns are clean. RDMO cementing services.
- 10 TOO H so EOT is at 4900'. LD extra tubing.
- 11 MIRU cementing services. Establish circulation with water and pump 20 bbls sodium metasilicate, 5 bbl water spacer, 75 sx Class "G" cement with 0.25 pps cello flake, 0.4% CD-32 and 0.4% ASA-301 mixed at 15.8ppg and 1.15 cuft/sx (cement volumes based on 4-1/2" 11.6# casing capacity with no excess from 4900' to 3920'). Displace cement to estimated TOC at 3900' using approx. 15 bbls water. TOO H and stand back 2-3/8" tubing so EOT at +/- 3900'. Reverse circulate using approx. 30 bbls water (2 times tubing volume) or until returns are clean. ****BE SURE ALL GAS IS OUT OF HOLE SO CBL CAN BE RAN**** RDMO cementing services. WOC to set up per cementing company recommendation.
- 12 TOO H and stand back 1140' of 2-3/8" tubing and LD extra tubing.
- 13 MIRU wireline services. RIH with sinker bar to tag cement plug at +/- 3900'. POOH LD sinker bar. If cement is not above 3920' contact engineer, otherwise proceed to next step.
- 14 PU and RIH with CCL-GR-CBL-VDL. Log from +/- 3875' to surface while holding +/- 1,000 psi on casing to verify cement coverage. ***DO NOT TAG CEMENT TOP at +/- 3900' WITH CBL* Contact engineering after CBL is ran to identify any changes to the below steps and confirm no cement coverage above 3600'.** RDMO wireline.
- 15 ****ALL BELOW STEPS ASSUME NO CEMENT BEHIND PRODUCTION CASING FROM 3600' TO SURFACE****
- 16 MIRU wireline. RIH and jet cut 4-1/2" production casing at 1040'. RDMO wireline. Circulate bottoms up and continue circulating to remove any gas from wellbore.
- 17 ND BOP. Install BOP on surface casing head with 4-1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.
- 18 TOO H and LD 1040' of 4-1/2" casing.

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- 19 TIH with 2-3/8" tubing open ended to 1140' (100' inside the 4-1/2" stub).
- 20 MIRU cementing services. Establish circulation with water and pump 10 bbls SAPP mud flush, 20 bbls fresh water spacer, then balanced stub plug using 260 sx Type III cement with cello flake and CaCl₂ as necessary, mixed at 14.8 ppg and 1.33 cuft/sx (cement volumes based on 100' inside 4-1/2" casing, 417' in 9" hole with 40% excess, and 200' in 8-5/8" surface casing). RDMO cementing services.
- 21 TOO H and LD 2-3/8" tubing until EOT at +/- 200'. Circulate down tubing and up surface casing/tubing annulus until returns are clean to ensure CIBP can be set in clean surface casing. Finish TOO H and LD 2-3/8" tubing. WOC to set up per cementing company recommendation.
- 22 PU and TIH with 2-3/8" tubing to tag cement plug at +/- 420'. If cement is not above 420' contact engineer, otherwise proceed to next step.
- 23 TOO H and LD all 2-3/8" tubing.
- 24 MIRU wireline. PU and RIH with CIBP (8-5/8", 24#/ft). Set CIBP at 80' and pressure test the CIBP to 1000psi for 15mins. If pressure test fails contact engineering, otherwise proceed to next step.
- 25 RDMO wireline. RDMO WO rig.
- 26 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.
- 27 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 28 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 29 Excavate hole around surface casing enough to allow welder to cut casing minimum of 5' below ground level.
- 30 Welder cut casing minimum of 5' below ground level.
- 31 Fill casing to surface using 4500psi compressive strength cement (NO GRAVEL).
- 32 Spot weld on steel marker plate. Marker should contain well name, well number, legal location (1/4 1/4 descriptor), and API number.
- 33 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com
- 34 Properly abandon flowline per Rule 1103. File electronic Form 42 once abandonment complete.
- 35 Back fill hole with fill. Clean and level location.
- 36 Submit Form 6 to COGCC ensuring to provide "As Performed" WBD identifying operations completed.

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