



Engineer: Jade Patterson

Cell: 509-307-7514

Date: 10/14/2014

## **PLUG AND ABANDONMENT PROCEDURE**

### **REHDER X 6-14, API 05-123-15759**

#### **Steps**

1. Locate and expose 8 5/8" casing stub. Extend stub to surface and install 8 5/8"x 11" SOW, 3M casing head with 3000 psi ball valves in both outlets.
2. 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.).
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. MIRU workover rig. NU 9" 3000 psi BOP stack on casing head. PT BOP and csg head per approved Form 2. Function test BOPE. NU rotating head on BOP. Hook up return line to shale shaker on flat tank. Spot trailer with 169 joints of 2 3/8" WS.
5. PU 7 7/8" mill tooth bit, necessary drill collars and drill pipe/work string (WS). Drill through existing cement plugs at surface (10 sk) and at the base of surface casing (100 sk plug ~658'-814') using fresh water with biocide.
6. Once surface cement plugs are drilled, displace hole with drilling mud and continue going in hole. Drill out cement plug at ~2900'-3000'.
7. RIH to stub of 2 7/8" casing @ 5200'. TOOH and LD drill collars and bit.
8. RIH WS open-ended to 5190'. Circulate and condition hole for additional cement plug.
9. Run gyro survey from casing stub to surface.
10. RIH with 2 3/8" tubing past casing stub to 5300'.
11. RU Cementers. Precede cement with 5 bbl water containing biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer.
12. Pump Shannon/Sussex plug: 740 sx (851 cu-ft) "G" w/0.25 pps cello flake, 0.4 % CD-32, 0.4% ASA-301 to achieve 2:30 pump time. Mix at 15.8 ppg and 1.15 cu-ft/sack. Calculated top of plug at 4200' based on a 10 1/2" hole with 20% excess. Caliper log from 4300'-4700'.
13. POOH to ~3900' and circulate clean. WOC per cement company recommendation.
14. RIH, tag top of plug at 4200' or shallower. If not, consult Evans Engineering.
15. POH to 1500' and LD WS. Precede cement with 10 bbls SAPP and 20 bbls fresh water spacer.
16. Pump surface plug: 570 sx (758 cu-ft) Type III w/cello flake and CaCl<sub>2</sub> as deemed necessary, mixed at 14.8 ppg and 1.33 cuft/sk. Cement volume from 1500'-778' in an 11" OH with 40% excess, and 788'-550 in 8 5/8" casing, no excess. Nearest caliper reading at 4300'.
17. POOH to ~250' and circulate clean. WOC per cement company recommendation.
18. RIH, tag top of plug. Plug needs to be 580' or shallower. If not, consult Evans Engineering. TOOH and LD WS.
19. RU wireline. Run and set CIBP in the 8 5/8", 24# surface casing at 80'. PT CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RDMO WL and WO rig.
20. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com) within 24 hrs of completion of the job.

21. Supervisor to submit paper copies of all invoices, logs, and reports to Joleen Kramer.
22. Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
23. Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
24. Welder cut casing minimum 5' below ground level.
25. Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
26. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
27. Obtain GPS location data as per COGCC Rule 215 and send to [rscDJVendors@anadarko.com](mailto:rscDJVendors@anadarko.com).
28. Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
29. Back fill hole with fill. Clean location, level.
30. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.