

Engineer: Tod Haanes

Cell: 303-929-2339

Date: 3/15/2015

PLUG and ABANDONMENT PROCEDURE

Shivers W Federal 29-4JI

API# 05 123 20083

Wins# H6912

Step Description of Work

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 foreman/field coordinator 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 WL. Pull bumper spring and tag bottom. Run pressure bomb and obtain pressure gradient survey from surface to 7862' (halfway between J Sand perfs) making gradient stops every 1000'. Forward pressure bomb results to Evans Engineering. Note: Do not run the BHP Survey after blowing down or killing the well with fluid.** RD WL.
3. Prepare location for base beam equipped rig. Install perimeter fence as needed.
4. Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL. The last Form 17 test on 12/22/2014 recorded a Bradenhead pressure of 0 psi, and no liquids.
5. MIRU WO rig. Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP with 2-3/8" pipe rams. Unseat landing joint, and LD.
6. TOOH and SB **7100'** 2-3/8" tubing.
7. RU WL. PU **gauge ring** and RIH to 7780' for 4-1/2" 11.6 lb/ft casing (spud date = 11/9/2000). POOH and LD **gauge ring**.
8. Set CIBP at 7750' (collars are located at 7730' and 7774') to abandon the J Sand perfs. **Standby WL.**
9. **Fill hole and pressure test CIBP to 1000 psi for 15 minutes.**
10. PU dump bailer and spot 2 sxs of "G" cement on the CIBP at 7750'. RD WL.
11. TIH with 2-3/8" tubing to 7090' **while hydrotesting to 3000 psi.**
12. **RU cementers. Pump Niobrara balanced plug:** 25 sxs (35 cf) Class "G" cement w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 to achieve 2:30 pump time, mixed at 15.8 ppg and 1.38 cf/sx. The plug will cover 7090' to 6690'. Volume is based on 400' inside 4-1/2" production casing with no excess. RD cementers.
13. Slowly pull out of the cement and PUH to 6400', and reverse circulate tubing clean to ensure no cement is left in the tubing.
14. WOC per cement company recommendation. Tag cement. Cement top needs to be above 6693' (400' above the Niobrara TOP at 7093').
15. PUH to 4900'.
16. **RU Cementers. Pump Sussex balanced plug:** 60 sxs (69 cf) Class "G" cement, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx. The plug will cover 4900' - 4110'. Volume is based on 790' in 4-1/2" production casing with no excess. RD cementers.
17. PUH to 3800' and reverse circulate to ensure no cement is left in the tubing.
18. WOC per cement company recommendation. Tag cement. Cement top needs to be above 4212' (200' above the Sussex TOP at 4412').
19. TOOH and SB **1450'** 2-3/8" tubing.

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20. RU WL. RIH and cut casing at 1350'. RD WL.
21. Circulate with fresh water containing biocide to remove any gas.
22. Un-land casing. ND BOP, ND TH. Install BOP on casing head with 4-1/2" pipe rams.
23. TOOH and LD 1350' of 4-1/2" casing. Remove 4-1/2" pipe rams and install 2-3/8" pipe rams.
24. RIH with 2-3/8" tubing to 1450'.
25. RU Cementers. Establish circulation with water containing biocide and precede cement with 10 bbl (min) SAPP followed by a 20 bbl fresh water spacer. **Pump Stub Plug:** 320 sxs (425 cf) Type III cement w/ cello flake and CaCl_2 as deemed necessary by the cementing company, mixed at 14.8 ppg and 1.33 cf/sx (100' in 4-1/2" production casing with no excess, 561' in 9.625" OH from caliper with 20% excess, 213' in 8-5/8" surface casing with no excess). The plug will cover 1450' - 576'. RD cementers.
26. Pull up to 200' and circulate tubing clean using fresh water treated with biocide. TOOH.
27. WOC per cement company recommendation. Tag cement. Cement top needs to be above 689'.
28. MIRU WL. RIH 8-5/8" CIBP to 80'. Set and pressure test to 1000 psi for 15 minutes. RDMO WL and WO rig.
29. 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.
30. Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
31. Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
32. Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
33. Welder cut casing minimum 5' below ground level.
34. Fill casing to surface using 4500 psi compressive strength cement (NO gravel).
35. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
36. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
37. Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
38. Back fill hole with fill. Clean location, and level.
39. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.