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PLUG AND ABANDON PROCEDURE (RE-ENTER)

BRAND #2

Step Description of Work

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. Prepare location for workover rig. Install perimeter fence as needed.
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. MIRU workover rig. NU 9" 3000 psi BOP stack on casing head. Pressure test BOP and csg head per approved Form 2. Function test BOPE. Install a choke or choke manifold on casing outlet. NU rotating head on BOP. Hook up return line to shale shaker on flat tank. Ensure full opening 3-1/2" TIW on rig floor.
4. RU power swivel. PU 7-7/8" rock bit, bit sub, float sub, 3-1/2" drill collars and 3-1/2" EUE drill pipe/work string (WS). TIH and drill through existing cement plugs at surface (10 sk) and at the base of surface casing (25 sk) using fresh water with biocide. *Note: if there is gas then let's run an inline float.
5. Once surface cement plugs are drilled, Displace hole with 9.0 ppg, 40 vis. drilling mud and drill out 25 sack open-hole plug set at ~600'-750'. *Note: Utilize the attached "Funnel Vis. To Apparent Vis. Conversion Chart" when checking mud viscosity. An apparent 40 vis for a 9.0 ppg mud should have a funnel viscosity time of 63 sec.
6. LD power swivel. Continue TIH while washing down every 5 jts to 4 1/2" casing stub at 4139'. Stop every 1,000' and circulate 1-2 bottoms up or until mud returns clean up to make sure we are adequately removing dehydrated mud and any gas in the wellbore. Make sure to check and record mud weight and viscosity in OW every hour to make sure our mud doesn't get out of spec.
7. Tag casing stub and record in OW. Circulate 1.5 times hole volume or until there is no more gas or dehydrated mud in returns. TOOH and stand back WS. LD drill collars and bit. *Note: If any tight spots were encountered while washing to bottom make sure to ream through the tight area until you no longer see a tight spot.
8. TIH with WS open-ended to ~4139'. Circulate and condition hole for cement plug.
9. Run a gyro directional survey from EOWS @ 4139' to surface with 100' stations. Forward results to Sabrina Frantz in Evans Engineering.
10. MIRU cementers. Establish circulation, pump Sussex plug: Pump 5 bbls fresh water followed by 20 bbls sodium metasilicate followed by 5 bbls fresh water ahead of cement: Mix and equalize cement plug (4139'-3939') consisting of 85 sx (97.8 cuft) of 0:1:0 "G" + 0.5% CFR-2 + 0.2% FMC + 0.5% LWA + 0.25 lb/sk polyflake. Mixed at 15.8 ppg, 1.15 cuft/sack. Plug size is based on 8" OH caliper log from 4139' to 3939' with 40% excess.
11. TOOH to ~ 2900' while SB ~34 jts of WS. Circulate well while WOC as per cement company recommendation.
12. TIH and tag plug at 3939'. If tag depth is deeper than 3939' call Evan's engineering. LD WS to place end of WS at 1030'.

13. Establish circulation, get bottoms up and pump Fox Hills plug: Pump mud flush of 10 bbls SAPP followed by 20 bbls water ahead of 365 sks (485.5 cuft) : Type III + 0.3% CFL-3 + 0.3% CFR-2 + 1% CaCl₂ + 0.25 lb/sk Polyflake, mixed at 14.8 ppg and 1.33 cuft/sk. Plug size is based on 8" OH from 1030' to 158' with 40% excess (No caliper log) and 8-5/8" casing from 158' up to surface.
14. POOH and WOC per cementing company recommendation.
15. Tag top of plug at or above 58' and record in OW. If we tag deeper than 58', call Evans engineering to discuss possible next steps. POOH and LD WS. RDMO cementing company.
16. If there was gas and we didn't see cement returns to surface then: RU wireline. RIH and tag TOC. Run and set CIBP in the 8 5/8", 24# surface casing and set above the TOC. Pressure test the CIBP and surface casing to 1000 psi for 15 minutes. Assuming successful test, RD wireline.
17. ND BOPE. RDMO workover rig.
18. Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.
19. Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
20. Excavate hole around surface casing of sufficient size to allow welder to cut off 8 5/8" casing at least 5' below ground level (depending on land owner requirements).
21. Fill surface casing with 4500 psi compressive strength cement (no gravel).
22. Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
23. Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
24. Back fill hole with fill. Clean location, and level.
25. Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.