

PLUG AND ABANDONMENT PROCEDURE

SEC. 4 INVESTORS 34-4

Step	Description of Work
1	Provide 48 hr 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 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed.
2	MIRU Slickline. Pull bumper spring and tag TD.
3	Prepare location for base beam equipped rig.
4	Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
5	MIRU workover rig. Circulate well with water w/ biocide to kill the well. ND wellhead. NU BOPs. Unseat landing jt.
6	POOH 2-3/8" tbg and stand back 7750' (246 jts). LD remaining.
7	MIRU Wireline. PU gauge ring for 4-1/2" 11.6# and RIH to 8250'. POOH and LD gauge.
8	RIH with 4-1/2" CIBP and set at 8200'. RIH w/ dumbailer and 2 sx cmt and set on top CIBP at 8200'.
9	RIH with 4-1/2" CIBP to 7750'. PT csg to 1000 psi for 15 minutes. RDMO Wireline.
10	Notify Cementers to be on call.
11	RIH on 2-3/8" tbg while hydrotesting to 3000 psi. Tag CIBP at 7750' and pick up 5'.
12	RU Cementers. Pump Niobrara balanced plug on top of CIBP: 55 cu-ft (40 sks) "G" 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 cuft/sk. Calculated top in the 4-1/2" csg is 7080'.
13	PUH to leave end of 2-3/8" tbg at 5325' and circulate hole clean.
14	Pump Sussex balanced plug: 80.5 cu-ft (70 sks) "G" w/ 0.4% CD-32, 0.4% ASA-301 with CaCl ₂ as necessary. Mixed at 15.8 ppg, 1.15 cuft/sack. Calculated top of plug at 4350' based in the 4-1/2" csg.
15	POH to ~4000' and circulate hole clean with fresh water w/ biocide. WOC per cement company recommendation.
16	Tag top of plug at 4350'. POOH, standing back 1400' (45 jts) and laying down the rest.
17	ND BOP and wellhead. Install a 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 MIRU Wireline. Cut off 4-1/2" csg at 1282' per CCL. RDMO WL. Circulate bottoms up using water and biocide to remove any gas from wellbore.
- 19 POOH and LD 4-1/2" csg. Remove the 4-1/2" pipe rams and Install 2-3/8" pipe rams.
- 20 RIH w/ 2-3/8" tbg open ended 100' past the 4-1/2" csg stub to 1400'.
- 21 MIRU Cementers. Pump Fox Hills Balanced plug: Pump mud flush of 10 bbls SAPP and 20 bbl water ahead of 346 cu-ft (260 sx) Type III w/cello flake and CaCl₂ as deemed necessary, mixed at 1.33 cf per sack, 14.8 ppg. Plug size is based on 9" hole with 40% excess covering 1400' to shoe of surface casing at 893' plus capacity of surface casing to 650'.
- 22 PUH to 100' and circulate out any excess cmt. WOC per cement company recommendation.
- 23 RIH and tag top of plug. Plug should be tagged at 693' or shallower. Call Evans Engineering to verify enough coverage. POOH and LD 2-3/8" tbg.
- 24 RU wireline. RIH 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, RD wireline. RDMO workover rig.
- 25 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.
- 26 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 27 Excavation crew to notify One Call to clear area around wellhead and flowlines.
- 28 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).
- 29 Welder cut casing minimum 5' below ground level.
- 30 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 31 Fill surface casing with cement (4500 psi compressive strength, no gravel).
- 32 Spot weld steel marker plate on top of sfc casing stub. Marker shall be labeled with well name, well number, legal location (1/4 1/4 descriptor) and API number.
- 33 Back fill hole with native material. Reclaim location to landowner specifications
- 34 Submit Form 6 to COGCC. Provide "As plugged" wellbore diagram identifying the specific plugging completed.

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