

## PLUG AND ABANDONMENT PROCEDURE

June 15, 2020

### Angelina #3

Red Mesa Field

NWSE, Section 1, T33N, R12W, La Plata County, CO

API 05-067-06607

Note: All cement volumes use 10% excess per 1000 foot of depth or 100% excess outside pipe and 50' excess inside pipe, whichever is greater. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures. All cement will be Class B, mixed at 15.8 ppg with a 1.18 cf/sx yield.

1. This project will use of an A-Plus steel tank to handle waste fluids circulated from the well and cement wash up.
2. Install and test location rig anchors. Comply with all COGCC, BLM, and Operator safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. Record casing, tubing and bradenhead pressures. NU relief line and blow down well. Kill well with water as necessary and at least pump tubing capacity of water down the tubing. ND wellhead and NU BOP. Function test BOP.
3. Install and test location rig anchors. Comply with all COGCC, BLM, and Operator safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. Record casing, tubing and bradenhead pressures. NU relief line and blow down well. Kill well with water as necessary and at least pump tubing capacity of water down the tubing. ND wellhead and NU BOP. Function test BOP.
4. Rods: Yes\_\_\_, No\_\_\_, Unknown\_\_\_\_.  
Tubing: Yes\_\_\_, No\_X\_, Unknown\_\_\_, Size\_\_\_\_\_, Length\_\_\_\_\_.  
Packer: Yes\_\_\_, No\_X\_, Unknown\_\_\_\_, Type\_\_\_\_\_  
If this well has rods or a packer, then modify the work sequence in step #2 as appropriate.

Note: tubing from well is on the ground next to well. TIH with mill and push or drill out rubber cementing plug set at 1800'.

5. **Plug #1 (Dakota perforations and top, 3193' – 3093')**: TIH and tag existing 4.5" CIBP at 3200' (plus or minus due to rubber cementing plug). Pressure test tubing to 1000#. Load casing with water and circulate well clean. If tubing has not been tested; pressure test tubing to 1000#. Attempt to pressure test casing. If casing does not test then spot or tag subsequent plugs as appropriate. Mix 12 sxs Class G and spot above CR to isolate the Dakota interval. TOH.
6. **Plug #2 (Gallup plug, 2385' – 2285')**: Perforate 3 squeeze holes at 2385'. Establish injection rate into squeeze holes if casing tested. RIH and wireline set 4.5" cement retainer at 2335'. Mix and pump 30 sxs Class G cement, squeeze 18 sxs outside 4.5" casing and leave 12 sxs inside casing. TOH.

7. **Plug #3 (7" casing shoe and Point Lookout top, 1350' – 1164')**: Perforate 3 squeeze holes at 1350'. Establish injection rate into squeeze holes if casing tested. RIH and wireline set 4.5" cement retainer at 1300'. Mix and pump 56 sxs Class G cement, squeeze 37 sxs outside 4.5" casing and leave 19 sxs inside casing. TOH.
8. **Plug #4 (Surface, 929' – 0')**: Perforate @ 929'. Establish injection rate. Mix and pump 56 sxs Class G cement down 4.5" casing and out 4.5" x 7" annulus. SI well and WOC. Tag TOC and top off if necessary prior to set P&A marker.
9. ND BOP and cut off wellhead below surface casing flange. Check for gas venting outside the surface casing (use gas monitor or flood the cellar with water and look for bubbles) Pressure test casing. Do not install surface casing shoe plug unless the surface casing pressure is zero. If there is pressure, additional deeper plug(s) will be required to ensure no surface casing pressure.
10. Install P&A marker with cement to comply with regulations. Record GPS coordinate for P&A marker on tower report. Photograph P&A marker in place. Cut off anchors and clean up location. Restore location per regulatory stipulations.