



Procedure to Re-enter & Properly P&A Well Prior to Offset HZ Fracs COA for Desha DSU

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Penrod 4-3

05-001-08766

1011' FNL, 1045' FWL

NWNW Sec 4, T1S, R65W

Adams County, CO

Proposed Work:

Locate Well and Make-Up Wellhead

- 1.) Call Line Locates & Provide 48 hr. Form 42 notice to COGCC prior to 'excavation and rig up.'
- 2.) Survey and locate abandoned well, mark with stake, and take location photos.
- 3.) Excavate to expose top of surface casing.
- 4.) Prepare location surrounding exposed casing as necessary for rig.
- 5.) Set and test deadman anchors as necessary.
- 6.) Weld 2" collar to top of 9-5/8" surface casing cap. Make up to collar, pneumatic drill with non-sparking bit. Drill out cap venting possible trapped gas.
- 7.) Once verified that no gas exists beneath top of surface casing plate, cut off surface casing below plate with torch, dress up smooth.
- 8.) Butt weld 9-5/8" casing to dressed cut, bringing threaded end of casing to ground level.
- 9.) Make up to 9-5/8" casing one 9-5/8" collar, and an 9-5/8" starter well head.
- 10.) NU flange adaptor and 5k BOP, test BOP.

Drill out Old Plug/s and Set New Plugs

- 11.) MU and RIH with 6-1/8" bit, PU 2-7/8" (or 3-1/2") drill collars, 2-7/8" 6.5# tubing, and TIW valve.
- 12.) Drill out 10 sx cement plug (down to 40'). Pressure test casing to 300 psi.
- 13.) Drill out 2nd cement plug of 25 sx plug @ 84'. Roll hole with kill fluid until well is dead or blown down.
- 14.) Continue RIH, washing out, tag top of Fox Hills plug, +/- 981'. Impossible to verify bottom of plug depth.
- 15.) Drill out Plug to +/- 1,100'. Continue to washdown, RIH and clean out with target depth of +/- 5,000'. Circulate hole clean.
- 16.) MIRU Slickline, RIH gyro survey inside tubing to deepest depth of clean out. POOH. RDMO Slickline.
- 17.) TOOH 2-7/8 Work String, Drill Collars and Bit.
- 18.) PU and RIH with mule shoe and 2-7/8" tubing to +/- 1,500'.
- 19.) RU cementers. Pump 221 sack balance plug of 15.8 ppg Class G 'neat' cement inside 7-7/8 Open Hole from +/- 1,500' plug up to ~900'.



Calculated Sacks for required Fox Hills Coverage - Plug 1 Re-Entry

Assume Class G Neat

Desired Coverage From 1500' to 900' = 600' (250 below Fox Hills to 85 above)

Assume all 7-7/8" Open hole 25% Excess

Yield : 1.15 cu ft / sx

$$600 \text{ lin ft} * \frac{0.3382 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} * 125\% = \text{221 Sacks Cement}$$

20.) PU with 2-7/8" tubing to +/- 700' (800' above bottom of plug). Roll hole clean, wait on cement.

21.) RIH with 2-7/8" tubing and tag top of cement plug, confirm TOC.

22.) Pull 2-7/8" tubing to 267'.

23.) RU cementers. Pump 114 sx of 15.8 ppg Class G 'neat' across surface shoe to surface.

Calculated Sacks for Surface Casing Shoe Coverage - Plug 2 Re-Entry

Assume Class G Neat

Desired Coverage From 267' to 0' = 267' (50' below Shoe to Surface)

Assume all 7-7/8" Open hole, & 9-5/8" Casing

Yield : 1.15 cu ft / sx

$$50 \text{ lin ft} * \frac{0.3382 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} = 29 \text{ Sacks Cement}$$

$$217 \text{ lin ft} * \frac{0.4479 \text{ cu ft}}{1 \text{ lin ft}} * \frac{1 \text{ sx}}{1.15 \text{ cu ft}} = 85 \text{ Sacks Cement}$$

114 Total Sacks Cement

24.) POOH with 2-7/8" tubing. Top off tubing displacement when out of hole. RD cementers.

25.) RDMO.

Reclaim

26.) Excavate around wellhead to 8' below grade, cut off 9-5/8" casing, weld on cap.

27.) Obtain GPS location data as per COGCC Rule 215.

28.) Backfill hole and reclaim surface to original conditions.