

HOUTS 4-1

- 1 Call One-Call for utility locates as needed. Prepare location for workover rig operations. Line location under rig and mud tanks.
- 2 Locate and expose 8 5/8" casing stub. Extend stub to surface and install 8 5/8" SOW x 11", 3m casing head with 3m ball valves in both outlets.
NOTE: Plan to remove flowlines when well is capped.
- 3 Provide notification of RU to COGCC as specified in approved Form 6.
- 4 MIRU workover rig. NU 7 1/16", 3000 psi BOP stack on casing head. PT BOP/casing head per approved Form 6. Function test BOPE. NU rotating head on BOP. Hook up return line to shale shaker on flat tank.
- 5 PU 4 3/4" mill tooth bit, necessary drill collars and 2 7/8", EUE work string (WS). Drill through existing cement plugs at surface (5 sk) and ~210' (10 sk) using fresh water with biocide. NOTE: Bottom of second cement plug is ~310' (about 50' below sfc casing shoe at 265').
- 6 Once surface cement plugs are drilled, displace hole with drilling mud containing biocide and continue in hole. Drill out 35 sk plug ~3340' – 3440'. Continue in hole to cmt above CIBP at ~6000'. Circulate and condition hole for bond log. POOH and SB WS, LD drill collars & bit.
- 7 PU casing scraper for 5 1/2", 17# casing and round trip to 5800'. Fill hole for CBL.
- 8 RU wireline and run CBL from PBD at ~6000' to surface. Cement placement behind 5 1/2" above the NB, across the SX and across the sfc casing shoe may be affected by info on this log.
- 9 Run gyro survey from ~6000' to surface.
- 10 PU two, one foot long 3 1/8" casing guns loaded 3 SPF, 0.50" EHD and RIH. Perforate 5 1/2", 17# casing at ~5800' (above existing cement top) and ~5400' (465' above top of NB). RD wireline.
- 11 RIH w/CICR for 5 1/2", 17# on 2 7/8" work string while hydrotesting to min 3000 psi. Set CICR @ +/-5430' depending on casing couplings.
- 12 MIRU cementing services. Establish circulation thru squeeze holes and prepare to cement. Mix and pump 110 sks of 50/50 Poz 'G' w/20% silica flour, 3% gel, 0.1% sodium metasilicate & 0.4% FL-52, mixed at 1.35 ppg & 1.71 cuft/sk. Displace to 4 bbl from EOT. Sting out and dump remaining cement on retainer and across upper squeeze holes. POOH about 10 jts and circulate with drilling mud to remove any cement from wellbore.
- 13 POOH & LD WS to 3600'. Circulate and prepare to set balanced cement plug.
- 14 Spot 60 sk cement plug consisting of Class 'G' containing 0.4% CD-32 and 0.4% ASA-301 (with CaCl₂ as needed), mixed at 15.8 ppg & 1.15 cuft/sk. Plug to cover up to ~3100'. POOH about 10 jts and circulate to remove any cement from wellbore. WOC 4 hrs.
- 15 Tag top of plug at ~3100'. Assuming plug is properly in place, SB 500' of WS and LD remainder.
- 16 RU wireline. RIH w/primer cord and break a 5 1/2" coupling at +/- 400'. RD wireline.
- 17 Unland 5 1/2" casing, circulate gas from hole with drilling mud. Install 5 1/2" pipe rams in BOP. P&LD the 5 1/2" casing (coupling OD = 6.050").
- 18 RIH open ended WS to 500' (100' inside 5 1/2" stub) and circulate to prepare for cementing.
- 19 MIRU cementing services. Mix and pump 130 sk cement plug consisting of Type III containing 0.25 lb/sk cello-flake (with CaCl₂ as deemed necessary), mixed at 14.0 ppg and 1.53 cuft/sk.

This is calculated to fill (btm to top) 100' of 5 ½", 17#, 135' of 12 ½" hole plus 20% excess and 100' in 8 5/8", 24#.

- 20 P&LD WS. WOC min 4 hr. RIH to tag cement top at +/- 165'. If cement is below 165' contact APC office for instructions. If cement is @ 165' or higher, proceed.
- 21 RU wireline. Run and set CIBP in the 8 5/8", 24# sfc casing at ~100'. PT CIBP/sfc csg to 1000 psi for 15 min. Assuming the pressure test is successful, proceed. RD wireline.
- 22 ND BOP. RDMO workover rig.
- 23 Wellsite supervisor should turn all paper copies of cementing reports/invoices to Jolene Kramer. NOTE: During the job, wellsite supervisor should instruct contractors to e-mail all logs, job reports/invoices to Jolene Kramer.
- 24 Excavate hole around sfc casing of sufficient size to allow welder to cut off 8 5/8" sfc casing at least 5' BGL (depending on landowner requirements). Cut off sfc casing.
- 25 Fill sfc casing with 4500 psi compressive strength redi-mix cement (sand and cement only – no gravel).
- 26 Spot weld steel marker plate on top of sfc casing. NOTE: Marker shall be labeled with well name and number, legal location (1/4, 1/4 description) and API number.
- 27 Properly abandon/remove flowlines as per COGCC Rule 1103.
- 28 Back fill hole with native material. Reclaim location to landowner specifications.
- 29 Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.