

## PLUG AND ABANDONMENT PROCEDURE

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FANTASTYK RED V 1-10

- | 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 Automation Removal Group at least 24 hr prior to rig move. Request they isolate production equipment prior to rig MIRU. |
| 2    | Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level. If pressure is found on surface casing, report to Evans Engineering before operations begin.                              |
| 3    | Prepare location for base beam equipped rig. Install perimeter fence as needed.  |
| 4    | MIRU. Bleed any pressure off of production casing. There is a CIBP/cement plug above all perms. ND WH. NU BOP. Unseat landing jt.  |
| 5    | TOOH and stand back 4500' of 2.063" IJ tbg. LD remaining tbg: 202 jts landed @ 6509' KB.   |
| 6    | RU hydro-testers and test 3 1/2" casing to 1000 PSI for 15 minutes.  |
| 7    | TIH w/ 2.063" tbg open-ended to 4500'. Hydro-test tbg to 3000 psi.   |
| 8    | RU cementers and place a balanced plug from 4500' to 3920' as follows: 25 sx class "G" w/ 0.5% CFR-2, 0.2% FMC, 0.5% LWA mixed at 15.8 ppg and 1.15 cf/sk. (29 cuft of slurry).  |
| 9    | TOH to ~3000. Circulate water containing biocide to clear tubing and casing. WOC per cementing company recommendation.   |
| 10   | Tag cement @ 3920'. TOOH and stand back 1100' of tbg.  |
| 11   | MIRU WL. Crack coupling or cut casing at 1100'. RDMO WL. Circulate bottoms up and continue circulating to remove any gas from wellbore.  |
| 12   | ND BOP and wellhead. Install BOP on surface casing head with 3 1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.  |
| 13   | TOOH and LD 3 1/2" casing.   |
| 14   | TIH with tubing open-ended to 1100' (3 1/2" stub).   |
| 15   | RU cementers. Establish circulation and circulate bottoms up. Pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min) fresh water spacer immediately preceding cement.   |

- 16 Pump a balanced plug 1100'-310': 330 sx (439 cuft.) Type III cement w/ 0.25 pps Polyflake, 0.3% CFR-2, 0.3% CFL-3 and 0.5% CaCl<sub>2</sub> mixed at 14.8 ppg and 1.33 cf/sk. Design to fill 590' in 9" OH + 40% excess and 200' in 8 5/8" surface casing.
- 17 TOOH. WOC per cementing company recommendation. Tag Cement. TOC should be at or above 410'. If not, consult Evans Engineering.
- 18 MIRU WL. RIH 8 5/8" CIBP to 80'. Set and PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 19 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.
- 20 Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
- 21 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 22 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 23 Welder cut 8 5/8" casing minimum 5' below ground level.
- 24 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 25 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 26 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
- 27 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 28 Back fill hole with fill. Clean location, level.
- 29 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.