

PLUG AND ABANDONMENT PROCEDURE

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CHAMPLIN 41-4 #1

- | Step | Description of Work |
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| 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 and remove any automation prior to rig MIRU. Well has a pumping unit. |
| 2 | Prepare location for base beam equipped rig. Install perimeter fence as needed. |
| 3 | Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL. |
| 4 | MIRU workover rig. Control well with water w/ biocide to kill the well. |
| 5 | NU rod table on ratigan with flow tee below for circulation if necessary. |
| 6 | Note: Operations have not been able to run the pumping unit. They suspect stuck rods. |
| 7 | Unhang rods from pumping unit, ensuring pumping unit is locked out and tagged out. Unseat pump. |
| 8 | RU hot oil truck and circulate 30bbls (1 tubing volume) fresh water down tubing to remove any paraffin on rods. |
| 9 | TOOH with rod string, stripping as necessary if stuck. Lay down pump and all rods on trailer. |
| 10 | ND rod table and ratigun. ND WH. NU BOP. Unseat landing joint. |
| 11 | Spot tubing trailer with ~162 jnts of 2-3/8" 4.7#/ft J-55 workstring yellow-band. |
| 12 | Release tubing anchor. POOH and LD ~163 jnts of 2-7/8" tbg landed at 5115'. |
| 13 | RU Slickline. RIH and tag bottom for fill. Note tag depth in Openwells. RU VES gyro services. Run gyro from bottom to surface making stop counts every 100-ft. Send results and invoice to Sabrina Frantz in Evans Engineering. RD Slickline and VES. |
| 14 | Notify Cementers to be on call. (65 sx 'G', 70 sx 'G', 30 sx 'G', and 510 sx 'Type 3') |
| 15 | Assuming tag deeper than 5088', PU casing scraper for 5-1/2" 15.5# csg and RIH on 2-3/8" tbg to 5088'. Reciprocate scraper across following depths: 5066' - 5088'; 4960', 4611' - 4666', and 4500'. P&SB 2-3/8" workstring and LD scraper. |
| 16 | PU CICR for 5-1/2" 15.5# csg and RIH while hydrotesting to 3000 psi on 2-3/8" workstring. Set CICR at 4960' +/- 10-ft. (Nearest collars are at 4932' and 4977' per GR-CCL-PERF log dated 4-26-1976). |
| 17 | RU Cementers. Perform a low pressure squeeze of 80 sx (16.4 bbls) 'G' + 0.5% CFR-2 + 0.2% FMC + 0.5% LWA mixed at 1.15 cuft/sk and 15.8 ppg down 2-3/8" WS out the CICR displaced with 16.3 bbls (tbg capacity- 3 bbls) fresh water w/ biocide to abandon the Shannon. Perform hesitations as necessary to squeeze 50 sx behind pipe and leave the casing filled with cement from 5088' - 4960'. Max squeeze pressure of 2500 psi. Underdisplace by 3 bbls, unsting from retainer and spot remaining 3 bbls on top of the CICR. |
| 18 | Unsting from CICR and circulate to clear tubing of excess cement. POOH, standing back 143 jnts of 2-3/8" workstring. |
| 19 | PU CICR for 5-1/2" 15.5# csg and RIH on 2-3/8" workstring. Set CICR at 4500' +/- 10-ft. (Nearest collars are at 4474' and 4517' per GR-CCL-PERF log dated 4-26-1976). |

- 20 RU Cementers. Perform a low pressure squeeze of 70 sx (14.3 bbls) 'G' + 0.5% CFR-2 + 0.2% FMC + 0.5% LWA mixed at 1.15 cuft/sk and 15.8 ppg down 2-3/8" out the CICR displaced with 17.5 bbls (tbg capacity) fresh water w/ biocide to abandon the Sussex. Perform hesitations as necessary to squeeze 50 sx behind pipe and leave the casing filled with cement from 4666' - 4611'.
- 21 Unsting from CICR and circulate to clear tbg. Spot 30 sx 'G' + 0.5% CFR-2 + 0.2% FMC + 0.5% LWA mixed at 1.15 cuft/sk and 15.8 ppg on top of CICR. Calculated TOC inside casing is 4235'.
- 22 P&SB 1220' (39 jnts) of 2-3/8" WS, laying down remainder.
- 23 MIRU Wireline. Cut off 5-1/2" csg at 1120' per CCL. RDMO WL. Circulate bottoms up using water and biocide to remove any gas from wellbore.
- 24 ND BOP and tubing head. Install a BOP on surface casing head with 5-1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.
- 25 POOH and LD 5-1/2" csg. Remove the 5-1/2" pipe rams and Install 2-3/8" pipe rams.
- 26 RIH w/ 2-3/8" tbg 100' into the csg stub to 1220'. Establish circulation using rig pump with freshwater and biocide. Get at least 1 full bottoms up (~150 bbls) to remove all gas and condition the hole.
- 27 MIRU Cementers. Fox Hills Plug: Establish circulation with freshwater and biocide and pump mud flush of 10 bbls SAPP and 20 bbl water ahead of 120.8 bbls (510 sx) Type III + 0.3% CFL-3 + 0.3% CFR-2 + 0.25 lb/sk Polyflake + CaCl₂ as deemed necessary, mixed at 1.33 cf per sack, 14.8 ppg. Plug size is based on 100' in 5-1/2" csg, 12.5" hole with 40% excess covering 1120' to surface csg shoe at 623', and capacity in the 8-5/8" csg to 423'. Max squeeze pressure of 2000 psi.
- 28 PUH to 100' and circulate hole clean. POOH and WOC at least 4 hours per cementing company recommendation.
- 29 RIH and tag top of plug. Plug needs to be tagged at 523' or shallower. Contact Evans Engineering after tag to confirm. POOH and LD 2-3/8" tbg.
- 30 RU wireline. Run 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, RDMO wireline. RDMO WO Rig.
- 31 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.
- 32 Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
- 33 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 34 Excavate hole around surface casing enough to allow welder to cut casing minimum 5' below ground level.
- 35 Welder cut casing minimum 5' below ground level.
- 36 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).
- 37 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 38 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.
- 39 Back fill hole with fill. Clean location, level.
- 40 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.