

RADEMACHER LOUIS J GU 1

Note: Production Casing = 4.5" OD, 11.6#/ft, N-80; Production Hole Drilled @ 7.875"; MI ~15 additional prod tbg jts.

- 1 Call foreman or lead operator at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to rig showing up. Install perimeter fence as needed.
- 2 MIRU slickline services. Pull bumper spring and tag bottom. Gyro ran 12/20/2013. RDMO slickline services.
- 3 Provide 48 hr notice to COGCC prior to rig mobilization. Notify IOC when rig mobilizes to location to generate workorder for flowline removal and one call for line locates.
- 4 Prepare location for base beam equipped rig.
- 5 MIRU, kill as necessary using clean fresh water with biocide and circulate. ND WH. NU BOP. Unseat landing jt, LD.
- 6 Notify cementers to be on call. Provide volumes listed below:
  - 6.1 Niobrara Suicide: 80 sx 50/50 Poz "G" w/ 20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52 mixed at 13.5 ppg and 1.71 cf/sk (20.3bbls) (9"+ 20% Caliper Log in file);
  - 6.2 SX/SH Suicide: 480 sx class "G", w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (94.3bbls) (9.5"+20% Caliper Log in file);
  - 6.3 Stub Plug: 500 sx Type III CaCl<sub>2</sub> cement mixed at 14.0 ppg and 1.53 cf/sx (135.2bbls) (100' inside 4.5" Prod Casing, 726' in 12.25" open hole, and 104' inside 8.625" surface casing)
- 7 TOO 2.375" production tubing. Stand Back.
- 8 MIRU WL. RIH gauge ring for 4.5" 11.6#/ft casing to 7642'. RIH CIBP w/ WL. Set at 7580'. PT Casing to 1000 psi. PU dump bailer, dump bail 2 sx class 'G' cement on CIBP.
- 9 Run CBL from CIBP to Surface.
- 10 PU 2 - 1' 3-1/8" perf guns with 3 spf, 0.5" dia 120° phasing. Shoot 1' of squeeze holes at 6790' and 6550'.
- 11 PU CICR. RIH and set at 6580'+/-20' pending collar locator on CBL. RD WL.
- 12 RIH w/ 2.375" tubing while hydrotesting to 3,000 psi.
- 13 RU Cementers. Pump Niobrara Suicide: 80 sx 50/50 Poz "G" w/ 20% silica flour, 3% gel, 0.1% sodium metasilicate and 0.4% FL-52 mixed at 13.5 ppg and 1.71 cf/sk (20.3bbls) (9"+ 20% Caliper Log in file); to place suicide squeeze between perfs. Underdisplace and sting out of CICR to leave 3 bbls on top of retainer.
- 14 PUH 6 stands. Circulate 90bbls water containing biocide to clear tubing.
- 15 Place 9.0 ppg mud containing biocide from 6392' to 4760' (~27bbls). TOO 4 hrs.

- 16 PU CICR. RIH and set at 3920'+/-20' pending collar locator on CBL. RD WL.
- 17 RIH w/ 2.375" tubing.
- 18 RU Cementers. Pump 5 bbl water w/ biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement.
- 19 Pump SX/SH Suicide: 480 sx class "G", w/0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sx (94.3bbls) (9.5"+20% Caliper Log in file); to place suicide squeeze between perms. Underdisplace and sting out of CICR to leave 3 bbls on top of retainer.
- 20 PUH 5 stands. Circulate 55bbls water containing biocide to clear tubing. TOOH & WOC 4 hrs.
- 21 RU WL. Crack coupling or shoot off casing at or below 930'. RDMO WL. Circulate hole using 20 bbl water containing biocide to remove any gas.
- 22 NDBOP, NDTH.
- 23 Install BOP on casing head with 4.5" pipe rams.
- 24 TOOH with 4.5" casing, LD.
- 25 RIH with 2.375" tubing to 1030'.
- 26 RU Cementers. Spot Stub Plug: 500 sx Type III CaCl<sub>2</sub> cement mixed at 14.0 ppg and 1.53 cf/sx (135.2bbls) (100' inside 4.5" Prod Casing, 726' in 12.25" open hole, and 104' inside 8.625" surface casing).
- 27 Circulate 5 bbls water containing biocide to clear tubing.
- 28 TOOH. WOC 4 hrs. Tag Cement. Cement top needs to be above 150'; Proceed assuming TOC is above 150'. Otherwise, call production engineer.
- 29 MIRU WL. RIH 8.625" CIBP to 100'. Set, PT to 1000 psi for 15 min. If tests, RDMO WL and WO rig.
- 30 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
- 31 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.
- 32 Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
- 33 Welder cut 8.625" casing minimum 5' below ground level.
- 34 MIRU ready cement mixer. Use 4500psi compressive strength cement, (NO gravel) fill stubout.
- 35 Weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
- 36 Properly abandon flowlines per Rule 1103.
- 37 Back fill hole with fill. Clean location, level.

38 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

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