

MILLER UPRR 42-29 #2

- 1 Provide 48 hour notice of MIRU to COGCC as required in approved Form 6
- 2 Prepare location for base beam rig to move onto.
- 3 Call Foreman and/or Field Coordinator before rig up to remove all production equipment off wellhead, catch and remove plunger, remove any automation equipment. Install fence if needed
- 4 No Gyro needed (Gyro ran 10/14/2011)
- 5 MIRU WO rig, pump, & tank. Kill w/ fresh water with biocide as needed. ND wellhead. NU BOP's. Unseat landing joint and lay down.
- 6 Place cementers on "will call" when rig moves onto location. Baker Hughes cementing services (Sheldon Kelley: (303) 659-5853).
- 7 TOO H with 2-3/8" tbg, standing back
- 8 MIRU Hydrotester to hydrotest tbg while TIH
- 9 PU scraper for 4-1/2", 11.6# csg, and 2-3/8" tbg. TIH w/ scraper and tbg to below 7,130' KB. Hydrotest tbg while TIH, replace any failed jnts
- 10 RDMO Hydrotester
- 11 TOO H with 2-3/8" tbg, standing back, TOO H w/ scraper and LD
- 12 PU and TIH with 10,000 psi CIBP and 2-3/8" tbg. Set CIBP at 7,050' KB (86 ft below top NB perf). Pull up tbg to just above CIBP. Pressure test CIBP to 2,000 psi for 15 min
- 13 MIRU cementing services.
- 14 Pump cement job to cover Niobrara inside 4-1/2" casing (7,050' to 6,623'). Pump job as follows: establish circulation, followed by 6.6 bbl (25 sks) Class G 15.8 lbs cement w/ 35% Silica Flour, 0.2% R-3, displace to 6,623 (0.00387 bbl / ln ft for 2-3/8" 4.7# tbg. 25.5 bbl)
- 15 POOH so EOT is just above cement plug. Reverse Circulate down casing and up tubing with minimum 9# mud w/ biocide for 2 times tubing capacity and have clean returns (51 bbl if EOT is at 6,600' KB)
- 16 TOO H 2-3/8" tbg, standing back about 5,070', LD remaining
- 17 MIRU E-Line Service Company
- 18 RIH with perforating tools and perf twice. First perf 4-1/2" csg at 5,120' KB (103 ft below bottom of Shannon) (Shannon bottom at 5,017'). Second perf at 4,100' (200' above top of Sussex, Sussex top at 4,299')
- 19 POOH. RDMO E-Line service company.
- 20 TIH with cement retainer and 2 3/8" tbg to 30' below top perf holes (4,130 based on perfs being at 4,100')
- 21 Pump cement suicide squeeze from 5,120' KB to 4,100' KB to cover Sussex (Sussex formation is at 4,299' – 5,017'). Pump job as follows: after establishing circulation with mud, pump 20 bbl sodium metasilicate pre-flush, followed by 125 bbl (606 sks) class G 15.8# cmt w/ 0.25 pps Cello Flake, displace with 123 bbl mud. (calculated using 1145' inside 4-1/2" casing + 1,020' between 10-1/2" hole and 4-1/2 csg based on caliper log + 20% excess for portion in annulus)
- 22 Sting out of Cement retainer and dump remaining cement (2 bbl) on top of cement retainer

- 23 TOO H to have EOT above cement plug (approximately 5 jnts, standing back jnts. Reverse circulate down csg an up tbg with mud 2 times tubing capacity (30 bbl if EOT is at 4,000') and have clean returns.
- 24 WOC minimum 4 hours; TOO H with tbg, standing back about 800', LD remaining (DO NOT LEAVE TBG IN HOLE OVERNIGHT).
- 25 MIRU E-Line Service company
- 26 RIH with jet cutter (For 4-1/2", 11.6 lbs casing) to cut csg at 700 ft KB (109' below bottom of surface casing). If unable to pull casing after first cut, cut again with jet cutter 50' above first cut. If still unable to pull casing following second cut, call engineering for plugging modifications.
- 27 POOH. RDMO E-Line service company.
- 28 TOO H 4-1/2" casing and LD. If unable to pull casing contact engineering for plugging modifications.
- 29 PU and TIH 2-3/8" tbg to 50' inside 4-1/2" csg
- 30 Pump cement plug from 750' to inside Surface casing to have 50' inside csg stub and cover Surface casing shoe with minimum 50' cement (Surface casing set at 591' KB). Pump job as follows: Establish circulation, followed by 31 bbl (152 sks) class G 15.8# cmt w/ 2% CaCl, displace to 390' (1.5 bbl)(Calculated using 50' inside 4-1/2" csg + 109' in 8-1/2" hole based on closest caliper log + 50% excess + 200' in 8-5/8" csg.)
- 31 TOO H to have EOT above cement plug, standing back jnts. Circulate with minimum 9# mud w/ biocide enough volume to bring mud to surface (Approximately 24 bbl)
- 32 WOC minimum 4 hours; IF SDFN, TOO H with tbg, standing back. (DO NOT LEAVE TUBING IN HOLE OVERNIGHT)
- 33 PU and TIH 2-3/8" tbg to tag top of cement (If cement is not at least 50' inside surface casing, notify engineering), TOO H w/ 2-3/8" tbg, standing back
- 34 MIRU E-line Service Company
- 35 RIH with CIBP for 8-5/8", 24# csg., and set just above TOC inside surface casing. Pressure Test CIBP to 1,000 psi for 15 min.
- 36 POOH, RDMO E-Line Service Company
- 37 TIH 2-3/8" tbg to just above CIBP
- 38 Pump cement plug from top of CIBP to Surface. Pump job as follows: Establish circulation, followed by 25 bbl (122 sks) class G 15.8# cmt w/ 2% CaCl, bring cement to surface (Calculated using 390' in 8-5/8", 24# csg.)
- 39 RDMO cementing service company. TOO H with tbg and LD.
- 40 RDMO WO rig
- 41 POST RIG ACTIVITIES
- 42 Wellsite supervisor turn all paper copies of cementing reports/invoices and logs in to Sabrina Frantz. (NOTE: During the job, wellsite supervisor should instruct the logging and cementing contractors to e-mail all logs, job reports/invoices to Sabrina Frantz.)
- 43 Have excavation contractor notify One-Call to clear for digging around wellhead and flowline removal.
- 44 Check top of cement inside 8-5/8" surface casing. If cement is not of sufficient height (less than 25' below ground level), place redi-mix cementer on will call.

- 45 Excavate hole around surface casing of sufficient size and depth to allow welder to cut off 8-5/8" surface casing at least 5' below ground level.
- 46 Have welder cut off 8-5/8" surface casing at least 5' below ground level.
- 47 If needed, MIRU ready cement mixer. Use 4,500 psi compressive strength redi-mix cement (sand and cement only, no gravel) to finish filling surface casing to top of cut off.
- 48 Have welder weld on steel marker plate. (Note: marker shall be labeled with well name and number, legal location (qtr, qtr description) and API number.
- 49 Properly abandon flowlines as per Rule 1103.
- 50 Have excavation contractor back fill hole with native material. Clean up location and have leveled to plant any vegetation required.
- 51 Submit Form 6 to COGCC. Provide "As Plugged" wellbore diagram identifying the specific plugging completed.