

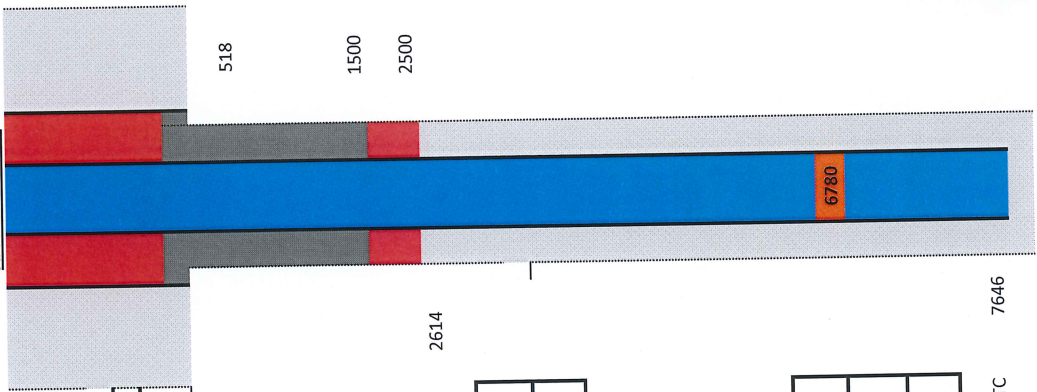
Loveland 8-3 – Bradenhead Procedure

- 1 Call Foreman or Lead Operator at least 24 hr prior to rig move. If not already completed, request that they catch and remove plunger, isolate production equipment and remove any automation equipment prior to the rig showing up. Install perimeter fence as needed.
- 2 MIRU Slick line. Fish plunger if necessary and tag for PBTD (should be at 7296').
- 3 Prepare location for base beam rig.
- 4 Spot 12 jts of 2-3/8" 4.7# J-55 8RD EUE tbg.
- 5 Spot 84 jts of 1-1/4" 2.33# J-55 IJ tbg.
- 6 MIRU WO rig. Kill well with fresh water with biocide. ND wellhead, NU BOPs.
- 7 Run two 2" or one 3" line(s) from starting head to return tanks (need to be able to circulate at highest rate possible).
- 8 PU 8-10' landing joint with TIW safety valve on top and screw into the tbg hanger. Back out the lock down pins and pull up on the tbg string to break any possible sand bridges. Do not exceed 80% of tubing tensile strength, or 57,384-lb.
- 9 Unseat tbg hanger and LD tbg hanger and landing joint. Install rubber wiper in stripping head.
- 10 MIRU EMI equipment. TOO H with 2-3/8" tbg. EMI tbg while TOO H. Lay down joints with wall loss or penetrations >35%. Replace joints as necessary. Keep yellow and blue band tubing. Note joint number and depth of tubing leak(s) on production equipment failure report in OpenWells. Clearly mark all junk (red band) tubing sent to yard.
- 11 PU and TIH with 2-3/8" tbg and 4.5" RBP (4.5" 11.6# I-80). Set RBP at +/- 6780' (Collars at 6756' and 6800').
- 12 Pressure test RBP to 5,000 psi for 15 minutes. (Pressure test to make sure plug is set correctly and casing is good)
- 13 Spot 2sx sand on top of RBP. TOO H, SB tbg.
- 14 ND BOP, ND tubing head. Un-land 4.5" 11.6# L-80 csg. NU double-entry flange. NU BOP.
- 15 TIH with 84 jts of 1-1/4" 2.33# J55 tbg to +/- 2500'. If 2500' cannot be reached, get as far below 1500' as possible before circulating (Want to try and get as much hydrostatic on top of existing cement as possible).
- 16 MIRU mud company with 10.0 ppg drilling mud. Circulate at least 1x annular volume (~125 bbls).
- 17 TOO H with 34 jts of 1-1/4" 2.33# J55 to +/- 1500'.
- 18 MIRU Cement company. Commence pumping cement job at maximum rate achievable consisting of 5 bbl fresh water; 60 bbl (220 sx) of Type III cement mixed at 14.0 ppg and 1.53 cuft/sk. Cement should be blended for a 3 hour pump time (Cement from 1500' to 518').
- 19 TOO H with 1-1/4" 2.33# and LD.
- 20 Break lines and clean up with fresh water. RDMO cement company.
- 21 ND BOP, ND dual entry flange. Re-land 4-1/2" 11.6# csg with 20,500-lb (3,000-lb over string weight) in tension. NU BOP.
- 22 Leave well shut in for minimum of 24 hours.
- 23 MIRU wire line and run CCL-GR-CBL-VDL from 1600' to 100'. If cement is not above 518', contact engineering for further instructions. RDMO wire line.
- 24 TIH with 2-3/8" XN SN and 2-3/8" 4.7# J55 EUE tbg. Land tbg @ +/- 7156' (1 jt above top Codell perf). Broach tbg to XN nipple.

- 25 ND BOP, NU master valve.
- 26 Install 7 1/16" x 5,000 psi tubing head adaptor with new 5,000 psi master valve threaded 2 3/8" connection. Make sure all wellhead valves are rated to 5,000 psi.
- 27 Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi with hydro tester. NU 5,000 psi wellhead. If existing wellhead is not 5,000 psi rated, install one that is.
- 28 RMDO WO rig. Return well to production team.
- 29 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.

Existing

KB=10'
Loveland 8-3
API #051232269



8-5/8" 24#/ft J-55 STC
12-1/4"

Surface casing 618

Fox Hills Base N/A

TOC 2614

Sussex	No perfs
Top	4146
Shannon	No perfs
Base	BHP

Niobrara	6850-7058
Top	6848
Codell	7186-7206
Top	7183

4-1/2" 11.6 #/ft L-80 LTC 7646

Type III

Sh/Sx Cement
Wellbore Diameter (in) 8.50
Hole/Csg Capacity (ft3/ft) 0.28
Cement Coverage Height (ft) 982
Cement Volume (ft3) 279
20% Excess (ft3) 334
Cement Vol (bbl) 60
Sx 218
Circ Volume 126

Mud
Existing cement
Sand Plug
RBP
New Cement
Fresh Water w/ Bio