Anadarko Petroleum Corporation

Western 17-31 – Bradenhead Procedure

1 This well requires a gyro survey prior to any work being completed.
2 Last csg pressure test 6,000 psi on 9/17/09.
3 Call Wattenberg IOC (970-506-5980) at least 24 hrs 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.
4 MIRU Slick line. Fish plunger if necessary and tag PBMD (Should be 7886').
5 Prepare location for base beam rig.
6 Spot 25 jts of 2-3/8" 4.7# J-55 8RD EUE tbg.
7 Spot 150 jts of 1-1/4" 2.33# J-55 10rd IJ tbg.
8 Notify mud company to have 10.0 ppg drilling mud on standby.
9 Check wellhead for flanged-style connections and 5,000 psi rating. If wellhead is not rated to 5,000 psi or does not have flanged-style connections, install one that does prior to completing the job.
10 MIRU WO rig. Kill well with fresh water with biocide. ND wellhead, NU BOP.
11 Run two 2" lines from starting head to return tanks.
12 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.
13 Unseat tbg hanger and LD tbg hanger and landing joint. Install rubber wiper in stripping head.
14 MIRU EMI equipment. TOOH with 2-3/8" tbg. EMI tbg while TOOH. 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.
15 PU and TIH with 230 jts of 2-3/8" 4.7# I-80 tbg with 4.5" RBP (4.5" 11.6# I-80). Set RBP at +/- 6900' (Collars at 6878' and 6918'). Spot 2 sx sand on top of RBP. TOOH. SB tbg.
16 Pressure test RBP to 2,000 psi for 15 minutes. (Pressure test to make sure plug is set correctly)
17 ND BOP, ND tubing head. Un land 4-1/2" 11.6 I-80# csg (Do not exceed 130,000-lb pull weight). NU double entry flange, NU BOP.
18 PU and TIH with 150 jts of 1-1/4" 2.33# J-55 10rd IJ tbg outside 4 ½" csg to +/- 4480' and tag TOC. PUH just off of TOC.
19 Circulate 265 bbls with rig pump (Circulate at least 1.5x annular volume from 4480') with 10.0 ppg mud sweep at the end.
20 MIRU Cement company. Commence pumping cement job consisting 5 bbl fresh water, 20 bbl sodium meta silicate and 5 bbl fresh water; 27 bbl (135 sx) of G" with ¼ lb/sk cello-flake mixed at 14.6 ppg and 1.12 cuft/sk blended for a 6 hr pump time (Cement from +/- 4480' to 4099').
21 TOOH with 20 jts of 1-1/4" 2.33# to +/- 3880' and circulate 2x tbg volume to clean up.

Pasture
NPV $288M
Bradenhead
Sh/Sx – 4480'-4099'
FH – 1500-446'

22 TOOH with 80 jts of 1-1/4" 2.33# to +/- 1500'.
23 Commence pumping cement job consisting of 10 bbl fresh water; 75 bbl (315 sx) of Type III with ¼ lb/sk cell-flake mixed at 14.8 ppg and 1.33 cuft/sk blended for a 3 hr pump time (Cement from 1500' to 446').
24 TOOH with remaining 1-1/4" 2.33# and LD.
25 Break lines and clean up with fresh water. RMDO cement company.
26 ND BOP, ND double entry flange, re-land 4-1/2" J-55 csg NU BOP.
27 Leave well shut in for minimum of 24 hours.
28 MIRU wire line and run CCL-GR-CBL-VDL from 4600' to 0'. If Sh/Sx cement plug is not above 4099' or Fox Hill plug is not above 446', contact engineering for further instructions. Email logs to engineering and DJVendors@anadarko.com. RDMO wire line.
29 TIH with 2-3/8" tbg and retrieving head and tag sand above RBP @ +/- 6900'. Circulate sand off RBP, latch onto RBP and TOOH. SB tbg, LD RBP.
30 PU and TIH with 3 jts 1-1/4" 2.33# tbg, 2-3/8" XN, 235 jts 2-3/8" tbg. Land 1-1/4" tbg @ +/- 7529' (1 jt above top Codell perf).
31 ND BOP, NU master valve.
32 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.
33 Install 2 3/8" pup joint above the master valve. Pressure test the tubing head from below the tubing head through the master valve to 5,000 psi with hydro tester. NU 5k wellhead.
34 RMDO WO rig. Return well to production team.
35 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.

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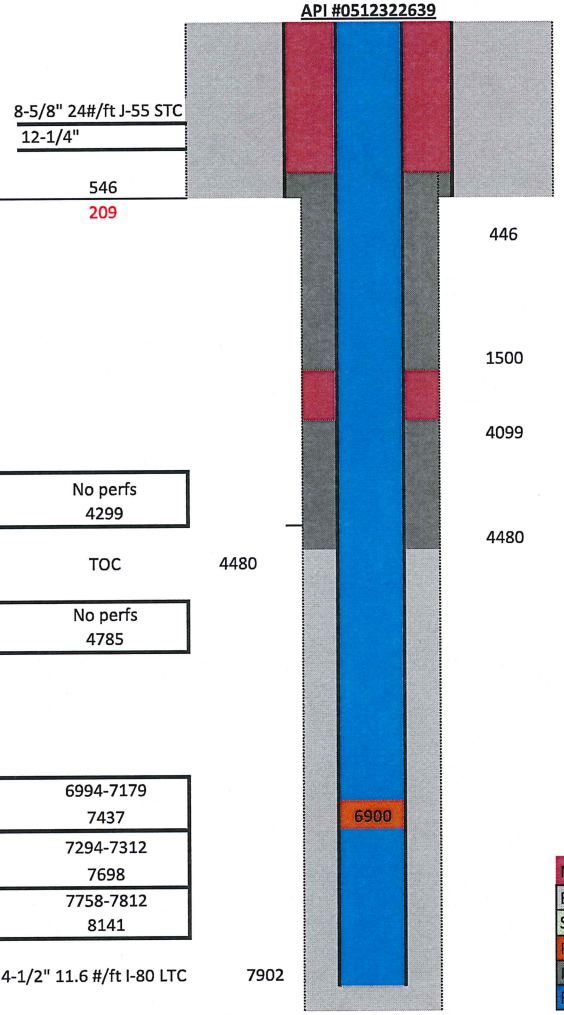
Bradenhead
Sh/Sx – 4480'-4099'
FH – 1500-446'

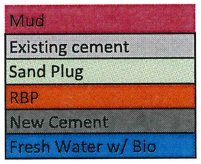
Existing

KB=10'

Western 17-31

API #0512322639





Type III **Fox Hills Plug**

Wellbore Diamater (in)	9.00
Hole/Csg Capacity (ft3/ft)	0.33
Cement Coverage Height (ft)	1054
Cement Volume (ft3)	349
20% Excess (ft3)	419
Cement Vol (bbl)	75
Sx	315
Circ Volume (bbls)	89

G" **Sussex Plug**

Wellbore Diamater (in)	9.00
Hole/Csg Capacity (ft3/ft)	0.33
Cement Coverage Height (ft)	381
Cement Volume (ft3)	126
20% Excess (ft3)	151
Cement Vol (bbl)	27
Sx	135
Circ Volume (bbls)	264