Anadarko Petroleum Corporation

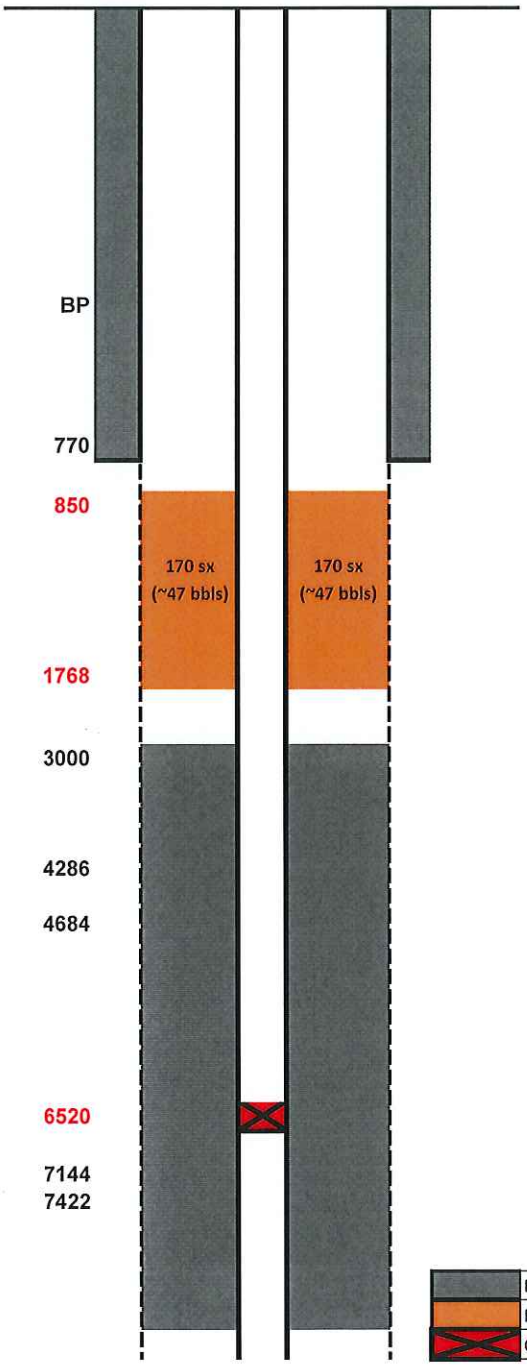
Everist 24-10 BradenHead Procedure

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 slickline. Fish plunger from lubricator. RIH and pull the bumper spring and standing valve if necessary. RBIH with a sinker bars and tag bottom. Report findings. PBTD (should be at 7517'). RDMO slickline.
3 Prepare location for base beam rig.
4 Spot 23 jts of 2-3/8" 4.7# J-55 8RD EUE tbg.
5 Spot 5 jts of 4 ½" 11.6# I-80 LTC csg.
6 MIRU WO rig and auxiliary equipment. Check pressures. Rig up one 3" line or two 2" lines from the casing head annulus to work tank. Kill well with fresh water. ND tree and adapter flange, NU BOPs.
7 PU 8-10' landing joint. TIW valve on top and screw into the tbg hanger. Back out the lock down pins and pull up on tbg string to break any possible sand bridges, unseat landing joint and lay down. Do not exceed 80% of tubing tensile strength, or **57,384-lb**. Clean out as necessary to 7517'.
8 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. Note joint number and depth of tubing leak(s) on production equipment failure report in Open Wells. Clearly mark all junk (red band) tubing sent to yard.
9 MIRU wireline, NU lubricator and RIH with Gage Ring to 6700', POOH.
10 RIH on wireline with 4.5" RBP (Retrievable Bridge Plug) (4.5" 11.6# I-80). Set RBP at +/- 6520' (Collars at 6496' and 6540'). POOH and Pressure test RBP to 2,000 psi for 15 minutes.
11 Dump bail 2 sx of sand on RBP and POOH.
12 ND BOP, ND tubing head, NU BOP's and install 4-1/2" pipe rams.
13 PU 4-1/2" landing joint with TIW valve on top, unland mandrel hanger or slips.
14 RIH on wireline, perform Free point test, report findings to engineer.
15 RIH with CCL/string shot to ~1768'.
16 Zero weight indicator, PU 4.5" csg with 20,000 lb. Apply 1,500 lbs of left hand torque in preparation for back off. (Back off csg at collar closest to 1768' or lower).
17 Fire string shot. If csg does not back off, contact engineering for further support.
18 POOH with wire line. RDMO Wire line.
19 PUH 1-2ft and circulate 115bbls (annular volume x 1.5) of 9.0ppg mud at 3bpm.
20 TOOH with 4-1/2" csg using casing lay down machine (use thread protectors when laying down casing).
21 PU 4-1/2" casing and TIH with the following jewelry in the listed order;
    a. Install skirted screw in sub @ backoff point.
    b. 1 jt of 4-1/2"csg
        i. Install cement basket and stop ring 5ft below collar.
    c. install stage cementing tool in closed position @ ~1768'
    d. Install (~21 jts) of csg with bow spring centralizers around every connection.

e. TIH with remaining casing.
f. Screw back into backed off csg coupling and torque appropriately using casing tongs.

22 Land csg in starting head. Set csg with 10K over string weight in slips (calculate weight from free point). ND BOP's.
23 NU and pack off 4-1/2" in the starting head.
24 Cut 4-1/2" csg, Install bell nipple if necessary. Install 4-1/2" 7.5K frac valve on 4-1/2" csg.
25 PU DV cementing tool dart and drop (wait approx. 5 minutes).
26 NU cement head and RU cement services, pressure up to 1000psi to shift DV tool open. Circulate 50bbls of 9.0ppg mud at 10bpm, followed by a 30bbl (5bbls water, 20bbls MS, 5bbls water) spacer. Prepare to cement.
27 Mix and pump **~47bbls (170 sx)** of 14.0ppg (1.53 ft^3/sk) Type III w/cello-flake and CaCL2.
28 Shut down, Drop wiper plug and displace with ~28 bbls of fresh water, pressure up on wiper plug to 1500psi to shift DV tool closed, bleed off pressure to ensure DV tool is holding. Break lines and clean. Shut 4-1/2" frac valve.
29 ND cementing head. RDMO cement company.
30 Leave well shut in overnight.
31 MIRU wire line and run CCL-GR-CBL-VDL from 1750' to 200' past indicated TOC. If cement is not to 850', contact engineering for further instructions.
32 NU 4-1/2" 5000 psi tubing head with 2-5000 psi valves. NU BOP to 2-3/8" tubing head. Change pipe rams to 2-3/8".
33 PU 3-7/8" bit/mill and TIH with 2-3/8" tbg, rig up power swivel and mill DV cementing tool @ ~1765'. TIH and tag plug at +/- 6520, circulate bottoms up, TOOH with bit and SB tbg.
34 Close the blind rams and pressure test DV tool to 1000 psi for 15 min.
35 PU and TIH with 2-3/8" tbg and retrieving head. Circulate sand off RBP at +/- 6520'. TOOH with RBP and SB tbg.
36 TIH with 2-3/8" NC, 2-3/8" XN SN and 2-3/8" 4.7# J55 EUE tbg, circulate out fill if necessary to 7517'. Land tbg @ +/- 7366'.
37 Broach tubing to seating nipple. ND BOP's, NU master valve and tubing head adaptor. Hydrotest tubing head to 5000 psi for 15 minutes.
38 RDMO WO rig.
39 Clean location and swab well back to production. Notify field foreman/field coordinator of finished work and turn well back over to production team.

Everist 24-10 05-123-26761 Proposed WBD (Bradenhead)
12-1/4" Surface Hole
7-7/8" Prod Hole



Between 8-5/8" Casing 24# and 4.5" casing	0.24715	ft^3/ft
Between 8-5/8" Casing 24# and 4.5" casing	0.04402	bbl/ft
7 7/8" Open hole and 4.5" casing	0.2278	ft^3/ft
7 7/8" Open hole and 4.5" casing	0.0406	bbl/ft
8" Open hole and 4.5" casing	0.2386	ft^3/ft
8" Open hole and 4.5" casing	0.0425	bbl/ft
8.5" Open hole and 4.5" casing	0.2836	ft^3/ft
8.5" Open hole and 4.5" casing	0.05051	bbl/ft
9" Open hole and 4.5" casing	0.3313	ft^3/ft
9" Open hole and 4.5" casing	0.0590	bbl/ft
10" Open hole and 4.5" casing	0.4350	ft^3/ft
10" Open hole and 4.5" casing	0.0775	bbl/ft
10.5" Open hole and 4.5" casing	0.4909	ft^3/ft
10.5" Open hole and 4.5" casing	0.0874	bbl/ft
11" Open hole and 4.5" casing	0.5495	ft^3/ft
11" Open hole and 4.5" casing	0.0979	bbl/ft
12.5" Open hole and 4.5" casing	0.7417	ft^3/ft
12.5" Open hole and 4.5" casing	0.1321	bbl/ft
Class Cement yield (zone 1, SX/SH) 15.8ppg	1.15	ft^3/ft
Class Cement yield (zone 2, Fox Hills) 14ppg	1.53	ft^3/ft

0.2	Excess

Zone 2 (Fox Hills)

(0.2386*(1768 - 850'))/1.53 * 1.2 = 170 sx

(0.0425*(1768 - 850')) * 1.2 = 47 bbls