PLUG AND ABANDOMENT PROCEDURE

UPRR PAN AM “M” # 1

Step	Description of Work
1	Provide 48 hr notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Call IOC (970-506-5980) at least 24 hr prior to rig move. Request they catch and remove the plunger, isolate production equipment and remove any automation prior to MIRU.
2	MIRU slickline services. Pull bumper spring and tag bottom. Run pressure bomb and obtain pressure gradient survey from surface to 7897' (halfway between J sand perfs) making gradient stops every 1000'. Forward pressure bomb results to Evans Engineering. RDMO slickline services.
3	Prepare location for base beam equipped rig. Install perimeter fence as needed.
4	Check and record Bradenhead pressure. If Bradenhead valve is not accessible, re-plumb so that valve is above GL.
5	MIRU, kill as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt, LD.
6	TOOH and stand back 2 3/8" production tubing (248 jts landed @ 7832').
7	MIRU WL. RIH gauge ring with junk basket for 4 1/2" 11.6 #/ft casing to 7850'. POOH.
8	Set CIBP at 7815' +/- 10' per CCL to abandon J sand perfs. Pressure test CIBP to 500 psi. There are previous cement squeeze perfs at 6700' & 7090'. If the pressure test does not pass, it may be these perfs leaking.
9	RIH 2 3/8" tubing to 7800' while hydrotesting to 3,000 psi. Tag CIBP then pick up 5'.
10	RU Cementers. Pump Niobrara Balanced Plug on: 70 sx (97 cuft) Class "G" w/ 20% silica flour, 0.4% CD-32, 0.4% ASA-301 and R-3 mixed at 15.8 ppg and 1.38 cuft/sx to place plug from 7815' to 6730'. Volume based on 1085' inside 4 1/2" casing, no excess.
11	PUH to 6600' and circulate to clear tubing of cement.
12	RU WL. PU and RIH with 2- one foot guns that are 3 1/8" with 4 spf, 0.5" diam, 60 degree phasing. Shoot squeeze perfs at 4700' and 4270'. POOH and RD WL.
13	RIH with 4 1/2" CICR on 2 3/8" tubing and set at 4300'.
14	RU Cementers. Establish circulation with a 20 bbl sodium metasilicate pre-flush followed by a 5 bbl spacer. Then Pump Sussex Suicide Squeeze: 290 sx (334 cuft) class G w/ 0.25 pps cello flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cuft/sx. Underdisplace by 3 bbls and unsting from CICR spotting at least 100' of cement on top of squeeze holes. The plug will cover 4700' to 4270'. Volume based on 430' of 11" OH from caliper with 20% excess, 430' inside 4 1/2" casing with no excess. RD Cementers.
15	PUH to 4000' and circulate to clear tubing of cement.
16	P & SB 1380' of tubing, LD remainder.

17 MIRU WL. RIH with jet cutter and cut 4 1/2" casing at 1280'. RDMO WL.

18 Circulate hole with water containing biocide to remove any gas.

19 NDBOP, NDTH. Install BOP on casing head with 4 1/2" pipe rams.

20 TOOH with 1280' of 4 1/2" casing, LD.

21 Remove 4 1/2" pipe rams and install 2 3/8" pipe rams.

22 RIH with 2 3/8" tubing 100' past casing stub to 1380'.

23 RU Cementers. Preceed cement with 10 bbl SAPP and a 20 bbl (min) fresh water spacer. Spot Fox Hills Stub Plug: 510 sx (678 cuft) Type III w/ cello flake CaCl2 as deemed necessary at 14.8 ppg and 1.33 cuft/sx to place plug from 1380' to 430'. Volume based on 100' inside 4 1/2" casing with no excess, 643' in 11" OH from caliper with 40% excess, 207' inside 8 5/8" surface casing with no excess. RD Cementers.

24 Trip up to 100' and circulate tubing clean using fresh water treated with biocide. TOOH.

25 WOC 4 hrs. Tag cement. Cement top needs to be above 437'.

26 MIRU WL. RIH 8 5/8" CIBP to 80'. Set and pressure test to 1000 psi for 15 minutes. RDMO WL and WO rig.

27 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hrs of completion of the job.

28 Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.

29 Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.

30 Excavate hole around surface casing enough to allow welder to cut casing minimum 5’ below ground level.

31 Welder cut casing minimum 5' below ground level.

32 Fill casing to surface using 4500 psi compressive strength cement, (NO gravel).

33 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.

34 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.

35 Properly abandon flowlines per Rule 1103. File electronic Form 42 once abandonment complete.

36 Back fill hole with fill. Clean location, level.

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

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