Engineer: Jacob Jones
Cell: 936-525-8393

PLUG and ABANDONMENT PROCEDURE

HIGHUM FOUNDERS 1

Step Description of Work

1 Provide 48 hour notice to COGCC prior to rig up per request on approved Form 6 (e.g. call field coordinator, submit Form 42, etc.). Notify Automation Removal Group at least 24 hours prior to rig move. Request they catch and remove plunger, isolate production equipment, and remove any automation prior to rig MIRU.
2 No Gyro needed, Gyro date 12/3/12.
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. Blow down bradenhead and re-check pressure the next day. Repeat until pressure stays at 0 psi.
5 MIRU WO rig. Kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unland tbg using unlanding joint and SB. Note: PACKER IN WELLBORE at 7281'.
6 MIRU WL. PU and TIH with (4.5", 11.6#) gauge ring to7695'. POOH. Sand plug originally tagged at 7698'.
7 PU and RIH with (4.5", 11.6#) CIBP and set at +/- 7695' to abandon the J Sand formation. POOH. Dump bail 2 sx on CIBP. POOH.
8 PU and RIH with (4.5", 11.6#) CIBP and set at +/- 7275' to abandon the Niobrara formation. POOH.
9 TIH with 2-3/8" tbg to 7275'. Circulate all gas from well. PT CIBP to 500 psi for 15 minutes.
10 RU cementers. **Pump Niobrara Balance Plug:** Pump 30 sxs (41 cf) 15.8 ppg & 1.53 cf/sk. Volume based on 461' inside 4.5" production casing w/ no excess. Cement will be from 7275' –6814'.
11 Slowly pull out of the cement and TOOH to 6500'. Reverse circulate using biocide treated fresh water to ensure tubing is clean.
12 TOOH and SB 1544 tbg. LD remainder.
13 PU and RIH with (4.5", 11.6#) CIBP and set at +/- 4480' to cover the Sussex formation. POOH. RIH with dump bailer and set 2 sx on CIBP. POOH.
14 Circulate with fresh water containing biocide to remove any gas.
15 RIH with jet cutter to 1444. Jet Cut 4-1/2" casing.
16 ND BOP. ND TH. Un-land casing using a casing spear, not a lifting sub. Max pull shall be 100,000#. If unable to unland, contact Engineering.
17 Install BOP on casing head with 4-1/2" pipe rams.
18 TOOH and LD 1 jt 4.5" casing. Circulate for 45 minutes through casing.
19 LD remainder 4.5" casing. Remove 4.5" pipe rams and install 2-3/8" pipe rams.
20 RIH with 2-3/8" tubing to 1544', 100' back inside 4-1/2" casing. If unable to get back into casing easily, do not over circulate. Attempt with mule shoe or wall hook. If still unable to get back into casing, notify engineering for a change in procedure.
21 If well shows no sign of gas migration or pressure after cutting, continue to step 17. If there is gas pressure building notify engineering for a change in cementing plans.
22 Establish circulation with biocide treated fresh water and pump two hole volume (30 bbls). RU Cementers. **Pump Shoe Plug:** 395 sxs (450 cf), 14 ppg & 1.15 cf/sk (100' in 4.5" production casing with no excess, 599' in 7-7/8" open hole with 100% excess and 100' inside

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8-5/8” surface casing with no excess). The plug will cover 1544’-745’. RD cementers. Notify Engineering if circulation is lost while pumping cement.

23 Slowly pull out of the cement and PUH to 400'. Reverse Circulate using biocide treated fresh water, to ensure the tubing is clean. TOOH. LD all 2-3/8” tbg.
24 RU WL. RIH 8-5/8”", 24# CIBP to 80'. RDMO WL and WO rig.
25 Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries to rscDJVendors@anadarko.com within 24 hours of completion of the job.
26 Supervisor submit paper copies of all invoices, logs, and reports to Evans Engineering Specialist.
27 Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
28 Capping crew will set and secure night cap on 8-5/8” casing head, restrain the casing head, pressure test CIBP to 500 psi with hydrotest pump, then remove night cap and casing head restraints.
29 Excavate hole around surface casing enough to allow welder to cut casing a minimum 5’ below ground level.
30 Welder cut casing minimum 5' below ground level.
31 Fill 8 5/8” casing to surface using 4500 psi compressive strength cement (NO gravel).
32 Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
33 Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
34 Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
35 Back fill hole with fill. Clean location, and level.
36 Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.