

OCCIDENTAL PETROLEUM CORPORATION

Please contact your area engineer with any questions concerning this procedure.

3/17/2021

PLUG and ABANDONMENT PROCEDURE

WILLIAMS 18-29

API: 05-123-28062

**Step Description**

1	Review Previous Open Wells Reports/Well History. BH History- 11/05/2020 SCPSI: 80 05/02/2013 SCPSI: 51 BH Sample Taken 09/14/2020. If you have questions or concerns, contact Foreman/Engineer.
2	COA: 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.).
3	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.
4	MIRU Slickline. Pull production equipment and tag bottom. Record tag depth, casing/tubing pressures and fluid level in Open Wells. Gyro was run on 03/11/09. RDMO Slickline.
5	Prepare location for base beam equipped rig. Install perimeter fence as needed.
6	COA: Verify Form 17 (State Bradenhead Test) has been run within 60 days of RU.
7	Refer to the Rockies Well Services Guidelines document whenever rigging up BOP and WL, or whenever tripping in or out of the well. Consult with Foreman/Engineer before deviating from these guidelines.
8	Upon RU, check and record bradenhead pressure. If bradenhead valve is not accessible, re-plumb so that valve is above GL. Blow down bradenhead and leave open during working hours. Re-check pressure each day and input value in the "Casing press." box in Open Wells.
9	MIRU WO rig. Verify BOP and wellhead rating, inspect for appropriate API standards, pressure test BOP. Kill well as necessary using biocide treated fresh water. ND WH. NU BOP. Unland tbg. **Barrier Management** Fluid will be the only barrier while NU BOP. Stop and review JSA.
10	TOOH and SB 7235' of 2-3/8" tbg. LD remaining 2-3/8" tbg.
11	MIRU WL. PU and RIH with (4-1/2", 11.6#) gauge ring to 7245'. POOH.
12	PU and RIH with (4-1/2", 11.6#) CIBP and set at +/- 7235' (collars at 7203' & 7245'). POOH. RDMO WL.
13	TIH with 2-3/8" tbg to 7235'. Circulate all gas out of well. PT CIBP to 500 psi for 15 minutes.
14	MIRU Cementers. Pump Niobrara Balance Plug: Pump 10 sx (2.1 bbl or 12 cf) of the Neat G Cement (15.8 ppg & 1.15 cf/sx) with appropriate amount of retarder added for this depth/temperature. Volume based on 132' inside 4-1/2", 11.6# production casing with no excess. Cement will be from 7235'-7103'.
15	Pull out of cement. TOOH to 4100', LD 2-3/8" tbg.
16	Pump Sussex Plug: Pump 10 sx (2.1 bbl or 12 cf) of the Neat G Cement (15.8 ppg & 1.15 cf/sx) with appropriate amount of retarder added for this depth/temperature. Volume based on 100' inside 4-1/2", 11.6# production casing with no excess. Cement will be from 4100'-4000'. Collect wet and dry samples of cement to be left on rig.
17	Pull out of cement. TOOH to 2500', LD 2-3/8" tbg.
18	COA: Confirm and document static conditions in the well before placing the next plug. If there is evidence of pressure or fluid migration at any time after placing the Sussex plug, contact Engineering.
19	Pump Upper Pierre Plug: Pump 10 sx (21 bbl or 12 cf) of the Neat G Cement (15.8 ppg & 1.15 cf/sx). Volume is based on 100' in 4-1/2", 11.6# production casing with no excess. The plug is designed to cover 2500'-2400'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers.
20	Pull out of cement. TOOH, SB 1500' of 2-3/8" tbg. LD remaining tbg.
21	MIRU WL. RIH and jet cut 4-1/2", 11.6# casing at 1500'. RDMO WL.
22	Attempt to establish circulation and circulate (61 bbl) with biocide treated fresh water.
23	ND BOP. ND TH. Un-land casing. Rig max pull shall be 100,000#. Max pull over string weight shall be 50,000#. If unable to unland, contact Foreman/Engineer. **Barrier Management** Fluid will be the only barrier while unlanding casing. Stop and review JSA.
24	Install BOP on casing head with 4-1/2", 11.6# pipe rams. **Barrier Management** Fluid will be the only barrier while NU BOP. Stop and review JSA.
25	TOOH and LD all 4-1/2", 11.6# casing. Remove 4-1/2", 11.6# pipe rams and install 2-3/8" pipe rams.

26	TIH with mule shoe on 2-3/8" tubing to 1500'. Establish circulation to surface with biocide treated fresh water and pump at least three hole-volumes (183 bbl) to clean up wellbore.
27	MIRU cementers. Pump Upper Pierre Plug: Pump 110 sx (24.1 bbl or 136 cf) of the Upper AGM blend (2% CaCl & 4% Gyp, 15.8 ppg & 1.23 cf/sx). Volume based on 200' in 7.875" bit size open hole with 100% excess factor. Cement will be from 1500'-1300'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during job.
28	Pull out of cement. TOOH to 900'. Reverse circulate tbgs clean. WOC.
29	COA: WOC 8 hours. Tag TOC. TOC must be 1300' or shallower. If tag is too deep or there is evidence of pressure or fluid migration, contact Engineering.
30	TIH and tag TOC. TOOH to 870'. Establish circulation to surface and pump at least three hole-volumes (183 bbl) to clean up wellbore.
31	COA: Verify and document that all pressure and fluid migration has been eliminated prior to placing the SC shoe plug at 870'. If there is evidence of pressure or fluid migration, contact Engineering.
32	MIRU cementers. Pump Stub Plug: Pump 90 sx (19.8 bbl or 111 cf) of the Upper AGM blend (2% CaCl & 4% Gyp, 15.8 ppg & 1.23 cf/sx). Volume is based on 100' in 7.875" bit size open hole with 100% excess factor. 120' in the 8-5/8", 24# surface casing with no excess. The plug is designed to cover 870'-650'. Collect wet and dry samples of cement to be left on rig. RDMO Cementers. Notify engineering if circulation is ever lost during job.
33	COA: If cement was not circulated to surface, then WOC 4 hours. Tag TOC. TOC must be 720' or shallower. If tag is too deep or there is evidence of pressure or fluid migration, contact Engineering.
34	Pull out of cement. TOOH to 250'. Reverse circulate tbgs clean. WOC.
35	TIH and tag cement to verify appropriate coverage above the surface casing shoe. Consult with Foreman/Engineer on when to PT casing. Pressure test casing to 500 psi and hold for 15 minutes. Notify engineering if tag is low or pressure test fails.
36	TOOH. Lay down all tbgs. ND BOP. Install night cap. RDMO WO rig.
37	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.
38	Supervisor submit paper copies of all invoices, logs, and reports to VWP Engineering Specialist.
39	Excavation crew to notify One Call to clear excavation area around wellhead and for flow lines.
40	Excavate hole around surface casing enough to allow welder to cut casing a minimum 5' below ground level.
41	Welder cut casing minimum 5' below ground level.
42	Fill 8-5/8", 24# surface casing from 50' to surface with 16 sx (3.3 bbl or 19 cf) of cement (15.8 ppg & 1.15 cf/sx).
43	Spot weld on steel marker plate. Marker should contain Well name, Well number, legal location (1/4 1/4 descriptor) and API number.
44	Obtain GPS location data as per COGCC Rule 215 and send to rscDJVendors@anadarko.com.
45	Properly abandon flow lines per Rule 1103. File electronic Form 42 once abandonment is complete.
46	Back fill hole with fill. Clean location, and level.
47	Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.
48	Back fill hole with fill. Clean location, and level.
49	Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed.

Deepest WW 1 mile: 282'; FHM: BP'; Sussex Top: 4303'; Sussex Base: 4508'; Shannon Base: 4883'; Niobrara Top: 7295'

WELL HAS GYRO. Gyro was run on 03/11/09.

No known casing integrity issues.

SUSSEX/SHANNON PRODUCTIVE WITHIN 1 MILE

Well was drilled by Kerr McGee.

Directional Well.