

PLUG AND ABANDONMENT PROCEDURE PSC 32-9A

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 foreman or lead operator 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.
3	Check and report surface casing pressure. If surface casing is not accessible at ground level, re-plumb so valve is at ground level.
4	Prepare location for base beam equipped rig. Install perimeter fence as needed.
5	MIRU, kill well as necessary using clean fresh water with biocide. ND WH. NU BOP. Unseat landing jt.
6	TOOH and stand back 2.063" IJ tbg. 218 jts = 7109' reported in hole.
7	MIRU WL. RIH gauge ring for 3 1/2" 7.7#/ft casing to Liner top @ 7140'. RIH CIBP w/ WL. Set at 7135' to isolate J sand perms. Dump bail one sack of cement on CIBP.
8	RIH CIBP w/ WL. Set at 6820' to isolate Codell and Niobrara perms. PT Casing to 1000 psi for 15 minutes. RDWL.
9	TIH w/ 2.063" tbg open-ended to CIBP @ 6820', hydrotesting to 3000 psi.
10	RU cementers and spot a balanced plug in 3 1/2" casing from 6820' - 6150' as follows: 25 sx "G" w/20% silica flour, 0.4% CD-32, 0.4% ASA-100 and R-3 to achieve 2:30 pump time. (34 cuft of slurry)
11	Pull and LD tbg to ~5000' and reverse circulate clean w/fresh water treated with biocide.
12	TOOH and stand back 3600' 2.063" tbg. LD remainder.
13	RUWL PU 1 - 1', 2 1/16" perf gun loaded with 3 spf. Shoot 1' of squeeze holes at 4200'. RDWL.
14	RU Cementers. Establish circulation down 3 1/2" csg taking returns on surface csg. Pump 5 bbl water w/ biocide, 20 bbl Sodium Metasilicate, and another 5 bbl spacer immediately preceding cement. Note: If unable to circulate, consult Evans Engineering.
15	Pump Sussex cement consisting of 280 sx class "G" w/0.25 pps cello-flake, 0.4% CD-32, 0.4% ASA-301 mixed at 15.8 ppg and 1.15 cf/sk. (322 cuft of slurry). Follow cement with a wiper plug for 3 1/2" csg and displace w/33 bbls water to leave cement top @ 3600' in 3 1/2". Cement volume based on 500' annular coverage in 10" hole with 20% excess.
16	WOC per cementing company recommendation.
17	RIH 2.063" tbg and tag plug @ 3600'. POH and SB 850' of tbg. LD remainder.
18	ND BOP and wellhead. Install BOP on surface casing head with 3 1/2" pipe rams. Install 3000 psi ball valves on both casing head outlets. Install a choke or choke manifold on one outlet.
19	RU WL. RIH w/ chemical cutter or jet cutter and cut off 3 1/2" casing at 750'. RDMO WL. Circulate bottoms up using drilling mud and continue circulating to remove any gas from wellbore.
20	Pull and LD 750' of 3 1/2" casing.
21	RIH w/ 2.063" tbg to 850' (100' inside 3 1/2" csg stub).
22	RU cementers. Pump 10 bbl SAPP (Sodium Acid Pyrophosphate) followed by 20 bbl (min) fresh water spacer immediately preceding cement.
23	Pump a balanced stub plug 850'-150': 290 sx (386 cuft.) Type III cement w/ 0.25 pps cello flake and CaCl2 as deemed necessary mixed at 14.8 ppg and 1.33 cf/sk (100' inside 3 1/2" casing, 403' in 10" OH + 40% excess and 197' in surface casing).
24	TOOH and WOC per cementing company recommendation. Tag plug; TOC should be 247' or higher. If not, Consult Evans engineering before proceeding.
25	MIRU WL. Run and set 8 5/8" CIBP at 80'. PT CIBP and surface casing 1000 psi for 15 min. Assuming successful test, RD wireline and rig.
26	Instruct cementing and wireline contractors to e-mail copies of all job logs/job summaries and invoices to rscDJVendors@anadarko.com within 24 hrs of the completion of the job.
27	Supervisor submit paper copies of all invoices, logs, and reports to Joleen Kramer.
28	Excavation crew to notify One Call to clear excavation area around wellhead and for flowlines.

29	Excavate hole around surface casing enough to allow welder to cut 8 5/8" casing minimum 5' below ground level.
30	Welder cut 8 5/8" casing minimum 5' below ground level.
31	Fill surface casing with 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	Properly abandon flowlines per Rule 1103.
34	Obtain GPS location data per COGCC Rule 215 and send to rscDJVendors@anadarko.com .
35	Back fill hole with fill. Clean location, level.
36	Submit Form 6 to COGCC ensuring to provide 'As performed' WBD identifying operations completed. File electronic Form 42 once abandonment complete.