

Monaghan 2
39.804572 / -104.695744
05-001-05066

Monaghan 2 Procedure

1. Survey and locate plugged wellbore. Set a stake and record as-drilled GPS coordinates.
2. Excavate around wellbore to expose the top of the surface casing.
3. Cut existing cap off wellbore. Weld a slip collar to 10-3/4" casing and necessary length of casing to reach ground level. Weld another 10-3/4" slip collar.
4. MIRU workover rig.
5. Install wellhead and BOP. Test BOP.
6. PU and RIH with 6-1/4" tricone bit, (x4) 3-1/2" drill collars, and 2-7/8", 6.5#, L80, EUE workstring.
7. Drill out 1st surface cement plug and circulate hole clean.
8. Continue drilling or RIH to top of 2nd surface casing plug. Record depth of plug.
9. Pressure test surface casing to 250 psi. If surface casing fails pressure test, contact engineer and hunt holes.
10. After pressure test of surface casing, drill out surface casing plug. If pressure is encountered below surface casing plug, circulate hole with mud or kill fluid until well is dead or blown down.
11. Continue drilling or RIH to top of Plug #3. Record depth of plug. POOH.
12. Rig up casing crew and RIH with 5-1/2", 15.5# J-55 casing to 1510' (adjust to 5' above tag depth) and set casing.
13. Rig up wireline and RIH with gyro 1510'. LOOH, send results to engineer.
14. RU cement crew, pressure test lines to 4,500 psi, and pump class G cement (50 sks) to cement casing in place.
15. Wait 8 hours for cement to set.
16. PU and RIH with 4-3/4" PDC bit, 3-1/2" mud motor, 3-1/2" monel collar, MWD, (x4) 3-1/2" drill collars, and 2-7/8" PH6 workstring and drill out cement to 1510'.
17. Continue drilling, use gyro results and directional tools to keep workstring as vertical as possible, drill down through cement plug into open hole, run in 200' of open hole and circulate hole clean.
18. POOH and LD BHA.
19. Rig up wireline and RIH with CBL to 1510'. LOOH, send results to engineer.
20. PU and RIH with mule shoe and 2-7/8" L80 tubing down and tag the top of casing stub (~5000'). Tag and record depth of stub.

Procedure assumes Stub Tag Depth at 5000', adjust first plug depths accordingly

21. RU cement crew, pressure test lines to 4,500 psi, and spot plug from 5000'-4700' with class G cement (100 sks) to cover the casing stub.
 - **FROM THIS POINT MOVING FORWARD:** Circulate out all hydrocarbons from well and clean wellbore. Must wait a sufficient time on all subsequent plugs to confirm static conditions. If at any time after placing this plug there is evidence of pressure or of fluid migration, contact engineer before continuing operations.
22. POOH to surface casing. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 4700', contact engineer.
23. POOH and spot plug from 3000'-2850' with class G cement (50 sks) to provide additional isolation below the aquifers.
24. POOH to surface casing. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 2850', contact engineer.
25. POOH and spot plug from 1841'-1464' with class G cement (115 sks) to cover the Fox Hills formation and 5-1/2" casing shoe.
26. POOH to surface casing. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 1464', contact engineer.

27. POOH and SB.
28. RBIH with jet cutters on wireline and cut casing at 1410' (adjust to 5' above TOC found with CBL).
29. POOH and RDMO wireline.
30. POOH with casing and LD.
31. PU and RBIH with mule shoe and workstring to 1464' (adjust depth to plug tag depth).
32. RU cement crew, pressure test lines to 4,500 psi, and spot plug from 1464'-1364' with class G cement (22 sks) to cover the casing stub. **Verify cement volume with engineer before pumping cement, volume may adjust depending on tag depths.**
 - **IF CIRCULATION IS NOT MAINTAINED WHILE PUMPING PLUG:**
 - POOH to surface casing. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 1364', contact engineer.
33. POOH and spot plug from 968'-604' with 15.8 ppg class G cement (120 sks) to cover the Arapahoe formation.
34. POOH to surface casing. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 604', contact engineer.
35. POOH and spot plug from 250' to surface with 15.8 ppg class G cement (110 sks).
 - **IF CEMENT DOES NOT RETURN TO SURFACE:**
 - i. POOH. Wait 4 hours and tag TOC. Record tag depth. If tag is deeper than 135', contact engineer.
 - ii. Pump 15.8 ppg (1.15 cuft/sk) Class G cement at tag depth to surface.
36. RDMO. Top off cement after rig has moved, if necessary.
37. After surface plug has set, cut casing to 5' below ground level and conduct bubble test before proceeding.
38. After Bubble Test is successfully performed, weld on a plate to seal the well.
39. Inscribe the well's legal location, well name and number, and API number on the plate as shown:

2310' FSL, 330' FWL, NWSW Sec 8, T3S, R65W
Monaghan 2
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40. Photograph welded name plate and send to engineer.
41. Backfill hole and reclaim surface to original conditions.
42. Cover up the well and remediate the disturbed area.

Monaghan 2 Cement Plug Table

CEMENT PLUG TABLE									
Plug Number	Plug Status	Target	Plug Bottom Depth	Plug Top Depth	Cement Class	Yield (ft ³ /sk)	Number of Sacks	Must Be Tagged?	Maximum Tag Depth
1	Existing	D&J Sand	8375'	8323'	Unknown	Unknown	20	No	N/A
2	New	Casing Stub	5000'	4700'	G	1.15	100	Yes	4700'
3	New	Aquifer	3000'	2850'	G	1.15	50	Yes	2850'
4	New	Fox Hills	1841'	1464'	G	1.15	115	Yes	1464'
5	New	Casing Stub	1464'	1364'	G	1.15	22	Possibly	1364'
6	New	Upper Arap.	968'	604'	G	1.15	120	Yes	604'
7	New	Fresh Water	235'	Surface	G	1.15	110	Possibly	135'
TOTAL NEW SKS OF CEMENT REQUIRED:							517		