

Appendix G: Negative Test Protocols

	GoM Exploration Wells MC 252 #1ST00BP01 – Macondo Prospect 7" x 9-7/8" Interval	
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21. Pull 30k over string weight (do no exceed 60k)
22. Release from LDS by picking up past 60k
23. POOH and prepare to set a surface cement plug.

9.4 TA Plugs and Riser Cleaning

9.4.1 Surface Cement Plug

1. Run a bond log – subject to change based on actual cement job conditions
2. RIH with 3-1/2" x 5-1/2" DP to ~6000' (no mule shoe / open ended pipe)
3. Displace to salt water from 6000' – surface
 - Pump a nerf ball prior to switching over to cement
4. Monitor well for 30 minutes to ensure no flow
5. Set 300' cement plug from ~6000' – 5700' TVD (min ~20 bbls)
 - Pump a nerf ball behind cement job
6. POOH to wellhead and wait for cement to set up
7. RIH and tag cement with 15k down
8. POOH and lay down 3-1/2" drill pipe, leave 5-1/2" racked back for Nile PA
9. Prepare to clean the riser for Nile PA

9.4.2 Rig Cleaning Prior for Nile PA

1. Clean the shaker area thoroughly, especially the ditch lines from the sand traps to the pit room. Large amounts of water should be pumped through all centrifugal pumps at the shaker area including the desanders, desilters, centrifuge and degasser.
2. After the initial clean up has been completed 250 bbls of water treated with 138 gallons Safe Surf O (0.55 gpb) should be pumped through all of the surface equipment. This includes the pumps and pump manifolds, chemical hopper, barite hopper and any other seldom used lines that may affect the completion fluid. Capture the 250 bbl Safe Surf O flush for proper disposal.
3. Clean and dry all pits, then bring the completion fluid onboard. The take on hose must be dry and not contaminated with mud or seawater.
4. After displacing the hole, clean the shaker area again. At this point, cleaning the flow line from the slip joint to shakers should be cleaned as well. Do not allow any cleaning water to get down the ditch to the pit room.

9.4.3 Riser Cleaning

1. Build a pumpable volume of spacers as follows in Table 1 and
2. Table :

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	GoM Exploration Wells MC 252 #1ST00BP01 – Macondo Prospect 7" x 9-7/8" Interval	
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13. POOH and lay down running equipment

14. Test casing and blind shear rams (**per APD requirements**) while out of the hole preparing lockdown sleeve equipment. (2500 psi w/ 14 ppg mud)

15. Negative test with base oil to the wellhead (monitor for 30 min no flow)

9.2.4 Surface Cement Plug

1. If cement job **is not** successful: (no returns or lift pressure seen).
 - Set wear bushing
 - Run IBC-CBL log
 - Wait on decision to do remedial work (MMS and BP)
2. If cement job **is** successful (partial returns or lift pressure seen) **or** IBC/CBL log and required remedial work is completed.
3. RIH to 8367' and displace to seawater:
 - Run 3-1/2" (1000'+) stinger x 5-1/2" DP to above the wellhead (no mule shoe / open ended pipe)
 - Ensure MMS Departure to set deeper plug is approved (*if departure does not get approved, displacement & 300' cement plug will be completed after LDS is set at 5800*)
 - Monitor well for 30 minutes to ensure no flow
 - *Pull wear bushing if it was set*
4. Set a 300' cement plug from 8367' – 8067' (*if approved*)
5. Wait on cement to set and tag top of cement with 15k down
 - Pump a nerf ball behind cement job
6. POOH retrieve wear bushing
7. Prepare to run lead impression tool and lockdown sleeve

Note: Drilling program will be updated with actual plug depths if MMS departure is not approved.

Notes:

- Do NOT slow displacement rate other than directed.
- To have a greater chance to bump plug on float collar:
 1. Caliper ~20% of casing with Tri-Mic's to determine a more accurate ID. (Do NOT use mill or book specs.)
 2. Calculate mud compressibility based on actual conditions.
 3. Factor in rig pump efficiency.
- Whenever you attempt to wash-down, you have a greater chance of sticking subsea casing with additional ECD or creating a packing off problem due to cuttings bed you are pushing.

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Temporary Abandonment procedure approved by MMS on April 16, 2010 (BP-HZN-MBI00021238).

Temporary Abandonment Procedure
Macondo – MC 252 #1
Deepwater Horizon

Current Status:

Making wiper trip prior to running a long string of 9-7/8" x 7" production casing

Forward Plan:

Run casing to 18,300' +/- per approved APD. Test casing to 2500 psi per approved APD.

Temporary Abandonment Procedure: *(estimated start time Sunday, April 18, 2010)*

1. Negative test casing to seawater gradient equivalent for 30 min. with kill line.
2. TIH with a 3-1/2" stinger to 8367'.
3. Displace to seawater. Monitor well for 30 min.
4. Set a 300' cement plug (125 cu.ft. of Class H cement) from 8367' to 8067'.

The requested surface plug depth deviation is for minimizing the chance for damaging the LDS sealing area, for future completion operations.

This is a Temporary Abandonment only.

The cement plug length has been extended to compensate for added setting depth.

5. POOH.
6. Set 9-7/8" LDS (Lock Down Sleeve)
7. Clean and pull riser.
8. Install TA cap on wellhead and inject wellhead preservation fluid (corrosion inhibitor) below TA cap.

The "Negative Test" email from Brian Morel to John Guide, on April 18, 2010 (BP-HZN-MBI00256247).

From: Morel, Brian P
Sent: Sun Apr 18 17:09:05 2010
To: Guide, John
Subject: RE: Negative Test
Importance: Normal

Done

From: Guide, John
Sent: Sunday, April 18, 2010 10:49 AM
To: Morel, Brian P
Subject: RE: Negative Test

I would use the seawater displacement as the negative test, as you stated, shut down at the end and do a flow test.

From: Morel, Brian P
Sent: Sunday, April 18, 2010 10:37 AM
To: Guide, John
Subject: Negative Test

John,
Plan is to do a negative test with base oil on the bottom plug. Then we will displace (a second negative test to greater value will happen) and following that set the cement plug. Are you ok with this, or do you think we should remove the first base oil test and just use the displacement as a negative test (shut down at the end and do a flow test)? I have got different opinions from everyone on the team. The way we currently have it set up is the standard we have been using, but this one is slightly different because the plug is so deep and base oil doesn't achieve the full negative load the wellbore will see. Don and Bob don't seem to have strong opinions either way.

Brian

The "Ops Note" sent Brian Morel on April 20, 2010 at 10:43 AM. (BP- HZN-MBI00021237).

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Kaluza, Robert

From: Morel, Brian P
Sent: Tuesday, April 20, 2010 10:43 AM
To: Morel, Brian P; Vidrine, Don J; Kaluza, Robert; Lambert, Lee; Lee, Earl P (Oper Svcs Drill)
Cc: Guide, John; Hafle, Mark E; Cocales, Brett W; Walz, Gregory S
Subject: Ops Note
Follow Up Flag: Follow up
Flag Status: Red

Quick ops note for the next few days:

1. Test casing per APD to 250 / 2500 psi
2. RIH to 8367'
3. Displace to seawater from there to above the wellhead
4. With seawater in the kill close annular and do a negative test ~2350 psi differential
5. Open annular and continue displacement
6. Set a 300' balanced cement plug w/ 5 bbis in DP
7. POOH ~100-200' above top of cement and drop neft ball / circulate DS volume
8. Spot corrosion inhibitor in the open hole
9. POOH to just below the wellhead or above with the 3-1/2" stinger (if desired wash with the 3-1/2" / do not rotate / a separate run will not be made to wash as the displacement will clean up the wellhead)
10. POOH and make LIT / LDS runs
11. Test casing to 1000 psi with seawater (non MMS test / BP DWOP) – surface plug
 - a. Confirm bbis to pressure up on original casing test vs bbis to test surface plug (should be less due to volume differences and fluid compressibility –seawater vs sobm)
 - b. Plot on chart / send to Houston for confirmation

The "Ops Note" sent by Brian Morel on April 20, 2010 at 3:36 p.m. (BP-HZN-MBI00129108).

From: Morel, Brian P
Sent: Tue Apr 20 15:36:07 2010
To: Vidrine, Don J; Kaluza, Robert; Lambert, Lee; Lee, Earl P (Oper Svcs Drill)
Subject: Ops Note
Importance: Normal

1. Test casing per APD to 2500 psi
2. RIH to 8367'
3. Displace to seawater from there to above the wellhead
4. With seawater in the kill close annular and do a negative test
5. Open annular and continue displacement
6. Set a 300' cement plug
7. Drop neft ball and circulate DS volume
8. Spot corrosion inhibitor in the open hole
9. POOH to wellhead and wash with the 3-1/2" / do not rotate
10. POOH and make LIT / LDS runs
11. Test casing to 1000 psi with seawater (non MMS test / BP DWOP)
 1. Confirm bbls to original casing test (should be less due to volume and fluid compressibility – seawater vs sobm)
 2. Plot on chart / send to Houston for confirmation

Jimmy Harrell (Transocean) testimony on how he typically runs a negative test.

20 Q. In the course of conducting your
21 negative test, how do you typically line up
22 your piping and valve arrangements for that?
23 You said that Mr. Vidrine wanted to do a
24 second test because he wanted to use a kill
25 line.

1 A. Yes.

2 Q. So how did you all conduct the first
3 negative test?

4 A. You do it by leading off back to
5 Halliburton and up your drill pipe. You pump
6 seawater to the end of your tail pipe and all
7 the way back up to above your annular with
8 your spacer.

9 Q. So what do you do there? You close
10 your annular -- keep your mud above your
11 annular with seawater in your back side?

12 A. Yeah. You hold the mud in the riser
13 with the annular closed.

14 Q. So it's not full -- it's not
15 completely to a seawater gradient at that
16 point in time, correct?

17 A. Well, yeah, it is. I mean, it's -

18 Q. Because you have seawater down the
19 drill pipe, but you're holding it back on the
20 back side. You have no common back on the
21 annular all the way back to surface.

22 A. You have drill pipe. You have
23 seawater in the drill pipe and you have
24 seawater in the kill line and either one would
25 be seeing the same pressure as far as from

1 that depth of 8367.

The MI SWACO Rheliant Displacement Procedure drafted by Leo Lindner (BP-HZN MBI00133083).

MI SWACO

LEO typed this up - procedure on how they would do this
↳ Mud Eng.

BP / Deepwater Horizon
Rheliant Displacement Procedure
"Macondo" OCS-G 32306

1. Before displacing to seawater, conduct a THINK DRILL with all.
2. Remember it's very important that we must avoid trapping SBM in pits, pumps, lines and hole. We will displace SBM from all four mud pumps, both stand pipes, choke, kill, boost lines, casing and riser.
3. Pump excess volume to Bankston, and have boat on starboard with mud hose on her.
4. Line up on sea chest.
5. Build 425 bbl **WBM spacer** in pit # 5, and use Duo Vis to thicken up.
6. Capacities:
Choke 100 bbls/794 strokes; Kill 100 bbls/794 strokes;
Boost 73 bbls/579 strokes; Drill pipe 196 bbls/1555 strokes;
Casing/Riser w/drill pipe annular 1817 bbls/14,420 stks.
Total displaced volume for hole and drill string, 2012 bbls/15,968 strokes
Pump Output 0.126 bbls/stk.

Displacement

1. Line up for all SBM returns to go to the pits and bypass sandtraps. Function test dump valve. As we displace, pump SBM to Bankston.
2. Displace choke, kill, and boost lines, and close lower valves after each. Zero stroke counter. (Note: when displacing choke line, over displace 8 bbls (63 strokes) for surface lines).
- 454 3. Pump 425 bbl **WBM spacer** from **pit # 5** down drill pipe followed by seawater.
- 352 4. Pump 775 bbls or 6150 stks. Spacer should be above the upper annular.
5. Close annular and conduct negative test. After successful negative test, open bag.
6. Continue displacement up the riser until spacer is 500ft past BOP stack (950 bbls 7540 strokes). We can boost riser.
7. Do not shut down until displacement is complete.
8. When WBM spacer returns at 15,968 stks, over-displace until interface is incorporated. When interface is incorporated, Compliance Engineer will take sample for Static Sheen test and ROC and shut down pumps. Switch to overboard discharge.
9. If static sheen is an apparent pass, discharge remaining spacer and seawater down overboard line. Mud Engineer will advise.

NOTE: Good communication will be necessary to accomplish a successful displacement. If you are not sure, stop and ask.