

From: Lindner, Leo T (MI DRILLING FLUIDS, INC)  
Sent: Tue Apr 20 22:06:37 2010  
To: Kaluza, Robert  
Subject: Macondo Displacement Procedure  
Importance: Low  
Attachments: Macondo Displacement to Seawater.doc

3196  
Exhibit No. \_\_\_\_\_  
Worldwide Court  
Reporters, Inc.



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).
3. Pump 425 bbl **WBM spacer** from **pit # 5** down drill pipe followed by seawater.
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.