

From: Pere, Allen L
Sent: Fri Mar 05 19:39:28 2010
To: Alberty, Mark W
Subject: Macondo LL Presentation
Importance: Normal
Attachments: 2010%200218%20Mark%20Hafle%20Horizon%20Update.pdf

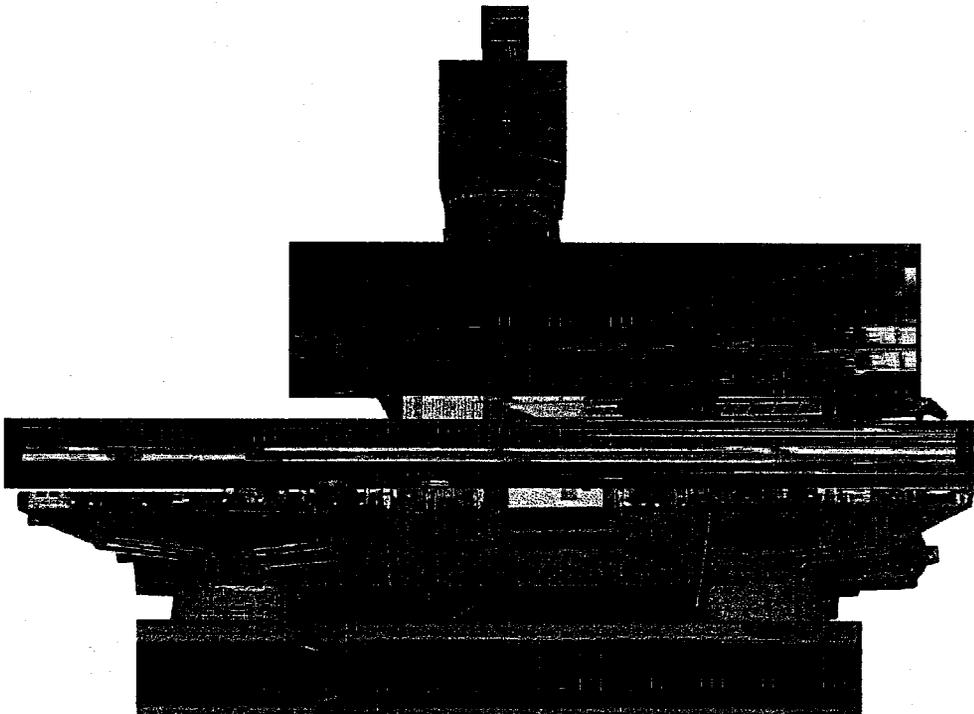
Mark,

Attached is the LL presentation. They talk a lot about leaks and getting returns back to the trip tank during the LOT. They do have the cmt sqz info but it more bullet points about the leaking valve btw the trip tank and the Cmt unit. The question I have is if they tested the lines before the LOT? Should have picked up the leak then.

<<...>>

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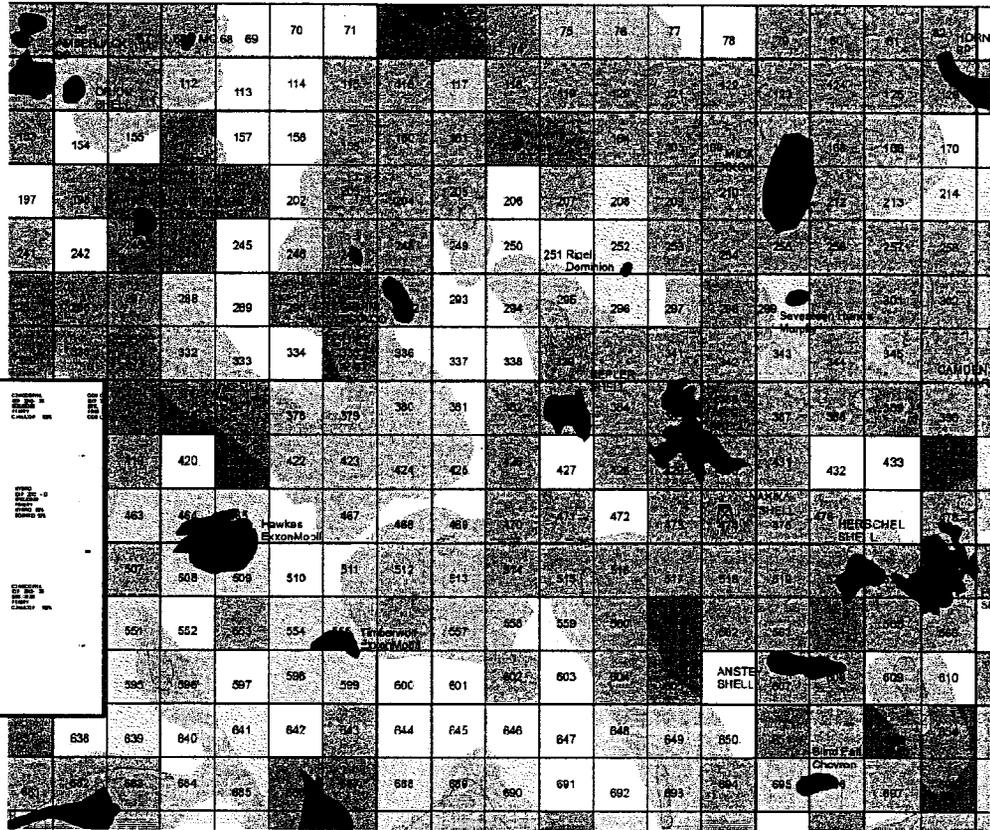


Macondo LL

Brian Morel, Mark Hafle, Brett Cocalis

Feb 17, 2010

Where is Macondo...



Nirvana Shell

Mississippi Canyon

Rigel Dominion

Hawkes ExxonMobil

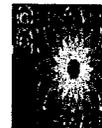
ANSTE SHELL

HERSCHEL SHELL

Bird Fall

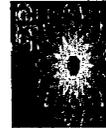
Crown

What's happened so far...



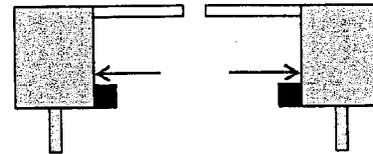
- Marianas drilled first 4 sections and was then damaged by Hurricane Ida.
- Rig released after repairs completed in Dec. 2009
- DW Horizon MOB to Marianas following Kodiak #2.
- All BOP maintenance on critical path since riserless work was already done.
- Restarted Macondo on Feb. 6, 2010

Annular Tests



• Incident

- ? Planned to test annulars to 3500 psi with test ram
- ? Pressured up to 3684 psi (15 bbls, should have been 2.5 bbls)
- ? Loud "woosh" heard on the rig floor, pressure dropped to 500 psi.
- ? Test shut down and determined test rams hadn't been closed
- ? Pressure bleeding off was? possible channel breaking through the surface plug or plug sliding down or other oilfield mystery?
- ? Pressure tested casing after all cement cleaned out to shoe without any issues



• Lesson Learned

- ? Asst Driller to track strokes and gallon count on standard tracking sheet for each BOP function
- ? Add average test volume to tracking sheet for specific function test, and Asst Driller to track Halliburton bbls during job / compare.



Surface Plug (TA plug from Marianas)



- Ran clean-out assembly w/ 18-1/8" rock bit to clean-out TA plug after testing the stack

? Tagged up at 5881' (expected 5867')

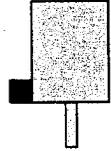
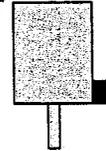
? Drilled ratty cement to 6081' (expected 6067')

? RIH to 6606' tagged up w/ 10k

? Washed and reamed on/off to liner top at 7479' (10' high)

? RIH with drilling BHA and tagged cement at 7479'

? Drilled 15' to get into liner top

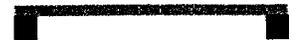


- Lesson Learned

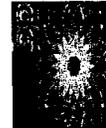
? Surface plugs in large hole are difficult

? Parabow inside casing a good idea, but may not work

? Set surface plug in seawater instead of mud

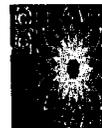


18" LOT

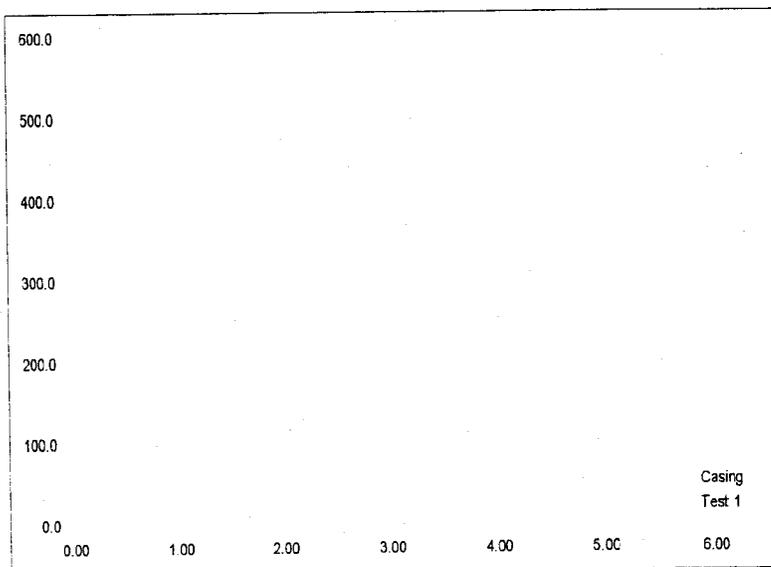


- Question:
- What is the record number of LOT's performed on a single well? (who remembers our 22" last year?)
- Let's see...

18" LOT (...Ok, let's call it LOT#18.1 ...)



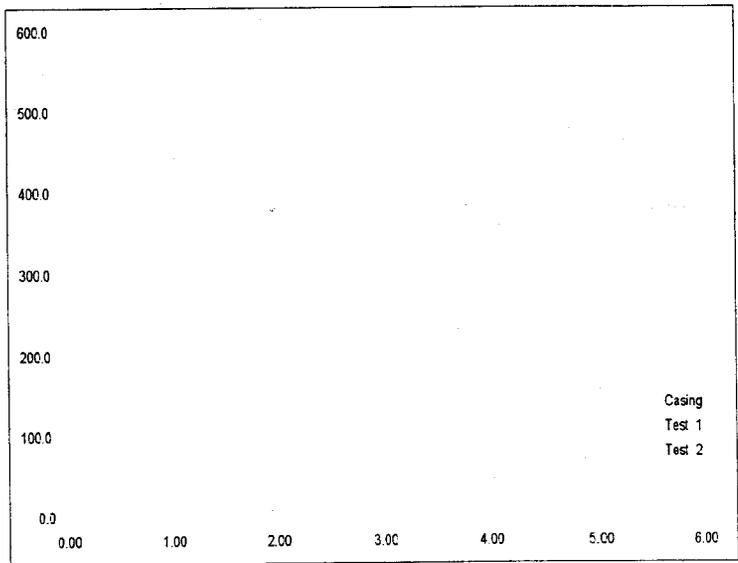
- Drilled out / circulated cuttings above the stack
- Broke circulation / tested all lines
 - ? Tested down kill and drill pipe from cement unit on upper annular
- Completed LOT w/ 10.6 ppg to 440 ppg / 6 bbls (11.54 ppg) Bleed back 3.25 bbl
 - ? 2 bbl gain trip tank
- Searched for leak path / retested lines / isolated valves



LOT (#18.2 ...)



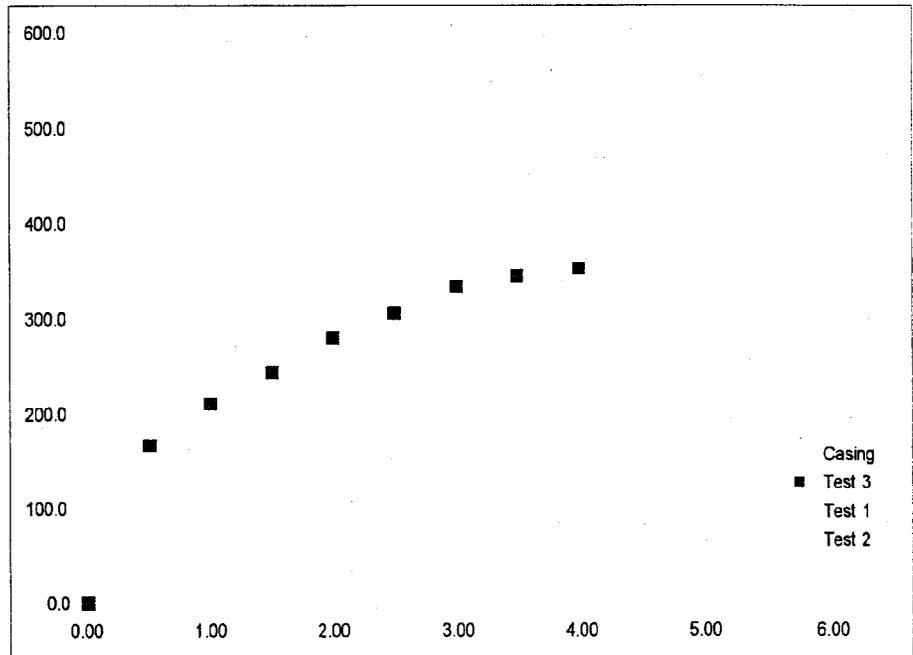
- Thought leak was through IBOP (previous issues when changed out)
- Pressured up on backside of IBOP w/ 1000 psi and held during test
- Completed LOT #2 w/ 10.6 ppg to 413 ppg / 4.5 bbls (11.54 ppg) BB - 3 bbl
? 2.25 bbl gain trip tank
- Rigged up to close pipe rams and retest
- Broke circulation w/ no returns after 5 bbls / pumped down drill pipe with no returns
- Hole packed up / rotated free and CBU



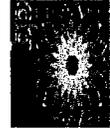
LOT (#18.3...)



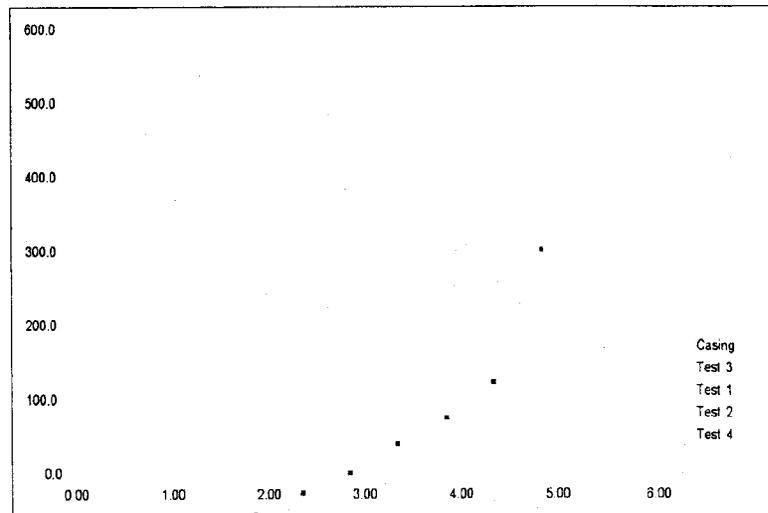
- Closed pipe rams: test #3 w/ 10.6 ppg to 352 ppg / 4.0 bbis (11.36 ppg) BB - 2.75 bbl
? 1.5 bbl gain trip tank
- POH to check DP for leaks / none found



LOT (#18.4...)



- TIH and closed annulars: test #4 w/ 10.6 ppg to 317 psi / 5.0 bbls (11.27 ppg) BB 3.75 bbl
? 1.25 bbl gain trip tank
- POH to squeeze using ramped pump schedule
? 10 bbl @ 2 bpm / 10 bbl @ 3 bpm / 10 bbl @ 4 bpm / 40 bbl @ 5 bpm / 10 bbl @ 4 bpm /
10 bbl @ 2 bpm / 10 bbl @ 1 bpm
? Initial pressure at 2 bpm 235 psi / final pressure at 2 bpm 396
- Held pressure 320 psi for 6 hours
- POH and TIH to perform LOT #5



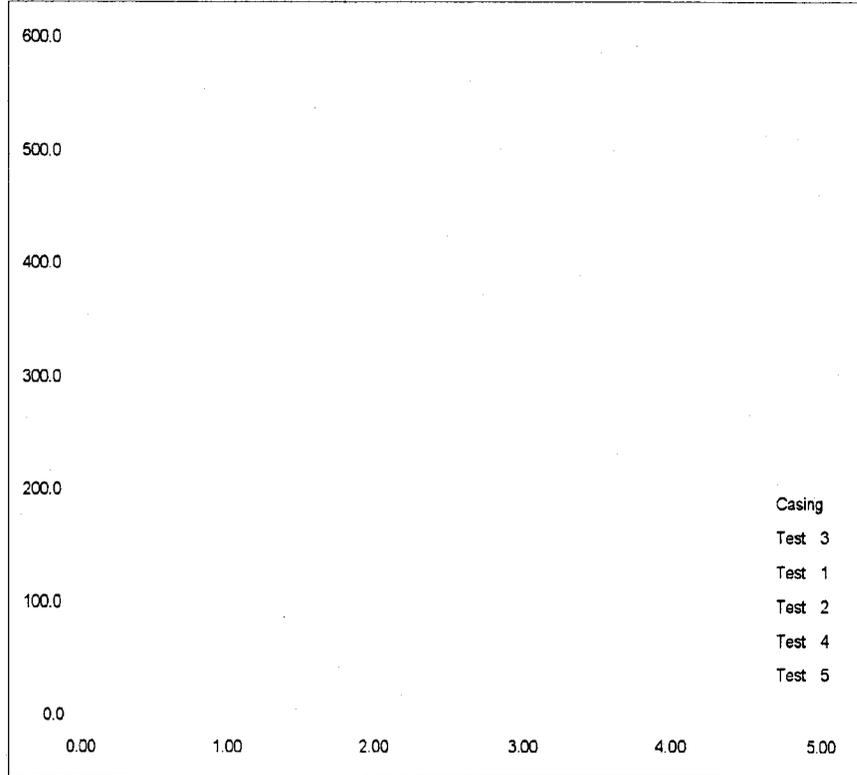
LOT (#18.5 ...) post squeeze LOT (whew)



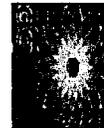
- Closed annulars: Test #5 w/ 10.6 ppg to 550 ppg / 4.0 bbls (11.77 ppg) BB - 3.5 bbl
 - ? No gains in TT
- Found leak on manifold between TT and Cement Unit
 - ? Flow path by double redundant valves
 - ? TO told WSL no way could leak

Lessons Learned

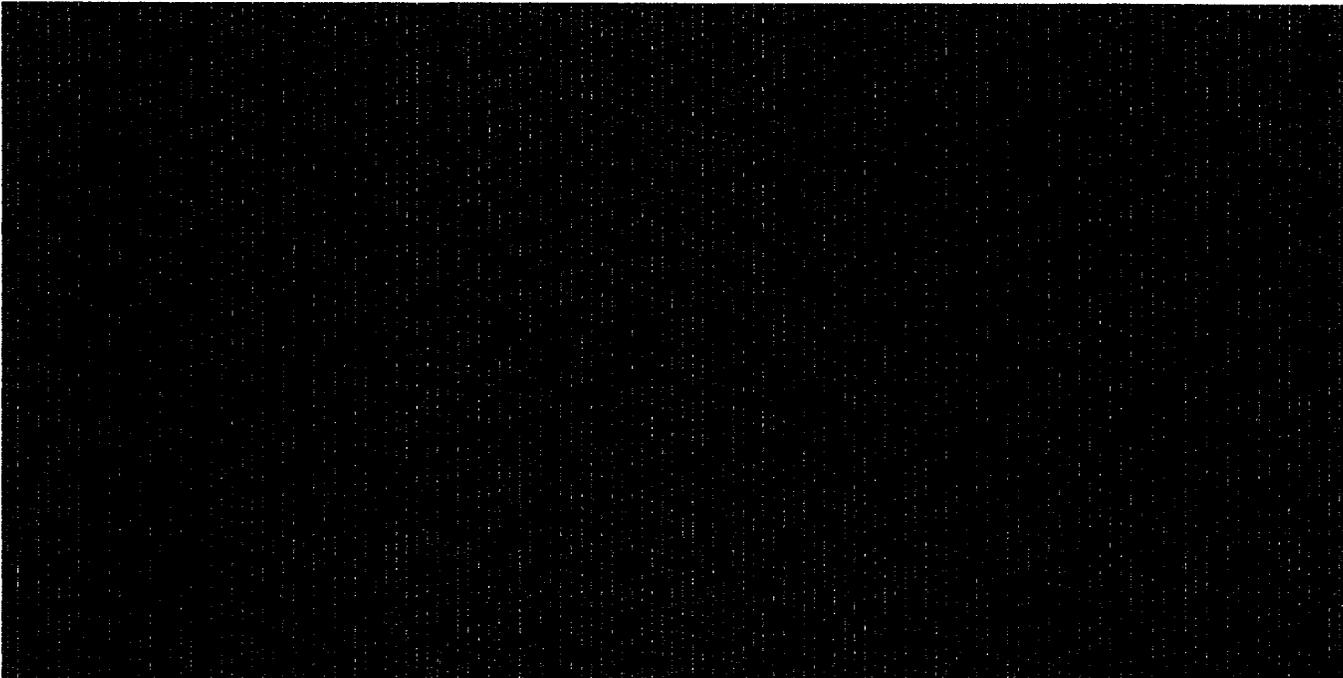
- Shoe Squeezes can work
- Pressure check valves, don't take contractors word
- Ramped squeeze rates very effective



Current Ops



- Drilled to 16" hole section TD
- Lost returns last night while circulating to lower ECD with 11.4 MW, 11.73 ECD
- Pumped 174bbbls of 84ppb LCM pill, losses stopped when pill reached 18" shoe.
- Mud losses so far... ~2500 bbls... well currently static, and attempting to pull to shoe



Questions