

**From:** Hafle, Mark E  
**Sent:** Wed Apr 14 23:09:46 2010  
**To:** Miller, Richard A  
**Subject:** RE: Macondo APB  
**Importance:** Normal

Thanks Rich. This has been a crazy well for sure.

Mark

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**From:** Miller, Richard A  
**Sent:** Wednesday, April 14, 2010 6:03 PM  
**To:** Morel, Brian P  
**Cc:** Hafle, Mark E  
**Subject:** RE: Macondo APB

We have flipped design parameters around to the point that I got nervous. I did a rough update of both my disk calculations and my WellCat model. All looks fine.

If we run the 9-7/8" x 7" as a long string, then the design *resembles* the original configuration, at least from an APB standpoint. The outward-acting 16" rupture disks mitigate 9-7/8" collapse loads due to B annulus APB. I do not have the final disk depth, so I guessed it is around 9,500'.

If the 9-7/8" x 7" is run as a liner (per your schematic), then there is a risk that a trapped annulus forms between the 7" and 9-7/8" liners. The WellCat model predicts an incremental 2,350 psi APB in that annulus. To keep the 7" from collapsing, the pressure inside the 7" at 17,157' TVD needs to be 4,800 psi or greater. Assuming that the production packer is set above this depth, then the 4,800 psi could dictate a reservoir abandonment pressure limit. We can hash this out in the completion phase, but you may want to alert completions of that possible issue.

Let me know if you have questions. I'll be in Westlake Thursday morning and have an early afternoon flight to catch.  
Rich

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**From:** Morel, Brian P  
**Sent:** Wednesday, April 14, 2010 1:31 PM  
**To:** Miller, Richard A  
**Cc:** Hafle, Mark E  
**Subject:** Macondo APB

Rich,  
There is a chance we could run a production liner on Macondo instead of the planned long string. As this does not change much for APB based on the original design assumptions of a trapped annular, I don't see any major effects, but wanted to confirm I am not missing something. Attached is the proposed schematic, please let me know if you have any questions. We could be running it in 2-3 days, so need a relative quick response. Sorry for the late notice, this has been nightmare well which has everyone all over the place.

Thanks

Brian