

From: Alberty, Mark W  
Sent: Wed Mar 17 22:16:09 2010  
To: Johnston, Paul J (Houston); Wydrinski, Ray  
Subject: RE: Question about stress cage  
Importance: Normal

Paul,

I have been put on a drilling team to review the incident (Hafle, LeBleu, and myself). We will be working on it the next few weeks. In the initial leak-offs (4) on the shoe there clearly was permeability present. Those same leak-offs I think gave a value near that expected for sand (if I recall Albertin's plots correctly). The leak-off after the squeeze does not have much if any permeability present, but this could be a result of both the pressure applied during the squeeze and the presence of the cementing fluids. So maybe that permeability seen in the leak-offs was present below the shoe and maybe it was above the shoe. Too bad we do not have porosity logs over the marls. In my book marls can be anything from highly permeable to no permeability. We need to look at the cuttings to see if this helps us clarify that. If the permeability is in the marls, that points toward one plausible explanation. If the permeability is behind the shoe, then things do not fit together all that well. One thing we can look at is the nano fossil and foram abundance from the biostrat work. If the abundance is close to 100, then we might be able to assume the permeability is present. If what you are hoping to do is to back calculate the fracture width and then determine if there was sufficient stress cage material present to boost the FG to the shale FG, then I can help you do that. It might be good to link your results to mine so we are consistent.

I will be back in Houston on Monday.

Mark

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From: Johnston, Paul J (Houston)  
Sent: Wednesday, March 17, 2010 2:38 PM  
To: Wydrinski, Ray; Alberty, Mark W  
Subject: Question about stress cage

Mark, Ray

I am trying to understand or at least put together a 1 pager on the loss event that occurred at Macondo. Mark, I know we talk at length about this in Bogota and I think I like the story around blowing out the stress cage and re-accessing a sand/ marl with a lower frac gradient and therefore having static losses. My question is how will I figure out what amount of frac gradient upside would we see with just ECD back pressure and back ground LCM? I don't have any logs from the well other than Gamma and Resistivity? So not sure really how I can go about looking at this? Mark, have you been given any more information about the well as far as mud properties or anything that might help us with this?

Anyway, The more I think about it the more I have to come to grips with the well had to be artificially strengthened to a point where we could drill ahead without losses but then loses that mechanism.

Any advice on how I can try to Quantify any of these values let me know.

<< File: Losses.ppt >>

Paul Johnston

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**From:** Alberty, Mark W  
**Sent:** Tue Mar 23 12:49:42 2010  
**To:** Hafle, Mark E  
**Subject:** RE:  
**Importance:** Normal

That normally implies abnormal horizontal stresses. I do not know much about the prospect. I do not think there is salt involved.

Mark

-----Original Message-----

**From:** Hafle, Mark E  
**Sent:** Tuesday, March 23, 2010 7:27 AM  
**To:** Alberty, Mark W  
**Subject:** FW:  
LOT above OB... Your thoughts

-----Original Message-----

**From:** Sepulvado, Ronald W  
**Sent:** Monday, March 22, 2010 1:47 PM  
**To:** Guide, John; Hafle, Mark E; Cocalis, Brett W; Vidrine, Don J; Deepwater Horizon, Formen  
**Cc:** Drill Floor; DWH OIM; DWH Toolpusher; Deepwater Horizon, Sperry Sun; Deepwater Horizon, Mud Eng  
**Subject:**

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