



## BP's Deepwater Oil Spill - Oil Spill Cementing - Open Thread

Posted by [Gail the Actuary](#) on October 30, 2010 - 10:35am

Topic: [Environment/Sustainability](#)

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We have not had an open thread on the oil spill in a while. The [oil spill commission](#) released two letters this week indicating problems with Halliburton's cementing.

This is a [link](#) to the letter from Mr. Bartlit to the Oil Spill Commission, dated October 28. It says, in part,

We asked Halliburton to supply us samples of materials like those actually used at the Macondo well so that we could investigate issues surrounding the cement failure. Halliburton provided us off-the-shelf cement and additive materials used at the Macondo well from their stock. Although these materials did not come from the specific batches used at the Macondo well, they are in all other ways identical in composition to the slurry used there. . .

We attach Chevron's report of its laboratory tests, and we have invited one of its experts to discuss that report with you at the public hearing on November 9.

Chevron's report states, among other things, that its lab personnel were unable to generate stable foam cement in the laboratory using the materials provided by Halliburton and available design information regarding the slurry used at the Macondo well. Although laboratory foam stability tests cannot replicate field conditions perfectly, these data strongly suggest that the foam cement used at Macondo was unstable. This may have contributed to the blowout.

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Chevron's report regarding its analysis can be found at this [link](#) (pdf). It is 38 pages in total. The table of contents lists analyses in a number of areas, including thickening time, mud balance, and mixability.

Halliburton was not too happy with all of this, and released its own [press release](#). It says, among other things:

Halliburton believes that significant differences between its internal cement tests and the Commission's test results may be due to differences in the cement materials tested. The Commission tested off-the-shelf cement and additives, whereas Halliburton tested the unique blend of cement and additives that existed on the rig at the time Halliburton's tests were conducted. Halliburton also noted that it has been unable to provide the Commission with cement, additives and water from the rig because it is subject to a Federal Court preservation order but that these materials will soon be released to the Marine Board of Investigation. Halliburton believes further comment on Chevron's tests is premature and should await careful study and understanding of the tests by Halliburton and other industry experts.

With respect to Halliburton's internal tests, the letter concludes that "only one of the four tests" showed a stable slurry. Halliburton noted that two of those tests were conducted in February and were preliminary, pilot tests. As noted in the letter, those tests did not include the same slurry mixture and design as that actually used on the Macondo well because final well conditions were not known at that time. Contrary to the letter, however, the slurry tested in February was not "a very similar foam slurry design to the one actually pumped at the Macondo well..." Additionally, there are a number of significant differences in testing parameters, including depth, pressure, temperature and additive changes, between Halliburton's February tests and two subsequent tests Halliburton conducted in April. Halliburton believes the first test conducted in April is irrelevant because the laboratory did not use the correct amount of cement blend. Furthermore, contrary to the assertion in the letter, BP was made aware of the issues with that test. The second test conducted in April was run on the originally agreed upon slurry formulation, which included eight gallons of retarder per 100 sacks of cement, and showed a stable foam.

BP subsequently instructed Halliburton to increase the amount of retarder in the slurry formulation from eight gallons per 100 sacks of cement to nine gallons per 100 sacks of cement. Tests, including thickening time and compressive strength, were performed on

the nine gallon formulation (the cement formulation actually pumped) and were shared with BP before the cementing job had begun. A foam stability test was not conducted on the nine gallon formulation.



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