



BP's Deepwater Oil Spill - Evidence of Erosion - and Open Thread

Posted by [Heading Out](#) on September 10, 2010 - 10:40am

Topic: [Environment/Sustainability](#)

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Update, 1:00pm EDT Friday: Admiral Allen has issued a [letter](#), authorizing BP to proceed with specific aspects of the relief well intercept procedure. In particular, BP is to proceed with an evaluation of the current status of the casing hanger. If it is found to be correctly positioned, BP is to install the locking ring to secure the hanger, and then commence completion of the relief well.

There was, apparently, no briefing on Thursday on the Deepwater Oil Spill. However RockyPaloma has put up a number of videos on Youtube showing an internal video inspection of the blowout preventer (BOP) with pictures of severe metal erosion.



Erosion within the BOP ([RockyPaloma](#))

Some of it seems to have eaten around the plate of the shear ram, in at least one place, though I have not watched this in real time and am not sure of all the locations.



Possible erosion of the BOP wall around the shear ram plate. ([RockyPaloma](#))

The video sequences include one of the [shear ram plates retracting](#).)

And one showing the deformed drill pipe surrounded by [the eroded annular preventer](#), gives some indication of the extent to which sand in the oil/natural gas/water mix was eating out the internal surfaces of the BOP, and allowing the leak to increase in size, over time, a point that I made, [quite early in the proceedings](#).

[MoonofA](#) has given a more concise, yet comprehensive picture of what the camera saw, together with a sketch of the ram assembly showing what the various parts are that are shown in the video. Ricx also adds [an interesting question](#).

For those who need reminding of the structure of the BOP, [PhilMB](#) has put up a graphic section of the structure, so that you can tell which view corresponds with what.

The problem, of course, is that it is not clear when the different stages of erosion occurred. While there is some, there is not a lot of difference in wear surface patterns under differing flow regimes, containing different abrasive concentrations at different flow speeds. Because the erosion took place over the relatively long time intervals that it did, I am surprised in a way that it did not do a lot more damage than it did. Certainly some of the gaps might have been filled if the top hat “junk shots” had been continued longer than they were.



View of the crushed DP with surrounding erosion ([RockyPaloma](#))

The investigation is, however, still in its early stages, and I imagine that there will be a lot more expert testimony on the structures (which likely means that at some time they will be cut apart to provide sectioned specimens). That is not going to be a simple short-term operation or investigation. And at the same time the pressure is now no longer on the relief well to seal in the oil and gas, so that too is likely to proceed at a gentler pace.



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