The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

# BP's Deepwater Oil Spill - Bubble, Bubble Oil and Trouble - and Open Thread 2

Posted by Heading Out on July 20, 2010 - 10:05am
Topic: Environment/Sustainability
Tags: deepwater horizon, oil spill [list all tags]

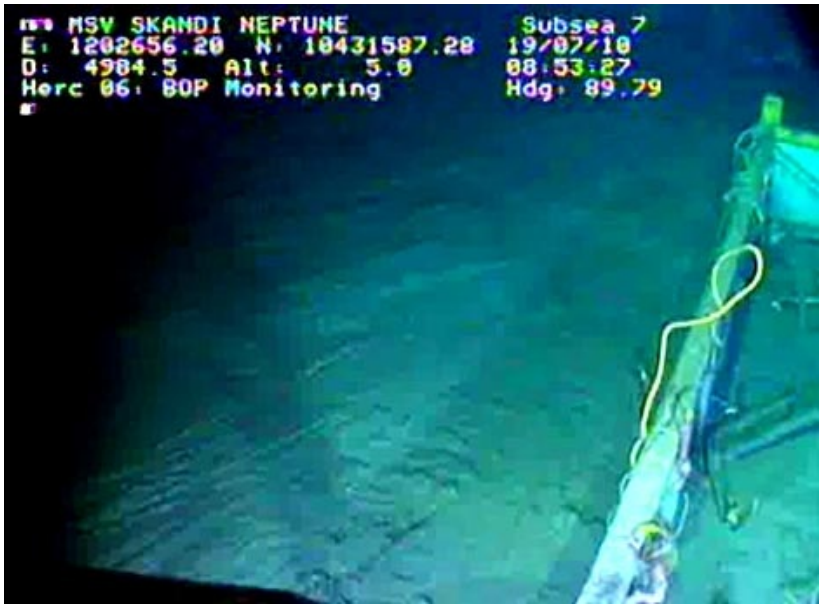
**This thread is being closed. Please comment on http://www.theoildrum.com/node/6757.**

**Because of the number of comments, this is a new thread. The previous thread was http://www.theoildrum.com/node/6754.**

**Update 2:30 pm EDT**: Original leak on the pipe has been sealed, but there are two major leaks on the stack now. One is at the bottom of the new "cap" and the other is on both sides of the BOP just underneath the flex joint. Lots of hydrates above the leaks.

**Update 1:00 pm EDT**: Chuck Watson has an update on the potential for a tropical storm, added to the end of this post.

I rather suspect that we will know a lot more about the behavior of the sediments and matter at the bottom of the Gulf within the next year or so than we have learned in the past hundred years. I am looking at the view from the Skandi ROV 2 at 10 am on Monday, and it is looking at a patch of mud that is bubbling a little, though over a relatively significant area (that of the camera illumination). There is no trace of oil venting and flowing upwards (and a fish just swam by) so there will be, no doubt, some samples taken, and, over time, we will learn what is the cause.




There were other views, from different ROVs that seemed to show clouds of something, but the

definition was poor, and it was not clear that this was not mud that the ROV itself had stirred up. This has been the case several times today, in watching the video, though there were, in the seep area, shots of small drops of oil heading up to the sea surface.

Given the debate that is developing between BP and the panel that advises Secretary Chu and Admiral Allen, the redirection of the thought process to include another attempt at a top kill, brings in a whole pile of new matter to be used in those discussions.

---

As the day continued there has been clarification of the remarks that both Admiral Allen and Kent Wells have made in the past, as well as an update on the relief well progress, and the resurrection of the idea of possibly doing a top kill. The test has been allowed to be continued another 24 hours, and it has been determined that the anomaly on the BOP is a slight leak on the flexible joint.

Looking at the Kent Wells conference at 5 pm, he began by reporting on the status of the relief well:

> Our first relief well, the total depth is at 17862, that's our casing point. We're four feet horizontally from the Macondo well at 2.8 degrees and we're looking directly at the Macondo well. So we're absolutely perfectly positioned. The team is feeling very good about how they've set this well up.
>
> They're now in the process of what we call opening the hole. So they're drilling the hole a little bit bigger diameter and then on Wednesday, Thursday we'll run casing and cement is in place and there's some testing to do followed by the drill out and ranging runs

The pressure in the well itself has risen to over 6810 psi and is rising at about 1 psi per hour. This lower pressure than the pressures originally estimated makes it possible to reconsider the top kill option. This is where, by feeding mud into the top of the well through the kill line, while the well is shut-in, the mud fills up the well. (The oil and gas are pushed back into the formation). Then should they be able to fill the well up with this mud, the weight of the full column of it, down the well, would be high enough to balance the pressure of the oil in the formation. At this point, rather than the well being shut in by the cap, it becomes killed by the mud pressure on the flow.

There is no longer any concern about pumping the mud in at any high rate of pressure, since the flow is already stopped. Instead the mud flow and pressure can be set to a slightly higher pressure than currently is in the well, and then slowly increase the flow to fill the well, without bringing the pressure to such a high level as to further compromise the well integrity. The injection would be followed with cement, to seal the well at the top of the underground part. This would later be followed by the well intersection by the relief well, and an injection of cement at the bottom of the well.

There are three areas where concern has been raised over the possibility of oil escaping the well below the sea bed and migrating back up to the surface. This is why the ROVs are located around the well monitoring the sea bed itself. There are, as noted earlier, patches where the sea bed is evidently bubbling (in that you can see where the bubbles pop out of the mud). But there is no sign of gas or oil then slowly rising to the sea surface from the bubble action. It may, therefore be something like a field of clams sitting below the surface and aspirating and then spitting out some

of the sea water. This action is not at the moment of concern, BP has checked the fluid coming out of the sediment and it is running at around 15% methane, which could just arise (according to Mr Wells) from biodegradation in the mud below the sea bed.

There is a natural seep some two miles from the site. This hydrocarbon flow has been tested and is not related to the Deepwater Spill. And so the only other area of concern is a very small leak coming out from the seal in the flexible joint (which, if you remember was straightened before the new cap was installed). The leak, at the moment is very small, and not of that much concern. However, if the leak starts to get bigger, and then turn into a stream, it may pick up some of the sand that is reported as being a concern from being in the BOP assembly. This will then, at the pressures anticipated, be enough to erode out the leak to an unacceptable size within a couple of hours. For now, however, it is very small, and not continuous flow, and so can be viewed with less concern, relative to other issues.

> The leak was detected in a flange between the top of the well and the rams that regulate flow up the main bore.
>
> Video footage is showing some hydrate build up on the outside of the stack and scientists believe a small amount of oil and natural gas is leaking out.
>
> Allen said the leak is not expected to hurt performance of the device and is not seen as a threat to its structural integrity.

**Update 1:00 pm EDT by Oil Drum staff member Chuck Watson**

The strong tropical disturbance that is currently just north of Puerto Rico has the potential to become the next hurricane of the season as it moves into the Bahamas and south Florida. The "Official" forecast (red line in the graphic) shows it just reaching hurricane force before landfall. The HWRF model, which is a newer model that is increasingly trusted by the community (bright yellow line) keeps it as a strong tropical storm after exiting Florida. Most of these tracks would create problems for cleanup operations (although, as discussed, a direct hit by a wet tropical storm or minimal hurricane could be beneficial). If the storm spins up into a strong tropical storm, and looks to cross Florida as forecast, expect the Oil/Gas industry to start preparations and shut-ins late Thursday and Friday. It's a long way out, with lots of uncertainties, but this one might be our next disruptive event for the Gulf.