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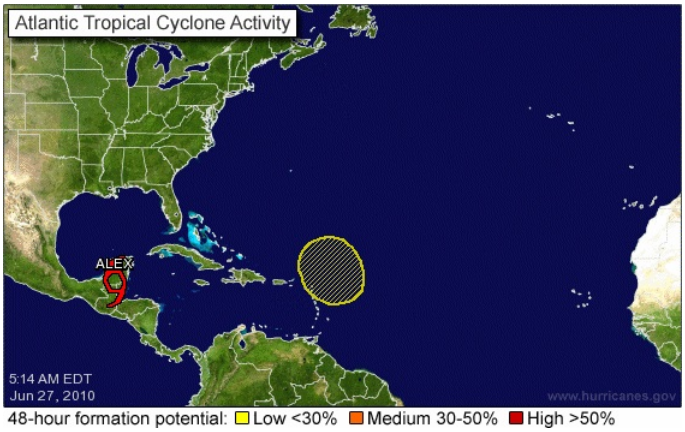
BP's Deepwater Oil Spill - Storm Threat and a Little More Progress - and Open Thread

Posted by Heading Out on June 27, 2010 - 10:50am
Topic: Environment/Sustainability
Tags: deepwater horizon, oil spill, relief wells [list all tags]

Chuck Watson is telling us now that while Alex is now weakening as it goes over the Yucatan, we need to keep an eye on it. Some of the models are showing Alex creeping north a bit, before turning back to Mexico. So while the risk to the Deepwater Horizon area is down, it is not gone completely. There may be high waves affecting the near shore area, even if the storm does not come very close.

One thing that a couple of relatively gentle Hurricane seasons lulls us into forgetting is that when the nucleating storms start to crank up, they can come quite regularly for a significant period of time. Back in 2005, for example, the National Hurricane Center ran out of normal alphabetical names for the storms. I mention that because, while Alex, the first storm of the season, is now landing and crossing the Yucatan Peninsula, there is already another area of concern forming in the Atlantic.



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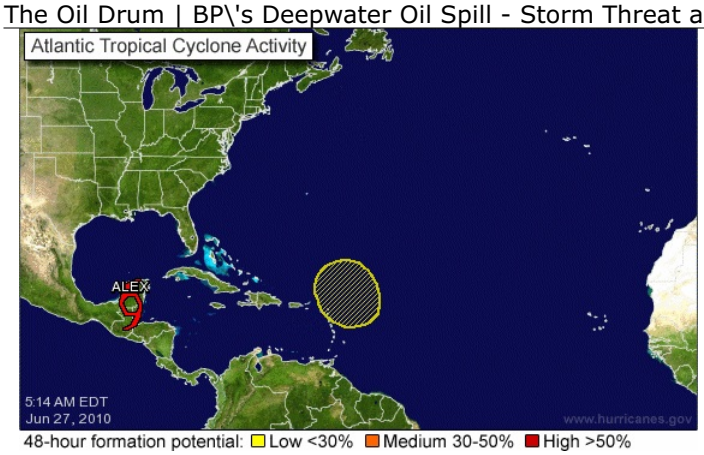


> BP has finished installing the first free standing riser, which has greater survivability than a fixed riser and will be connected to a third vessel arriving at the site of the wellbore next week, the Helix Producer—a redundancy measure also taken under the direction of the federal government.

Given stated concerns over the use being made of foreign aid, the Coast Guard Joint Command also wants you to know that

> To date, the administration has leveraged assets and skills from numerous foreign countries and international organizations as part of this historic, all-hands-on-deck response, including Canada, Germany, Mexico, Netherlands, Norway, the United Nations' International Maritime Organization and the European Union's Monitoring and Information Centre.

The relief well has reached a point where the well needs to be cased and lined, and that is in hand. As the depths get closer to that of the original well (RW at 16,400 ft original well 18,000 ft) I suspect that there may be a little more care than usual taken to ensure that this cement job is good. And once that is complete, then as the drill begins to advance further the "ranging"operation will continue.

End Game in Drilling Relief Wells

I wanted to clarify a little more what I am referring to as the End Game for the drilling of the relief wells. In his remarks the other day, Admiral Allen said:

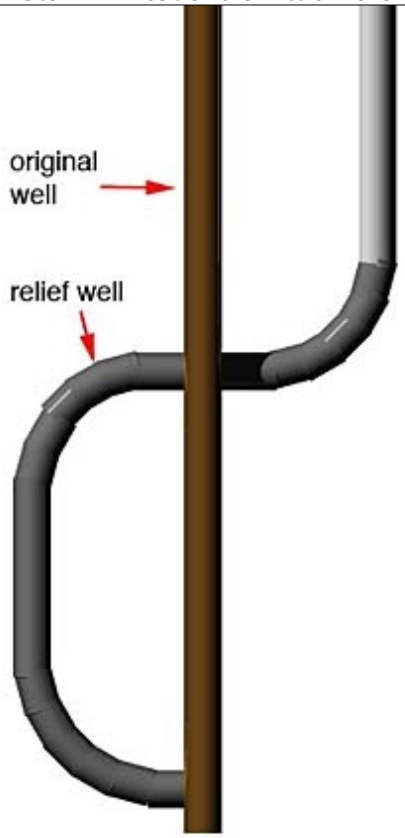
> they're going to try and intercept somewhere around between 16,700 and 17,000 feet. We will confirm that for you and put out a statement tomorrow. They don't have to go clear to the reservoir, which is at 18,000 feet, and what they're going to do is they're going to close in and very slowly close to that point where they will then drill through the wellbore casing, and if they need to, drill through the pipe itself. But you are right; they'll be slightly above the level of the reservoir.

And subsequently he talked about "ranging" to find the exact position of the original well. To do this the relief well has come in relatively horizontally and electrical pulses have been sent down the casing of the original well. I believe that the connections to allow this were being monitored by the Skandi ROV1 until earlier this evening when it moved away.

Skandi ROV1 showing the electrical connections (lhs) to the plate allowing the electrical pulses to be transmitted down the casing.

As the electrical current flow down the casing it will (as Faraday demonstrated, as you no doubt all remember from High School Physics – grin) generate a magnetic field around the path. By including the appropriate instruments on the relief well drill string, it is possible to therefore locate the original well with a much higher degree of precision than from the original dead reckoning of the well location.

Once this has been done, then the well will swing back down to vertical and drill down until it is close to the desired depth, when it will again turn horizontal and drill over to intersect the well. At this point they hope to hit on the centerline of the casing so that they can mill through it, although should they be slightly off they can (as I noted earlier use penetrating charges to create the flow path for the mud to enter the well.



Projected future path of the relief well (Not to scale)