

SATURDAY, JUNE 12, 2010

BP Official Admits to Damage BENEATH THE SEA FLOOR

As I noted Tuesday, there is growing evidence that BP's oil well - technically called the "well casing" or "well bore" - has suffered damage beneath the level of the sea floor.

The evidence is growing stronger and stronger that there is substantial damage beneath the sea floor. Indeed, it appears that BP officials themselves have admitted to such damage. This has enormous impacts on both the amount of oil leaking into the Gulf, and the prospects for quickly stopping the leak this summer.

On May 31st, the Washington Post [noted](#):

Sources at two companies involved with the well said that BP also discovered new damage inside the well below the seafloor and that, as a result, some of the drilling mud that was successfully forced into the well was going off to the side into rock formations.

"We discovered things that were broken in the sub-surface," said a BP official who spoke on the condition of anonymity. He said that mud was making it "out to the side, into the formation."

On June 2nd, Bloomberg [pointed out](#):

Plugging the well is another challenge even after BP successfully intersects it, Robert Bea, a University of California Berkeley engineering professor, said. **BP has said it believes the well bore to be damaged**, which could hamper efforts to fill it with mud and set a concrete plug, Bea said.

Bea is an [expert in offshore drilling](#) and a high-level [governmental adviser](#) concerning disasters.

On the same day, the Wall Street Journal [noted](#) that there might be a leak in BP's well casing 1,000 feet beneath the sea floor:

BP PLC has concluded that its "top-kill" attempt last week to seal its broken well in the Gulf of Mexico may have failed due to a malfunctioning disk inside the well about **1,000 feet below the ocean floor**.

The broken disk may have prevented the heavy drilling mud injected into the well last week from getting far enough down the well to overcome the pressure from the escaping oil and gas, people familiar with BP's findings said. They said

much of the drilling mud may also have escaped from the well into the rock formation outside the wellbore.

On June 3rd, The Canadian Press [quoted](#) the top government official in charge of the response to the oil spill - Admiral Thad Allen, the commandant of the Coast Guard - as pointing to the same possibility:

The failure of the so-called top kill procedure - which entailed pumping mud into the well at high velocity - suggested "**there actually could be something wrong with the well casing, and there could be open communication in the strata or the rock formations below the sea floor,**" Allen said.

On June 7th, Senator Bill Nelson told MSNBC that he's investigating reports of oil seeping up from additional leak points on the seafloor:

Senator Bill Nelson (D-FL): Andrea we're looking into something new right now, that there's reports of oil that's seeping up from the seabed... which would indicate, if that's true, that the well casing itself is actually pierced... **underneath the seabed.** So, you know, the problems could be just enormous with what we're facing.

Andrea Mitchell, MSNBC: Now let me understand better what you're saying. If that is true that it is coming up from that seabed, even the relief well won't be the final solution to cap this thing. That means that we've got oil gushing up at disparate places along the ocean floor.

Sen. Nelson: That is possible, unless you get the plug down low enough, below where the pipe would be breached.

Indeed, loss of integrity in the well itself may explain why BP is drilling its relief wells more than [ten thousand feet](#) beneath the leaking pipes on the seafloor (and see [this](#)).

Yesterday, recently-retired Shell Oil President John Hofmeister [said](#) that the well casing below the sea floor may have been compromised:

[Question] What are the chances that the well casing below the sea floor has been compromised, and that gas and oil are coming up the outside of the well casing, eroding the surrounding soft rock. Could this lead to a catastrophic geological failure, unstoppable even by the relief wells?

John Hofmeister: **This is what some people fear has occurred. It is also why the "top kill" process was halted.** If the casing is compromised the well is that much more difficult to shut down, including the risk that the relief wells may not be enough. If the relief wells do not result in stopping the flow, the next and drastic step is to implode the well on top of itself, which carries other risks as well.

As [noted](#) yesterday in The Engineer magazine, an official from Cameron International - the manufacturer of the blowout preventer for BP's leaking oil drilling operation - noted that one cause of the failure of the BOP could have been damage to the well bore:

Steel casing or casing hanger could have been **ejected from the well** and blocked the operation of the rams.

Oil industry expert Rob Caverner believes that the casing might be damaged beneath the sea floor, noting:

The real doomsday scenario here... is if that casing gives up, and it does come through the other strings of pipe. Remember, it is concentric pipe that holds this well together. If it comes into the formation, basically, you've got uncontrolled [oil] flow to the sea floor. And that is the doomsday scenario.

Caverner also said BP must "keep the well flowing to minimize oil and gas going out into the formation on the side":

And prominent oil industry insider Matt Simmons believes that the well casing may have been destroyed when the oil rig exploded. Simmons was an energy adviser to President George W. Bush, is an adviser to the Oil Depletion Analysis Centre, and is a member of the National Petroleum Council and the Council on Foreign Relations.

On May 26th, Simmons referred to this issue on MSNBC:

We have a right to know what's really going on.

Given the impact on America's people, natural resources and economy, BP and the government must fully disclose the amount of damage underneath the sea floor, and what that means for the efforts to cap the well.

Charley said...

They don't know what the "damage" is beneath the sea floor. Perhaps you would like to go down there, beneath the sea floor 13,000 ft and make an assessment? Please tell us exactly how you will get there.

BP stated from the beginning that the Relief Well was the only way to get this one under control. The relief well HAS to be drilled to very near the bottom of the blowout. It is the column of mud and the weight of that column that keeps the flow in check. That is how it was done to drill this well and drill almost all wells. The relief well will intercept the blowout, pump weighted drilling mud into it, and reestablish the control. Note that the blowout well WAS under control when drilled, and when the drill string was tripped out of the hole. The mud had it under control while the casing string was run to the bottom and the cement job pumped. The pressure at TD was about 13,500#, not the 50,000 that Simmons states. The well blew out only when the pressure was reduced by removing some of the mud and causing a pressure reduction. There evidently was some failure of the cement job.

The relief well will intersect the blowout and pump mud into it from the bottom to reestablish the mud column and kill the well. Pump the heavy weight mud at a high rate and it will make the flow heavier and slower, then slower and heavier, then heavier still until the column of mud becomes heavy enough to kill the flow. Then they can pump the cement job again from the bottom, and include any formation sealing / blocking additives that they need to keep it from leaking out.

Simmons has made the claim that the wellhead with the BOP attached has been blown out along with the casing. You can see it on all of the ROV camera feeds. It is in the ground just where it is supposed to be. If 13,000 ft of pipe had been jacked out of the sea floor as Simmons claims, how did no one notice it when it came up through the rig floor? It is nonsense.

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