BP trial to focus on scientists' spill estimates

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In this July 11, 2010, file photo, provided by BP, workers onboard the Transocean Discoverer Inspiration deploy the 3 Ram Capping Stack to the Deepwater Horizon BOP in the Gulf of Mexico. Experts for BP and the federal government used the data from the gauges in calculating how much how much oil spilled into the Gulf during the 87 days it took to plug the well. But they will provide a judge with widely different estimates when the second phase of a trial resumes Monday, Oct. 7, 2013, for litigation spawned by the spill. (AP Photo/BP, Marc Morrison, File)

When BP used a capping stack to seal its blown-out well in the Gulf of Mexico, the device didn't just shut the source of the nation's worst offshore oil spill. Its pressure gauge also provided scientists with crucial data about the rate that crude was spewing from the well when engineers finally plugged the leak in July 2010.

Experts for the British oil giant and the federal government used the pressure gauge data in calculating how much oil spilled into the Gulf during the 87 days it took to plug the well. But each side will provide a federal judge with very different estimates when the second phase of a trial resumes Monday for litigation spawned by the spill.

U.S. District Judge Carl Barbier is scheduled to hear three weeks of testimony from dueling experts to help him calculate how much oil spilled into the Gulf—a key factor in determining how much more money BP and its contractors owe for their roles in the deadly disaster.

Justice Department attorneys will try to persuade Barbier that the pressure gauge on the capping stack provided the best set of data about the flow of oil from the well.

"The pressure data, collection rates, and geometry of the capping stack are by far the most accurate and reliable sources of information on flow rate, and were recognized as such by all parties at the time," they wrote in a pretrial filing.

BP, however, says the government's experts ignored other important data. Company lawyers say its experts used a "proven methodology" that doesn't require "simplistic and unverified assumptions about flow conditions."

"In contrast, the United States' experts employ unproven methods that require significant assumptions and extrapolations in lieu of, and even directly inconsistent with, the available data and other evidence," company attorneys wrote.

The Deepwater Horizon drilling rig was working at the site of BP's Macondo well off the Louisiana coast when the well blew out April 20, 2010. The explosion on the rig killed 11 workers and set off a massive fire. The rig sank less than two days later to the bottom, about a mile (1.6 kilometers) below the Gulf surface.

The Justice Department's experts estimate 4.2 million barrels, or 176 million gallons (666 million liters) spilled into the Gulf after the blowout . BP has urged Barbier to use an estimate of 2.45 million barrels, or nearly 103 million gallons (390 million liters), in calculating any fines under the Clean Water Act. Both sides agree that 810,000 barrels, or 34 million gallons (129 million liters), escaped the well but were captured before the crude could pollute the Gulf.

Under the Clean Water Act, a polluter can be forced to pay a maximum of either $1,100 or $4,300 per barrel of spilled oil. The higher maximum applies if the company is found grossly negligent, as the government argues BP should be. But penalties can be assessed at amounts lower than those caps.

Using the government's figures, a maximum penalty if the company is found grossly negligent could total $18 billion. Using the company's figures, that maximum penalty would be around $10.5 billion.

For the trial's first phase, Barbier heard eight weeks of testimony about the causes of the April 2010 well blowout.

Barbier divided the trial's second phase into two parts. For the first

segment, he heard four days of testimony last week about BP's efforts to cap the well. He set aside 12 days of testimony for the second segment, which will consist almost exclusively of technical testimony by experts.

Government experts believe the oil was flowing from the well at a higher rate shortly after the blowout than it was when the well was sealed with the capping stack.

"Basic principles of oil production hold that reservoir pressure depletes and flow rates wane over time," Justice Department attorneys wrote.

BP's experts concluded that flow rates increased over time, due in part to the erosion of steel rams on the rig's blowout preventer. Martin Blunt, a BP expert who is a professor of petroleum engineering at Imperial College in London, also took other factors into consideration, including the "compressibility" of the rocks in the reservoir BP was drilling.

"In assessing the data, Dr. Blunt uses a conservative lens," BP attorneys wrote. "Dr. Blunt accounts for fundamental geological facts and principles of physics acknowledged by United States experts but omitted in their flow calculations."

Calculating the rate that oil was flowing from the well has been a contentious issue from the beginning of the disaster.

Marcia McNutt, who was director of the U.S. Geological Survey at the time of the blowout, led the government's Flow Rate Technical Group and frequently interacted with BP officials while its engineers scrambled to seal the well. In videotaped testimony shown to Barbier last week, McNutt said it didn't appear that anyone from the government was inside BP's "circle of trust" when it came to sharing data about a procedure called "top kill" that failed to seal the well.

McNutt also said it took longer for her team of scientists to arrive at a flow-rate estimate because they got poor data from BP.

"Did you feel that BP was not a willing partner when it came to flow rate?" a lawyer for Deepwater Horizon rig owner Transocean Ltd. asked McNutt.

"There was this tenseness," McNutt said. "It was almost kind of a chill in the room when flow-rate issues came up."

Timothy Crone, a professor of marine geophysics at Columbia University, was the lead researcher on what was billed in September 2010 as the first independent, peer-reviewed study of the leak's volume. Crone and a colleague analyzed underwater video to arrive at an estimate that closely mirrors the federal government's current calculation of how much oil escaped the well.

Crone said he is surprised the topic is still being debating three years later.

"The majority of scientists who worked on the problem are in agreement," he said. "I can understand why BP wants to make it a question again, but in my opinion it's not."