

McClatchy Washington Bureau

Posted on Fri, Jul. 23, 2010

Researchers confirm subsea Gulf oil plumes are from BP well

Sara Kennedy | McClatchy Newspapers

last updated: July 24, 2010 01:33:33 PM

ST. PETERSBURG, Fla. — Through a chemical fingerprinting process, University of South Florida researchers have definitively linked clouds of underwater oil in the northern Gulf of Mexico to BP's runaway Deepwater Horizon well — the first direct scientific link between the subsurface oil clouds commonly known as "plumes" and the BP oil spill, USF officials said Friday.

Until now, scientists had circumstantial evidence, but lacked that definitive scientific link.

The announcement came on the same day that the National Oceanic and Atmospheric Administration announced that its researchers have confirmed the existence of the subsea plumes at depths of 3,300 to 4,300 feet below the surface of the Gulf. NOAA said its detection equipment also implicated the BP well in the plumes' creation.

Together, the two studies confirm what in the early days of the spill was denied by BP and viewed skeptically by NOAA's chief — that much of the crude that gushed from the Deepwater Horizon well stayed beneath the surface of the water.

"What we have learned completely changes the idea of what an oil spill is," said chemical oceanographer David Hollander, one of three USF researchers credited with the matching samples of oil taken from the water with samples from the BP well. "It has gone from a two-dimensional disaster to a three-dimensional catastrophe."

The other scientists involved in making the link, USF said, were biological oceanographer Ernst Peebles and geological oceanographer David Naar.

The finding is important because oil that escaped from the mile-deep, blown-out well had been treated with dispersants, which broke the oil in the water column into tiny droplets, and therefore did not form an oil slick at the surface, said Richard H. Pierce, senior scientist and director of the Center for Ecotoxicology at Sarasota's Mote Marine Laboratory.

"It's more readily taken up and absorbed and ingested by marine animals," he explained.

Although dispersed oil degrades more quickly over the long-run, in the short-term, it poses a more toxic threat to marine life, Pierce said.

"So, we've been very concerned, and it is critical USF has verified it," he said.

The full report was not released Friday, but will be available sometime next week, USF spokeswoman Vickie Chachere said.

BP declined to comment on the USF discovery. "We have only seen media reports, and have not yet seen the report and underlying data," BP spokesman Phil Cochrane said in an e-mail.

USF scientists found microscopic droplets of biodegraded oil at varying depths beneath the Gulf's surface, the university said in a statement.

One layer was 100 feet thick; it was found 45 nautical miles north-northeast of the well site, officials said.

The researchers found the plumes after models created by a USF expert in ocean currents, Robert Weisberg, predicted subsurface oil from the Deepwater Horizon well would move toward the north-northeast, USF said.

"The clouds were found near the DeSoto Canyon, a critical area that interacts with Florida's spawning grounds," USF said.

The NOAA study made similar findings. According to the report, which was reviewed by 19 scientists known as the Joint Analysis Group, data collected by five research ships deployed in the Gulf from May 19 to June 19 showed oil suspended in the water between 1,000 and 1,300 meters — about 3,280 feet to 4,265 feet.

The NOAA scientists detected the oil by measuring its fluorescence — many of the droplets are too small to detect otherwise — and said that that measurement linked it to the BP well.

The report said the oil had been detected in heaviest concentrations near the BP well and that its concentrations dropped as the ships moved away from the well, but that not enough samples had been taken to determine the full "horizontal extent" of the plumes.

The report also said the impact of the oil on sealife had yet to be determined. Even at low concentrations, the report said, the oil "might be biologically meaningful" because of the length of time fish and other organisms would be exposed to it.

The report also said that scientists had detected lower levels of dissolved oxygen in the water at depths below 3,280 feet, but that they couldn't determine why the levels were low with certainty. They said the levels were not so low as to be fatal to sealife.

Steven Murawski, chief scientist for NOAA's National Marine Fisheries Service, said the data confirm that the subsea plumes of oil were the result of the Deepwater Horizon well.

"That's a real smoking gun, as far as we're concerned," he said. "It really is a flow" from the well.

In May, when scientists first reported that they had discovered oil beneath the Gulf's surface and blamed it on the Deepwater Horizon spill, they were denounced by both BP and NOAA chief Jane Lubchenco.

BP CEO Tony Hayward denied that such plumes existed and Lubchenco called the reports "misleading, premature and, in some cases, inaccurate."

On the Web

[Read the NOAA report](#)

MORE FROM MCCLATCHY