



**Admiral Allen; Dr. McNutt Provide Updates on Progress
of Scientific Teams Analyzing Flow Rates from BP's Well**

Interior News

Sent by: Frank Quimby@DOI

06/10/2010 05:38 PM



OFFICE OF THE SECRETARY
**U.S. Department
of the Interior**

www.doi.gov

News Release

Admiral Allen; Dr. McNutt Provide Updates on Progress of Scientific Teams Analyzing Flow Rates from BP's Well

WASHINGTON -- Under the direction of National Incident Commander Admiral Thad Allen, the Flow Rate Technical Group (FRTG), which is led by United States Geological Survey Director Dr. Marcia McNutt, and a scientific team led by Energy Secretary Steven Chu are analyzing new data and bringing together several scientific methodologies to develop an updated estimate of how much oil is flowing from BP's leaking oil well in the Gulf of Mexico. The updated estimate, which will bring together the ongoing work of scientists and engineers from the federal government, universities, and research institutions, will be of how much oil has been flowing since the riser was cut on June 3.

“Developing accurate and scientifically grounded oil flow rate information is vital, both in regards to the continued response and recovery, as well as the important role this information may play in the final investigation of the failure of the blowout preventer and the resulting spill,” said Admiral Allen, the National Incident Commander. “Top government and independent scientists are working non-stop to analyze all the information available and refine assessments being developed through numerous methodologies. I have directed Dr. McNutt and Secretary Chu to analyze the latest data and assess the various methodologies that are being used and bring

them together into an updated best estimate of how much oil is now flowing from BP's well. They will have that updated best estimate in the coming days."

Dr. McNutt announced today that three of the scientific teams analyzing flow rates have reached updated assessments, based on new data or analysis, of flow rates from BP's well before the riser was cut on June 3. The Department of the Interior and the Department of Energy have also directed BP to provide precise differential pressure measurements inside and outside the top hat to allow federal scientists to develop another independent estimate of how much oil is flowing from BP's well.

"Each of the methodologies that the scientific teams is using has its advantages and shortcomings, which is why it is so important that we take several scientific approaches to solving this problem, that the teams continue working to refine their analyses and assessments, and that those many data points inform the updated best estimate that we are developing," said Dr. McNutt.

Below is a summary of the independent scientific methodologies that are being used to develop assessments of flow rates.

1. Analysis of Pressure Readings (DOE scientists led by Secretary Chu)

A team of federal scientists led by Energy Secretary Steven Chu is analyzing pressure readings from the BOP stack and the riser to assess flow rates and how flow rates may have changed as a result of the riser being cut. The Department of the Interior and the Department of Energy have directed BP to provide precise differential pressure measurements inside and outside the top hat to allow federal scientists to develop another independent estimate of how much oil is flowing from BP's well.

2. Flow Rate Technical Group

The Flow Rate Technical Group (FRTG), which was convened by Admiral Allen and which is led by USGS Director Dr. Marcia McNutt, is comprised of several Sub-Teams that are pursuing independent approaches to estimating the oil flow rate from the damaged well. The FRTG will

soon have an assessment of how much oil has been flowing from BP's well since the riser was cut on June 3.

The Plume Modeling Team of the FRTG is pursuing the approach of observing video of the oil/gas mixture escaping from the damaged well, using particle image velocimetry analysis to estimate fluid velocity and flow volume. On May 27, the Plume Modeling Team, which analyzed video obtained from BP, provided an initial lower bound estimate of 12,000 to 25,000 barrels of oil per day, but at that point were continuing their work to provide an upper bound estimate. Based on additional video that BP was directed to provide, members of the Plume Modeling Team have now calculated updated lower and upper bound range estimates for a period of time before the Riser Insertion Tube Tool was inserted and before the riser was cut. Most of the experts have concluded that, given the limited data available and the small amount of time to process that data, the best estimate for the average flow rate for the leakage prior to the insertion of the RITT is between 25,000 to 30,000 barrels per day, but could be as low as 20,000 barrels per day or as high as 40,000 barrels per day.

The Mass Balance Team of the FRTG is using remote sensing data from deployment of the Airborne Visible InfraRed Imaging Spectrometer (AVIRIS) and satellite imagery to calculate the amount of oil on the ocean surface on a certain day. The team is correcting the value for oil evaporated, skimmed, burned, and dispersed up to that day and divided by time to produce an average rate. Based on observations on May 17th, and given the amount of oil observed and the adjusted calculations for the amount of oil that has been burned, skimmed, dispersed, or evaporated the initial estimate from the Mass Balance Team that was announced on May 27 was in the range of 12,000 to 19,000 barrels of oil per day. The team continued to refine its estimate and has concluded that the best estimate for the average flow rate was in the range of 12,600 to 21,500 barrels of oil per day.

The Reservoir Modeling Team of the FRTG will describe the geologic formations as well as composition and pressures of the oil, natural gas, and other compounds that are being released. Using open-hole logs; pressure, volume, and temperature data; core samples; and analog well or reservoir data; the team will populate computer models and determine flow rate from targeted sands in the well as a function of bottomhole pressure. The reservoir modeling team is continuing to work on independent estimates that will be completed later this month

The Nodal Analysis Team of the FRTG will use input from reservoir modeling (including pressure, temperature, fluid composition and properties over time) and pressure and temperature conditions at the leak points on the sea floor, along with details of the geometries of the well, BOP, and riser to calculate fluid compositions, properties, and fluxes from both before and after riser removal. The nodal analysis team is continuing to work on independent estimates that will be completed later this month

3. Woods Hole Analysis

In coordination with the Unified Command, a team of experts lead by Woods Hole Oceanographic Institution (WHOI) and assisted by researchers from Johns Hopkins University, University of Georgia and Massachusetts Institute of Technology used acoustic technologies to measure flow rates after the top-kill attempt ended and before the riser was cut. Using an ROV, flow estimates have been derived from three different view angles above the riser pipe and three different view angles above the BOP. Woods Hole Oceanographic's initial total flow rate estimate of 0.12m³/s to 0.23m³/s from before the riser was cut is a preliminary bulk flow estimate. This outflow may contain gases, liquids, and solids including natural gas, condensates, oil, sediments, and produced water.

To view the Plume Team Estimates, [click here](#).

To view the Plume Team Statement, [click here](#).

To view the Woods Hole Statement, [click here](#).

For a list of FRTG Team membership [click here](#).

For a list of FRTG member bios [click here](#).

For information about the response effort, visit www.deepwaterhorizonresponse.com.