

# National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

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## Chief Counsel's Report Released

### *Provides Significant Details from Spill Commission's Investigation of Macondo Well Blowout and Deepwater Horizon Rig Explosion*

On January 11th, the National Oil Spill Commission released its final report to the President, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling*, which included a chapter on the well blowout and rig explosion. That chapter summarized the results of the investigation by the Commission's Chief Counsel, Fred Bartlit, and his investigative team into the causes of the Macondo well blow out and *Deepwater Horizon* rig explosion. Today, the Commission is releasing the full report on the Chief Counsel's investigation, which provides details of the series of engineering and management mistakes by those responsible for the drilling operations, including BP, Halliburton, and Transocean.

The Chief Counsel is issuing this additional report to provide the American public, policymakers, and industry with the fullest possible account of the investigation into the causes of the well blowout which was summarized in the Commission's report. The Chief Counsel's investigative team unearthed and analyzed far more information than could have been included in the Commission's report.

In their foreword to the Chief Counsel's report, Commission Co-Chairs Bob Graham and William Reilly state, "Fred Bartlit and his investigative team have provided the most comprehensive, coherent, and detailed account of the events leading up to the blowout and explosion . . . In clear, precise, and unflinching detail this report lays out the confusion, lack of communication, disorganization, and inattention to crucial safety issues and test results that led to the deaths of 11 men and the largest offshore oil spill in our nation's history."

Chief Counsel Bartlit said, "The sad fact is that this was an entirely preventable disaster. Poor decisions by management were the real cause. Our team of investigators unearthed significant information about the blowout and greatly advanced our understanding of this tragedy. We are

putting forward this additional detailed report in the hope that the public, industry, and government officials will learn from it, and future disasters might be prevented.”

The Chief Counsel’s Report, complete with illustrations and animated graphics, is only available digitally and can be viewed at <http://www.oilspillcommission.gov/chief-counsels-report>.

Among the details being presented publicly for the first time in the Chief Counsel’s report are these:

- **BP was aware of problems with Halliburton personnel and work product years before the blowout.** In 2007, a consulting firm issued a quality control report warning BP that Halliburton’s lab technicians “do not have a lot of experience evaluating data” and that BP needed to improve communication with Halliburton “to avoid unnecessary delays or errors in the slurry design testing.” BP’s own cementing expert described the “typical Halliburton profile” as “operationally competent and just good enough technically to get by.” And BP’s engineers had been forced to “work around” the Halliburton engineer assigned to Macondo for years—they said that he was “not cutting it” and that he often waited too long to conduct critical tests. But they neither reviewed his work at Macondo carefully, nor even checked to see that he conducted testing in a timely manner—even though they knew that their last minute changes to the cement design test could cause problems and that using nitrogen foamed cement could pose “significant stability challenges.” (pages 113,116)
- **Although testing of the blowout preventer may ultimately reveal flaws in that equipment, BOP failures were NOT the root cause of the blowout.** The rig crew activated the BOP, at best, only moments before the blowout began. By then, hydrocarbons had already gone past the BOP into the riser and were expanding rapidly towards the rig floor. Even if the BOP had functioned flawlessly, the rig would have exploded and 11 men would have died. (page 198)
- **A BP engineering reorganization in early 2010 resulted in delays and distractions for the team drilling the Macondo well.** After the reorganization, the BP well team leader wrote his supervisor: “Everybody wants to do the right thing, but, this huge level of paranoia from engineering leadership is driving chaos. . . What is my authority?” The reorganization appears to have had an impact on decision-making in the weeks leading up to the blowout, the time during which virtually all of the decisions identified by the Chief Counsel’s team as increasing the risk of a blowout were made. (page 227)
- **BP’s own well site leaders accepted facially implausible explanations for the negative test results.** Less than a week after blowout, one of the two BP company men who had been on the *Deepwater Horizon* during the crucial test told senior engineers “I believe there is a bladder effect,” and that this effect—not failed cement—was the source of the problematic test results. When BP’s vice president for drilling and completions received the email, he responded with a string of question marks: “????????????????????????????????????????????????????????????.” The vice president who wrote this email was physically present on the rig during the crucial test. If anyone had

consulted him or any other shore-based engineer, the blowout might never have happened. Every industry expert the investigative team met with dismissed the so-called bladder effect as a fiction that could not have accounted for the pressure readings the men saw on April 20. (page 229)

- **Physical evidence taken from the well shows that hydrocarbon flow almost certainly came to the surface through the “shoe track” of the well and up the production casing.** Cement in the shoe track should have blocked this flow, which further calls into question the quality of the cement job. (page 44-45)
- **Although BP engineers recognized that the Macondo cement job would be a difficult one, and that Halliburton’s engineer was not doing “quality work,” they did not fully review his cement design.** BP’s Macondo team asked an internal cement specialist to provide technical support on an “ad hoc” basis, but he left the country without carefully reviewing the cement design, and never saw any information about the cement slurry design or lab testing results until six days after the blowout. When he reviewed those materials, several aspects of Halliburton’s cement design surprised him. (page 124)
- **The Transocean crew missed several signs of a “kick” – that is, hydrocarbons in the riser -- on the night of the blowout.** At 9:27 pm, less than 15 minutes before the blowout began, they did notice an anomaly in pressure data from the well, and shut down operations to investigate. They noticed several anomalies that should have caused serious concern, but showed no hint of alarm. (page 180)
- **BP’s well design decisions complicated efforts to cap the well.** BP was forced to be especially cautious in its capping efforts because it believed that capping the well at the top could cause oil to burst through the sides of the well and flow up through the rocks to the sea floor. BP increased the risks of such problems by installing pressure relief “burst disks” in the well and by choosing not to install a “protective casing” at Macondo. (page 63)
- **Once the Chief Counsel’s team identified serious concerns with Halliburton’s cement slurry design and testing process, Halliburton declined to cooperate with the investigation effort.** Halliburton refused to allow the team to conduct further interviews of its cementing engineer and lab personnel. Halliburton has not provided scientific data to support some of its technical assertions, and declined to provide documents regarding lab testing protocols and evaluation criteria. Halliburton also has not used or made available its proprietary cement modeling software to back up its assertions that the Macondo well failed because BP did not use enough centralizers. The Chief Counsel’s team believes that it is reasonable to infer that Halliburton would have provided these materials if they had been favorable to Halliburton. (pages 97, 120-121)
- **The Chief Counsel’s report settles the confusion over what type of centralizers BP shipped to the rig.** BP shipped additional centralizers to the rig to run on the final casing string, but then decided not to use them. Until now, there has been no clear account of what type of centralizers BP shipped to the rig and why they were not used. The Chief Counsel’s report identifies the type of centralizers that were delivered—and includes an

actual photograph of them taken by a BP engineer. It also explains why BP's Macondo team thought they were the wrong type. (page 85)

- **BP's on-duty Well Site Leader was not present during preparations for the critical negative pressure test, and may not have been present during the beginning of the negative pressure test itself.** Industry experts say that Well Site Leaders should be present on the rig floor during this crucial period. On the *Deepwater Horizon* rig, fundamental mistakes were made during the negative pressure test, beginning with the test set-up. The misinterpretation of test results was a major factor contributing to the blowout. (page 164)
- **BP's penultimate version of its temporary abandonment procedures included not one but two negative pressure tests.** BP dropped one of these tests in its final version. According to one expert, this second test would have been less likely to have been misinterpreted by Well Site Leaders and the rig crew. At the very least, it would have given the *Deepwater Horizon* another opportunity to realize that the cement job had failed. (page 133)
- **BP and the Macondo team were aware of ways to carry out its temporary abandonment procedure that could have reduced risk.** BP decided to set a lockdown sleeve during temporary abandonment operations (rather than later in the well project) to save time (5.5 days) and cost (\$2 million). Its engineers also believed that they should set a backup cement plug and a lockdown sleeve as the last steps in the temporary abandonment sequence. Because of these decisions, BP instructed the rig crew to displace over 3000 feet of heavy drilling mud from the well with seawater—severely underbalancing the well—before setting additional backup barriers to hydrocarbon flow. The Macondo team knew this was unnecessary, and that they could use alternative procedures to avoid underbalancing the well before setting additional barriers. They even included such procedures in their plans at various points. But they ultimately rejected those options in favor of an approach that created significant and unnecessary risks. (pages 135-139)

Fred Bartlit is widely regarded as one of America's leading trial lawyers. He came to the National Oil Spill Commission uniquely qualified to lead the investigation of the BP blowout. Bartlit played a major role in investigating the *Piper Alpha* North Sea Oil Platform disaster in 1989, in which 167 people died in the worst oil rig explosion disaster prior to the *Deepwater Horizon*. Bartlit's investigation identified the causes of that 1989 explosion, both in terms of its engineering and regulatory failures. His work as trial counsel during those year-long hearings in Aberdeen, Scotland, played a prominent role in the resulting judicial opinion known as the "Cullen Report," which led to widespread improvements in industrial drilling practices in the North Sea.

Bartlit's investigation team notably included Richard Sears, the Oil Spill Commission's Senior Science and Engineering Advisor. Now retired from Shell Oil, Sears has more than 30 years of experience with the petroleum industry as a geophysicist. He is widely regarded by industry officials and academics as one of the most prominent experts on the kinds of drilling and engineering issues involved in the Gulf spill. Sears provided invaluable assistance to the Commission in identifying the

root causes of the spill and in formulating recommendations to ensure that similar mistakes would not be repeated. Sears has recently served a Visiting Scientist at the Massachusetts Institute of Technology and on the Advisory Board of Stanford's School of Earth Sciences.

President Barack Obama established the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling through Executive Order 13543 on May 21, 2010. The 7-person Commission investigated the relevant facts and circumstances concerning the root causes of the *Deepwater Horizon* explosion and offered proposals to guard against, and mitigate the impact of, any future oil spills associated with offshore drilling. Those findings and recommendations are contained in the Commission's final report and available for viewing or downloading at [www.oilspillcommission.gov](http://www.oilspillcommission.gov).

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