UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

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IN RE: OIL SPILL BY THE OIL RIG *DEEPWATER HORIZON* IN THE GULF OF MEXICO ON APRIL 20, 2010

DOCKET NO. MDL-2179
SECTION "J"
NEW ORLEANS, LA
MONDAY, SEPTEMBER 30, 2013

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IN RE: THE COMPLAINT AND PETITION OF TRITON ASSET LEASING GMBH, ET AL

DOCKET NO. 10-CV-2771
SECTION "J"

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UNITED STATES OF AMERICA
V.
BP EXPLORATION & PRODUCTION, INC., ET AL

DOCKET NO. 10-CV-4536
SECTION "J"

****

DAY 1 MORNING SESSION
TRANSCRIPT OF NONJURY TRIAL PROCEEDINGS
HEARD BEFORE THE HONORABLE CARL J. BARBIER
UNITED STATES DISTRICT JUDGE

APPEARANCES:

FOR THE PLAINTIFFS:

HERMAN HERMAN & KATZ
BY: STEPHEN J. HERMAN, ESQ.
820 O'KEEFE AVENUE
NEW ORLEANS, LA 70113

DOMENGEAUX WRIGHT ROY & EDWARDS
BY: JAMES P. ROY, ESQ.
556 JEFFERSON STREET, SUITE 500
POST OFFICE BOX 3668
LAFAYETTE, LA 70502

APPEARANCES CONTINUED:

LEVIN PAPANTONIO THOMAS MITCHELL
RAFFERTY & PROCTOR
BY: BRIAN H. BARR, ESQ.
316 SOUTH BAYLEN STREET, SUITE 600
PENSACOLA, FL 32502

WEITZ & LUXENBERG
BY: ROBIN L. GREENWALD, ESQ.
700 BROADWAY
NEW YORK CITY, NY 10003

LUNDY, LUNDY, SOILEAU & SOUTH
BY: MATTHEW E. LUNDY, ESQ.
501 BROAD STREET
LAKE CHARLES, LA 70601

MORGAN & MORGAN
BY: FRANK M. PETOSA, ESQ.
188 EAST CAPITOL STREET, SUITE 777
JACKSON, MS 39201

FOR THE STATES' INTERESTS:

ALABAMA ATTORNEY GENERAL'S OFFICE
BY: COREY L. MAZE, ESQ.
WINFIELD J. SINCLAIR, ESQ.
500 DEXTER AVENUE
MONTGOMERY, AL 36130

FOR THE STATE OF LOUISIANA:

STATE OF LOUISIANA
BY: JAMES D. CALDWELL,
ATTORNEY GENERAL
1885 NORTH THIRD STREET
POST OFFICE BOX 94005
BATON ROUGE, LA 70804

APPEARANCES CONTINUED:

KANNER & WHITELEY
BY: ALLAN KANNER, ESQ.
DOUGLAS R. KRAUS, ESQ.
701 CAMP STREET
NEW ORLEANS, LA 70130

HENRY DART, ATTORNEYS AT LAW
BY: HENRY DART, ESQ.
510 NORTH JEFFERSON STREET
COVINGTON, LA 70433

FOR THE UNITED STATES OF AMERICA:
U.S. DEPARTMENT OF JUSTICE
TORTS BRANCH, CIVIL DIVISION
BY: STEPHEN G. FLYNN, ESQ.
POST OFFICE BOX 14271
WASHINGTON, DC 20044

U.S. DEPARTMENT OF JUSTICE
ENVIRONMENT & NATURAL RESOURCES DIVISION
ENVIRONMENTAL ENFORCEMENT SECTION
BY: THOMAS BENSON, ESQ.
STEVEN O'ROURKE, ESQ.
SCOTT CERNICH, ESQ.
A. NATHANIEL CHAKERES, ESQ.
ANNA CROSS, ESQ.
BETHANY ENGEL, ESQ.
RICHARD GLADSTEIN, ESQ.
JUDY HARVEY, ESQ.
SARAH HIMMELHOCH, ESQ.
P.O. BOX 7611
WASHINGTON, DC 20044

APPEARANCES CONTINUED:

FOR BP EXPLORATION &
PRODUCTION INC.,
BP AMERICA PRODUCTION
COMPANY, BP PLC: LISKOW & LEWIS
BY: DON K. HAYCRAFT, ESQ.
ONE SHELL SQUARE
701 POYDRAS STREET
SUITE 5000
NEW ORLEANS, LA 70139

KIRKLAND & ELLIS
BY: J. ANDREW LANGAN, ESQ.
HARIKLIA KARIS, ESQ.
PAUL D. COLLIER, ESQ.
MATTHEW T. REGAN, ESQ.
BARRY E. FIELDS, ESQ.
300 N. LASALLE
CHICAGO, IL 60654

KIRKLAND & ELLIS
BY: MARTIN BOLES, ESQ.
333 SOUTH HOPE STREET
LOS ANGELES, CA 90071

KIRKLAND & ELLIS
BY: ROBERT R. GASAWAY, ESQ.
JOSEPH A. EISERT, ESQ.
655 FIFTEENTH STREET, N.W.
WASHINGTON, DC 20005

COVINGTON & BURLING
BY: ROBERT C. “MIKE” BROCK, ESQ.
BRIDGET K. O'CONNOR, ESQ.
1201 PENNSYLVANIA AVENUE, NW
WASHINGTON, DC 20004

APPEARANCES CONTINUED:

FOR TRANSOCEAN HOLDINGS LLC, TRANSOCEAN OFFSHORE DEEPWATER DRILLING INC., AND TRANSOCEAN DEEPWATER INC.:

FRILOT
BY: KERRY J. MILLER, ESQ.
ENERGY CENTRE
1100 POYDRAS STREET, SUITE 3700
NEW ORLEANS, LA 70163

SUTHERLAND ASBILL & BRENNAN
BY: STEVEN L. ROBERTS, ESQ.
1001 FANNIN STREET, SUITE 3700
HOUSTON, TX 77002

MUNGER TOLLES & OLSON
BY: MICHAEL R. DOYEN, ESQ.
BRAD D. BRIAN, ESQ.
LUIS LI, ESQ.
GRANT A. DAVIS-DENNY, ESQ.
ALLEN M. KATZ, ESQ.
335 SOUTH GRAND AVENUE, 35TH FLOOR
LOS ANGELES, CA 90071

FOR HALLIBURTON ENERGY SERVICES, INC.:

GODWIN LEWIS
BY: DONALD E. GODWIN, ESQ.
JENNY L. MARTINEZ, ESQ.
BRUCE W. BOWMAN, JR., ESQ.
PRESCOTT W. SMITH, ESQ.
SEAN W. FLEMING, ESQ.
RENAISSANCE TOWER
1201 ELM STREET, SUITE 1700
DALLAS, TX 75270.

APPEARANCES CONTINUED:

GODWIN LEWIS
BY: R. ALAN YORK, ESQ.
GWENDOLYN E. RICHARD, ESQ.
1331 LAMAR, SUITE 1665
HOUSTON, TX 77010

FOR ANADARKO
PETROLEUM CORPORATION,
ANADARKO E&P COMPANY LP:

KUCHLER POLK SCHELL
WEINER & RICHESON
BY: DEBORAH D. KUCHLER, ESQ.
1615 POYDRAS STREET, SUITE 1300
NEW ORLEANS, LA 70112

BINGHAM MCCUTCHEN
BY: WARREN A. FITCH, ESQ.
KY E. KIRBY, ESQ.
2020 K STREET, NW
WASHINGTON, DC 20006

OFFICIAL COURT REPORTER: CATHY PEPPER, CRR, RMR, CCR
CERTIFIED REALTIME REPORTER
REGISTERED MERIT REPORTER
500 POYDRAS STREET, ROOM HB406
NEW ORLEANS, LA 70130
(504) 589-7779
Cathy_Pepper@laed.uscourts.gov

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I N D E X

EXAMINATIONS PAGE

P-R-O-C-E-E-D-I-N-G-S

MONDAY, SEPTEMBER 30, 2013

M O R N I N G   S E S S I O N

(COURT CALLED TO ORDER)

08:12:24

08:12:25 THE DEPUTY CLERK: All rise.

08:12:26 THE COURT: Good morning, everyone. Please be seated.

08:12:49 VOICES: Good morning, Your Honor.

08:12:50 THE COURT: Stephanie, go ahead and call the case,
08:12:53 please.

08:12:53 THE DEPUTY CLERK: MDL 10-2179, In re: Oil spill by
08:12:57 the Oil Rig *Deepwater Horizon* in the Gulf of Mexico on
08:13:00 April 20, 2010; Civil Action 10-2771, In re: The Complaint and
08:13:07 Petition of Triton Asset Leasing GmbH, et al.;
08:13:14 Civil Action 10-4536, United States of America v.
08:13:18 BP Exploration and Production, Incorporated, et al.

08:13:22 THE COURT: All right. Good morning, again. This is
08:13:29 Phase Two of the Transocean *Deepwater Horizon* limitation
08:13:37 liability trial, and also the consolidated civil action by the
08:13:41 United States under the Clean Water Act and Oil Pollution Act
08:13:47 against BP and Anadarko.

08:13:49 We have segregated this Phase Two into two
08:13:54 segments. The first segment is called source control. This
08:13:58 will involve evidence and testimony as to what occurred from

the time the *Deepwater Horizon* sank and the riser fractured and the oil began to escape until, I think it was, approximately 87 days later when the well was capped. That's source control.

In this first phase, which is going to take four days, I've allowed each side of that case to have 15 hours of testimony. We really only have two sides to this phase, and that is the aligned parties on one side versus BP on the other side. The aligned parties include the private claimants represented by the Plaintiffs' Steering Committee, the States, Transocean and Halliburton, as I said, against BP on the other side, 15 hours per side.

Starting next Monday, we'll begin the second segment of Phase Two, which is the so-called Quantification segment. In that case, the parties are the United States on one side versus BP and Anadarko on the other side. I've allowed 12 days, a total of 45 hours for each side, for quantification.

For the benefit of the press and public, I want to emphasize that this Phase Two will not include the assessing of any actual penalties. That will have to be the subject of a later trial.

I want to remind everyone about your cell phones, iPads, tablets, laptops, any other electronic device must be turned off or silent in the courtroom. If you need to use your phone, please step out into the hallway and away from the courtroom doors to do so.

We've already had a breach of the court rules and policies here this morning. Before I walked in the courtroom, somebody showed me a picture that some group called Restore the Delta -- I don't know who is here from Restore the Delta, but you or your representatives have already violated court rules by standing in the courtroom and taking a photograph of the interior of this courtroom. That's a clear breach of court rules and policies.

As a result of that, I've ordered that anyone who is not a lawyer and not a member of the press must turn in their phones, cell phones, laptops, cameras, everything. It's unfortunate. I try to be as liberal as I can on allowing people to bring these devices into the courtroom nowadays, but if we have people that start violating the rules, then other people have to suffer for your violation.

So whoever is here for Restore the Delta, you've already caused a problem for everybody else. I'll just point that out.

No food or drinks are allowed in the courtroom. The exception, of course, is the lawyers can have water at their counsel tables.

I'll repeat again, the taking of any photographs, video anywhere, not only inside the courtroom, but inside the federal courthouse complex, is strictly prohibited. This is not just my rule, by the way, this is a rule or policy of the United States Judicial Conference overseen by the United States Supreme Court.

So any recording, broadcasting or transmitting of any part of a trial in a federal courthouse is strictly prohibited. Anyone who violates these rules may be subjected to sanctions, including fines, seizure of the device and possible ejection from the courtroom and courthouse.

These rules and other matter pertaining to public access to the trial are set forth in the Court's Order of August 22nd, 2013, which is Record Document 11086, a copy of which is posted on the Court's public website at www.laed.uscourts.gov, and at the MDL 2179 link.

There is one overflow courtroom for this trial. That's Room 311, which is on the third floor. The same rules that apply in this courtroom and in the courthouse, of course, apply up there in Room 311.

As we did during Phase One, copies of deposition which are used at trial, exhibits which are introduced at trial and, of course, trial testimony will be regularly posted to a public website -- who is in charge of that website? Is it the same one we had last time -- www.mdl2179trialdocs.com.

That is not a court-supervised or sanctioned website. It's set up by the parties, but that's where those matters will be posted on a regular basis.

All right. As last time, we have two rows up front on my left, but at the right as you enter the courtroom up front, for members of the press.

Our trial schedule will be 8:00 a.m. to 6:00 p.m., Monday through Thursday. We'll have a slightly different schedule during the week of October 14.

October 14 is Columbus Day. We will not hold trial on that day. Instead, we will hold trial on that Friday, October 18.

There is also one other exception or difference in scheduling that week. That Wednesday, October 16, I will be unable to hold trial that afternoon because of an important en banc court meeting that I have to attend, which will take up most all of that afternoon. So, for that reason, October 16, I plan to recess at noon.

What I would like to do now is have counsel who plan to appear during the trial to make their appearances at this time for the record.

MR. BARR: Your Honor, Brian Barr for the plaintiffs.

MR. LUNDY: Your Honor, Matt Lundy for the plaintiffs.

MS. GREENWALD: Good morning, Your Honor, Robin Greenwald for the plaintiffs.

MR. PETOSA: Good morning, Your Honor, Frank Petosa for the plaintiffs.

MR. IRPINO: Good morning, Judge. Anthony Irpino for the plaintiffs.

MR. GODWIN: Good morning, Judge. Don Godwin for Halliburton.

MR. YORK: Alan York, also for Halliburton.

MR. SMITH: Prescott Smith for Halliburton.

MR. MILLER: Kerry Miller for Transocean.

MR. BRIAN: Brad Brian for Transocean and the aligned parties.

MR. LI: Luis Li for Transocean, Your Honor.

MR. DOYEN: Your Honor, Mike Doyen for Transocean, as well.

MR. MAZE: Corey Maze for the State of Alabama.

MR. KANNER: Allan Kanner for the State of Louisiana.

MR. KRAUS: Doug Kraus for the State of Louisiana.

MR. SINCLAIR: Winfield Sinclair for the State of Alabama.

THE COURT: All right.

MR. BROCK: Your Honor, Mike Brock for BP.

We have trial team members here this morning who will be participating in quantification only. Would you like for them to identify themselves?

THE COURT: They can go ahead and introduce themselves.

MS. KARIS: Good morning, Your Honor. Hariklia Karis for BP.

MR. HAYCRAFT: Don Haycraft, BP.

MR. COLLIER: Good morning, Your Honor. Paul Collier for BP.

MR. REGAN: Good morning, Your Honor. Matt Regan on behalf of BP.

MR. FITCH: Your Honor, good morning. Tony Fitch on behalf of Anadarko for the quantification phase.

MS. KIRBY: Ky Kirby for Anadarko.

MR. FLYNN: Good morning, Your Honor. Stephen Flynn for the United States.

MR. O'ROURKE: For the United States, Steve O'Rourke.

MR. CHAKERES: Good morning, Your Honor. Nat Chakeres for the United States.

MR. FIELDS: Good morning, Your Honor. Barry Fields for BP.

MR. BOLES: Good morning, Your Honor. Martin Boles for BP.

THE COURT: You all can check with Stephanie and with our court reporters because what we're going to do, like we did last time, rather than take roll every day, we're just going to have minute entries each day that the following counsel appeared at various times during the trial, okay?

All right. Does anybody have any other preliminary matters before we proceed to opening statements?

Okay. Each side has one hour allotted for opening statements. Who is going to make the opening statements for the aligned parties?

MR. BARR: Your Honor, Brian Barr on behalf of the plaintiffs. Mr. Brian will be speaking as well, and Mr. Godwin.

THE COURT: Who is going first? All right. You're up, Mr. Barr.

Again, I'll remind everyone. It would be very helpful, because of the number of lawyers and parties, and we're going to have five different court reporters during the course of this month-long trial, I ask anyone to please remember to identify yourself and who you represent each time you stand to speak. Try to make sure you're speaking into a microphone somewhere in the courtroom. Speak up loudly and clearly, so we can hear you and so it gets recorded and so forth.

Go ahead, Mr. Barr.

MR. BARR: Good morning, Your Honor. Brian Barr on behalf of the plaintiffs and the aligned parties. May I proceed?

THE COURT: Yes.

OPENING STATEMENTS BY MR. BARR:

87 days. The evidence will show that BP's failure to prepare source control plans and its outright lies to Unified Command and the federal government caused oil to flow from the Macondo Well for 87 days.

BP refused to spend any time or money preparing to stop a deepwater blowout at its source. As a result, it had no source control plans, and it provided no training on how to conduct such an operation.

All of this was a direct result of BP's decision to ignore decades of warnings, warnings that set out that BP did not have adequate plans or procedures to use existing technology for deepwater source control.

BP then made the situation worse by compounding its preparedness failures and corrupting the decision-making process by lying about the amount of flow from the well, the risks, likelihoods of success and reasons for failure of the actions it was taking to stop the flow. Lies have consequences, Your Honor.

The consequence of BP's lies was to extend the time the well was allowed to flow by months. Counsel for Transocean, Mr. Brian, will address these lies during his opening statement. I'm going to focus my time, Your Honor, on BP's failure to prepare.

BP knew how important source control was. In its Oil Spill Response Plan, controlling the source was the second highest priority in any spill response, right after ensuring the safety of citizens and response personnel. For this highest priority, the evidence will show that BP paid lip service to it.

In the words of Andy Inglis, the CEO of BP Exploration and Production, BP literally spent zero dollars in preparation for containment of a deepwater spill.

BP itself will testify, through its 30(b)(6) designee, James Rolhoff, that it was unaware of any funds that had ever been allocated to identify ways to shut in a deepwater well subsea other than through the use of a BOP.

BP knew of the gaps in its ability to control the source of a deepwater blowout. However, BP had a policy under its Risk Management Plan that risks were could be deemed acceptable because they were too expensive to mitigate. In accordance with this policy, BP ignored its obligation to mitigate the consequences of a deepwater catastrophe.

In BP's initial Exploration Plan for the Macondo Well, BP certified that it had the capability to respond, to the maximum extent practicable, to a worst-case discharge. The evidence will show that BP knew this certification was false. It knew it did not have the capability to respond to a worst-case discharge. In fact, the evidence will show that BP knew it didn't have the capability to respond to a discharge substantially less than worst case.

As the Court will hear from Lars Herbst, the Regional Director of the MMS for the Gulf of Mexico, "I would say that they were not prepared to respond to whatever the actual rate that was on this incident."

BP's highest corporate officers even agree that they did not have the plans or equipment needed to appropriately respond. Tony Hayward: "The ability to intervene in the subsea was not in any way, shape or form complete. We certainly didn't have all of the tools with the benefit of hindsight we could have had. Yes, we didn't have some of the things that you would ideally want."

Not only did BP not have all the tools it needed or the knowledge of how to use existing technology to stop a deepwater blowout, it had nothing for its employers and other responders to review in determining how best to respond.

BP's employees were not trained on how to control the source of the deepwater blowout. BP had never even conducted a drill response in deepwater. Its employees were asked to do a job they had not been taught to do.

As will best be described by Charles Holt, one of the source control -- one of the leaders of the source control effort, when discussing the preexisting plans that were created and provided to him, he will testify and agree that BP was essentially creating plans on how to kill this well.

People like Mr. Holt were left to create plans from scratch as they waited on the only measure they had, a relief well, a process known to take 90 to 150 days. All the while, the well kept flowing.

Federal Regulations require BP to have the ability to do more than this. Under the Federal Regulations, 30 C.F.R. 254.5, BP was required to take all appropriate actions necessary to immediately abate the source of the spill.

Now, what did BP have to address this requirement? BP's plan was to activate its Oil Spill Response Plan, use ROV's to intervene and attempt to actuate the BOP, and then wait for a relief well, with thousands upon thousands of barrels of oil flowing into the Gulf every day.

Let's talk a minute about BP's Oil Spill Response Plan. What is in BP's Oil Spill Response Plan? BP's Oil Spill Response Plan is a nearly 600 page document that contains a total of one page on source control.

What does this one page provide? Here it is right here, Your Honor. "In the event the spill source cannot be controlled by the facility operator or remotely with a safety system, BP will activate the Oil Spill Response Plan and assemble a team of technical experts to respond to the situation." That is the entirety of the plan.

Source control was BP's highest response priority, and it received a grand total of one bullet point in its 600-page plan.

BP's think about it in the middle of a crisis approach to response planning left nothing for responders to actually look to in order to make intervention decisions. BP's plan was nothing more than a plan to plan.

Yes, BP's plan operated as BP expected it would. Responders were left to make things up on the fly as oil gushed into the Gulf.

Now, Your Honor, the evidence will show that BP actually believes its response plan worked. BP is proud of the work it did in allowing this well to flow for 87 days, nearly three months. BP believes it was acceptable to wait until the midst of a crisis to design the first source control plan.

Now, Your Honor, the evidence will show that BP brought in some of the best source control experts in the world to help it figure out how to stop its well from flowing, companies like Wild Well Control, Cameron, other oil companies like Exxon, deepwater drillers like Transocean.

BP brought these experts in and then refused to listen to what they had to say. Time and time again, BP's outside technical experts recommended one thing, and BP did something else.

Now, Your Honor, one of the things BP is going to talk a lot about in this trial is the MMS's approval of its Oil Spill Response Plan. They are going to point to that as a defense to the time it took to stop Macondo from flowing.

But, Your Honor, the MMS's approval of BP's Oil Spill Response Plan, the evidence will show, is irrelevant. BP did not even consider the Oil Spill Response Plan to be a source control plan.

Earnest Bush, BP's 30(b)(6) Designee on the source control section of the Oil Spill Response Plan and the person who had responsibility for the plan of BP, will testify that this plan was not meant to address source control. This plan is not about source control.

So, Your Honor, in a trial about preparing for source control, a plan that's not about source control, the MMS's approval of that plan, irrelevant.

Now, let's talk about the other things BP had other than the Oil Spill Response Plan. The other source control techniques known to BP were the use of ROV's, as we talked about, and to wait for a relief well.

The evidence will show that BP knew that ROV's were unlikely to be able to close in a deepwater blowout like Macondo. BP had been told for years that, in the face of a flowing well, the deepwater ROV's were unlikely to work and should not be relied upon.

As for relief wells, given the time it takes to drill a relief well, particularly when dealing with a well capable of flowing at 162,000 barrels a day, relief wells should be considered a measure of last resort.

But for BP, relief wells were a measure of only resort. Relief wells were the only thing that BP had that they knew could stop a deepwater blowout.

BP knew ROV's and relief wells could not immediately abate the source, and its reliance upon these procedures left BP unprepared.

Lars Herbst, again, the Designee for the regulator. He was quite clear on BP's failures to meet the federal government's expectations on its ability to respond to a deepwater blowout. He will testify that, "We expected them to be able to contain a deepwater blowout. They did not, obviously, contain it as quick as our expectations were. The government expected BP to have, consistent with its certification in its initial Exploration Plan, the capability to close in a blowout long before 87 days."

Now, throughout this trial, BP is going to attempt to pass the buck to the federal government as a shield to defend itself against its failures in the time it allowed the Macondo Well to flow. It will try to convince this Court that the government was fully embedded and an equal participate in the response effort and approved BP's actions after only an independent and thorough analysis. The evidence will show this is simply not true.

Prior to Macondo, BP knew that the United States Coast Guard enters a response with the idea that they are there to assist the responsible party, BP. The evidence will show that the government relied upon BP, and that BP was in charge of identifying and developing source control techniques, not the government.

This makes sense. The government is not in the business of drilling wells. That's BP's business.

As the federal on-scene coordinator recognized, "As subsea drilling systems are not an area of Coast Guard cognizance and expertise, the federal on-scene coordinator was unfamiliar with the technology and capabilities of the deepwater drilling industry. Neither the Coast Guard nor any other federal agency had experience with a massive deepwater spill. Ultimately, source control had to be achieved through the responsible party, BP."

The Coast Guard's Report on Preparedness echoes this statement. "The federal government has neither the skilled personnel nor the appropriate equipment to respond immediately to an oil blowout in deepwater and must rely wholly on the responsible party."

The government knew that it did not have the training and expertise to determine the best way to shut in Macondo. That expertise was expected to rest with the operator, BP. What the government did not understand was that BP did not have the training, experience, plans or procedures either.

Now, the evidence will show that it was only after BP's deceptive analysis of the failed Top Kill that the government role changed. According to the Report of the federal on-scene coordinator, "There was a lack of transparency by BP on source control. Major decisions were made outside of the incident command structure. Tactical planning occurred behind closed doors by BP personnel without government participation in the formation of those plans."

This changed in late May 2010, when the National Incident Command representative, who the Court will hear is Admiral Cook, vigorously insisted on participating in an internal BP meeting to assess the failed Top Kill, establishing a new paradigm.

Now, Your Honor, BP's also going to claim it met the industry standard on source control. You're going to hear a lot about that. BP bases this statement primarily on its Oil Spill Response Plan, the same Oil Spill Response Plan that it does not consider to be a source control plan.

BP has no actual evidence of any other company's internal procedures and policies. It will bring to this Court no evidence of any other company's internal source control plans, procedures or training. The only evidence that will be presented during this trial is that BP had no such internal plans or procedures.

But even if BP had evidence of other companies' internal plans or preparations, that does not excuse BP, particularly a company like BP that calls itself a leader in deepwater drilling in the Gulf of Mexico.

Reckless conduct is still reckless conduct even if other companies are doing it. BP does not get a pass because other companies failed in the same way it did.

Now, Your Honor, I'm going to slow down for a minute here and kind of talk to you a little bit about what BP knew prior to Macondo and the warnings it had been given to suggest to it that it was not ready for such a response.

The evidence will show that BP's failure to prepare was particularly egregious given the evidence, given the decades of warnings that preexisted Macondo. BP was aware of these warnings and disregarded them. The direct result, a well that was allowed to flow for 87 days.

Going back to at least 1991, and for the next 20 years prior to Macondo, BP was told that it needed to do more.

In 1991, a joint industry program published a study on blowout control. This is the Joint Industry Blowout Control Report. It will often be referred to throughout this trial as DEA-63.

The focus of this report was on deepwater. It emphasized subsea source control and recognized that no practical solutions currently exist as of 1991.

The 1991 DEA-63 Report specifically discussed capping stacks, modified BOPs and other capping devices and their potential use. Then DEA-63, in 1991, went through details, through the many types of possibilities for the use of subsea equipment.

After providing BP details on the types of devices that could be used for source control in deepwater, DEA-63 went on to provide some dire warnings. It told BP, "Current technology is considered inadequate," and that capping methods would further limit the probability of a long-term solution. This last point on capping methods, the evidence will show, was something BP fully understood.

BP recognized in 2001 that capping stacks were considered best available technology in onshore and shallow water drilling environments. BP had conducted a study to determine best available technology comparing relief wells to capping stacks, and the conclusion of that study was that capping stacks could reduce response time by 50 percent.

BP fully understood the benefits of a capping stack in reducing the amount of time a well was allowed to flow and did nothing to apply this technology to deepwater, its most dangerous environment.

The warnings of DEA-63 were not an isolated event. They were repeated multiple times from 1991 to 2010. The evidence will show that BP was repeatedly told that a deepwater blowout would happen, and that new blowout control measures were necessary. From 1991 to 2010, BP did nothing to advance source control technology.

Now, the last thing I want to talk about briefly, Your Honor, throughout this trial you're going to hear BP describe the Macondo event as unique, unpredictable, something that could not be foreseen in the drilling industry.

They are going to point to Admiral Allen to attempt to support that. With all due respect to the Admiral, he did not and could not know what BP knew and had known for decades. He certainly would not know, as BP did, what DEA-63 predicted in 1991, nearly 20 years prior to Macondo.

As you can see, Macondo was predicted with precision. Just like Macondo, a broken riser separated from the vessel and falling to the ocean floor, a kink in the riser above the BOP, flow to the BOP, the kink in the riser and the end of the drill pipe, and a listing BOP.

In fact, the BOP depiction in DEA-63 is actually worse than what occurred at Macondo, making Macondo an even easier source control effort than what was shown in DEA-63.

Now, Your Honor, no question, BP spent a large amount of money responding to the Macondo spill. BP finally funded the research called for decades earlier, and it completed it in three months. However, BP should not have waited 20 years to do the work it knew was necessary.

It should not have treated the Gulf of Mexico as its own private laboratory for a research and development project that was called for and due to be funded decades earlier. It should not have come into the Macondo response having spent no money, provided no training and having no plans on how to stop Macondo from flowing.

Had BP prepared, as a prudent and responsible company, the evidence shows that Macondo would have been capped within days to weeks, and the people of the Gulf would have been spared millions of barrels of BP's oil.

Thank you, Your Honor.

THE COURT: Thank you. Mr. Brian.

OPENING STATEMENTS BY MR. BRIAN:

Good morning, Your Honor. Brad Brian on behalf of Transocean and the aligned parties.

I'm going to focus my remarks on BP's misrepresentations about the flow rate in April and May of 2010, and how those misrepresentations delayed the capping of the well.

The evidence will show that BP repeatedly misrepresented that 5,000 barrels a day was the best estimate of flow rate. The evidence will show that BP repeatedly withheld documents showing significantly higher flow rates.

The consequences of BP's misrepresentations and concealment were bad decisions, a false diagnosis of why the Top Kill source control method that they used failed, and tragically, the rejection in May of an alternative strategy, the BOP-on-BOP that was ready to be installed and would have capped this well long before it was eventually capped on

July 15th of 2010.

Your Honor, we have prepared this timeline to show BP's conduct in the two months, that critical two-month period after April 20th of 2010.

BP misrepresented the flow rate in a meeting on April 28th between the head of its response team, Doug Suttles, and Admiral Landry, when he represented that the best estimate was actually 2500 barrels, with an upward bound of 5,000 barrels.

Then, as you can see in the timeline, on May 10th, Mr. Suttles showed Admiral Landry a model, a graph, in which they represented that the most likely model was 5,000 barrels of oil per day. Neither representation, 2500 nor the 5,000, was remotely accurate, and BP knew it.

BP's own records show, and this chart shows just some of the internal estimates that BP had, that were much, much higher than the best estimates they represented to the government.

As you'll see on this timeline, during this time period, BP was considering three options to cap the well, two capping methods, the BOP-on-BOP and a separately designed capping stack, and the so-called Top Kill.

BP was told by its outside consultant in the middle of May that the Top Kill procedure that they were contemplating, which I'll discuss in more detail later, was unlikely to work if the rate -- the flow rate was in excess of 50,000 barrels a day.

Nevertheless, BP pressed ahead and falsely claimed that it was a slam-dunk or that they had a 60 to 70 percent chance of success. Those statements were false. With the heavy flow rate that they knew was coming out of that well, the Top Kill was not a slam-dunk, not even close. It failed just as its outside consultants had predicted. The flow path was too big and the flow rate was too great.

But BP would not and did not admit the true reasons why the Top Kill had failed, because doing so would have required BP to admit that it had misrepresented the flow rate in the first place.

So BP falsely claimed that ruptured disks were the only plausible cause of the Top Kill failure. That was not true. And because of that skewed analysis, BP recommended that the BOP-on-BOP alternative, which was ready to go, be abandoned. The Coast Guard relied on BP and agreed. And it was abandoned and the well was allowed to flow for weeks and weeks and weeks that were unnecessary.

Now, let me go through the timeline in a little more detail, Your Honor.

Within two days of the blowout, one of the modelers at BP calculated a rate of 82,000 barrels per day. When the higher-ups at BP saw this, they sent another e-mail, and they told people to tell Alistair -- he was the modeler who calculated 82,000 -- tell Alistair not to communicate to anyone on this, because we've had difficult discussions with United States Coast Guard on the numbers.

Within five days, a BP vice-president had done its own modeling where he got as high as 92,000 barrels per day. The following day, Mr. Suttles, April 28th, met with Admiral Landry. As I mentioned, Mr. Suttles was the head of BP's response team. Admiral Landry was the head of the government's response team.

And Mr. Suttles told Admiral Landry that the range was 1,000 to 5,000 with the best estimate of 2,500 barrels. By April 28th of 2010, BP had calculated far higher flow rates.

Now, Mr. Brock will tell you, and we agree, that there was uncertainty about the rates, Your Honor. But when there is uncertainty, what the engineers do is they do modeling in order to bound those rates so they have some idea, a good idea what they are doing.

The range that Mr. Suttles gave Admiral Landry had no basis in fact. And was, in fact, inconsistent with the range that BP's own engineers had calculated by that time, which was between 2,500 barrels and 65,000 barrels. That range, that document was not communicated to the government nor did BP share its vice-president's calculation as high as

92,000 barrels.

One of the things that BP admitted in its guilty plea was that it withheld multiple internal documents with flow rates estimates that were significantly higher, significantly greater than 5,000 barrels of oil per day that it did not share with the Unified Command.

Mr. Suttles' representation of 2,500 barrels was not only false, it was deeply flawed because it's based on the assumption that effective orifice size of the BOP through which the oil would be flowing was less than half an inch. There was no basis, no basis for that assumption.

Admiral Landry vividly recalls that April 28th meeting with Doug Suttles. She publicly announced that day, in reliance on what Mr. Suttles said, that the well was flowing at 5,000 barrels of oil per day, and she testified at her deposition that in making that announcement, she relied on the work of BP through Doug Suttles.

On May 10th, Mr. Suttles sent this chart to Admiral Landry. And you'll see, Your Honor, that BP labeled in this chart 5,000 barrels of oil per day in the lower right-hand corner as the most likely model, that blue line at the bottom is at 5,000 barrels of oil per day. There is nothing to support that claim.

But it's worse than that, Your Honor. Because what the evidence is going to show is that a few days before that the BP modelers sent to higher-ups at BP the model on the left of this demonstrative showing flow rates as high -- the 162,000, Your Honor, was a flow rate calculated in 2009 prior to, but even if you discard that, showing the high flow rates as high as 110,000 barrels per day.

But what BP did before May 10th was they took that chart on the left and they edited it, and that's a word that comes right out of the e-mails. They took out five or six of these lines, they reduced the scale to show a much lower worst-case scenario, and they inserted the most likely model of 5,000 barrels a day.

On May 16, the Unified Command approved BP's recommendation to do the Top Kill. Within hours of that decision, they learned from their outside consultants, Dr. Rygg at Add Energy, that the procedure that they were contemplating using for Top Kill would not work if the well was flowing at 15,000 barrels per day or higher.

They were contemplating at that time of injecting 50 barrels -- I guess it's 50 barrels per minute of mud down to fill it. And what he says in his e-mail was, "Looks like with 15,000 barrels per day, you cannot kill it with 50 barrels per minute of mud."

The BP engineers understood the significance of Dr. Rygg's analysis. Because a couple days later, one of the BP modelers sent this e-mail in which he said, "The apparent reliance in Ole" -- that's Ole Rygg -- "Ole's e-mail on the 5,000 number, which has little, if no origin, is concerning. From all the different ways we have looked at flow rate, 5,000 would appear to err on the low side."

Another BP engineer agreed the next day. "Tim's points" -- Tim was the modeler who sent the previous e-mail -- "Tim's points are both valid and have an impact on the viability of the kill option working."

BP should have shared these e-mails with the government, but it didn't. Instead, the evidence in this trial will show that BP tried desperately to keep confidential, both externally and internally, information about the flow rate.

Around this same time one of the BP modelers engineers sent an e-mail asking for information, and he got this response. "We remain in a position where no flow rate information can be released internally or externally."

BP's policy of not releasing the flow rate information was enforced at the highest levels of the company.

On May 5th, one of its engineers named Mike Mason sent this extraordinary e-mail to Andy Inglis. Andy Inglis was the CEO of BP Production and Exploration. He had seen a report on CNN that reported very high flow rates. He had done his own calculations. He sent this e-mail to the CEO. "We should be very cautious standing behind a 5,000 barrels per day figure as our modeling shows that this well could be making anything up to approximately 100,000 barrels of oil per day."

What will the evidence show happened when Mr. Mason sent this e-mail?

Well, Mr. Inglis' executive assistant came to him and said, "If you have a thought like this, come walk over and talk to us." In other words, don't put it in writing.

Mr. Mason asked, "What's the problem?"

Mr. Inglis' assistant answered, "It's the high number, the 100,000 barrels of oil per day."

Mr. Mason met with government scientists that very day and did not disclose his own concerns about the 5,000 barrels of oil per day or that the flow rate could be 20 times higher. Instead of revealing these concerns, BP provided fabricated estimates of the likely success of Top Kill.

BP told the Secretary of Energy, Mr. Steven Chu, that the Top Kill was a slam-dunk. And Tony Hayward, the CEO of BP, went on international news and said that there was a 60 to 70 percent chance of success.

(WHEREUPON, a videotape was played.)

Based on what I read in BP's pretrial papers, Your Honor, I anticipate that BP will argue in this case that the 5,000 flow rate wasn't just BP's estimate, that it was the Unified Command or NOAA's estimate; that they disclosed to the government flow rates that were higher than 5,000 barrels; and that they disclosed Dr. Rygg's opinion that Top Kill might not succeed or was likely not to succeed if the flow rate was over 15,000.

None of those arguments will work. And here is why. Because the evidence will show that NOAA did not do any well modeling and based its estimates on the unreliable visual observations from flyovers and some video clips. Only BP had all the information about its well to do the modeling that was necessary to make good source control decisions.

And while it's true that BP did provide the government with some higher numbers, they were careful, and you'll see the documents, to couch them as *worst-case scenarios*. And as I've already shown you through the comparison of the two charts, they actually doctored one of the charts in order to understate the worst-case scenario.

They did provide Dr. Rygg's opinion that the Top Kill would not work if the flow rate was in excess of 15,000, but they continued to represent that the best estimate of flow rate was 5,000 barrels of oil per day.

The evidence will show, Your Honor, that they made that representation not once, not twice, but at least 14 separate times to admirals who were participating in the decisions, in public filings, in letters to Congress.

BP made six separate attempts with Top Kill between May 26th and May 28th, all failed. The BP engineers watching those failures, they understood why it failed. The flow path was too big and the flow rate was too great.

The plan had been that if Top Kill failed, they would go ahead with the BOP-on-BOP, which was ready to go.

As early as May 4, they had done a hazardous risk analysis, and this e-mail went out, this report, saying, "We've completed the HAZID for the well capping effort. We have mitigations for all the risks."

They had a two-day Peer Assist Team look at the BOP-on-BOP, and they concluded on May 13th and May 14th that the BOP-on-BOP operation is feasible and can be managed safely.

Unified Command had approved the procedures to cut the riser and to remove the low marine riser package all in preparation for the installation of the BOP-on-BOP. And on May 29th, they had a detailed schedule calling for it to be installed and the well shut-in by June 6th.

If it had been installed, the well would have been sealed long before it was. So why wasn't it?

Because even after Top Kill failed, BP still would not come clean about the flow rate. They knew why the Top Kill had failed. This is a text message from Kurt Mix saying, "There was too much flow rate. Over 15,000 and too large an orifice."

BP presented the government with three scenarios, three possible scenarios for the cause of the failure of Top Kill. The first two they said were possible, but not plausible. Only the third, which they said that the ruptured disks had collapsed on April 20th during the explosion, only the third did they represent was plausible.

Everyone agrees that this scenario was not correct. The ruptured disks never failed.

The problem was, Your Honor, is that they told the government that this scenario, this third scenario was the only one that was plausible. They knew that the more likely explanation was the one they knew about all along, the flow rate was too great and the flow path was too big. Their false diagnosis was the direct result of their fraud.

If BP had been open from the beginning about the flow rate, it would have been obvious to everyone beforehand that the Top Kill would fail and obvious to everyone afterward why it had failed.

So why do we care? Why does any of this matter? Because the false diagnosis and the false statements, Your Honor, shape the recovery efforts that took place during this time period and delayed the capping of this well for many, many weeks.

BP told the government that because the ruptured disks were likely open, shutting-in the well via the BOP-on-BOP is likely to lead to broaching. It wasn't true. There was no path open to the formation. BP could not admit to the larger truth, that the flow rate was too great.

They recommended -- because of this false analysis, they recommended abandoning the BOP-on-BOP. The Coast Guard relied on that recommendation. And on May 29th wrote this saying, "The BOP-on-BOP is no longer a choice."

BP has argued, and I'm sure they'll argue during this trial this week, that the BOP-on-BOP was not ready in the middle of May. Whether or not it was ready in the middle of May, after that peer assist review said it was feasible and ready to go, it was clearly ready, and the evidence will show without a doubt that it was ready to be installed by the end of May.

And you don't have to take our word for it, Your Honor, because it's in the documents written by the man at BP who ran the team.

This is what he wrote on August 26th, about six weeks after the well was shut-in. "We were in a position early on to install a cap, and a decision was made to do the Top Kill first. After the Top Kill failed, we were again going to install the cap, then the decision was made to use the Top Hat and containment."

Now, BP is going to tell you that there were venting issues and maintenance issues, but all of those were taken care of by May 29th, when there was a schedule to land the BOP stack on the *Horizon* BOP to open the choke to vent the shut-in and to close it down by June 6th.

The well was finally capped, as you know, on July 15th through the capping stack. Now, we think that proves that the BOP-on-BOP would have worked earlier.

We're going to hear testimony at this trial about the similarities between the capping stack procedure that was used and the BOP-on-BOP. So let me just make a couple of quick points. And, first, the capping stack that effectively closed in the well used the exact same ram that would have been used for the BOP-on-BOP. And the same venting option that was used for the capping stack existed for the BOP-on-BOP.

What the success in July shows is that it could have been done earlier through the BOP-on-BOP that was ready to be installed, and it would have been done earlier but for BP's misrepresentations and concealment.

So let me end my remarks by saying this, Your Honor, within days of the blowout, within hours of the blowout, men and women from around the world, including some good folks at BP, gathered to do everything they could to shut-in this well.

Unfortunately, some other folks at BP, whether it's because of the instinct to minimize responsibility or whether because there was concern of their stock price, whatever the reason, and it doesn't really matter in this case, some folks just would not admit the true scope of this disaster. And one lie begets another lie. And that's what happened.

And as a result of that, there were worse consequences than there should have been. Consequences that lie at the feet of BP.

Thank you, Your Honor.

THE COURT: All right. Thank you.

All right. Mr. Godwin.

OPENING STATEMENTS BY MR. GODWIN: Thank you, Your Honor. Good morning, Judge, Don Godwin for Halliburton.

Your Honor, as you've heard, Halliburton and other members of the aligned parties will present conclusive evidence that BP completely was unprepared for a blowout in the Gulf of Mexico. You will also hear that BP's misrepresentations not only had a profound impact on the very source control options, but these misrepresentations actually delayed the capping of the well by weeks, if not months.

Your Honor has previously stated that the evidence presented during the source control portion of the Phase Two trial may impact the Court's allocation of fault. It is Halliburton's position that BP's lack of preparation and its misrepresentations should substantially increase BP's overall liability.

And to be clear, Your Honor, there is no evidence in Phase Two that Halliburton did anything other than an exemplary job during the source control efforts. Moreover, none, Your Honor, none of the parties to Phase Two are maintaining any allegations of misconduct relating to any of Halliburton's source control activities.

But, beyond the allocation of liability issues, Your Honor, raised by BP's conduct, BP's decision to make several key misrepresentations relating to source control to the Unified Command was unforeseeable to Halliburton. And these misrepresentations, Your Honor, had serious implications and consequences, including a significant delay during which the well was -- the well continued to flow for approximately 87 days. As a result of this, BP's misrepresentations acted as a superseding cause as it pertains to Halliburton.

Thank you, Your Honor.

THE COURT: All right. Mr. Brock, you're up.

MR. BROCK: I need just one minute to get the technology switched over in the back.

THE COURT: All right.

OPENING STATEMENTS BY MR. BROCK:

Good morning, Your Honor, and opposing counsel.

The Court will not hear any testimony in this case from any representative of government or industry that BP was not doing every single thing that it could to get the well shut-in as quickly as possible.

It defies common sense to accept that BP would undertake to execute a Top Kill procedure knowing that it would not work.

We'll talk a little bit about what goes on with Top Kill, but essentially, Your Honor, that was a procedure that was planned over a two-month period of time, the work stream for that was begun immediately after the incident. Five ships, vessels, were involved in the setup of that procedure. There was an underground complex of valves and chokes and pipe that were installed to conduct that procedure. Over 300 people out in the Gulf of Mexico on those ships, hundreds more in Houston monitoring it.

And the aligned parties say, BP went forward with that procedure knowing that it would not be successful. That makes no common sense, and it's not supported by the evidence as we will demonstrate to you in this trial.

We're going to frame the issues around four essential issues here, Your Honor. First, that our source control efforts in shutting in the Macondo well were extraordinary. The quality and the scale of the work carried out by BP and industry and the United States Government was unprecedented.

Second, and this is critical, we think, to your analysis of the evidence. Source control decisions had to be made in the face of significant uncertainty. And the decisions made by BP, industry, and government will, you will see, reflect sound engineering judgment.

What do I mean by that, "made in the face of significant uncertainty"? It's important to know that during the response, especially in the early weeks, almost nothing was known about what was going on in the well. Where was the pipe? Where the were the rams closed? What was the path of flow? What was the flow?

All of those things were unknown to BP and the United States and industry who were involved in this response. And so decisions had to be made in the absence of information.

It's not so hard to come in to court today, these many years later, and say: We've culled the records. We've looked at everything. We believe that there was a better way.

That, Your Honor, is Monday-morning quarterbacking at its worst.

What we would like to ask the Court to do is to think about these decisions, the sequence in which they were made, and the information that was available to the decision makers when those decisions were made. And I think if you do, you will see that the story is a much different one than has been shared with you this morning.

The United States of America was not misled by BP with regard to source control decisions. You know, in the usual fraud case where someone says that there was a misrepresentation, the party that says that something was misrepresented to them usually comes to court and says: You told me something that wasn't true. It was material. I relied on it to my detriment or to the detriment of others.

You're not going to hear in this case that the United States of America says that BP misrepresented flow rate information to it that drove decisions. You've heard the presentation about what the lawyers believe to be the case, we're going to show you the evidence in terms of what representatives of the United States say they knew about flow rate.

And, Your Honor, what was understood from the very beginning by the United States, by BP, by people that were looking at this issue independently, was that it was not possible to understand the rate of flow given the numerous uncertainties that existed in the well during this period of time. We'll spend some time talking about that.

And last, Your Honor, BP had in place a response plan that was approved by the United States government. It was fully consistent with industry standards for spill preparedness.

Now, immediately after the accident, BP's team went to work in terms of developing potential responses to the blowout and gathering information. I think this will be helpful to the Court as we go through the case just to understand the significant structure that was in place in order to respond to this spill.

Admiral Thad Allen was the National Incident Commander for this and you will see some of his testimony during this case.

Admiral Landry was also a significant player in terms of decision-making and in terms of understanding how to make decisions in the face of significant unknowns.

Marcia McNutt you will hear from in this case.

James Dupree, who was leading the BP team, you will hear from in this case.

And within this structure, industry stepped in, as well as numerous contractors to help pull together the right kind of response to this incident.

Now, one thing that is going to be hard for us to convey to you in the context of this trial is the diligence and the dedication of the people that were involved in this response.

In the Houston center located at BP, on a daily basis, on many of the days during the spill, 700 engineers and technicians would be at work, two shifts a day. They have a morning report at 6:30 where one set of teams would report to the next set of teams working on a particular issue, and all of these people were dedicated to getting this well shut-in as quickly as possible.

I'll say it again. It defies common sense to say that we would delay by two months the shut-in of this well because we didn't want to say something about why Top Kill had failed. And I'm going to get to that in a little more detail in a bit.

The allegation has been made that we didn't have a plan in place, that we didn't do anything, and we didn't know what to do when the incident occurred. This is BP's planning and implementation source control document. Within two days, these teams were set up at the Houston center to start working options in parallel for the shut-in of the well. There was an engineering are support team, a Top Kill team, a relief well team, a capping team, containment teams.

This was preplanned, it was organized, it moved forward in an orderly fashion, as it should, and it allowed for the early capping of the well before the intersection of the relief well. But it was a significant undertaking that was handled in an appropriate way.

Underlying everything that occurred in the response, Your Honor, were three guiding principles. First, don't take any action that makes matters worse.

You're going to see when we look at the decision about BOP-on-BOP versus Top Kill versus other options like collection, that this is a significant overriding principle. It is what the government instructed us to do. It is within our own policy that this is the right approach to take.

Work options in parallel. You will see in this case the numerous interventions that were in place.

Leave no stone unturned, spare no expense. Over $1.6 billion was spent by the company. They pursued every single option that was reasonably that was put forward, either by BP, by industry or the government.

This is not a company that would delay the shut-in of a well over the kinds of things that the plaintiffs are alleging.

I've mentioned the issue about uncertainty in terms of flow rate. These are just a few comments, and we'll see some more as we go through the case.

Tom Hunter, the Director of the Sandia National Lab: "There was not sufficient data from the well to make a flow rate estimate."

Ole Rygg from Add Energy: "Didn't have enough information."

Admiral Thad Allen: "All of God's children had a flow rate number. People were modeling, they were looking at possibilities. There were flow rate estimates that were at the high end, there were flow rate estimates at the low end, but what was understood at that time, April, May, June, even up to the shut-in of the well with the capping stack, that you couldn't use these models to accurately understand flow rate because of the significant unknowns."

I have here also Mr. Wilson, Transocean's expert.

He agrees that BP didn't attempt to model.

Where did the 5,000 number come from? This was referenced in one of the statements by the aligned parties. The 5,000 number came from Bill Lehr of NOAA. That's where that number was derived. That's where it was first set forth. Everyone understood that there was significant uncertainty that went with that number.

I'll show you just another something on that in just a second.

These are some of the flow rate numbers that were disclosed, shared with the government in the period of time before Top Kill. I'm going to show Your Honor some other documents on this later.

Pre-spill, the company estimated the flow could be as high as 62,000 barrels a day.

On April the 22nd, there is an internal e-mail between the US Coast Guard and other government folks talking about the range being 64 to 110.

On April the 30th, there is a note from Nick Wetzel, who is within government, about his conversation with representations of BP where we are telling him that we think the flow rate is in the range of five to 40,000 barrels a day.

Now, this is important to the issue of the Top Kill procedure, where the allegation is, well, you shouldn't have done it because you knew the flow rate was more than 15,000. That's not accurate. I'll get to that in a little bit.

Then last, we have May 19, 2010, it's conveyed five to 40,000 barrels, could be as high as a hundred thousand barrels a day.

The government may not have had every single flow rate evaluation that was done by BP, but they had significant information with regard to our estimates, and they knew that these estimates were not going to be precise or reliable.

A lot of talk about Doug Suttles misrepresenting flow rate. This is sort of the rest of the story as relates to Doug Suttles and his statements.

First of all, the Securities and Exchange Commission: "Accurate estimation of the flow rate is difficult."

Doug Suttles: "It's impossible to get a precise number. We know it's highly uncertain." He doesn't know, it's difficult to measure. "What we can do is actually look at the expression of it on the surface. 5,000 barrels a day was the best estimate, but we also stressed from the beginning that this number is very uncertain."

The plaintiff's expert, Wilson, has not bothered to look at the data that BP shared with the government. He's going to tell you later today, I think, that we misrepresented things. He didn't go to the trouble of looking at what the government had and what the government knew.

Now, there was reference in Mr. Brian's statement to Admiral Thad Allen. He basically shared with the Court that the government really wasn't involved, the government didn't know, the government wasn't knowledgeable, they didn't know what we were doing.

I think when Your Honor sees his point of view, you'll see that's not quite accurate.

(WHEREUPON, a video clip was played.)

MR. BROCK: This, Your Honor, was an open situation in Houston. Just as Admiral Allen describes, the United States scientists and technicians were embedded in the center. They were working hand in glove with BP folks. They were talking at the water cooler. They were sharing openly data at that center.

The United States of America had access to significant information, and, as you can see from Admiral Allen, nothing went forward, nothing was approved without their review and their approval.

This just confirms that this is a fair summary of the interaction between the government and BP at the response site.

This, Your Honor is something that we hope will just be helpful to you during the trial of the case. It is a

Deepwater Horizon source control timeline.

Some of the important events that we'll be talking about right here, the plaintiffs say -- Mr. Barr does, well, we weren't really organized, we didn't know what to do, we didn't know how to get our plan off the ground.

On April the 21st, we applied for a permit to drill a relief well. By May the 2nd, 12 days later, we had a rig in place, and the first relief well was spudded.

Of course, everyone understood that this would be out here, the guaranteed, hoped for shut-in time, but it's also understood that the team could not take actions between May 2nd and September 17th that would jeopardize this work or this work here. That's going to be important in a few minutes.

We'll also talk about this May 26th to May 28th timeframe when Top Kill was attempted. Then we'll get over to this June 4th to July 10th timeframe when it was decided to move to a collection strategy and away from shutting in the well, and how that developed and the actions that were taken.

We'll talk about this one a little bit in this case, too, Your Honor, because I think it demonstrates diligence. It demonstrates the company's commitment to get the well shut in. It shows that there was not fraud or misrepresentation.

All of these work streams were underway and working in parallel. Each one had a team. It's being evaluated, it's being risk assessed. Each one of them, including the BOP-on-BOP, all of these are being looked at, looked at, risk assessed, planned, and all of this is happening in parallel.

You heard reference to Secretary Chu. Let's see if he thinks we weren't interested in getting the well shut-in as quickly as possible.

(WHEREUPON, a video clip was played.)

MR. BROCK: Would a company that wanted to shut the well in as quickly as possible go forward with a multi-million-dollar procedure involving five ships knowing that it wouldn't work; and, would a company that wanted to shut the well in as quickly as possible make up a reason for its failure that would delay the shut in of the well simply to cover up flow rate estimates that everyone understood were not reliable? Judge Barbier, that makes no sense.

This is the don't make it worse strategy that we've talked about. Don't do any harm to any of the options as you pursue things in parallel.

Now, there is criticism here about the sequencing of the source control efforts, that is, did we get them in the right sequence, what does the government think about that, do they think we didn't do it the right way? Here is Thad Allen again.

(WHEREUPON, a video clip was played.)

MR. BROCK: Thad Alan, as part of his due diligence, was exploring with other companies whether or not BP was proceeding in an industry standard kind of way with their recommendations, were there other things that could be done.

He's answering that question saying, I've been in contact with industry, and they've let me know that we're doing things in the right way in the right sequence.

We'll show Your Honor during the trial, I went on to ask him, who are these people that you talked to. He had said -- he really didn't want to do it at the press conference -- Rex Tillerson, of Exxon, and Halliburton. That's who he talked to, to see if we were proceeding in an industry standard kind of way using the sequencing in the right way.

No one was being critical back at the time about how things were being done and conducted. It's only now that there is criticism from these parties about this.

Now, we've talked a little bit about -- we've heard about the BOP-on-BOP option. From the papers that the plaintiffs filed, I think I understand that they believe that we should have used a BOP-on-BOP in mid May. Now I'm hearing them say, well, maybe not mid May, maybe early June.

But what's clear is that the BOP-on-BOP solution was not ready before the Top Kill procedure was instituted. We're talking about now the period of time May 15th or so up to May 28th, when the Top Kill procedure was instituted. That solution was not ready.

There is going to be a dispute in this case about whether BOP-on-BOP was ever ready. We'll have a conversation about that during this trial.

The BOP-on-BOP presented greater risks than did Top Kill. This was evaluated. It was documented.

It's further the case that if they are saying still, well, we should have done BOP-on-BOP before Top Kill, Transocean's own records reflect, as of May 18th, that a solution on this venting capability is still 10 to 14 days away.

There was another problem. The Deadman on the Transocean BOP had a design issue and was not functioning properly. We've heard about that before. That's another reason the *DD II* BOP was not ready before the Top Kill procedure was run.

Transocean's own witness, who I believe will be testifying in this case, will tell you that Top Kill and junk shot occurred between May 26th and May 28th. We were still working on it during that period of time on the *DD II* with the venting option.

The Transocean BOPs were not ready when the Top Kill procedure was conducted, and Top Kill was a less risky option. Why is that?

This is just a photograph that's taken from an animation that I think Your Honor will see during the trial. To execute the BOP-on-BOP option -- this would be the *Deepwater Horizon* BOP -- the ROV's would have to unlatch this piece of the BOP, the Lower Marine Riser Package.

What was not known is whether or not it would cause a complete separation because it was not known precisely where the drill pipe was and if it would hang up.

This here, if this outcome were to occur, does not meet the don't make it worse policy because if you have this, it's very unlikely that you could get it to reseat, and it would be difficult, if not impossible, to cut this drill pipe here because these devices would have difficulty getting their cutting tools from the edge of the BOP down into the pipe.

So it was a significant issue, and this made things worse if this outcome occurred when you tried to unlatch. That's one of the reasons that the Top Kill procedure is better.

The other issue is, if you use the *DD II* BOP, you would be putting this massive device, 360 tons, on top of the lower BOP. If you were successful in getting this off, if you didn't damage this seal here that's very finally ground and has to be there in very good condition to create a seal, if you're able to do this, then this device goes on top of the lower BOP.

There was an issue. When the rig sank, the BOP was pulled over. When that happened, it did not go back all the way to straight up. It still was leaning, and you can see this crater area here.

So there were issues about BOP-on-BOP and its stability, that is, the fact that it was leaning, the fact that there were issues with that. That's another reason that was not the right option.

So given these things, the fact that the BOP wasn't ready, the fact that there were engineering issues that were not resolved, Top Kill was the reasonable choice given what the team was faced with in late May 2010.

I don't think there can be any dispute about that. From the way I heard them present it today, I'm not even sure they are arguing that, but we'll see when the evidence starts coming in.

Now, there is something that -- this is just going to take a little work, and I apologize for this -- we have to be very careful with our terminology, Your Honor, as it relates to Top Kill.

We've got a stipulation regarding source control events. Top Kill is comprised of two techniques, one, momentum kill, and the other, junk shot. Momentum kill refers to the operation by which you pump the fluid into the BOP. Junk shot is different. It refers to the operation where bridging materials are added to the BOP trying to clog up the spaces, reduce the flow rate, and give you an opportunity to shut the well in.

This is just a very brief animation of that. I'll just run this just for a second in the interest of time.

So, if Your Honor can see it on the screen, this piping system here goes over some manifolds and then back up to the ships that I was telling you about earlier. This is the mud coming into the BOP. You'll see that it continues to run.

This is dynamic kill. This is using the flow of mud only to try to shut in the well.

Now we've got the junk coming in. This is just for illustration purposes, but you can see that if it works as designed, it has the effect of filling the holes, filling the spaces in the BOP, which would allow for you to kill the well using mud. That's the junk shot component of the procedure.

This was risk assessed, and they looked at the options of how to do it, how to go through it, and it was determined it was a low risk, high reward procedure; unlike BOP-on-BOP, which yes, it was high reward, but it was also very high risk.

A peer review was conducted in a very careful way, where representatives of industry, as well as contractors, came in and looked very carefully at this procedure. You can see Dr. John Smith from LSU; Ted Burgoyne, who you heard from in the first phase of the trial; representatives of Exxon;

representatives of Boots & Coots; representatives of Shell and EMI, were all there to evaluate this and to help the engineers understand what they needed to do.

It was risk assessed. We'll go through these all during the trial. But one of the important things is that they needed to be sure that the relief well was deep enough, that if there was migration of oil or gas into the formation, that the relief well would be deep enough and cemented in, that it would not be affected by that. So that was another mitigation that had to be in place to make sure that that went well.

Now, there is the issue about Top Kill and the two components to it.

In mid May, based on some data that the engineers were seeing, it was believed that it was possible that the momentum kill only would be sufficient to shut in the well.

There was pressure data coming from a device called a PTB. There had been a decrease of about six or 700 psi. They thought it might work, but that was just momentum kill.

It's clear, and we'll show this during the trial, that if you incorporate the junk shot part of the procedure, it reduces the path size by plugging it with various materials.

Why is that important? Mr. Brian said that BP had determined that if the flow rate was over 15,000 barrels a day, we couldn't shut in the well. That was an evaluation that was done. That's right here. Modeling indicates that a dynamic kill cannot be successfully executed if the oil flow rate is 15,000 stock tank barrels.

This was being done on May 8th when they were looking at doing momentum kill only. This is because of the change in pressure. Mr. Rygg has testified about this, and he has been clear, that 15,000 barrels per day, this modeling here doesn't have anything to do with junk shot, so don't deduce anything on the junk shot based on this modeling.

Why is that? The understanding was that junk shot -- or Top Kill, when you include both components, was not flow rate dependent because of the junk's ability to reduce flow rate and create backpressure. We'll present evidence on that during this trial.

That was understood by Richard Brannon and others in government. I'll just read the last question: "Well, and based on this modeling at 15,000 barrels a day, a pure dynamic kill was not going to be successful. That was the prediction. When they were thinking about just doing dynamic kill, that was true. This does not address how a junk shot will allow for the creation of additional backpressure that could allow a Top Kill as implemented at different flow rates." And the answer to that is, "Yes." There was no misrepresentation from BP about flow rate, about the ability for Top Kill to be successful.

This is what I referred to earlier about why it was so difficult to understand the flow rate. There were just too many unknowns at that time to be able to understand that.

But notwithstanding that, if we're going to talk about a fraud case, and we're going to say that we misled the government, it's important to understand what they knew; not just what we told them, but what they knew from all sources.

This is April 25th, Glen Watabayashi has done an evaluation, 64,000 barrels a day. This is the note we looked at earlier. This is from Moore to Owens: "Nick Wetzel spoke to BP who indicated that it was between five and 40,000 barrels perfect day." This is before the Top Kill procedure was run. It was communicated by BP that higher numbers than 5,000 barrels were in play and possibilities.

Here is another workup that the government had done where one of their scientists estimates it at 65,000 barrels a day. If restrictions are taken into account, 30,000 barrels per day are suggested.

Here is one where Professor Worley gives the government a number of 70,000 barrels a day. He later became a member of the Flow Rate Technical Group.

So, as Admiral Allen has said, "All God's children have flow rate estimates." Everyone was trying to figure it out, plugging in into models, things that were not known and seeing what they looked like.

But what happened was, because of the confusion, the Flow Rate Technical Group was established by Admiral Allen. Here are the participants: US Coast Guard, NOAA, Department of Energy, Coast Guard, others.

BP was not a member of the Flow Rate Technical Group. This is the organization that was established to state the government's number. There were diverted models, other opinions. That's fine because at this point there wasn't virtual certainty on anything.

Now, after the Flow Rate Technical Group was formed, before the Top Kill procedure was started on May 26th, Marcia McNutt, who is leading the Flow Rate Technical Group, says, "Multiple lines of scientific evidence agree that the rate of release is at least 14 to 20,000 barrels of oil per day."

The United States of America was not misled in terms of flow rate going into the Top Kill procedure. It knew and was aware that the flow rate could be over 15,000 barrels per day. There were many lines of evidence to support that. In fact, they weren't worried about it because it was understood that the Top Kill procedure, when you include junk shot, is not expected to be flow rate dependent.

This is the same number being shared by Doug Suttles with Mary Landry. You've heard about Doug Suttles kept saying five. He's saying here the expected range of possible flow rates is five to 40.

We could go on and on in these, but I do want to make this point: Mary Landry, who is the federal on-scene coordinator, was asked about some of these things that Mr. Brian showed you, that he says weren't conveyed to the government and that caused them to not understand what was going on. So these are shown to her in the deposition. She says: "I would have looked at them in the order of my business."

"Did you rely on them for any purpose?"

"No, because we were standing up the Flow Rate Technical Group, and I was deferring to that Group to be the expertise."

"Did you rely on any of these documents," the ones that were shown to her.

She says, in my response, "No."

This is just Admiral Allen saying again that the Coast Guard and the Unified Command always assumed from the outset that this could be a catastrophic event. The last sentence, I think, is significant: "We never relied on the one to 5,000 barrels a day. The government understood, BP understood, independent scientists understood there were too many uncertainties."

Knowing all of this, this is Admiral Landry and Mr. Brannon signing off on the Top Kill procedure that includes both momentum kill and this alternative LCM pills here that is the junk shot aspect of that procedure. There is no misrepresentation here.

Just a couple things on the issue of whether or not we misled the government on probability of success.

This is a note from Dr. McNutt to Secretary Chu, where she says -- I'm sorry, it's a note to someone else responding about a question from Secretary Chu: "The secretary asked me what were the chances of Top Kill. I told him it is a nonsense question. Top Kill's have worked 60 to 70 percent of the time when one has access to the wellhead to shut in flow from the top. There has never been success of Top Kill in other situations, including in the Outer Continental Shelf."

Your Honor, there was nothing -- no way that the government was misled about the success of Top Kill. This is Dr. McNutt explaining what actually is accurate. This number had been discussed, that when we have access to the well, when we're not at 5,000 feet, this technique works pretty well, but it had never been tried at 5,000 feet, and everyone understood that.

This is Tom Hunter, Your Honor, who was the co-head of the science team. This is his testimony about whether or not, whether or not in the response government relied on any estimate of 5,000 barrels per day.

(WHEREUPON, a video clip was played.)

MR. BROCK: Fraud cannot exist without reasonable reliance. There was no fraud, but there was certainly no reliance on the behalf of the government on anything that was said or done in the flow rate space. Mr. Hunter makes it clear here.

Now, what happened at Top Kill? These are the vessels that were organized to execute the procedure. We'll talk about those in a little detail.

This shows some of the subsea setup, the manifolds and other things that had to be in place in order to execute the Top Kill.

These ships here, there is just all kinds of redundancy here, there is pumps and backup pumps. There is mud and backup mud. There is the ability to do all kinds of different things.

On this one here, you see some of the subsea structure.

This is my point. I can't get my head around an allegation that BP would do all of this knowing that it wasn't going to work. That's just beyond my ability to comprehend in these circumstances.

But the procedure was run. It was not successful. At that point, it came to the responsibility of the engineers and technicians of both BP and the United States to evaluate why Top Kill did not work.

The aligned parties say we made up an excuse because we didn't want to admit that the flow rate was high. We just made it up. We thought we could hide the flow rate by making up this excuse. That's their allegation.

Now, one thing they don't point out is what we were going to next was collection. If you were trying to hide something, why would you set up a system of collection where you might prove that 15 or 20 or 30,000 barrels a day of oil are coming out of the well? That doesn't make any sense.

But they went to a system of collection because of the interpretation that collapse disks may have ruptured during the blowout. These collapse disks are in place down in the 16 -- I think it's in the 16-inch casing, and they are there to protect the well in the event that you get a differential pressure between the 18-inch casing and the 16-inch casing. If that differential pressure is created, those disks will open.

The significance of that is that -- I think I have this right, I hope I do -- the 18-inch casing here is open to the formation. So when you're thinking about what to do next, if that's the right interpretation -- and there was data that supported that from the way that they were analyzing and looking at the data during the Top Kill procedure and in the weeks thereafter -- if that has occurred, then if you do a hard shut in of the well, there is little doubt that the outcome is going to be you're going to release oil and gas into the formation. That was a significant risk if that has occurred.

The calculation were done by BP. They were reviewed by the United States. The conclusion was we cannot rule that out.

This is just demonstrating what the outcome can be. It's also the case that the outcome can be that these things release way over from the well and could put at risk the relief well operations.

Now, they didn't show you this document, but they referred to it in their 30-page pretrial statement. This is the language that they are focused on. "On the day after the event, one of the evaluations that was done by BP is that this was a possible and plausible outcome." That's what it said in the document.

But that's not the end of the story here, Judge Barbier. This is not the last piece of work that was done on this event. They engaged Phil Pattillo to look at it in detail. He ran the calculations. He said, "An event related rupture of a collapsed disk can be conjecture. It's in play. It's possible."

This is May the 30th. They didn't tell you about this either. This is a communication to Admiral Allen, "Diagnostics and data acquired suggest that the ruptured disk in the 16-inch casing may have failed during the initial well control event. If they failed and we shut in the well, it could cause hydrocarbons to flow to shallow formations and onwards to the sea floor."

Under the first do no harm rubric, this is what the team is trying to avoid, the "may" and the "if."

This was presented to Secretary Salazar on May the 31st. These are his notes on his slide set. "An event related rupture of a collapsed disk can be conjecture."

Now, we asked Dr. McNutt, the Director of USGS, chair of the Flow Rate Technical Group, "Do you believe the evidence strongly suggested that the hypothesis was true?"

"There was an interpretation of the data that allowed it. It was not unique. It was not the only interpretation." What word does she use? "It was a plausible interpretation" -- the same language used by BP in its slide deck that they showed you; they didn't show you the other stuff, but what they showed you -- "and carried such a great risk that if it was correct it was worth taking seriously."

Secretary Chu had discussions and interaction with BP on this issue. He was very keen to have this independently reviewed by his own scientist, that is, is what BP is putting forward reasonable, is it plausible?

He says here that, "It is reasonable, the scenarios are reasonable, but I see other scenarios."

Here is Dr. Chu talking about it: "We have been getting the data at the same time as the BP engineers, conducting our own independent analysis of the data so that we can verify the conclusions that BP is making at every step."

He did these calculations himself with the actual data. Just like BP, he could not rule out that this had occurred. Under first do no harm, he did not believe going forward with BOP-on-BOP was appropriate because if you shut in that well, you run the risk of blowing out and losing the BOP.

Now, BP didn't dig in and say there is only one explanation. No. There is interaction with Secretary Chu and Andy Inglis. Here Secretary Chu says: "There are two equally plausible explanations for this." Andy Inglis doesn't say, no, you're wrong, it can only be one thing, it can only be the thing that protects us from having to say about flow rate. He doesn't say that. He says, "I agree, there are two scenarios that could explain the observations from Top Kill, the collapsed disk failure or mud down the well from the reservoir with counterflow of oil and gas upwards."

We did not -- BP did not, we did not, misrepresent our understanding of what happened during Top Kill. It is appropriate to proceed on the do no harm approach.

This is Marcia McNutt. This is the conclusion. "The initial interpretation by both BP and the National Labs is that the ruptured disk in the 16-inch casing may have blown in the initial incident. If that is the case, then the well should not be shut in from above."

That was the conclusion of the United States. It was the conclusion of BP. It was a possibility. It could not be ruled out. It was the right engineering decision based on what was known then because, if you remember, no one knew the path of flow at that time. It was an uncertainty that they were dealing with, and they made a reasonable decision based on what was known. Not looking at it in retrospect, in hindsight, based on what was known at the time.

So they moved to a collection strategy. We'll talk in detail about this, but one of the issues with regard to BOPs is that the capping stack, now that they're thinking about collection as opposed to other methodologies, allows for more collection; in the way it was configured compared to the BOP option as it was configured at the time, it allows for more collection.

You're going to hear in this case, Your Honor, a fascinating story of how the company working with industry figured out how to attach a capping stack to the top of the BOP, to the flange that's basically expected to move with the riser, because that's the purpose of it. This flange here, which is this right here, it was damaged on the back side, it had bolts that were injured, it had a piece of pipe in it. What had to be done was to figure out how to attach that capping stack to this very, very -- to a piece of equipment that was not designed to receive it, I think is the best way to put it.

These three options for attachment were all worked in parallel by the teams.

Now, I think I understand the parties' allegations to be in this case that -- in terms of source control -- there's a lot of allegations about we weren't ready for this, and we weren't ready for that, but I think the allegation comes down to you should have had a prebuilt capping stack.

One of the key issues here on the causation side of things is this: The only way to get this device onto the BOP without lifting the Lower Marine Riser Package, which had its own risks as we've discussed, was to attach it to the top of the BOP.

Much of the time that was involved in getting the capping stack ready to be attached -- and it was initially designed just to be attached for collection -- was spent developing these ways of doing that. They actually had to build, engineer, test tools that would allow for the attachment.

Each of these were running in the range of 70 tests. A lot of them were conducted underwater to see if they could make it work. That took a lot of time. That's where a lot of the time was spent in terms of getting the capping stack ready.

So there is a question, could you have shut the well in earlier, knowing everything you know now, looking in retrospect, if you had a capping stack available.

Admiral Allen says: "How long it takes to put a capping stack in place is dependent on a lot of different factors. I don't think there is any way to estimate that."

It's a unique situation. It was a unique blowout. As you've heard, there were no capping stacks anywhere in the world prior to this event. It had never been proven that a capping stack could work in deepwater. It was proven here, with a massive engineering effort and commitment that it would work here; but, before this, no one had a capping stack.

The government did not require it. This is Lars Herbst that you've heard from: "MMS did not require a capping stack. No one in industry had a capping stack."

Well, with regard to preparing for an incident, he tells Mr. Barr, "There is no real historical context as what would be needed. I don't believe the expectation they would develop something or have something available for a low probability event. The context of historically there has been no events related to that, so planning for events that have never occurred would be difficult."

Now, I'll skip over this one because they haven't mentioned it yet, but I'll mention this one. DEA-63, this seems to be the focus of the plaintiffs' case here in terms of why we should have had a capping stack.

One important issue that comes out of this document, Your Honor, is that this group here that looked at this issue and made recommendations, not to just BP, this is recommendations to industry, says, "Continuing into Phase Two is not warranted at this time." In other words, the group is saying, we don't believe proceeding to phase two is justified or warranted at this point in time.

Now, there has been a reference to this, but I think I'll just touch on this briefly. What is it that was expected of BP in terms of its response to a blowout in deepwater?

This here, Your Honor, is the industry standard for response to a deepwater blowout prior to the Macondo event. What did we need to do?

"Quickly commence relief well drilling." We did that. We had it spudded and underway by May the 2nd.

"Use ROV's to attempt to activate the BOP." You heard about it in Phase One, the efforts that made there. You'll hear a little more today.

"Stand up a team of well control experts to analyze the well and additional methods for controlling the blowout." That was done here. It was done immediately. By the following morning, BP's well control experts were present and working to develop solutions to the blowout, to understand the data, to understand what might could be done.

Our well control plan is consistent with every other operator in the Gulf of Mexico. It cannot be argued that we did not meet industry standard in the way that we were organized to respond to a blowout.

Here are the documents showing that we began to develop plans for drilling both a shallow and deep intercept well using the *Discover Enterprise* and the *DD II* and *DD III*, and this team was led by Pat O'Bryan.

This is the industry standard as it existed before April the 20th in terms of what should be done: "Assemble a team of technical experts." That is what BP did. It met the industry standard.

Now, ultimately, Your Honor, as you know, the capping stack was utilized to seal the well on July the 15th. Just one word about that, and then I'll have one other thing to share.

The idea with the capping stack was primarily to use it as a collection tool. The access points on the capping stack were going to be very beneficial for that.

But in the months of June and July, it was also developed that it was possible with the capping stack to conduct a well test to understand what was the pressure response to the well if it was shut in.

So a decision was made to go forward with the capping stack, conduct those tests, and see if the well could be safely shut in. The capping stack had the ability to let off pressure, that is, if the pressure built up to an unacceptable level after shut in, to let that pressure off and let the well either flow or begin to collect oil again.

So the test was run. The capping stack was actually installed, I think, on the 12th. After a couple of days of testing, the well was eventually successfully shut in on July 15th.

I just wanted to conclude with one more clip by Admiral Allen that I think summarizes his view of the work of BP and industry in getting this well shut in, in a timely way.

(WHEREUPON, a video clip was played.)

MR. BROCK: Your Honor, BP did not misrepresent flow rate in a way that caused a delay of the shut in of the well. It made reasonable engineering decisions based on what was known at each step along the way, keeping in mind the principles of do no harm, work all options in parallel, leave no stone unturned.

That's not fraud. That's not gross negligence. We just look forward to presenting to you our side of this, our evidence on this, over the next four days. Thank you very much.

THE COURT: All right. Thank you.

We'll take a 15-minute recess. We'll come back and start the testimony.

(WHEREUPON, at 10:10 a.m., the Court took a recess.)

THE DEPUTY CLERK: All rise.

THE COURT: All right. Go ahead and swear in the witness.

THE DEPUTY CLERK: Would you please raise your right hand. Do you solemnly swear that the testimony which you are about to give will be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

JOHN WILSON

was called as a witness and, after being first duly sworn by the Clerk, was examined and testified on his oath as follows:

THE DEPUTY CLERK: Please state and spell your name for the record.

THE WITNESS: My name is John Wilson, W-I-L-S-O-N.

MS. KARIS: Your Honor --

THE COURT: Before you speak, we apparently had a confession by the person who took the picture this morning: Mr. Reamer (spelled phonetically) from the Restore the Delta Group.

Mr. Reamer, where are you? Are you in the courtroom?

MR. REAMER: Here.

THE COURT: Okay. There you are. Since you were courageous enough to confess, we're going to just penalize you for the time being. We'll keep your phone for a while. And I'll lift the ban on everyone else. I know people are under a great state of anxiety without their electronic devices. So the phones, when you want to retrieve them, are down in the clerk's office, in a box in the clerk's office.

So we'll keep the ban on Mr. Reamer for the day, at least, and we'll see. But I accept your apology, Mr. Reamer, and thank you for fessing up.

Okay.

MS. KARIS: Hariklia Karis for BP and I recognize we're on the clock so I did not want to interrupt Mr. Li's examination, but we have filed a *Daubert* challenge to a portion of Dr. Wilson's testimony that I would like to raise and review at this time.

THE COURT: Yes. I've read the report and -- I mean the -- I'm sorry, the Motion to Exclude certain portions of his report. I'm going to allow him to testify. If we get to certain areas of questions that you think are objectionable or beyond his expertise, you can object, and I'll rule on it at that time. Okay?

MS. KARIS: Thank you, Your Honor. Yes.

THE COURT: All right. Go ahead.

MR. LI: Thank you, Your Honor. Good morning. Luis Li on behalf of Transocean and the aligning parties. Nice to be before you again, Your Honor.

DIRECT EXAMINATION BY MR. LI:

Q. Good morning, Dr. Wilson. Can you tell the Court where you currently are employed?

A. Yes. I'm employed at the New Mexico Institute of Mining and Technology in Socorro, New Mexico.

Q. What do you do there, sir?

A. I teach science and engineering in the Department of Earth and Environmental Sciences.

Q. How long have you been teaching at the New Mexico Institute of Mining and Technology?

A. Almost 30 years.

Q. Now, you have a Ph.D.?

A. Yes.

Q. And what is your Ph.D.?

A. It's in hydrodynamics from the Massachusetts Institute of Technology, MIT.

Q. And you also have a bachelor's degree I take it?

A. Yes. I have a bachelor's degree in civil engineering from Georgia Tech.

Q. Now, if you could tell the Court, we obviously submitted a very long CV, but if you could tell the Court just generally how your experience and research relate to the topic you're

here to testify about today, BP's internal flow rate modeling in April and May of 2010.
A. Well, for the last 45 years I've been focused both in teaching and research and study on the mechanics of fluids, and particularly mechanics of fluids related to processes in the geosphere, underground and aboveground, particularly flow and force media.
Q. Just so we're clear, layperson's terms, *force media*, you mean rocks, sediment, dirt?
A. That's right.
Q. And fluids can be water, gas, oil?
A. That's correct.
Q. Now, does hydrology share principles in technology with the gas and oil industry?
A. Oh, yes. Many of these principles and technologies are shared between the fields actually with correspondence back and forth and papers published across the fields.
Q. Have you published articles in the oil and gas field?
A. Yes, I have.
Q. Now, did you prepare a report in this litigation?
A. Yes.
Q. And if we could pull up TREX-11900.1.1.TO.
Dr. Wilson, is this your report?
A. Yes, it is.
Q. What did you review in order to form the opinions in your

report?

A. I reviewed depositions and e-mails and memos and reports and PowerPoint presentations.

Q. And those e-mails and the reports and other items, were they part of the discovery in this particular case?

A. Yes, they were.

Q. And who were these reports and e-mails and correspondence by?

A. Most of them were internal to BP. Some were between BP and the government.

Q. Now, did you prepare a demonstrative or help prepare a demonstrative of these opinions?

A. Yes, I did.

Q. Now, if we could take a look at D-25019, first slide.

Sir, are these your opinions?

A. Yes, they are.

Q. If you could just read the first opinion and explain a little to the Court what you mean by this.

A. Well, the first one says: "Immediately after the blowout of the Macondo well, BP began conducting flow rate -- well flow rate modeling to inform its source control efforts, including the Top Kill operation."

Q. If you could explain to the Court in layperson's terms, what we're talking about?

A. Well, basically, just after the accident, even before the

rig sank, engineers at BP went back and visited the model they had prepared for the original permit application to the Minerals Management Service and revised that and looked at what might happen if the rig sank, if the riser broke off and sank to the bottom of the ocean -- and other conditions.
Q. Now let's take a look at the Opinion B. Read it and just briefly explain what you did.
A. "In the weeks following the blowout, BP's computer models suggested higher flow rates than those BP reported to the government, the press and the public."
So over the period of April and May that I looked at is this information, there were a wide number of computer simulations done under a variety of conditions examining what the range of flow rates might be from the well, and literally dozens of these. And those were used to inform source control efforts.
Q. And you mentioned that there were certain flow rates that reported -- that BP reported to the government, the press and the public. What was that flow rate estimate?
A. Well, typically, almost exclusively, they reported 5,000 barrels of oil per day whereas the computer simulations they were running were most often showing rates higher than that.
Q. Now let's take a look at Opinion C, which is -- if you'd just read it and explain briefly what you did.

A. "BP knew or should have known from its modeling efforts that the Top Kill was very likely to fail because the well flow rate exceeded a 15,000 barrel oil per day threshold rate."

This is referring to some work done by a consultant contractor to BP examining the Top Kill and finding through hydraulic modeling of the Top Kill that if the flow rate was sufficiently high that it would fail to execute properly; that is, the injection of mud would simply not go down, it would come up.

Q. All right. And your last opinion: "After the Top Kill failed, BP was informed that the failure was most likely due to flow rate."

Just tell the Court briefly what you did and what that means.

A. Well, in that particular case, because of the study referred to in part C, there was knowledge that a high flow rate would lead to a failure of the Top Kill, particularly the momentum part of that Top Kill.

And the engineers examining this afterwards, particularly those specializing on the Top Kill, like a company called Wild Well Control, concluded that it was mud coming out of the top of the blowout preventer through the riser not going down the well that was responsible for it because the flow rate was too high.

Q. Now, Dr. Wilson, with respect to the documents and depositions you reviewed, did they contain sufficient information for you to form and support your opinions to a reasonable degree of scientific certainty?

A. Yes, I did.

Q. Now, Dr. Wilson, let's start with your first opinion, which is this same exhibit -- or Demonstrative Slide 2.

In your opinion, you state: Immediately after the blowout, BP began conducting well flow exercises.

First let's talk about who at BP was doing it. Did you identify different groups at BP that was -- that were doing these studies?

A. Yes. After looking over all the information, it appears that you could subdivide people working on this into four different engineering groups who were exploring -- trying to diagnose the well and then look at source control efforts using modeling.

Q. Now, Dr. Wilson, did you help prepare an organizational chart, Demonstrative 25013B?

A. Yes.

Q. And we've got it up on an easel here. It's a little hard to see, so I'm not going to make you try to read every word on it. I'll just point on it and we can go from there.

Or with the Court's permission, if I could walk up there, Your Honor, and I could point to it.

THE COURT: As long as you have the lapel mike on, that's fine.

EXAMINATION BY MR. LI:

Q. Now, Dr. Wilson, you have here four groups. Were these the groups you identified?

A. Yes, they are.

Q. Now, on the left, you have three groups here: Flow assurance, petroleum engineers and reservoir engineers. Are these preexisting groups within BP?

A. Well, they are associated with preexisting groups. The group on the left is a group that actually has that title, flow assurance.

And the middle group, then, on the left -- I'm not sure what color that is. It may be purple. I'm color-blind -- I think are people focused on production engineering.

And the next group over, the reservoir engineers, were basically involved in exploration for their everyday business.

Q. So let's focus on these first three groups here that are groups that are normally associated with BP. What's their general job? Is their job to figure out how much oil might flow out of a well?

A. Well, all of them, in the course of their daily activities, model flow from wells. And so they are all familiar with the computer software typically used to model hydraulics of wells and reservoirs.

THE COURT: Mr. Li.

MR. LI: Yes, sir.

THE COURT: I'm getting a complaint by someone who is listening elsewhere in the courthouse that they still can't hear you. I think you have that lapel mike way too low.

MR. LI: How about now?

THE COURT: We'll see if Judge Shushan is happy now.

EXAMINATION BY MR. LI:

Q. Let's focus for a second on the far right of this chart here in light blue. It's called the Hydraulic Kill Team. It has Kurt Mix, Ole Rygg, Tom Selbekk and Bill Burch. What was this group?

A. This was more or less an ad hoc group assembled together because of the blowout to look at the control options.

Q. If we can just focus on a couple of these folks, who is Ole Rygg?

A. He's a consultant at a company called Add Energy that specializes in software for modeling well flow.

Q. Is this a sophisticated company?

A. Yes. One of the most sophisticated in this kind of business.

Q. And then Bill Burch, what's his job?

A. He's with a company called Wild Well Control, a company that's particularly aimed at dealing with blowouts.

Q. Now, you had mentioned -- all of those groups, did they

produce modeling related to flow rate?
A. All of these groups did hydraulic modeling related to flow rate.
Q. And in your review of the documents, the e-mails and the PowerPoints, and what have you, did you see those flow rate estimates get communicated up to the executives?
A. Yes. They were some communications between individual engineers within a group, from time to time between groups, but there was also communications upward quite frequently, into the leadership roles at the top of this chart.
Q. So I'm going to point out a couple of folks at the leadership roles. So here we have Tony Hayward, CEO of BP. Did you see communications involving him?
A. Yes.
Q. Here we have Andy Inglis, CEO of Exploration & Production. Did you see communications from the modeling groups up to Mr. Inglis?
A. Yes.
Q. And then here we have a person who is identified as Jasper Peijs. We have a little dotted line here, and we call him an executive assistant to the chief of staff to Andy Inglis. Did you see communication from the flow rate modelers up to Mr. Peijs?
A. Yes, I did.
Q. Now, over here in a grayed-out box, we have a couple of

letters, UAC. What did you understand that to mean?
A. Unified Area Command.
Q. And that was the group that was in charge of -- a multi-agency group in charge of shutting in the well?
A. Yeah, government agencies -- excuse me -- BP and others.
Q. Do you need some water?
A. No, I'm fine.
Q. And here we have Mr. Suttles, Doug Suttles. He's the COO of Exploration & Production. What was his role?
A. He was tasked to communicate directly with the government at the UAC, and he was principally responsible for that. And Dave Rainey appeared to be his assistant --
Q. Did you see communications between the engineering team through the executives over to Mr. Suttles?
A. Yes.
Q. Now, let's talk a second about -- there is an issue, Mr. Brock brought it up in his opening statement, as to what does flow rate even mean. And if you could tell the Court what you mean by flow rate.
A. Well, I was reviewing these modeling efforts over a period of a little over a month by BP engineers, their consultants and contractors, and they were looking at a variety of issues related to source control. And doing that, they were simulating pressures and temperatures and flows in the well. And they were simulating ranges of flow rates, not a particular

number, not a daily flow rate, just what is the likely range of flow rate in the well.

Q. So when you say estimate, do you mean -- what do you mean?

A. I mean an approximation of what the flow rate is likely to be, so between some range of numbers, and within some range of numbers.

Q. Let me ask you, in your experience as a Ph.D. from MIT who specializes in hydrodynamic analysis, do you do estimates in your field?

A. I do estimates of that kind dealing with uncertainty and probabilities all the time.

Q. Now, you are familiar, are you not, with Dr. Ballard, one of BP's experts in this case?

A. Yes, I am.

Q. Now, he appears -- I'm going to point to it with the laser -- he is actually in the flow assurance group down here.

Did you see that?

A. Yes, I saw that.

Q. Dr. Ballard has criticized your opinion by saying BP was not modeling estimates of daily discharge from the well.

When you refer to estimates, what are you talking -- do you agree with Mr. Ballard or not?

A. I agree with him. They weren't doing daily flow rate estimates.

Q. What were they doing?

A. They were estimating range of flow rates to inform their source control efforts.

Q. You just preempted my next question.

So once you have a bunch of estimates, and they may be rough, can you do something with those estimates?

A. Absolutely.

Q. What can you do with them?

A. It's the whole reason for doing it. To examine alternatives for source control to see how each source control option you may consider will perform for different flow rates, which are in a range of reasonable or likely flow rates. But you're not doing this for a single flow rate, but for rather a range of possible flow rates.

Q. So were BP's flow rate estimates reliable in the sense that they could inform source control decisions?

A. They were highly reliable for that purpose.

Q. So we've talked a moment about modeling and flow rates estimates. Why don't we tell the Court what you mean by modeling?

A. Well, modeling is used in engineering and science and finance and economics and a variety of other things to conceptualize a system, you convert it into mathematical form, and in the case here, on to a computer, and then you use that to simulate the system you're trying to understand. And you do that perhaps to reconstruct the past, forensic modeling, or predict the future.

Q. Now, based on your experience and education, are you familiar with the types of modeling, flow modeling, that BP did in this case?

A. Yes, I am.

Q. Have you used similar modeling in your career in 45 years?

A. Yes.

Q. Now, in your opinion, how did -- or did BP's modeling deal with uncertainty?

A. Well, uncertainty in -- almost everything in science is uncertain except fundamental principles, that is, you make a measurement of something like a temperature. You don't know it exact, but you have an approximation that's based on the instrument you're using, or, if it's subjective, just your feeling, your belief on what the temperature is.

But there are certain fundamental principles models always have. They consider earth mass, for example. There are other principles they preserve.

In this case, there was a great deal of information known about the well and the reservoir and the fluids, for example, and so they were using modeling to understand those parts of the system which were less certain.

Q. Okay. Dr. Ballard, down there on that chart, he's opined that the input parameters that you put into these models were too uncertain to estimate flow rates. Would you agree or

disagree with that?
A. Well, I would disagree with that. They were too uncertain maybe to estimate a flow rate on a particular day, but they were certainly good to estimate ranges of flow rate that could be used to inform decision-making.
That's how they are used probabilistically in many other areas of activity, including petroleum engineering.
Q. Did you see examples of BP modeling to deal with uncertainty?
A. Yes, I did.
Q. If we could have TREX-5063.1.1.TO. Now, this is an e-mail from Trevor Hill to Gordon Birrell on April 28, 2010, attaching modeling of system flow behavior. These individuals are on the chart. I'm not going to make you try to have an eyesight exam, but one of the fellows is here, and he's sending off this e-mail.
He says, "We have modeled the whole system from reservoir to sea in order to bound the answers on flow rate." What did you understand that to had mean?
A. Well, there are two issues in here. One is what the model actually was trying to represent as the system. In this case, it's everything from the reservoir all the way up to the connection to the well, through the well, up to the wellhead, BOP, the riser, and then out to sea.
Q. I'm going to stop you for a second right there. So the

first part is to measure the entire system. Is this a normal thing you would do in your area of expertise?
A. Well, this is a normal thing one would do in this kind of application.
Q. All right. Then the second part of the phrase is -- or sentence is, "in order to bound the answers on flow rate." What did you understand that to mean?
A. That's the kind of thing I was talking about a few minutes ago, a range of flow rates, to get some idea of what the likely flow rate -- what the flow rate is likely to be, within what range is it likely to be, to bound it.
Q. Is that the kind of thing you typically do as an expert in hydrodynamics?
A. You would do something like this, yes.
Q. Let's take a look at the report that was attached to this e-mail, which is TREX-5063.4.1.TO. This is a memoranda that was attached. It says, "There are four data points in which we have good confidence," reservoir pressure, seabed water pressure, fluid properties and flow path.
If you could just explain to us what the -- what's being conveyed here?
A. Well, these are some things that the person writing this memo thought were more certain, better known. These are reservoir pressures and seabed pressures, which are the pressures driving the flow. It's the difference between those

two pressures that causes the flow. That turns out to be one of the more important parameters in a system.

Of course, the fluid properties refer to the hydrocarbons. The flow path is, this case, referring to the riser. We know that the exit for the hydrocarbon from the well goes out through the riser.

Q. So on April 28th, at least this set of engineers believed there was good confidence in this data; is that correct?

A. That is correct.

Q. Now, there are some things where -- let's pull up TREX-5063.4.2.TO.

So in this memo, the author writes, "We are currently less certain of the following aspects," and he lists a number of aspects. Are you familiar with this document?

A. Yes.

Q. Are these the type of uncertainties that modeling --

A. Yeah.

Q. -- is designed to deal with?

A. They express uncertainties regarding how the well and reservoir are connected and how the flow moves up through the well itself. Then how it then exits the wellhead to the BOP -- to the riser.

Q. Let's pull up -- so there were certain uncertain things, but did they generate an estimate out of this?

A. Yes.

Q. Let's pull up TREX-5063.4.5.TO.

Here, we have a chart that we pulled out. Using the knowns and less certain estimates, was BP able to get a range -- to bound the answers on flow rate?

A. Yes. They have a range here.

Q. What was the range?

A. In this set of scenarios, it was from 2500 barrels of oil per day at the low end up to 65,000 at the high end.

Q. So there is some interesting language here that's probably not obvious. Here it says, "orifice size inches diameter." In the context of this chart, what does orifice size mean?

A. Well, there were obstructions to flow in the BOP and the first part of the riser, where the riser had fallen and kinked over. The details of that obstruction were not known. So the BP engineers chose to take that complexity in terms of what the obstruction might be and simplify it into something called an orifice. That is, you take a pipe, you put a plate of steel across it, and you punch a hole through it to let fluid flow go through that hole.

If the hole is really teeny, you get less flow. The bigger the hole is, the more flow occurs. The orifice size here is the diameter of that hole in that plate. So the smaller the hole, the bigger the barrier, or resistance to flow, the lower the flow rate.

Q. So this orifice size, it's an extraction?

A. It's an extraction -- it's sometimes called an equivalent orifice size. It's sort of an equivalent resistance to what may actually be taking place in the BOP and part of the riser.
Q. Now, the first estimate, which yields 2500 barrels per day, how big is the orifice, the effective orifice size of that?
A. Well, that effective orifice is a quarter of an inch, .025 inches.
Q. We're talking about the size of this pen cap here?
A. Right. It could be an orifice that small.
Q. How would you characterize that restriction, extracting all of the BOP, the riser and everything else?
A. Well, it's a teeny hole, and therefore it's a very large restriction.
Q. Now, if you could take a look at the 1-inch diameter, what is the flow rate for 1 inch?
A. 33,000 barrels of oil per day.
Q. So if instead of this pen cap, the flow is actually coming through an effective orifice of this quarter, which is about an inch, we're talking 33,000 barrels a day?
A. Right. It's an effective orifice of just less than an inch or about an inch.
Q. Now, Dr. Wilson, as BP learned more about the well, did it incorporate that data into its models to lessen uncertainty?
A. Any modeling exercise involves taking advantage of new

information to improve the model, and BP did that.
Q. Let's take a look at TREX-9266.1.1.TO.
This is an e-mail from Ole Rygg to Kurt Mix, the subject is blowout rates, and it has a number of attachments.
You mentioned you knew Ole Rygg or you knew who he was?
A. Yes.
Q. Tell us what he does.
A. Well, he's one of the software developers for Add Energy that's developed a computer code called OLGA, all capital letters, O-L-G-A, which is one of the more sophisticated packages in the business for modeling multi-phase flow in pipes and wells and things like that. He was the consultant on this job and did the simulations.
Q. Let's take a look at this attachment here, TREX- 9266.2.1.TO. You'll see here, there is a 3800 backpressure measurement here.
A. Yes, sir.
Q. How did that come about?
A. Well, just before this memo was written and computer simulation done, a measurement was finally made at the bottom of the BOP. This subdivided the system into two parts, below the BOP and above it, where there were measurements of pressure at each of those points.
Now, they could understand the pressure difference

between the reservoir and the bottom of the BOP and use that to model the reservoir flow and well flow up to the BOP using this pressure.

Q. So by adding this pressure data, did they narrow some of the uncertainty?

A. That's right. They now knew more about to what extent the flow was restricted through the BOP and riser, as opposed to restricted at, say, the connection between the reservoir and the well.

Q. So tell us, is there a relationship between flow rate and wellhead pressure?

A. Well, in this case, the higher the pressure at this point, the lower the flow rate would be.

Q. So it's like a garden hose, where you've got your finger at the tip of the hose?

A. Yeah.

Q. Now, is it standard or unusual practice to incorporate new data such as pressure into modeling?

A. It's standard practice.

Q. Let's focus for a second on the flow path column here. There is a number of different cases, annulus, casing, and both. What do you understand this column to represent?

A. Well, this is an example of a scenario analysis to deal with uncertainty about which of several possible flow paths were believed to be acting for flow-up through the well.

One was through the production casing. That's the one labeled casing here. The other was in the annulus, between the production casing and outside of that. That's referred to as annulus. There is more resistance to flow in the annulus than there is in the casing itself.
Q. So they are essentially taking three different possible flow paths and modeling all three?
A. The third one, which I failed to mention, is where there is flow-ups in both.
Q. They are taking all three, and they're modeling them and giving results?
A. Yes, that's right.
Q. What are the ranges at 3800-barrel-per-day -- sorry, 3800 psi, what are the ranges?
A. Well, the low flow rate is that through the annulus. It's 37,000. Then, when they look at flow through the production casing, it's 55,000 barrels of oil per day.
Q. Then when it's both?
A. 74,000 barrels of oil per day.
Q. Now, Dr. Wilson -- if we could go to D-25019, slide three -- this is your second opinion: "In the weeks following the blowout, BP's computer models suggested higher well flow rates than those BP reported to the government, the press and the public."
Dr. Wilson, is that your opinion?

A. Yes.

Q. Now, did you help prepare a demonstrative of BP's modeling in the late April and May timeframe, 2010?

A. Yes, I did.

Q. We've put it up on this easel here. It's D25015C.

Dr. Wilson, could you walk us through what this chart here depicts.

A. Well, over this period of time, memorialized through PowerPoint presentations, reports, memos and e-mails, were documentation of simulations, computer simulations using these hydraulic flow models for a number of purposes, to look at pressures and temperatures and flow rate. All of those simulations produce a flow rate. Every report -- almost every report I read gave the flow rate for that simulation.

So this chart represents all of those simulations done over that period that I assembled for the purposes of this chart.

Q. I'm going to approach. Dr. Wilson, there is some little diamonds here. What are these?

A. Those are individual computer simulations. That is a particular scenario, a particular condition in the well and reservoir.

Q. For example, here, this random diamond sitting right here, which is about April 22nd, is that a single test?

A. That's a single computer run.

Q. That yielded what, a result in what?
A. Looks like 82,000.
Q. When you have a range like this, or a line through a number of diamonds, what does that represent?
A. Well, many of these are scenario analyses, where a variety of things were changed. We just saw a slide that had six things. It would consist of a vertical line with six numbers on it that were the six numbers in that table.
Q. I think you said, and just so we're absolutely clear, what documents and reports did you use to populate, to create this chart?
A. It was consistent with e-mails and memos, reports and PowerPoint presentations. I don't think there is any other category of information used.
I may point out that when there is a scenario of quite a few simulations, the individual simulations are shown as separate little diamonds or dots on that vertical line; although, in some cases, for reasons I describe later, I didn't do that.
Q. Now, there are some red lines here. It's very hard to read, and I apologize to the Court, but one here says 5,000 BOPD estimate. It's right down here. Why did you put this line?
A. Well, the 5,000 estimate is the one that BP consistently brought forth to the public and press and in reports to the

government.

Q. We'll focus on this a little more later. Here is a line that says 15,000 BOPD limit, and it goes across here. Why did you put that line on --

A. Well, that turns out to be critical flow rate that I already mentioned that Ole Rygg found in simulating the dynamic kill portion of the Top Kill, that at a rate of that high or higher, the Top Kill would fail.

Q. I think I walked away too quick because there's a few diamonds here that are actually right on the 5,000 line. We'll get into this a little more, but if you could explain to the Court what you concluded about those results that were on the 5,000 line?

A. Well, some of these simulations are where you take a measured or assumed pressure at two different points and look at the flow between them. Others were where you would have a target flow rate, what do I have to do to create this? Given these two pressures, how do I get a certain flow rate?

An example would be, then, to change the resistance and size. Sort of like screwing down an old-fashioned brass nozzle on a garden hose to get the flow rate down to the rate I want, in this case 5,000.

So it was a target simulation. Most of the 5,000 simulations here were targeted to be 5,000 by adjusting the resistance in the system.

Q. So when you saw evidence of adjusting the resistance in the system, did you see any evidence that those adjustments were based on empirical data?
A. No.
Q. Dr. Wilson, there are a number of red dots on the chart here, big fat red dots there. What do those represent generally?
A. Those represent four of the reports I was just referring to. These are all reports to the government.
Q. Let's focus for a second, if you would, on the dot of April 28, 2010.
First of all, did you review the deposition of Admiral Landry?
A. Yes.
Q. Did you watch it?
A. Yes.
Q. Let's take a look at TREX-92 -- I'm sorry, 9628.1.1.TO.
Do you know what this document is?
A. Yes, that's something that she drew in her deposition.
Q. What did it represent?
A. It represented a meeting that she had with Doug Suttles up here on the chart.
Q. Right up here in the UAC box?
A. Yes.
Q. The COO of E&P?

A. That's correct.
Q. Tell us what happened.
A. Well, she referred to a meeting with him in which he had drawn this diagram -- or this diagram was drawn indicating that BP felt the flow rate was between 1,000 and 5,000 barrels of oil per day, with a best estimate, her words, of 2500. He drew this after he said he consulted with somebody in Houston.
Q. Okay. So focusing on April 28, 2010, did you see any evidence in this testing that took place before Doug Suttles told Admiral Landry that the range was between 1,000 to 5,000 barrels a day, with 2500 barrels a day being the most likely, did you see any support for that?
A. Well, I think the chart is pretty clear. These flow rates up until that date are all pretty much higher than that. Almost none are as low or lower. It was clear that the hydraulic modeling did not support such an estimate.
Q. Dr. Wilson, I'm going to focus you on the next red dot there, which is placed at May 10, 2010. If we could pull up TREX-9155.1.1.TO.
This is an e-mail from Doug Suttles, right up there, to Rear Admiral Landry and Admiral Thad Allen dated May 10, 2010. Do you recognize this document?
A. Yes, I do.
Q. There is an attachment to it, so let's bring that up.
91 -- this is sort of a cover e-mail with an

attachment of a letter, so let's bring up that letter. 9155.2.1.TO. This is a letter from Doug Suttles. What does it say up here?
A. "Contains proprietary information."
Q. Now, is well data typically proprietary?
A. Yes.
Q. If you could read the "re" line, what does it say there?
A. "MC 252 Response -- United States Coast Guard Request for Proprietary Information Regarding Potential Productive Capacity of the Maconda Well."
Q. Obviously, they mean to write Macondo.
A. Yes.
Q. But what do you understand potential productive capacity to mean?
A. Well, they are asking for flow rates.
Q. Let's take a look at the interior of this letter, TREX-9155.3.1.TO, and focus on the first paragraph.
"If the well continues to flow at its currently estimated rate of 5,000 barrels per day." Did you see, by May 10, Dr. Wilson, which is right here on this chart, by May 10, did you see evidence from BP's flow rate modeling that the current estimate was 5,000 barrels per day?
A. Well, once again, if you look at the various scenarios simulated back in here in the period before that, the significant majority of them are higher than 5,000. There is

no support for the best estimate of 5,000 in this memo.

Q. Let's go on in this memo. "The estimated unrestricted full-stream capacity of the well is approximately 55,000 barrels per detail."

Let's just show where that is. I'm sorry about the -- I should have probably made these a little bigger. 55,000 barrels per day, I think, is right about here.

A. That's correct.

Q. Now, did you see evidence in BP's hydraulic modeling related to the flow rate that supported the contention that BP was giving to the United States Government that the worst case discharge was 55,000 barrels per day?

A. Well, I think you can see on the chart that a large number of simulations in the period before this letter or memo came out are better than 55,000, so they are up in here, as well as some below 55,000.

So it's certainly not, according to their hydraulic modeling, extremely rare and representing theoretical downside.

Q. You just read something out of the text of this letter here. It says, "This would be extremely rare and represents a theoretical downside."

Is the 55,000-barrel-a-day estimate that's contained in this representation to the United States Government, is it extremely rare in the modeling?

A. Not in the modeling.

Q. Now, let's go to the chart which is also attached to this letter. It's at TREX-9155.4.1.TO.

Do you recognize this chart?

A. Yes. This was attached to that letter and e-mail.

Q. Could you describe for us what this chart depicts.

A. This is a PowerPoint slide of a plot of production in barrels of oil per day versus time following the accident. It has two results on it. Each one represents the depletion of the reservoir. As oil is produced, pressures drop and flow rates drop.

It does it for two different cases, one starting at what I believe to be 55,000 barrels of oil per day, and the other starting at 5,000 barrels of oil per day.

Q. Focusing for a second on the one that starts at 5,000 barrels per day, what does BP entitle this estimate?

A. They call it a most likely model.

Q. Does it purport to rely on actual reservoir conditions?

A. Yes, it does.

Q. Now, with respect to the red line here, how does BP choose to identify this case?

A. They identify this in the slide as worst case model.

Q. Again, do they purport to base this representation on, quote, unquote, actual reservoir conditions?

A. Yes. They did.

Q. In your review of all of these charts, did you have an

opportunity to see how this chart was created? Did you look at some metadata, other things?
A. Yes.
Q. So let's take a look at TREX-1 -- sorry, 9157.1.1.TO. This is an e-mail from Kelly McAughan to Jasper Peijs and others. Kelly McAughan is somewhere down here.
A. She's right there.
Q. Right there. She sends this e-mail to Jasper Peijs.
She says, "Here are the plots that were discussed," WCD plots. What did you understand WCD plots to mean?
A. These are plots of worst case discharge, which I don't think we've defined yet.
Q. Let's bring up the next e-mail in the chain. It's at 9157.1.2.TO. What does Mr. Peijs say about the modeling that he's received from Kelly McAughan?
A. Writing to her, he says, "Both Tony and Andy have seen it and are impressed with the fast turn-around. This is exactly what they asked for. This information is sensitive, please do not forward."
Q. So she sends an e-mail -- I'm sorry, Jasper Peijs says both Andy and Tony are satisfied --
A. Right.
Q. -- and please do not forward this -- or do not pass it around. What does he say? Do not forward.
Let's pull up the chart she attached, which is at

TREX-9157.2.1.TO.

Dr. Wilson, was this chart attached to the e-mail?

A. Yes.

Q. What does this depict?

A. This is an Excel spreadsheet chart showing production through the Macondo Well versus time for six different scenarios, each one starting out at a different initial flow rate and then changing over time as the reservoir is depleted, from the time of the accident into August, with the right-hand column annotating what each of the plots represent in terms of reservoir or other conditions, plus input assumptions at the bottom give universal numbers used in all of the simulations.

Q. All right. So up here you have some input assumptions. Some of these might be proprietary data?

A. Some of those might be proprietary data, yes.

Q. These boxes here, you have the various assumptions to generate these models?

A. That's correct.

Q. What do they range from in numbers? From the top -- you don't have to read them all, but just from the top to the bottom?

A. Well, the top one starts out at 162,000 barrels of oil per day.

Q. The bottom?

A. At 5,000 barrels of oil per day.
Q. So the very bottom one is 5,000 barrels a day.
Does it say anywhere on this chart most likely model?
A. No. It doesn't say anywhere.
Q. What's the worst case discharge on this particular model?
A. 162,000, with 110,000 being the next worst.
Q. Dr. Wilson, we're going to keep our eye on this chart because it's going to change a little.
Let's pull up TREX-9330.1.1.
Here we have an e-mail Kelly McAughan to Jasper Peijs, again. If you could just read the entire e-mail.
A. Yes, Kelly ran two more simulations. She writes, "Ran the new cases and put them in a graph with the other 6 (total of 8 cases now). I attached the Excel file as well so you can edit freely. Let me know if there is anything else!"
Q. Now, in your review of this document and other documents, did you see evidence that the chart that Kelly McAughan sent to Jasper Peijs was, in fact, edited freely?
A. Yes, I did.
Q. Did you help prepare a demonstrative to explain what you observed?
A. Yes.
Q. Let's pull up TREX- 25011A.
If you could help -- using this demonstrative, help walk us through what you discovered.

A. Well, the chart on the right is the one we saw attached in that report sent to Admiral Landry and others. The chart on the left is the new chart with eight different scenarios on it sent by Kelly McAughan up the line to Jasper Peijs.

It's essentially the same chart we looked at a few minutes ago with two more simulations on it.

Q. Did they proceed to edit?

A. Yes. Jasper Peijs took the file, edited it in Excel to change scales and to eliminate some of the simulations, leaving only two, one for 5,000 barrels of oil per day and another for 55, with a vertical scale now fixed so 55 sort of fills it up.

He then imported it into a PowerPoint -- actually, it was in PowerPoint. He edited it in PowerPoint and then added some annotations that we saw on the final slide shown here, such as the two boxes with most likely model at the bottom and worst case model at the top.

Q. Now, in the preparation of this demonstrative to explain how this chart was edited, did you have the opportunity to review the Excel files at issue that were actually edited?

A. Yes, I did.

Q. I'm going to ask you to take a look at TREX-11906. I provided a copy to counsel.

Do you recognize that exhibit?

A. Yes, I do.

Q. Is that the document you used to help generate this chart?

A. Yes.
Q. Dr. Wilson, let's now move to the next dot on this chart, which is dated May 19th. It's another big red dot.
And let's pull up TREX-3218.1.1.TO. This is an e-mail from Doug Suttles to Admiral Landry and Admiral Allen on May 19th.
Do you recognize this e-mail?
A. Yes, I do.
Q. And let's pull up one of the things that -- well, first of all, it says, "Attached below is our most recent work on flow rate estimation."
We'll get back to that phrase in a second, but first let's take a look at an attachment. Let's take a look at 3218.15.1.TO.
Are you familiar with this chart as part of the package that was sent to Admiral Landry and Admiral Allen?
A. Yes, I am.
Q. And there is an oil and water estimate. And the best guess is how much?
A. 5,700 barrels of oil per day.
Q. And this is really hard to read, but what's the date on this?
A. The 17th of May, 2010.
MS. KARIS: Your Honor, I'm going to object to beyond the scope. Dr. Wilson, in his report and his deposition and I

think even in his qualifications, established that he looked at hydraulic modeling. This is not based on hydraulic modeling. This is based on surface expression work, which as Mr. Barr said in his opening, is unrelated and unreliable for purposes of estimating flow.

Dr. Wilson has not considered surface expression work and said he isn't qualified to do surface expression work, so this is beyond the scope.

MR. LI: Your Honor, we're just presenting what they gave to the government. I'm not asking any more questions about it.

THE COURT: About this?

MR. LI: Yeah. I'm moving on.

THE COURT: All right. Let's move on.

EXAMINATION BY MR. LI:

Q. Let's go back to opening slide, which is TREX-3218.1.1.TO. And it says, "Attached below is our most recent work on flow rate estimation."

Have you reviewed, Dr. Wilson, this whole letter?

A. Yes, and the two attachments.

Q. How many pages are we talking about?

A. Eleven pages of attachments.

Q. And one page of an e-mail?

A. And one page of the e-mail, yes.

Q. So based on your review of the hydraulic flow rate

modeling that BP did prior to May 19, 2010, did this contain all of BP's most recent work on flow rate?
A. It contained very little, if any, of BP's most recent work on flow rate using hydraulic models.
Q. Let's take a look at TREX-9156.1.1.TO.
This is an e-mail dated May 11th from Mike Mason to a number of people. And the body of the e-mail says, "All, Jasper's feedback, after reviewing with Andy Inglis" -- up here (indicating) -- "is very positive."
Did you review this document?
A. Yes.
Q. Who is Mr. Mason?
A. He's the leader of this group marked on the diagram. You're pointing to it. The label on the diagram is petroleum engineers, but a group of people doing production engineering.
Q. And he's reporting communications with Andy Inglis?
A. That's correct.
Q. Let's pull up from TREX-9156.5.1.TO. This is an attachment to Mr. Mason's e-mail.
And what do we see here, Dr. Wilson?
A. This is one of several attachments looking over a suite of scenarios examining what flow would be like under different conditions in the reservoir and in the well.
Q. And this is, in fact, hydraulic modeling, is it not?
A. This is hydraulic modeling using the new pressure

measurement at the bottom of the well, BOP of 3800 psi.
Q. Is this the typical kind of modeling you would see reservoir engineers do?
A. In this kind of -- well, this is the typical kind of modeling you see in the presence of some uncertainty about flow path and the like, and so there are a suite of scenarios here to deal with that uncertainty.
So the answer is yes, it's a typical kind of result you would expect for this kind of analysis.
Q. So Mr. Mason from the petroleum engineering group creates this model. What are the ranges here?
A. Well, for the upper diagram, they go from 21 to 82,000 barrels of oil per day, and that's with the new pressure measurement at the bottom of the BOP of 3800 psi.
And the bottom figure -- the bottom table is 24 to 96,000 barrels of oil per day. And that's with the BOP removed.
Q. Were these flow rates -- was this particular document provided to the government on that May 19th?
A. This document was not provided to the government.
Q. Let's take a look at TREX-9156.12.1.TO.
This is a FAQ, or a frequently asked question, slide from that package.
If you could just read this for us and tell us what you understand it to mean.

A. Well, this is self-asked questions, frequently asked questions by the modelers who put the package together.

And he says: "What gives you confidence in your understanding of the data?"

"We know: The pressure below the BOP." That's the 3800 psi thing.

"We know: Something about the reservoir. The properties, the fluid characteristics, the pressure of the reservoir and depths."

"We know: Something about the current state of the BOP. And geometries in the well." The various flow paths.

And, "With this data we can anticipate the expected range of rates."

Q. What did you understand Mr. Mason to be saying in this slide pack?

A. That we're doing scenario analysis to look at the range of flow rates that is likely to encompass the actual flow rate at the well.

Q. Now, Dr. Ballard says that there is no confidence in these rates because the inputs were too uncertain.

Do you agree with him?

A. No.

Q. From your review of the documents, did it appear that BP engineers at the time had confidence in their understanding of the data?

A. Yes.

MS. KARIS: I object to form, Your Honor, and this is part of the basis for our *Daubert* motion as well. Dr. Wilson is not qualified to speak to what BP engineers believed. That's speaking as to their state of mind.

THE COURT: I'll sustain the objection.

EXAMINATION BY MR. LI:

Q. Dr. Wilson, if we could move on to a topic that we discussed earlier, which you called *targeted rates*. What did you mean by that?

A. That's where you describe a flow rate as a target and then adjust resistances in the system to get flow to meet that rate.

Q. Let's take a look at TREX-9156.8.1.TO. This is from that same slide pack.

"The case for 5,000 bopd at 3800 psi."

What is this?

A. This is a targeted flow rate calculation done as part of this package. 5,000 didn't pop up in the kind of scenarios we looked at a minute ago in the analysis done by this group.

So they targeted 5,000 and looked at what conditions could be used to create a rate of 5,000 barrels of oil per day.

Q. How would you have characterize these various restrictions?

A. Well, the permeability of 170 -- and permeability refers to the resistance to flow in the reservoir. The permeability

of 170 is the lowest that this package used.
Q. What about reservoir?
A. The reservoir thickness of 10 feet is the lowest, I believe the lowest used in the package. Much lower than in the previous slide or other slides in the package, which were 88 feet and 44 feet.
Q. Now --
A. I'm --
Q. I'm sorry. In the interest of time, you reviewed this entire package?
A. Yes.
Q. What was the lowest flow rate estimate in this entire package?
A. 5,000 barrels of oil per day.
Q. Now, with this 5,000 barrel per day figure in mind, Dr. Wilson, did you ever see any -- did you ever see Mike Mason from the reservoir engineers expressing doubts or writing e-mails about making the case of 5,000 barrels of oil per day?
A. Yes.
Q. Let's pull up TREX-3220.1.1. This is an e-mail from Mike Mason to Andy Inglis, up there (indicating). And what does he say, if you could just read the highlighted portion?
A. He says, "We should be very cautious standing behind a 5,000 barrels of oil per day figure as our modeling shows that this well could be making anything up to approximately 100,000

barrels of oil per day."

Q. And if you can read the last sentence.

A. "We can make the case for 5,000 barrels of oil per day only based on certain assumptions and in the absence of other information, such as a well test."

Q. Now, Dr. Wilson, I'm going to take you out of the context of this oil spill for a second and just put you in your office in New Mexico. You get a call from a colleague who says: John, this figure we have been using doesn't sound very good. We have been modeling things that could show up to 20 times higher.

You as a professor, what do you do?

MS. KARIS: Your Honor, this is beyond the scope of Dr. Wilson's opinion. He specifically said he has not done anything to assess what he would have done, what was reasonable. He strictly looked at what BP's engineers were doing and not communicating his opinion.

THE COURT: I don't believe this is in his report, is it?

MR. LI: Not this exact phrase.

THE COURT: I sustain the objection.

MS. KARIS: Thank you.

EXAMINATION BY MR. LI:

Q. Dr. Wilson, what happened next after Mr. Mason sent this e-mail?

A. He got a phone call or an e-mail back from Jasper Peijs, the executive assistant to Andy Inglis as listed on the board, asking him to talk to him. And this was done on a Saturday. I think Mike Mason's e-mail was on a Saturday. The reply was on a Saturday. The meeting was on a Saturday.

And he went to see Jasper Peijs and had a conversation about this. And he was asked not to put this kind of thing in writing. And he asked sort of, what do you mean by that? And he got the feeling, pretty clear feeling that it was the big number, that the idea of putting down the 100,000 barrel of oil per day number in this e-mail was what was upsetting to the executive assistant.

Q. Dr. Wilson, your report discusses an apparent effort to conceal flow rate estimates at BP. In your review of the BP's flow rate modeling documents, did you see other examples of BP making an apparent effort to conceal flow rate estimates?

A. Yes. Both internally and externally.

Q. Is that good engineering practice?

A. No, it's not.

Q. Let's take a look at TREX-9475.3.1.TO.

This is an e-mail from Richard Lynch, who is up here in the executive range, to Adam Ballard, the forthcoming BP expert.

And what does he tell -- what is in this e-mail?

A. Well, he says, "We remain in a position where no flow related information can be released internally or externally."

Q. Can not releasing flow rates internally or externally produce bad results?

A. Well, in the course of normal business, I -- it would be dependent on the management.

In the course of an accident investigation like this where you're trying to marshal all sorts of resources to figure out what's going on, I think hiding information is not a good idea.

MS. KARIS: Your Honor, we move to strike.

Again, Dr. Wilson has said he hasn't look at how source control decisions were made. He hasn't looked at what the government had, what the government relied on, or how the government made its decisions. So what information would or wouldn't be valid is beyond the scope.

THE COURT: I overrule the objection, go ahead.

EXAMINATION BY MR. LI:

Q. Dr. Wilson, let's take a look at TREX-9474.1.2. This is an e-mail from Farah Saidi. She writes to Trevor Hill, who is on this chart right there, "Since the rates are confidential and I was told by Mike Brown not to write anything about it, he advises to call Paul Tooms."

Is this one of the e-mails you reviewed in reaching your conclusion that there was evidence that BP attempted to conceal the flow rate?

A. Yes, this is one of the things that I talked about in limited communication within and without BP regarding flow rates.

Q. In your review of the documents and testimony, including Admiral Allen's testimony, did you see any evidence that BP at the time told the government that they were conceal -- that they were keeping flow rate information confidential?

A. No, they never expressed that opinion to any of the government folks that I could see, at least not the decision makers.

Q. Let's take a look at --

MR. LI: Just so the record is clear, "at least not the decision makers," is what he said.

EXAMINATION BY MR. LI:

Q. Let's take a look at TREX-9164.1.1.TO. This is an e-mail from Paul Tooms to a number of folks. It says, "The purpose of this note was meant to put a limit on the people outside the circle of trust getting the data."

In light of this e-mail, did you see evidence that government officials were in or outside of the circle of trust?

A. They were out.

Q. Now, you've worked with the government before, have you not?

A. Yes.

Q. Is it a good engineering practice to keep information from the government?

MS. KARIS: Your Honor, objection. Again, it's beyond the scope.

MR. LI: I'll move on, Your Honor.

THE COURT: Okay.

EXAMINATION BY MR. LI:

Q. Are you familiar with the deposition of Marcia McNutt?

A. Yes.

Q. What did she say about the circle of trust?

A. "I guess I'm not in the circle of trust."

Q. I want to return to the bar chart here, D25015. Let's look at the last red dot there that's dated May 24th. Let's pull up TREX-1651.1.1.TO.

This is a letter that BP sent to Congressman Markey. I'm going to go very quickly.

Dr. Wilson, are you aware that this letter forms the basis of BP's guilty plea?

A. Yes.

Q. If we could the pull up TREX-52673.17.3, this is from BP's factual allocution in their guilty plea. Did you review this in forming part of your opinion?

A. Yes.

Q. So it says, "BP falsely suggested in it's May 24th letter that the Unified Command's flow rate estimate of 5,000 barrels of oil per day was the most scientifically informed judgment."

I'm just going to stop right there. Based on your review of all the evidence in the case, do you agree or disagree with that statement?

MS. KARIS: Your Honor --

MR. LI: Let me rephrase that.

THE COURT: I sustain that objection.

MS. KARIS: Thank you.

THE COURT: I assume that was an objection.

MS. KARIS: Yes.

MR. LI: It was well stated. I heard it loud and clear.

MS. KARIS: Sometimes the best objections are silent.

MR. LI: Well, it was a good one.

EXAMINATION BY MR. LI:

Q. Let me just rephrase the question. Based on your review of the documents, was 5,000 barrels per day the most scientifically informed judgment of flow rate?

A. No, it was not. You can see many computer simulations higher than that appear.

Q. I would like to turn to your third opinion. Let's pull up D-25019, slide four. Thank you.

"BP knew or should have known from its modeling efforts that the Top Kill was very likely to fail because the well flow rate exceeded a 15,000-barrels-per-day threshold rate."

Now, another witness will testify about Top Kill and what it involves, so we're not going to go into depth on this, but if you could just explain very briefly what Top Kill is?

A. Top Kill consisted of two stages. One was to inject mud at the wellhead through the bottom of the BOP, down the wellbore, and have weight and rate of mud be sufficient to overcome the momentum of the well due to the up-flowing hydrocarbon.

The second stage was to also inject obstacles, junk, in a junk shot into the well to catch in various bits and pieces in the BOP, and therefore allow a greater probability that mud would go down and arrest the well, rather than come up.

Q. Let's just keep those two things separate for a second.

So we've got the dynamic kill or a momentum kill, and we have a junk shot. Did you see any testing in your review of the evidence at all, any BP modeling at all about the junk shot?

A. There was no modeling of the junk shot.

Q. Did you see testing relating -- or documents relating to testing for the dynamic kill?

A. There was hydraulic modeling of the dynamic kill.

Q. Is the dynamic kill dependent on flow rate?

A. Yes.

Q. Why is that?

A. Well, one name is momentum kill. If you know anything about momentum, it has to do with velocity, and velocity has to do with flow rates. So the memorandum kill is very much dependent on flow rates.
Q. So you need enough momentum to fight the other momentum to win?
A. You need enough force to overcome the momentum of the upward flowing well.
Q. Is the viability of the junk shot, is there any impact of flow rate on the viability of junk shot?
A. Well, in an indirect sense in that there are -- it's a higher flow rate. It's more likely that there are fewer obstructions or bigger openings in the BOP, less for the junk to catch on, so a higher flow rate would suggest a lower probability that the junk shot would succeed.
Q. What modeling did you see about the momentum or dynamic kill?
A. Ole Rygg of Add Energy did modeling of the momentum kill. There was some earlier modeling, but that was modeling at the time of the design, and it was the modeling relied on BP and others for making a decision about the momentum kill.
Q. What did Ole Rygg determine?
A. He determined that if the flow rate was as high as 15,000 barrels of oil per day, then it would not succeed. That you simply couldn't overcome the upward momentum of the well.

Q. Let's take a look at TREX-9132.2.1. Are you familiar with this document?
A. Yes, I am.
Q. I'm going to skip ahead and just take at a look here. "Knowledge of the flow rate is needed to form a view of the probability of success, as is knowledge of the position of flow restrictions." Do you agree or disagree with that statement?
A. Oh, I agree.
Q. Then what is this? If you could just read this, please.
A. This next is one of five bullets: "Modeling indicates that a dynamic kill cannot be successfully executed if the oil flow rate is 15,000 barrels of oil per day."
Q. Now, there's a number of e-mail exchanges about the Top Kill. I'm going to ask you to look at 9250.2.2.TO.
If you could just focus on -- let's set the stage a little for the Court. There is a wellhead pressure drop of about 700 psi, correct?
A. At the pressure transducer below the BOP, the pressure had changed and dropped.
Q. What does Ole Rygg say about one of the possibilities for what would account for that pressure drop?
A. He -- I'll paraphrase it first. He's suggesting that if the pressure drops, it's because there's less resistance to flow. He puts it this way: "This means a large hole in the BOP stack has less chance of ever being able to do a dynamic

Top Kill, since the required rate through the stack to achieve the required pressure drop is too high."

Q. Then what he is saying next?

A. "Be aware that we are working on the 5,000 barrel of oil per day case. That could be too optimistic."

Q. Let's take a look at TREX-9250.1.2. This is part of the chain in the e-mail. Let's read the first paragraph. "The apparent reliance in Ole's e-mail on the 5,000 barrels per day number, which has little if no origin, is concerning. From all the different ways we have looked at flow rate, 5,000 barrels per day would appear to err on the low side."

Now, Dr. Wilson, from all of the evidence you reviewed, do you agree or disagree with Mr. Lockett, a BP engineer, would you agree or disagree with his statement?

A. Well, if you look at hydraulic modeling, which is what Tim Lockett does, at the date preceding the time of this note, the significant majority of those computer simulations are greater than 5,000 barrels of oil per day.

Q. Then a second phrase here, "Maybe I'm being pessimistic, but my first thought when I heard of this fall in pressure upstream of the BOP is that this is bad news rather than good. My thought would go to reduced restrictions within the BOP."

Do you agree or disagree with that as at least one possibility?

A. Yes, I would agree with that.

Q. Now, Dr. Wilson, in your review of the flow rate modeling that BP had done prior to this date, did you see any evidence in your review that the likelihood of success for the Top Kill was 60 to 70 to 80 percent?
A. There is no evidence for that in the hydraulic modeling.
Q. Did you see any evidence suggesting that the Top Kill was a slam dunk?
A. I saw no evidence that it was a slam dunk. And, in fact, I would be quite worried about the Top Kill chance of success after reviewing the hydraulic modeling.

MS. KARIS: I'm going to move to strike. Again, the chance of success of Top Kill is beyond the scope of Dr. Wilson's opinions. In fact, he specifically told me in his deposition, "I did not evaluate the dynamic kill itself. I have no prior experience evaluating dynamic kills." That's at page 122 of his deposition.

Likewise, when I asked him if he has any prior will experience with momentum kills, answer, "I do not. I've never done it prior in this case. I've never actually evaluated the momentum kill even in this case beyond looking at the estimates done by the modelers."

That's why I object to him speaking to that estimate --

THE COURT: Let me ask Mr. Lee to respond.

MR. LI: Yes, Your Honor. We're just asking, based on what he looked in the modeling and based on looking at what Ole Rygg's modeling was, did you see any evidence --

THE COURT: The problem is it sounds like it wasn't in his report or something that he's opined on.

MR. LI: It is in his report, Your Honor. He says that BP knew or should have known that the Top Kill had a very low chance of success. It's his third opinion.

THE COURT: All right. I'm not going to strike his testimony, but let's move on.

MR. LI: Yes, sir. In fact, I'm moving on.

EXAMINATION BY MR. LI:

Q. Let's take a look at slide five of D25019, which is your last opinion. "After the Top Kill failed, BP was informed that the failure was most likely due to flow rate."

Let's just cut right to the chase. Let's look at TREX-9160.1.1.

Do you recognize this document?

A. Yes, I do.

Q. This is a text message from Kurt Mix to John Sprague dated May 27, 2010. It says -- what does it say, Dr. Wilson?

A. It says, "Too much flow rate -- over 15000 and too large an orifice."

Q. What do you understand that to mean?

A. Well, he was concluding, based on the failure of the momentum kill that they attempted up to that point in time on the rig, that the flow rate was too high, and that's why it had not succeeded. And refers to then over 15,000, using Ole Rygg's simulation results as a guidepost, that the flow rate must be over 15,000, or it wouldn't have failed.

Q. Did Wild Well Control come to the same conclusion?

A. Yes, they did.

Q. Kurt Mix is at least one of the members of the Hydraulic Kill Team, correct?

A. Yes, he is.

Q. Now, let's take a look -- we're about to wrap up. Let's take a look at -- well, strike that.

Now, Dr. Wilson, have you reviewed various statements made by BP to the government, the press and the public about flow rate?

A. Yes, I have.

Q. Did you prepare a chart summarizing some of those statements?

A. Yes.

Q. Let's bring up D-25018A.

What the does this chart represent?

A. This is a summary of those times at which BP offered 5,000 barrels of oil per day, or something close to it, as a best estimate or most likely estimate.

Q. Now, to be fair, some of these statements include statements that this is NOAA's estimate, or that it's UAC's estimate; is that correct?

A. That is correct.

Q. In your review of these press reports in which 5,000 or close to 5,000 barrels per day was described as best estimate from April 28th all the way through May 24th, 2010, did you ever see in any of those press statements representatives from BP standing up and saying, this is incorrect, it's actually not 5,000 barrels per day, all of our modeling shows something different? Did you ever see that?

A. Not to the public or to the press or to the government.

MR. LI: Your Honor, I have no more questions.

THE COURT: Okay.

I imagine you're going to be a few minutes.

MS. KARIS: A few, Your Honor.

THE COURT: Why don't we go ahead and break for lunch, and come back at 1 o'clock. Okay.

MS. KARIS: Thank you.

THE DEPUTY CLERK: All rise.

(WHEREUPON, at 11:45 a.m. the Court was in luncheon recess.)

* * *

REPORTER'S CERTIFICATE

I, Cathy Pepper, Certified Realtime Reporter, Registered Merit Reporter, Certified Court Reporter of the State of Louisiana, Official Court Reporter for the United States District Court, Eastern District of Louisiana, do hereby certify that the foregoing is a true and correct transcript to the best of my ability and understanding from the record of the proceedings in the above-entitled and numbered matter.

s/Cathy Pepper

Cathy Pepper, CRR, RMR, CCR
Certified Realtime Reporter
Registered Merit Reporter
Official Court Reporter
United States District Court
Cathy_Pepper@laed.uscourts.gov

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