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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

IN RE: OIL SPILL BY THE OIL RIG * Docket 10-MD-2179
DEEPWATER HORIZON IN THE *
 GULF OF MEXICO ON APRIL 20, 2010 * Section J
 *
 Applies to: * New Orleans, Louisiana
 *
 Docket 10-CV-02771, * February 27, 2013
IN RE: THE COMPLAINT AND *
PETITION OF TRITON ASSET *
LEASING GmbH, et al *
 *
 Docket 10-CV-4536, *
UNITED STATES OF AMERICA v. *
BP EXPLORATION & PRODUCTION, *
INC., et al *
 *
 * * * * *

DAY 3, AFTERNOON SESSION
 TRANSCRIPT OF NONJURY TRIAL
 BEFORE THE HONORABLE CARL J. BARBIER
 UNITED STATES DISTRICT JUDGE

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23
24 Proceedings recorded by mechanical stenography using
25 computer-aided transcription software.

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1 AFTERNOON SESSION

2 (February 27, 2013)

3 THE COURT: Please be seated, everyone.

4 Mr. Miller, you are up.

5 ALAN HUFFMAN,

6 having been duly sworn, testified as follows:

7 CROSS-EXAMINATION

8 BY MR. MILLER:

9 Q. Kerry Miller for Transocean, and I have you on
10 cross-examination.

11 Dr. Huffman, during your testimony before lunch right
12 at the beginning --

13 THE COURT: You might want to move that thing a
14 little bit.

15 BY MR. MILLER:

16 Q. During the beginning of your testimony before lunch, I
17 wrote down one of your opinions, and I think I got it right. I
18 want to make sure.

19 What I wrote down is you stated -- you testified that
20 in your opinion, the most critical aspect of well control is
21 maintaining a safe drilling margin.

22 Did I get that right, Dr. Huffman?

23 A. That is essentially correct. I think I made a more
24 general statement that keeping the mud balanced so that you're
25 maintaining that margin but also protecting for the kicks on

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01:06 1 the low side is the basic principle.

01:06 2 Q. You think that's the most critical principle of well
01:06 3 control, correct?

01:06 4 A. Absolutely. It's your first line of defense.

01:06 5 Q. In terms of that critical principle of well control,
01:06 6 maintaining a safe drilling margin, that is the responsibility
01:06 7 of the operator, correct, Dr. Huffman?

01:06 8 A. It is the responsibility of the operator to determine
01:06 9 those parameters and tell the drilling people what to do.

01:06 10 Q. And the parameters that we are talking about -- let me see
01:06 11 if I have them right based upon your earlier testimony. The
01:06 12 parameters are predictions of pore pressure, correct?

01:07 13 A. That would be the lower boundary, yes.

01:07 14 Q. And the predictions of pore pressure is a job for the
01:07 15 operator, correct?

01:07 16 A. That is correct. They usually do the predrill prediction.

01:07 17 Q. Another parameter is the frac gradient, correct?

01:07 18 A. Correct.

01:07 19 Q. The operator is also responsible for predictions in
01:07 20 testing of the frac gradient, correct?

01:07 21 A. That is correct. And those are usually in their APDs.
01:07 22 They are showing them in the permit.

01:07 23 Q. In terms of the third parameter, the one in the middle, is
01:07 24 the mud weight, correct?

01:07 25 A. That is correct.

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01:07 1 Q. It is also the responsibility of the operator to decide an
01:07 2 appropriate mud weight based upon the other parameters,
01:07 3 correct?

01:07 4 A. That is correct.

01:07 5 Q. Dr. Huffman, I know you submitted a CV with your report,
01:07 6 and you testified a lot about prudent operator standard.

01:07 7 In terms of the basis for your testimony on that, as
01:07 8 I understand your background, Dr. Huffman, you worked for a
01:07 9 dozen years at Exxon and at Conoco, correct?

01:07 10 A. That is correct.

01:07 11 Q. Those are two large operators, correct?

01:07 12 A. That is correct.

01:07 13 Q. They operate in the Gulf of Mexico, correct?

01:07 14 A. They do.

01:08 15 Q. In addition to your time as an employee of Exxon and
01:08 16 Conoco, since 2003 you have operated your own company, correct?

01:08 17 A. That is correct.

01:08 18 Q. And since 2003 operating Fusion Geophysical, you have
01:08 19 worked for operators as well, correct?

01:08 20 A. That is correct. Large numbers of them around the world.

01:08 21 Q. So based upon the last 22 years, in addition to your
01:08 22 education, you believe that you can adequately define what a
01:08 23 prudent operator is, correct?

01:08 24 A. Yes. I work with enough companies that I see the industry
01:08 25 practices across that group of companies.

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01:08 1 MR. MILLER: Let's pull up Dr. Huffman's rebuttal
01:08 2 report.

01:08 3 BY MR. MILLER:

01:08 4 Q. Dr. Huffman, I put on the screen the cover page to your
01:08 5 rebuttal report. Do you see that, sir?

01:08 6 A. Yes, I do.

01:08 7 Q. Let's go to page 17 of your rebuttal report.

01:09 8 Sir, you have identified for me that the operator was
01:09 9 responsible for pore pressure, frac gradient, and mud weight
01:09 10 issues, correct?

01:09 11 A. Yes.

01:09 12 Q. I want to be a little more specific with respect to this
01:09 13 operator and this well, Macondo.

01:09 14 In your rebuttal report, sir, you identified two BP
01:09 15 engineers, Brian Morel and Mark Hafle, as being the most
01:09 16 responsible individuals within BP, the operator, for safe
01:09 17 drilling margin issues.

01:09 18 Do you see that, Dr. Huffman?

01:09 19 MR. REGAN: Objection, Your Honor. You may not have
01:09 20 meant to do it, but it's not what the document says in terms of
01:09 21 the question. You said "most responsible."

01:09 22 BY MR. MILLER:

01:09 23 Q. Can you answer my question, Dr. Huffman?

01:09 24 A. I --

01:09 25 THE COURT: Wait, wait, wait. So what's the

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01:09 1 objection? That he is misstating the document?

01:09 2 MR. REGAN: I just want to make sure. I think you
01:09 3 changed the phrase in the document on there, Kerry.

01:09 4 THE COURT: Why don't you read it again.

01:09 5 MR. MILLER: Let me rephrase my question.

01:10 6 THE COURT: Okay.

01:10 7 BY MR. MILLER:

01:10 8 Q. Dr. Huffman, do you have an opinion, with respect to
01:10 9 engineers at BP, which engineers had the most critical roles in
10 BP's drilling margin decisions?

01:10 11 A. I believe it was two of them, and two of them included
01:10 12 Mark Hafle and Brian Morel. And the reason I put this
01:10 13 statement in the report is that as an expert reviewing after
01:10 14 the fact what had happened in the well, their views would be
01:10 15 critical to my analysis of that well and why things went the
01:10 16 way they did. And I had no information from them, and I felt
01:10 17 that was a serious issue. I would like to know what they
01:10 18 thought and what they were seeing at the time.

01:10 19 Q. Dr. Huffman, this opinion that Brian Morel and Mark Hafle
01:10 20 held the most critical roles in BP's drilling margin decisions,
01:10 21 is that based upon your reviews of the depositions and
01:10 22 documents in this case?

01:10 23 A. Yes. I --

01:10 24 MR. REGAN: I object to the question. The sentence
01:10 25 says "who may have played." It doesn't say it's my opinion

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01:11 1 that these individuals held the most critical roles. It says
01:11 2 "may have." I know it's a small point, but it is a difference.

01:11 3 **THE COURT:** Well, I think Mr. Miller was asking him
01:11 4 if he agreed with his statement. Whether that's the exact
01:11 5 statement that's in that document is another issue.

01:11 6 **MR. MILLER:** That's another issue. This was a point
01:11 7 of reference, Your Honor; but I think my question stands.

01:11 8 **THE COURT:** Okay. Go ahead.

01:11 9 **THE WITNESS:** And the way I would respond to that,
01:11 10 Counselor, is that having the contemporaneous views of critical
01:11 11 people like Mr. Hafle and Mr. Morel are important. And in
01:11 12 direct this morning we cited some examples of e-mails from
01:11 13 Mr. Morel that were very important to my analysis.

01:11 14 I would like to have heard a lot more from both
01:11 15 of those gentlemen in deposition, which we did not have
01:11 16 available to us. That was my point.

01:11 17 **BY MR. MILLER:**

01:11 18 **Q.** Dr. Huffman, I would like to turn to the TREX that we
01:11 19 looked at this morning.

01:11 20 **MR. MILLER:** Let's pull up TREX-4411, please.

01:12 21 Let's go to the next slide. You can see this
01:12 22 one better.

01:12 23 **BY MR. MILLER:**

01:12 24 **Q.** Do you recognize this document, Dr. Huffman?

01:12 25 **A.** Could you zoom in at the top? It's very hard to read

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01:12 1 here.

01:12 2 Q. Yes. It's still a little blurry.

01:12 3 A. Yes. It's the revised casing program in March 2010. I
01:12 4 recognize it.

01:12 5 Q. I think the date of this document is March 26, 2010?

01:12 6 A. That is correct.

01:12 7 Q. This would have been a document that BP, as the operator,
01:12 8 submitted to MMS?

01:12 9 A. That is correct.

01:12 10 Q. This document contained -- hold on. This document, it
01:12 11 pertained to -- I'm right here, if you can read that.

01:12 12 A. Yes. It says: "Revised casing program to include running
01:12 13 a 9 7/8 liner."

01:12 14 Q. This was a particular application BP filed with the MMS
01:12 15 prior to running the casing for the production interval,
01:12 16 correct?

01:13 17 A. That is correct.

01:13 18 Q. The production interval, just to go back to one of the
01:13 19 demonstratives counsel for the Department of Justice showed you
01:13 20 before lunch, you had that picture of the well and you had the
01:13 21 blue zone at the bottom, correct? Do you remember that?

01:13 22 A. That is the subject interval, yes.

01:13 23 Q. The subject interval, the production interval, the
01:13 24 production casing, would have occurred within the blue zone on
01:13 25 that previous demonstrative, correct?

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01:13 1 A. Correct.

01:13 2 Q. Let's look at Attachment 2 to the March 26 BP MMS
01:13 3 submission.

01:13 4 Are you familiar with this particular graph,
01:13 5 Dr. Huffman?

01:13 6 A. Yes. This is what they refer to as the PPFG diagram
01:13 7 that's included in the application.

01:13 8 Q. If you look at the bottom, whose name appears on the
01:13 9 bottom of the page?

01:13 10 A. I believe it says Brian Morel, if I'm reading it
01:13 11 correctly.

01:13 12 Q. Is there any other name of any other BP individual on this
01:13 13 page?

01:13 14 A. I do not see one, no.

01:13 15 Q. Is there any name of any individual outside of Mr. Morel
01:13 16 on this page?

01:13 17 A. Not that I can see.

01:14 18 Q. Let's focus in on the bottom of this. I can better relate
01:14 19 to this one. I call this one the *driving between the lines*.

01:14 20 Let's look at what this indicates. You'll see here
01:14 21 there's a little triangle and an indication for 9 7/8. Do you
01:14 22 see that, Dr. Huffman?

01:14 23 A. Yes.

01:14 24 Q. What does this portion -- you see I've colored in some
01:14 25 lines here. Vertically going down from this point here where

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01:14 1 it says 9 7/8 and over here on this side -- I guess this would
01:14 2 be the Y axis -- those are depth indications, correct?

01:14 3 A. That is correct.

01:14 4 Q. Go ahead and explain to Judge Barbier and the rest of the
01:14 5 people gathered here today what this indicates, what this
01:14 6 represents.

01:14 7 A. First we have -- on the left here, that is their estimated
01:14 8 pore pressure, so that's the fluid pressures in the rocks.
01:14 9 Then you have the fracture gradient here on the right.

01:14 10 Q. That's what we have in the yellow, right?

01:14 11 A. In the yellow.

01:15 12 Then the orange is the safe drilling margin. Notice
01:15 13 it says here, "frac gradient minus .5." So they are using that
01:15 14 as their drilling margin boundary. And then the black -- the
01:15 15 dark black line here is their -- which is green at the bottom
01:15 16 of the diagram -- is their mud weight that they intend to drill
01:15 17 with in that part of the open hole.

01:15 18 Q. This would be the pore pressure?

01:15 19 A. Yes, this line to the left is the pore pressure.

01:15 20 There's another dashed line here, which is what we
01:15 21 would call their *trip margin*, which is their offset for being
01:15 22 overbalanced with their mud.

01:15 23 Q. Sure, Dr. Huffman. And like I said, I call this document
01:15 24 driving between the lines. I'm going to ask you some questions
01:15 25 based upon that term.

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01:15 1 A. Understood.

01:15 2 Q. As I appreciate it, what a safe drilling margin is for any
01:15 3 particular interval is you have to maintain your mud weight
01:15 4 between the dotted lines. Is that correct, Dr. Huffman?

01:16 5 A. That is essentially correct, yes.

01:16 6 We have lost the video input, I think.

01:16 7 Q. It's the after-lunch technical error.

01:16 8 THE COURT: Wait a minute.

01:16 9 THE WITNESS: It's back up here.

01:16 10 THE COURT: It's back up?

01:16 11 THE WITNESS: Yes, I have it.

01:16 12 THE COURT: That was not a technology problem. That
01:16 13 was my hand problem. I accidentally hit the button to shut it
01:16 14 off.

01:16 15 MR. MILLER: I know how much you love these geologic
01:16 16 lines, Judge. I will be quick, I promise. I get the message.

01:16 17 BY MR. MILLER:

01:16 18 Q. So again, Dr. Huffman, you talked a lot about maintaining
01:16 19 a safe drilling margin.

01:16 20 A. Yes.

01:16 21 Q. What line and what color for this production interval,
01:16 22 this 9 7/8-inch casing interval, represents a safe drilling
01:16 23 margin?

01:16 24 A. It would be the orange line right here. That would be the
01:17 25 upper boundary that you cannot infringe on with your mud weight

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01:17 1 as you drill deeper.

01:17 2 Q. That's one line you got to be in between?

01:17 3 A. Right. You have to stay below that line with your mud
01:17 4 weight.

01:17 5 Q. The mud weight is in green, right?

01:17 6 A. That's right. The mud weight is the dark black curve that
01:17 7 has the green segment on it at the bottom. That curve cannot
01:17 8 go to the right of the dashed curve with the orange marking on
01:17 9 it.

01:17 10 Q. This other dotted line is your other boundary, right?

01:17 11 A. That is correct.

01:17 12 Q. So you have to be in between the dotted lines to maintain
01:17 13 that safe drilling margin, correct?

01:17 14 A. Essentially, yes.

01:17 15 Q. Let me ask you: Based upon all the information you
01:17 16 reviewed in this case, when BP drilled the safe drilling
01:17 17 margin -- I'm sorry -- drilled the production interval and then
01:17 18 laid the casing down for the production interval and then moved
01:17 19 into cementing the well, did BP maintain this safe kick
01:17 20 interval or safe drilling interval, as you called it before
01:17 21 lunch?

01:17 22 A. No, they did not.

01:17 23 Q. Can you elaborate where these lines would have been at
01:18 24 various points in time in late March and in April of 2010?

01:18 25 A. Yes. Essentially the orange line, which we see here on

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01:18 1 the diagram, was what they were proffering as their first
01:18 2 estimate from their casing at the top of the interval. But
01:18 3 during the drilling of that open hole, they encountered with
01:18 4 their Geo Taps calculated fracture gradients that were
01:18 5 significantly lower, which means, if I can point on this at
01:18 6 right about here -- it's hard to do this on the screen. I
01:18 7 apologize.

01:18 8 In this interval right here where I'm showing, their
01:18 9 fracture gradients were significantly to the left of that
01:18 10 orange line. So they lost their margin because the fracture
01:18 11 gradients had declined in that interval.

01:18 12 Q. Basically, Dr. Huffman, at certain points in time during
01:18 13 this interval, based upon the data that you reviewed, the
01:18 14 testing data, were the orange and green lines basically on top
01:19 15 of each other?

01:19 16 A. They were within 1 to 2/10 of a pound per gallon from each
01:19 17 other. They're very close.

01:19 18 Q. Is that a safe drilling margin?

01:19 19 A. It is not.

01:19 20 Q. Is that evidence of a prudent operator?

01:19 21 A. It is not.

01:19 22 Q. Let's look again at one of the exhibits Mr. Spiro showed
01:19 23 you this morning. It's TRES-01241. This is the April 13
01:19 24 e-mail from Bobby Bodek. I'm going to focus in on the bottom
01:19 25 section that Mr. Spiro didn't show you.

ALAN HUFFMAN - CROSS

01:19 1 MR. MILLER: Let's go ahead and stop there.

01:19 2 BY MR. MILLER:

01:19 3 Q. Again, this e-mail is dated April 13, 2010. Do you see
01:19 4 that, Dr. Huffman?

01:19 5 A. I do.

01:19 6 Q. So this would have been exactly one week before the
01:19 7 catastrophic blowout?

01:19 8 A. Correct.

01:19 9 Q. Bobby Bodek was a BP geologist, correct?

01:19 10 A. Yes, he was an operations geologist on the well.

01:19 11 Q. He was the person who was assigned to provide information
01:19 12 to the BP wells team on pore pressure, fracture gradient, and
01:20 13 mud weight issues, correct?

01:20 14 A. Yes.

01:20 15 Q. And he writes -- one of the recipients of this e-mail is
01:20 16 Mark Hafle, correct?

01:20 17 A. Correct.

01:20 18 Q. Mark Hafle was a senior drilling engineer at BP, correct?

01:20 19 A. That is correct.

01:20 20 Q. He was Brian Morel's direct boss, correct?

01:20 21 A. I don't recall their reporting relationship. I know they
01:20 22 were both drilling engineers employed by BP.

01:20 23 Q. Both drilling engineers assigned to the Macondo well,
01:20 24 correct?

01:20 25 A. That is my understanding, yes.

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01:20 1 Q. Mark Hafle is one of the individuals who you say had a
01:20 2 very critical role in safe drilling margin issues, correct?

01:20 3 A. That is my understanding, yes.

01:20 4 Q. Let me go ahead and read this statement. This is coming
01:20 5 from a geologist to an engineer, correct?

01:20 6 A. That is correct.

01:20 7 Q. "We already experienced static losses of 14.5 ppg ESD."
01:20 8 "ESD" is mud weight, correct?

01:20 9 A. That is the downhole mud weight when they are not pumping
01:20 10 the mud, so it's -- still, it's static.

01:20 11 Q. That's what the S stands for?

01:20 12 A. Right. Static --

01:20 13 Q. Equivalent static density, correct?

01:20 14 A. Correct.

01:20 15 Q. But that is mud weight?

01:21 16 A. That is right.

01:21 17 Q. When you go back to the earlier demonstrative we showed,
01:21 18 that would be the line in the middle. That's what you need to
01:21 19 have between the lines of pore pressure and frac gradient,
01:21 20 correct?

01:21 21 A. That is correct.

01:21 22 Q. Mr. Bodek, the geologist, tells the drilling engineers
01:21 23 that: "It appears as if we had a minimal, if any, drilling
01:21 24 margin."

01:21 25 Now, "if any, drilling margin" means zero, correct?

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01:21 1 A. That is correct.

01:21 2 Q. And in order to be safe, you need to be at .5, correct?

01:21 3 A. That is correct.

01:21 4 Q. So they were between .2 and zero drilling margin according
01:21 5 to the BP lead geologist, correct?

01:21 6 A. That is correct.

01:21 7 Q. Let's look at the last sentence in this e-mail. Again,
01:21 8 this is Mr. Bodek, the lead geologist, talking to Mr. Hafle,
01:21 9 correct?

01:21 10 A. Yes.

01:21 11 Q. "We had simply run out of drilling margin. At this point
01:21 12 it became a well integrity and safety issue."

01:21 13 The point in time he is talking about was during the
01:22 14 critical drilling of the production interval, correct?

01:22 15 A. That is correct.

01:22 16 Q. That was at the point at which total depth was declared in
01:22 17 the well, correct?

01:22 18 A. That is true.

01:22 19 Q. "At this point it became a well integrity safety issue."

01:22 20 Do you know if anybody shared Mr. Bodek's e-mail with
01:22 21 the MMS?

01:22 22 A. I have no evidence that that was shared. I didn't see any
01:22 23 documentation of it.

01:22 24 Q. The fact that -- let me ask you this, Dr. Huffman: After
01:22 25 April 13, 2010, when Mr. Bodek sent this e-mail, do you know,

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01:22 1 sir, that BP, in fact, went ahead and cased the production
01:22 2 interval on April 19 and then cemented this well on April 20?

01:22 3 A. I am aware of that from the daily log of operations, which
01:22 4 describes everything that happened on the rig, yes.

01:23 5 Q. They did this at a point in time when there was a well
01:23 6 integrity and safety issue, correct?

01:23 7 A. That is correct.

01:23 8 Q. Let's move on.

01:23 9 MR. MILLER: Let's put a portion of Dr. Huffman's
01:23 10 rebuttal report back up, page 16 of Dr. Huffman's rebuttal
01:23 11 report.

01:23 12 BY MR. MILLER:

01:23 13 Q. I'm going to go ahead and read this language and ask you
01:23 14 some questions about this in terms of timing and what was going
01:23 15 on in terms of these comments that you are making.

01:23 16 You say in your rebuttal report: "BP had a choice of
01:24 17 plugging up the bottom of its hole with cement and attempting
01:24 18 to find a higher, stable point at which to set casing that
01:24 19 would isolate the high pressure sand behind pipe and protect
01:24 20 the hydrocarbon-bearing reservoirs below it."

01:24 21 Do you see that, Mr. Bodek [verbatim]?

01:24 22 A. Yes, I do.

01:24 23 Q. I think you described that before lunch as one option BP
01:24 24 had, correct?

01:24 25 A. That would have been my recommendation to them at that

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01:24 1 point, yes.

01:24 2 Q. And the point in time we are talking about basically
01:24 3 equates to when Mr. Bodek was writing his e-mail to Mr. Hafle,
01:24 4 correct?

01:24 5 A. I believe this would have actually been a little earlier
01:24 6 than the 13th.

01:24 7 Q. But it's during the time in which BP is drilling the
01:24 8 production interval?

01:24 9 A. Yes. It's in the first couple weeks of April, yes.

01:24 10 Q. Nevertheless, you say: "Despite that option" -- that is,
01:24 11 this option that you suggested that BP should have done --
01:24 12 "Despite the possibility of encountering sands with even higher
01:24 13 pore pressure than what it had already encountered and despite
01:24 14 the staff's understanding of the regulations, when BP had
01:25 15 drilled to a depth of 18,260, it elected to drill an additional
01:25 16 100 further feet without obtaining MMS prior approval in doing
01:25 17 so."

01:25 18 Do you see that statement, Dr. Huffman?

01:25 19 A. Yes, I do.

01:25 20 Q. You set forth two options that BP had in April of 2010,
01:25 21 correct?

01:25 22 A. Yes.

01:25 23 Q. The first option of plugging up the bottom of the hole
01:25 24 with cement and attempting to find a higher stable point in
01:25 25 protecting the hydrocarbon-bearing reservoirs, in terms of the

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01:25 1 language that you used in your direct testimony, would that
01:25 2 have been the most prudent option, Dr. Huffman?

01:25 3 A. I believe it would have been, yes.

01:25 4 Q. Would it have also been the safest option?

01:25 5 A. Yes.

01:25 6 Q. Did BP choose that option?

01:25 7 A. They did not.

01:25 8 Q. Was it BP's responsibility to make that decision at that
01:25 9 point in time?

01:25 10 A. Once they had determined that their margin was gone,
01:25 11 they -- if they planned to drill forward, they had to talk to
01:26 12 MMS first because they didn't have the margin that MMS had
01:26 13 approved prior to that decision to drill forward. So they had
01:26 14 to go to MMS at that point if they drilled another foot of the
01:26 15 subsurface.

01:26 16 **MR. REGAN:** Your Honor, before Mr. Miller asks
01:26 17 another question, we are just doing a repeat of the direct exam
01:26 18 at this point in time. I think, in terms of the alignment of
01:26 19 the parties on this issue, Transocean is clearly aligned with
01:26 20 the testimony that was elicited on direct. We are using the
01:26 21 same documents to do the same questions. I just ask that from
01:26 22 an efficiency standpoint and also from the standpoint of how
01:26 23 many witnesses we have to get through --

01:26 24 **MR. MILLER:** I will be real quick. I have about five
01:26 25 minutes left.

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01:26 1 **THE COURT:** There's some validity to what you say,
01:26 2 but it's not exactly a repeat of the direct examination, at
01:26 3 least not from what I have taken from it. We talked about who
01:26 4 is aligned with who in this case. I'm going to give Mr. Miller
01:26 5 some leeway here.

01:27 6 **MR. MILLER:** I would point out, too, that Dr. Huffman
01:27 7 is a joint PSC/DOJ expert, Your Honor. He's not just a DOJ
01:27 8 expert, but certainly our interests are not aligned with the
01:27 9 PSC.

01:27 10 **BY MR. MILLER:**

01:27 11 **Q.** Dr. Huffman, this second option, which was moving forward
01:27 12 and drilling an additional 100 feet when they had these
01:27 13 drilling margin issues that we previously identified, I think
01:27 14 you called that this morning *totally unsafe*. Is that correct,
01:27 15 Dr. Huffman?

01:27 16 **A.** Yes, it was unsafe and dangerous.

01:27 17 **Q.** In fact, I think you said one of the most dangerous things
01:27 18 you have ever seen in your 20 years' experience?

01:27 19 **A.** That is correct.

01:27 20 **Q.** But, in fact, sir, the second option, moving ahead, is the
01:27 21 option BP chose, correct?

01:27 22 **A.** It was.

01:27 23 **Q.** The second option of moving ahead when they were faced
01:27 24 with these two choices was also the cheapest option, wasn't it,
01:27 25 Dr. Huffman, at the time?

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01:27 1 A. Yeah. Counselor, I did not look at nor opine on the
01:28 2 casing cost options that are involved here, so it is a bit
01:28 3 beyond my expertise to discuss how much casing costs and
01:28 4 production liner versus --

01:28 5 Q. Thank you. I withdraw the question. Thank you, Doctor.

01:28 6 MR. REGAN: I adopt the witness's objection.

01:28 7 MR. MILLER: I withdraw the question.

01:28 8 THE COURT: I'll sustain you and the witness.

01:28 9 BY MR. MILLER:

01:28 10 Q. Let's look at another snippet from page 16 of your
01:28 11 rebuttal report. You state -- and again, you are talking about
01:28 12 the production interval time, the time that was in blue on the
01:28 13 diagram we looked at this morning.

01:28 14 A. Correct.

01:28 15 Q. You say: "In any event, it left its well" -- you mean BP
01:28 16 left the Macondo well by these terms, correct?

01:28 17 A. Yes.

01:28 18 Q. -- "in a position where it had but a tiny margin available
01:28 19 to cement the well's final interval."

01:28 20 The final interval is the production interval,
01:28 21 correct, Dr. Huffman?

01:28 22 A. That is correct.

01:28 23 Q. The cement job that you're talking about is the cement
01:29 24 that was pumped on April 19 and April 20, correct?

01:29 25 A. That is correct.

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01:29 1 Q. I think I understood your testimony correct -- and correct
01:29 2 me if I'm wrong. But as I understand it, Dr. Huffman, it is
01:29 3 the responsibility of the operator to maintain a safe drilling
01:29 4 margin and/or a safe kick margin at all times, including at the
01:29 5 point in time after drilling is done, when total depth is
01:29 6 declared and they are laying down the production casing,
01:29 7 correct?

01:29 8 MR. REGAN: Object, outside the scope.

01:29 9 MR. MILLER: I think it's completely within the
01:29 10 scope.

01:29 11 THE COURT: Overruled.

01:29 12 Go ahead.

01:29 13 THE WITNESS: I think it's important to clarify
01:29 14 something because this is a very good question.

01:29 15 BY MR. MILLER:

01:29 16 Q. Thank you.

01:29 17 A. The safe drilling margin is called the safe drilling
01:29 18 margin for a reason. When you stop drilling, that .5 margin is
01:29 19 no longer applicable because you are not advancing the drill
01:30 20 bit. So that's a critical point here.

01:30 21 Having said that, the statement that I made here was
01:30 22 also documented this morning in BP's MoC from April 15 where
01:30 23 they documented clearly in their own records that they would
01:30 24 have to use very low pump rates for any circulation of liquid.

01:30 25 Now, I'm not a cementer. I don't do that for a

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01:30 1 living. But I understand how fluids flow, including mud,
01:30 2 because that's part of what I do. Any fluid that you
01:30 3 circulated at the bottom of this well in this condition would
01:30 4 have been a delicate operation. You would have had to be very
01:30 5 careful how you did it because the well was very fragile at
01:30 6 this point.

01:30 7 Q. So there is a relationship, sir, between the safe margin
01:30 8 you have to maintain and circulating any fluids at the bottom
01:30 9 of a well?

01:30 10 A. That's correct. And that's defined in BP's own *Tubular*
01:30 11 *Design Manual* we looked at this morning in direct. They
01:30 12 clearly understand that that margin is needed for cementing.

01:30 13 Q. Those fluids could be foam-based cement?

01:31 14 A. Yes. It can be any fluid that you are circulating in the
01:31 15 well.

01:31 16 Q. Let's look at the MoC document that's TREC-51165. Do you
01:31 17 remember this document with the very fine print, Dr. Huffman?

01:31 18 A. Yes. Yes.

01:31 19 Q. That document is dated April 15, 2010, correct?

01:31 20 A. It is.

01:31 21 Q. Dr. Huffman, I know you testified about it this morning.
01:31 22 I'm not going to go back into the substance. I just want to
01:31 23 make sure we all know who was involved with the preparation of
01:31 24 this document.

01:31 25 The verifier of this document is listed as who,

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01:31 1 Dr. Huffman?

01:31 2 A. Mark Hafle.

01:31 3 Q. Responsible persons for this particular document and the
01:31 4 completion of this document was done by whom at BP,

01:31 5 Dr. Huffman?

01:31 6 A. I believe it says Greg Walz and John Guide.

01:31 7 Q. And Greg Walz and John Guide worked in the operations
01:31 8 department at BP?

01:31 9 A. I actually don't recognize Greg Walz's name; but John
01:32 10 Guide was involved in drilling the well, yes. He was one of
01:32 11 the superintendents, I believe, out on the rig. He was the
01:32 12 well team leader.

01:32 13 Q. Specifically for Macondo, correct?

01:32 14 A. Yes.

01:32 15 Q. We know that you have said before that Mark Hafle
01:32 16 performed a very critical role for BP in terms of complying
01:32 17 with safe drilling issues, correct?

01:32 18 A. Yes. He was one of the drilling engineers involved in the
01:32 19 rig, in drilling, yes.

01:32 20 THE COURT: The document that's up on the screen,
01:32 21 it's 51165, correct?

01:32 22 MR. MILLER: Correct.

01:32 23 THE COURT: What is that document? What's the title
01:32 24 of it?

01:32 25 MR. MILLER: It's called "Management of Change," and

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01:32 1 it pertained to operations BP was doing in mid-April 2010.

01:32 2 THE COURT: Okay.

01:32 3 MR. MILLER: A change in plans.

01:32 4 THE COURT: Okay.

01:32 5 BY MR. MILLER:

01:32 6 Q. This was a document before lunch, you said, in terms of
01:32 7 BP's statements about maintaining an arbitrary frac gradient,
01:32 8 was something you had never seen in your entire career,
01:33 9 correct?

01:33 10 A. I don't believe I said exactly that. What I stated was
01:33 11 that they recognized how delicate the condition of the well
01:33 12 was. They had established their arbitrary frac gradient, as
01:33 13 you just stated, of 14.5.

01:33 14 My own view was that it was slightly lower than that;
01:33 15 it was between 14.35 to 14.4, was their operative lowest
01:33 16 fracture gradient in the open hole.

01:33 17 Q. What exactly from this document, again, was something you
01:33 18 had never seen in your career? Very egregious, in your
01:33 19 opinion?

01:33 20 A. I don't believe I said that relative to this document
01:33 21 specifically.

01:33 22 Q. Okay.

01:33 23 A. I believe it may have been another document, Counselor.

01:33 24 Q. Let's move on. In this case you issued two reports,
01:33 25 correct, Dr. Huffman?

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01:33 1 A. Yes, an initial report and a rebuttal report.

01:33 2 Q. My read of those reports contains no opinions with respect
01:33 3 to Transocean. Is that correct, Dr. Huffman?

01:33 4 A. That is correct.

01:33 5 Q. In compiling those reports, Dr. Huffman, you didn't
01:34 6 evaluate or conduct any analysis of Transocean personnel
01:34 7 awareness of safe drilling margins on the rig, correct?

01:34 8 A. I did not.

01:34 9 Q. Okay. So you can't answer whether the driller had any
01:34 10 knowledge or awareness of the drilling margin of Macondo,
01:34 11 correct?

01:34 12 A. That is correct.

01:34 13 Q. The same is true in your rebuttal report. You don't
01:34 14 mention Transocean, correct?

01:34 15 A. I don't believe I did, no.

01:34 16 Q. The point of your rebuttal report was specifically to
01:34 17 rebut BP experts, correct?

01:34 18 A. That is correct.

01:34 19 **MR. MILLER:** Thank you, Dr. Huffman. That is all I
01:34 20 have.

01:34 21 **THE WITNESS:** Thank you, Counselor.

01:34 22 **THE COURT:** Halliburton.

01:34 23 **MR. GODWIN:** Thank you, Your Honor. Your Honor, I
01:34 24 think I can be done in about five to seven minutes.

01:35 25 **THE COURT:** Thank you.

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01:35 1 MR. GODWIN: You're welcome.

01:35 2 CROSS-EXAMINATION

01:35 3 BY MR. GODWIN:

01:35 4 Q. Good afternoon. How are you?

01:35 5 A. Very good, sir. How are you?

01:35 6 Q. We have not met before, have we?

01:35 7 A. I do not believe we have. I haven't shaken your hand,
01:35 8 anyway.

01:35 9 Q. Well, anyway, I did see you in the hall with your lawyer,
01:35 10 shook your hand, and walked by you --

01:35 11 A. That's right, yes.

01:35 12 Q. -- but anyway, nice to see you, sir.

01:35 13 Dr. Huffman, what was, in your opinion, the fracture
01:36 14 gradient at the bottom of the well just prior to the cement
01:36 15 job?

01:36 16 A. My estimate is it was between 14.35 to 14.4 at its weakest
01:36 17 point.

01:36 18 Q. Okay, sir. Just prior to the lunch break, you
01:36 19 testified -- and I'm paraphrasing -- that it is important to
01:36 20 understand the pore pressures encountered as you drill. Isn't
01:36 21 that correct, sir?

01:36 22 A. Yes, it is important.

01:36 23 Q. The way I understood it, and you correct me if I'm wrong,
01:36 24 was that you want to know that or want to be able to accomplish
01:36 25 that so as to manage the appropriate drilling margins there at

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01:36 1 the bottom of the well, correct?

01:36 2 A. That is correct.

01:36 3 Q. Okay, sir. And, sir, did you analyze the pore pressures
01:36 4 that existed in the final production interval of this Macondo
01:36 5 well?

01:36 6 A. Yes, I did.

01:36 7 Q. Okay, sir. And if -- and as you say you did, what was the
01:36 8 first sand with elevated pore pressures encountered in the
01:37 9 final interval? And when I say "elevated," I'm saying at or
01:37 10 around 14.15 ppg.

01:37 11 **MR. REGAN:** Your Honor, if I could interpose an
01:37 12 objection. The United States has made clear that Dr. Huffman
01:37 13 is not here to testify about the zone that I believe Mr. Godwin
01:37 14 is asking him about right now. I think it is expressly in
01:37 15 their filing in response to the *Daubert* motion that Dr. Huffman
01:37 16 was not retained to render an opinion on the particular
01:37 17 hydrocarbon zone that is the subject of this question.

01:37 18 **MR. GODWIN:** Judge, pore pressure is what has been
01:37 19 talked about here --

01:37 20 **THE COURT:** I'm going to overrule the objection.

01:37 21 **MR. GODWIN:** Thank you, Your Honor.

01:37 22 **BY MR. GODWIN:**

01:37 23 Q. Go ahead, sir.

01:37 24 A. Yes. The first sand that was encountered with the high
01:37 25 pressures was not a hydrocarbon-bearing sand.

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01:37 1 Q. Okay, sir.

01:37 2 A. It was a wet sand.

01:37 3 Q. All right.

01:37 4 A. To clarify counsel's comment.

01:37 5 And that sand had a measured pore pressure from the
01:37 6 Geo Tap measurements of 14.15 pounds per gallon.

01:38 7 Q. Okay, sir. Had you finished?

01:38 8 A. Yes.

01:38 9 Q. What was the first sand that was elevated with pore
01:38 10 pressures that you encountered that you deemed to be a
01:38 11 hydrocarbon-bearing sand?

01:38 12 MR. REGAN: Your Honor, that's expressly an opinion
01:38 13 that the United States said that this witness is not here to
01:38 14 proffer --

01:38 15 MR. GODWIN: Judge, prior to the lunch break, he was
01:38 16 asked, "If BP hired you and said they'd run out of drilling
01:38 17 margin and you were giving advice, what advice would you give
01:38 18 them?"

01:38 19 He said, "I would advise them to set casing and
01:38 20 cement higher -- the higher hydrocarbon sands in the well."

01:38 21 BY MR. GODWIN:

01:38 22 Q. Did I state that correctly, sir?

01:38 23 MR. REGAN: My objection is still pending.

01:38 24 THE COURT: Let me understand your objection,
01:38 25 Mr. Regan. Explain it to me. What interval does this relate

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01:38 1 to as opposed to what you're talking about?

01:38 2 **MR. REGAN:** There's an interval in that part of the
01:38 3 well, which Halliburton will put on evidence about, it's called
01:38 4 M57B. They will put on witnesses to testify about it.

01:38 5 **THE COURT:** It's the higher level than what he was
01:39 6 talking about?

01:39 7 **MR. REGAN:** I'll get to Dr. Huffman's statement in a
01:39 8 second. With respect to his opinions, it has been made clear
01:39 9 both to the parties and to the Court that he is not here as a
01:39 10 witness to express an opinion on whether or not that zone,
01:39 11 M57B, is a hydrocarbon-bearing zone.

01:39 12 So with respect to Mr. Godwin's question, it is
01:39 13 not proper -- it's my belief it is not proper for him to ask
01:39 14 questions for this witness to identify whether a zone is
01:39 15 hydrocarbon bearing or not because he has been expressly
01:39 16 represented to not be an expert to testify to this Court on
01:39 17 that topic.

01:39 18 **MR. GODWIN:** Judge, in the rebuttal report at
01:39 19 appendix 1 on page 2 --

01:39 20 Could we pull up here TREX-7511, please.

01:39 21 **MR. REGAN:** While they are pulling it up,
01:39 22 Your Honor --

01:39 23 **MR. GODWIN:** Appendix 1, the second page.

01:39 24 **MR. REGAN:** The representation made by the
01:39 25 United States about this witness was after the date of this

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01:39 1 report being filed.

01:39 2 MR. GODWIN: Judge, we are looking here at the --

01:40 3 THE COURT: Wait, wait.

01:40 4 MR. GODWIN: We have it up here on the screen,
01:40 5 Your Honor.

01:40 6 THE COURT: What do you have up on the screen?

01:40 7 MR. GODWIN: Appendix 1, Your Honor, to the rebuttal
01:40 8 report of this witness. That's page 2, sir.

01:40 9 THE COURT: Well, if this is, as Mr. Regan
01:40 10 represents, an area or subject which the United States has
01:40 11 advised the Court that this witness was not being offered as an
01:40 12 expert to testify about, I don't know how we can go there.

01:40 13 MR. REGAN: It's Docket 5672, filed February 14,
01:40 14 2012.

01:40 15 MR. GODWIN: Judge, what I'm asking --

01:40 16 THE COURT: I have that document here. What part?

01:40 17 MR. REGAN: Footnote 1, Your Honor, page 2.

01:40 18 THE COURT: Footnote 1. Hold on. I have that right
01:41 19 in front of me. Hold on.

01:41 20 "BP also claims that Dr. Huffman impermissibly
01:41 21 proffered an opinion regarding M57B zone. The United States
01:41 22 asserts that Dr. Huffman was not retained to render an opinion
01:41 23 on whether the M57B zone contained hydrocarbons."

01:41 24 It goes on to say: "During the deposition the
01:41 25 United States made it clear that such testimony was beyond the

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01:41 1 scope of Dr. Huffman's report. The United States, therefore,
01:41 2 does not object to limiting Dr. Huffman's testimony at trial to
01:41 3 avoid opinions regarding whether the M57B zone contained
01:41 4 hydrocarbons."

01:41 5 I sustain Mr. Regan's objection.

01:41 6 **MR. GODWIN:** May I attempt to lay a foundation, Your
01:41 7 Honor? In other words, what I'd like to do --

01:41 8 **THE COURT:** No. We are just not going to go there.

01:41 9 **MR. GODWIN:** Well, in the report, if I might,
01:42 10 Your Honor, is what -- without being disrespectful to the Court
01:42 11 at all -- I never would -- he talks about these
01:42 12 hydrocarbon-bearing zones there on page 2 in the rebuttal
01:42 13 report, sir, which is what I'm referring to. And all I want to
01:42 14 ask him, that just with regard to the report and not to go
01:42 15 outside of it, Judge, can he identify here for Your Honor with
01:42 16 regard to that one sentence that you have here in the report
01:42 17 what zones you're referring to.

01:42 18 **THE COURT:** Let me clarify it. This thing I just
01:42 19 read occurred after the rebuttal report was filed, right?

01:42 20 **MR. REGAN:** Yes, Your Honor, it did.

01:42 21 **THE COURT:** I'm going to sustain Mr. Regan's
01:42 22 objection.

01:42 23 **MR. GODWIN:** Thank you, Your Honor.

01:43 24 I will ask a couple questions, Your Honor, and
01:43 25 stay away from M57B.

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01:43 1 THE COURT: Go ahead.

01:43 2 MR. GODWIN: Thank you, Your Honor.

01:43 3 BY MR. GODWIN:

01:43 4 Q. Dr. Huffman, you conducted a petrophysical analysis for
01:43 5 purposes of preparing your rebuttal report, did you not, sir?

01:43 6 A. Yes, I did.

01:43 7 Q. While the specific purpose of the analysis, as was stated,
01:43 8 was to assess the property of the rocks in the last two
01:43 9 intervals of the well, the analysis necessarily had to separate
01:43 10 the rock from the geological formation or the sands, including
01:43 11 the sands in the well, did it not?

01:43 12 A. Yes. It analyzed all the rocks, including sands, shales,
01:43 13 all the materials in the well.

01:43 14 Q. To do your analysis, you used data gathered from BP's
01:43 15 wireline logging operations, did you not, sir?

01:44 16 A. That is correct.

01:44 17 Q. And I believe before the lunch hour, you were asked about
01:44 18 those wireline operations that you used, and you said you did
01:44 19 use those. And so for purposes of that analysis, you did use
01:44 20 BP's wireline logging operations, correct?

01:44 21 A. Yes, I did.

01:44 22 Q. The same data that you used to identify the rock and
01:44 23 calculate its hardness, can those -- can that same data also be
01:44 24 used to identify what is contained in the sands that intersect
01:44 25 with those rocks?

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01:44 1 A. Yes.

01:44 2 Q. Okay, sir. And did you do that, sir, as a part of your
01:44 3 petrophysical analysis?

01:44 4 MR. REGAN: Your Honor, I think we are getting right
01:44 5 back into the same topic, with respect to Mr. Godwin trying to
01:44 6 use this witness to be an expert on hydrocarbon-bearing zones.

01:44 7 MR. GODWIN: I haven't mentioned hydrocarbon-bearing,
01:44 8 Judge.

01:45 9 THE COURT: Let's see where it goes.

01:45 10 MR. GODWIN: Thank you, Your Honor.

01:45 11 THE WITNESS: Would you ask the question again,
01:45 12 please?

10:55 13 MR. GOODWIN: Yes. Could we ask for the reporter to
10:55 14 read back? If not, I can rephrase it.

01:45 15 THE COURT: Did you do that as a part of your
01:45 16 petrophysical analysis, I think is the last question.

01:45 17 THE WITNESS: Yes. In order to analyze the rock
01:45 18 strength, which is the reason why we did the log analysis, you
01:45 19 have to include in that analysis a calculation of the fluids
01:45 20 that are saturating the rocks.

01:45 21 BY MR. GODWIN:

01:45 22 Q. Okay.

01:45 23 A. Whether it be brine or water or oil or gas. You need to
01:45 24 know that for the computation of the strength of the rocks.
01:45 25 The goal of the log analysis was very specific, to try to

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01:45 1 understand whether there was any chance that the anomalously
01:45 2 high formation integrity test could be valid.

01:45 3 And my determination was they were not. The rocks
01:45 4 all appeared to be similar in strength through the well, and
01:45 5 there was no explanation for the absurdly high tests that they
01:46 6 got in the two intervals.

01:46 7 Q. In those rocks that you were analyzing, for purposes of
01:46 8 your petrophysical analysis there, did you determine that those
01:46 9 rocks, those sands, contained a percentage of water, water
10 saturation?

01:46 11 MR. REGAN: Your Honor, we are getting right into the
01:46 12 question of how people who do this for a living and express
01:46 13 opinions on this, other than Dr. Huffman, determine whether a
01:46 14 zone is hydrocarbon bearing. This is exactly the topic you are
01:46 15 going to hear about from Mr. Strickland, who is a Halliburton
01:46 16 expert who they will put on the stand to give this testimony
01:46 17 about his views. Dr. Huffman is the wrong witness for this.

01:46 18 MR. GODWIN: I'm just asking here about the water,
01:46 19 Your Honor. And he said he did a petrophysical analysis to
01:46 20 determine the hardness of the rocks, the water saturation, what
01:46 21 was there. He was looking at the fracture gradient, pore
01:46 22 pressure, all of that being very important, said he needed it.
01:46 23 And I have not asked about hydrocarbons, Judge. I'm just about
01:46 24 done here. I need a little leeway from you, please.

01:47 25 MR. REGAN: This is an interpretive science. It

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01:47 1 takes people to look at data that itself is a product of
01:47 2 algorithms, to look at that data to come to judgments in their
01:47 3 view about where you have things like resistivity, crossover,
01:47 4 water saturation. These are -- it's a science that has been
01:47 5 done by Dr. Strickland, who they are going to put on. We have
01:47 6 witnesses that address this. He is the wrong witness to
01:47 7 testify about this.

01:47 8 **THE COURT:** Let me ask the witness.

01:47 9 Do you understand the question Mr. Godwin is
01:47 10 posing to you?

01:47 11 **THE WITNESS:** Yes, Your Honor.

01:47 12 **THE COURT:** Can you tell me, do you consider that
01:47 13 within the bounds of the expertise for which you were brought
01:47 14 to court to testify about, or is that outside of it?

01:47 15 **THE WITNESS:** It is -- if you would look at my CV,
01:47 16 Your Honor, the other area --

01:47 17 **THE COURT:** I'm not looking at your CV. I want to
01:47 18 know what it is you understand you were called here by the
01:47 19 United States to testify about, whether this is within or
01:47 20 without the bounds of that.

01:47 21 **THE WITNESS:** It is not within the bounds of what I
01:47 22 was asked to opine on, Your Honor.

01:48 23 **THE COURT:** I sustain the objection.

01:48 24 **MR. GODWIN:** Thank you, Your Honor. I pass the
01:48 25 witness.

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01:48 1 Thank you, Dr. Huffman.

01:48 2 THE WITNESS: You're welcome.

01:48 3 THE COURT: BP.

01:48 4 CROSS-EXAMINATION

01:48 5 BY MR. REGAN:

01:48 6 Q. Dr. Huffman, my name is Matt Regan. I represent BP, and
01:49 7 I'm here on cross-examination.

01:49 8 Dr. Huffman, could you tell us what *BSEE* stands for?

01:49 9 A. It's the Bureau of Safety, Environment, and
01:49 10 engineering [verbatim], I believe is the new term. It's had
01:49 11 several changes since MMS.

01:49 12 Q. It's the Bureau of Safety and Environmental Enforcement,
01:49 13 correct?

01:49 14 A. Yes, enforcement. That's correct.

01:49 15 Q. You don't work for BSEE, do you?

01:49 16 A. No, I do not.

01:49 17 Q. You don't work for BOEM, correct?

01:49 18 A. I do not.

01:49 19 Q. Do you know what that stands for?

01:49 20 A. I forget what the acronym stands for, Counselor.

01:50 21 Q. That's the Bureau of Ocean Energy Management.

01:50 22 You have never worked for the MMS, correct?

01:50 23 A. No, I have not.

01:50 24 Q. Which federal agency in the United States is responsible
01:50 25 to enforce the drilling regulations that you testified about on

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01:50 1 your direct exam?

01:50 2 A. At the time of the accident, it was the MMS.

01:50 3 Q. Do you know who does it today?

01:50 4 A. I believe it's BSEE today.

01:50 5 Q. Now, you were retained by the federal government in this
01:50 6 case, correct?

01:50 7 A. Yes, I was.

01:50 8 Q. The federal government is paying your fee, your hourly
01:50 9 fee, in conjunction with your work as an expert and your
01:50 10 testimony today, correct?

01:50 11 A. That is correct.

01:50 12 Q. You are not responsible for enforcing drilling regulations
01:50 13 in the United States, are you?

01:50 14 A. No.

01:50 15 Q. BSEE's employees, they also get paid by the federal
01:50 16 government, correct?

01:50 17 A. I would assume so, yes.

01:50 18 Q. Their job is to review regulations, interpret regulations,
01:50 19 and apply them to drilling operations, correct?

01:50 20 A. I would assume so, yes.

01:51 21 Q. That's what they do day in, day out, correct?

01:51 22 A. Yes.

01:51 23 Q. You, sir, have never analyzed whether a well has complied
01:51 24 with MMS regulations until the expert report that you filed in
01:51 25 this case, correct?

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01:51 1 A. I have never been asked to do a direct comparison to the
01:51 2 regulations, that is correct.

01:51 3 However, I use those regulations in my design work on
01:51 4 a regular basis.

01:51 5 Q. As part of your work, have you ever analyzed whether a
01:51 6 well has complied with MMS regulations or not before you
01:51 7 submitted your expert report to Judge Barbier?

01:51 8 A. Not that I can recall, no.

01:51 9 Q. This is the first time you have ever done it?

01:51 10 A. It's the first time I have rendered an opinion on whether
01:51 11 someone violated the drilling margin.

01:51 12 Q. It's your maiden voyage with respect to expressing
01:51 13 opinions about whether or not an operator has complied with CFR
01:51 14 regulations for drilling margin, correct?

01:51 15 A. It's the first time I have been asked to opine on it, yes.

01:52 16 Q. You do not interpret regulations in your day-to-day work,
01:52 17 correct?

01:52 18 A. That is a question I need to be careful how I answer,
01:52 19 Counselor. I, every day of the week, do well planning work and
01:52 20 well monitoring work for wells both in U.S. waters and outside
01:52 21 the United States for a large group of companies.

01:52 22 In doing so, I utilize the regulations and their
01:52 23 equivalents to advise the clients how to drill their wells
01:52 24 safely and not violate the regulations. So there is a
01:52 25 distinction here that needs to be made between opining on it on

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01:52 1 an accident, like we are doing here, and applying those
01:52 2 regulations in my daily work for over 23 years.

01:52 3 Q. But what you are doing here, in applying those regulations
01:52 4 in an accident, this is the first time you have ever done that?

01:52 5 A. That's correct. And I, frankly, hope it's the last one I
01:52 6 have to do.

01:52 7 Q. Are you a regulator?

01:52 8 A. No, sir, I am not.

01:52 9 Q. Are you in the business of determining whether or not
01:52 10 regulations are violated?

01:52 11 A. That is not my normal practice of work, no.

01:53 12 Q. How would you -- well, let me ask you.

01:53 13 With respect to how the regulators, the people who
01:53 14 are paid by the federal government to work at BSEE to interpret
01:53 15 and enforce regulations, do you have an understanding of how
01:53 16 they do that job?

01:53 17 A. The only interactions I have had with the MMS, other than
01:53 18 in this case, have been in the area of shallow hazards
01:53 19 analysis, where we worked closely with them in the past at my
01:53 20 time at Conoco.

01:53 21 Q. Shallow hazards analysis, we'll get to that in a minute.
01:53 22 That talks about shallow gas, really about a couple thousand
01:53 23 feet below the mud line, correct?

01:53 24 A. It's actually other things as well.

01:53 25 Q. You understand that the people who are paid by the federal

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01:53 1 government to review and enforce regulations physically travel
01:53 2 offshore, go to rigs, and conduct inspections of the documents
01:53 3 that are there, correct?

01:53 4 A. Yes, I do.

01:53 5 Q. You have never done that?

01:53 6 A. I have never been asked to.

01:53 7 Q. You have never been on an offshore rig that is operating
01:53 8 in your life?

01:53 9 A. That is correct. I have only been on them during rig
01:53 10 inspections in port.

01:54 11 Q. Now, there are rules that the federal government has to
01:54 12 apply to its federal employees who, as their job, interpret
01:54 13 federal regulations about how to conduct inspections. You know
01:54 14 that, right?

01:54 15 A. I believe so, yes.

01:54 16 Q. Those are in the CFR, right?

01:54 17 A. Actually, I believe they're partly in their operations
01:54 18 manuals as well.

01:54 19 **MR. REGAN:** Can we pull up 30 CFR 250.130.

01:54 20 **BY MR. REGAN:**

01:54 21 Q. This is part of the CFR, Dr. Huffman. While we are
01:54 22 waiting for it to come up, have you ever participated in a BSEE
01:54 23 inspection?

01:54 24 A. No, sir, I have not.

01:54 25 Q. 250.130, this is the Code of Federal Regulations, the same

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01:54 1 chapter that you are relying on in terms of your report,
01:54 2 correct?

01:54 3 A. That is correct.

01:54 4 Q. "BSEE will inspect OCS facilities and any vessels engaged
01:54 5 in drilling. These include facilities under the jurisdiction
01:55 6 of other federal agencies."

01:55 7 Do you see that?

01:55 8 A. Yes, I do.

01:55 9 Q. They conduct these inspections to verify that you are
01:55 10 conducting operations according to the Act, the regulations,
01:55 11 the lease, and the contingents. Do you see that?

01:55 12 A. I do.

01:55 13 Q. Now, those BSEE inspectors, they look at APDs, correct?

01:55 14 A. My understanding is that the field inspectors focus
01:55 15 primarily on the IADCs when they are on the rig.

01:55 16 The APDs and other documents, such as the weekly
01:55 17 activity reports, are used more heavily by the district
01:55 18 engineers.

01:55 19 Q. In your review of the CFR, in creating your report to talk
01:55 20 about the regulations for the first time, did you see
01:55 21 regulations in the CFR about what happens during an inspection?

01:55 22 A. I did not review that part of the process, Counselor. My
01:55 23 focus was on Section 400 to 466, which is the part of the regs
01:55 24 that I worry about as a pressure specialist.

01:55 25 Q. As a regulatory expert, are you supposed to limit yourself

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01:55 1 to one portion of the regulations or the regulations as a whole
01:56 2 when you are trying to reach a judgment about whether or not
01:56 3 there has been compliance?

01:56 4 A. I want to clarify something here, Counselor.

01:56 5 When you say I'm a regulatory expert, I want to make
01:56 6 sure take you understand what I think that means as it pertains
01:56 7 to me.

01:56 8 Every day in my practice, I have to design wells that
01:56 9 honor and embody the regulations.

01:56 10 Q. Are you a regulatory expert?

01:56 11 A. I am an expert on the application of the regulations from
01:56 12 section -- from 400 to 250.466, and it's actually 68 and -9,
01:56 13 which are the piece of the regulations that apply to what I do
01:56 14 as a professional. I do not profess to be an expert in
01:56 15 regulations outside of my expertise area.

01:56 16 Q. Okay.

01:56 17 MR. REGAN: 250.132, please.

01:56 18 BY MR. REGAN:

01:56 19 Q. Now, these federal employees who are charged with
01:56 20 interpreting federal regulations and enforcing them, they have
01:56 21 rules under the CFR for what should happen when they conduct an
01:57 22 inspection. I put that up, 250.132.

01:57 23 I take it from your answer this is not a regulation
01:57 24 you would have been familiar with?

01:57 25 A. It's not. And, Counselor, could I clarify? This is using

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01:57 1 BSEE. Is this consistent with what existed at the time of the
01:57 2 Macondo?

01:57 3 Q. It is.

01:57 4 A. Okay. I just want to make sure it hasn't changed.

01:57 5 Q. You know that, right?

01:57 6 A. I just want to make sure. Because again, I didn't read
01:57 7 all of the other sections that don't apply to my work.

01:57 8 Q. You didn't look at the work of anyone other than BP,
01:57 9 correct?

01:57 10 A. In this case, I looked at BP's behavior on this particular
01:57 11 rig in this case.

01:57 12 Q. Right. You didn't look at Transocean's behavior, correct?

01:57 13 A. The only thing I looked at with respect to Transocean is
01:57 14 the drilling data, the information that was provided as part of
01:57 15 the case that they may have collected.

01:57 16 Q. You looked at some of it, right?

01:57 17 A. I looked at the information that I was provided to do my
01:57 18 job.

01:57 19 Q. Who provided you that information?

01:57 20 A. The Justice Department.

01:57 21 Q. The Justice Department asked you to focus on BP?

01:57 22 A. The Justice Department asked me to look at the data and
01:57 23 render opinions on what I thought about the way the well was
01:58 24 drilled and whether it violated the regulations that pertain to
01:58 25 what I do.

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01:58 1 Q. With respect to one company, BP, correct?

01:58 2 A. They did not initially specify that. They asked me to
01:58 3 look at the data.

01:58 4 Q. But at some point you were told, "focus exclusively on
01:58 5 BP," correct?

01:58 6 A. No, I wouldn't say that, Counselor. It's my opinion that,
01:58 7 as the operator, BP was the party that was responsible for the
01:58 8 decisions made on the rig. It was my view, and I maintain that
01:58 9 view, that ultimately BP had the responsibility for the
01:58 10 decisions made on the rig.

01:58 11 Q. If you look at 250.132, it talks about: "What must I do
01:58 12 when BSEE conducts an inspection?"

01:58 13 Let me see if I can fix this microphone.

01:58 14 It says: "(b), you must make the following available
01:58 15 for us to inspect:

01:58 16 "(3), all records of design, construction, operation,
01:58 17 maintenance, repairs, or investigations on or related to the
01:59 18 area."

01:59 19 Do you see that?

01:59 20 A. Yes, I do.

01:59 21 Q. You know that the BSEE or MMS inspectors that went out to
01:59 22 Macondo looked at APDs, correct?

01:59 23 A. They may have, yes.

01:59 24 Q. Those are applications for permits to drill, correct?

01:59 25 A. Yes.

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01:59 1 Q. They looked at APMs, correct?

01:59 2 A. Again, I would have to go back and look at the depositions
01:59 3 of Mr. Neal and his son to confirm that. It's been a while
01:59 4 since I read it.

01:59 5 Q. Mr. Neal and his son are the people that were paid by the
01:59 6 federal government to go out and inspect Macondo to determine
01:59 7 whether there was any regulatory violations, correct?

01:59 8 A. That is correct.

01:59 9 Q. How many regulatory violations did they say occurred on
01:59 10 Macondo?

01:59 11 A. I don't believe that they cited them for any that I can
01:59 12 recall.

01:59 13 Q. Not one?

01:59 14 A. No.

01:59 15 Q. Things that you say were -- I think I've got most of
01:59 16 them -- egregious, blatant, extreme, truly egregious, beyond
01:59 17 anything I have seen in my career, the people who were paid by
01:59 18 the federal government at the time to go to the rig and inspect
01:59 19 the records did not find a single violation, correct?

01:59 20 A. Yes. And I think it's important here, Counselor --

02:00 21 Q. That's my question, Dr. Huffman.

02:00 22 A. Okay.

02:00 23 Q. There's also a checklist that the BSEE inspectors have to
02:00 24 review, correct?

02:00 25 A. Yes.

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02:00 1 MR. REGAN: If we could pull up TREN-4135.

02:00 2 BY MR. REGAN:

02:00 3 Q. You're familiar with this checklist that is used by the
02:00 4 BSEE inspectors?

02:00 5 A. Yes. I have seen it in their manual.

02:00 6 Q. If we go to the second page, they go through remarks, they
02:00 7 put in the enforcement actions, and then they sign it, correct?

02:00 8 A. Yes.

02:00 9 Q. You are not aware of any enforcement actions that were
02:00 10 written up by the inspectors during the drilling of the well,
02:00 11 correct?

02:00 12 A. Not that I'm aware of, no.

02:00 13 Q. BSEE also has onshore personnel that inspect APDs, APMs,
02:00 14 and other drilling documents submitted by operators, correct?

02:00 15 A. That is correct.

02:00 16 Q. What was the name of the onshore drilling engineer who
02:00 17 worked for the MMS who was involved in reviewing the filing
02:00 18 with respect to Macondo?

02:00 19 A. It was Mr. Frank Patton.

02:01 20 Q. Do you know where Mr. Patton lives?

02:01 21 A. I would assume he lives in the New Orleans/Metairie area.

02:01 22 Q. He was the person, during the drilling of the well, that
02:01 23 the United States of America put in the position of reviewing
02:01 24 the filings, that you have reviewed as well, and making the
02:01 25 determination if there was any violations, correct?

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02:01 1 A. Right. And, Counselor, it's important here --

02:01 2 Q. Just -- I would ask you to answer my question.

02:01 3 THE COURT: Well, wait a minute. A witness has a
02:01 4 right to answer your question and then explain if he wishes to.

02:01 5 MR. REGAN: Yes, Judge.

02:01 6 THE COURT: So go ahead, Dr. Huffman.

02:01 7 THE WITNESS: We are talking about -- and this is
02:01 8 important, I think, for the Court to clarify.

02:01 9 There are two processes at work here. The
02:01 10 district engineer, Mr. Patton, is looking at two sets of
02:01 11 documents, primarily. He's looking at the APDs, which you
02:01 12 cited correctly, and he's looking at the weekly activity
02:01 13 reports, which is a weekly update of what's happening on the
02:01 14 rig. The inspector -- and Mr. Patton is doing this on a
02:01 15 regular basis as information comes in.

02:01 16 The inspectors, Mr. Neal and his son, are going
02:01 17 around the Gulf of Mexico inspecting rig after rig. They go
02:02 18 from one facility to another, and they only are on the rig one
02:02 19 day a month for two to four hours, at which time they are
02:02 20 expected to go through all of this information that you have
02:02 21 just shown us.

02:02 22 After reading the depositions of both Mr. Neal
02:02 23 and his son, they are not trained engineers. They are not
02:02 24 experts in the field. To assimilate a month's worth of
02:02 25 operational data in a two- to four-hour visit, when they are

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02:02 1 also doing tests of equipment and other things, is a daunting
02:02 2 task. I, as an expert, would have a hard time in two hours
02:02 3 analyzing a month's worth of operational data.

02:02 4 So it's important to understand that we have two
02:02 5 processes: The district office is doing their regulatory
02:02 6 checks on what's happening, and the inspectors are going on the
02:02 7 rig one day a month for a few hours and are expected to
02:02 8 assimilate a large amount of drilling information, and the two
02:02 9 processes are distinct from each other.

02:02 10 So it does not surprise me in any way that the
02:02 11 inspectors, in their visits to the rig, were missing critical
02:03 12 information. In fact, my review of the IADCs, the drillers'
02:03 13 reports, which is what Mr. Neal and his son looked at, were
02:03 14 reporting different information because they were reporting
02:03 15 downhole information on the leak-off tests and the PITs,
02:03 16 whereas the WARs and the APDs were reporting surface
02:03 17 information.

02:03 18 So the information being presented to the MMS in
02:03 19 the two sets of individuals were different. And that is a
02:03 20 critical factor here, Your Honor, that the information being
02:03 21 shown to these people was not consistent in itself. There were
02:03 22 separate sets of documents. And that just opens the door for
02:03 23 confusion on the part of the regulator. They cannot do their
02:03 24 job if the information they're being given is incomplete or
02:03 25 selective and in different sets of documents.

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02:03 1 So it's a real challenge for the regulator to do
02:03 2 their job in the face of that.

02:03 3 MR. REGAN: Your Honor, I just move to strike the
02:03 4 answer as nonresponsive, but I'll ask him the question.

02:03 5 BY MR. REGAN:

02:03 6 Q. You said about 20 minutes ago, in response to counsel for
02:03 7 Transocean's questions, that you would have found it helpful to
02:04 8 talk to Mr. Morel and Hafle because their contemporaneous
02:04 9 views -- they are critical people. The contemporaneous views
02:04 10 of critical people may be important to evaluating what happened
02:04 11 on Macondo, correct?

02:04 12 A. Yes, that is correct.

02:04 13 Q. Do you agree that the contemporaneous views of Mr. Neal,
02:04 14 the father, and Mr. Neal, the son, could be critical to
02:04 15 evaluating whether or not BP complied with drilling margin
02:04 16 regulations?

02:04 17 A. I would agree with that, yes.

02:04 18 Q. You would agree that the views of Mr. Frank Patton, the
02:04 19 drilling engineer here in New Orleans who reviewed those
02:04 20 documents that were filed in the office, do you agree that his
02:04 21 contemporaneous views would be critical to evaluating the
02:04 22 drilling margin issues that you have raised before this Court?

02:04 23 A. I believe both his contemporaneous views and his views
02:04 24 during his deposition were important, Counsel.

02:04 25 Q. You talked about the difficulty of the job of an MMS

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02:04 1 inspector or a BSEE inspector. Have you ever held that job?

02:04 2 A. No, I have not.

02:04 3 Q. One of the documents that people who do that job review
02:05 4 are called IADCs. Do you know what that is?

02:05 5 A. Yes. That is referred to as a daily driller's report
02:05 6 also.

02:05 7 Q. Did you review the daily driller's report with respect to
02:05 8 the opinions you have expressed to this Court?

02:05 9 A. At the time of my deposition, I was relying on the daily
02:05 10 log of operations, which is the master document which we looked
02:05 11 at earlier in direct.

02:05 12 The IADC -- again, for clarity of what the document
02:05 13 is -- is a daily operations report that is done 12-hour shift
02:05 14 by 12-hour shift. And it transcribes information from the
02:05 15 master log of drilling operations and also adds on the list of
02:05 16 the crew that's on the rig and other information. So it is a
02:05 17 separate document from what I use in my field, which is the log
02:05 18 of operations on the well.

02:05 19 Q. Dr. Huffman, do you remember my question?

02:05 20 A. Yes. You asked if I looked at it. And what I'm saying to
02:05 21 you is I looked at them after my deposition.

02:05 22 Q. For purposes of drafting your first report, had you looked
02:05 23 at the IADC reports?

02:05 24 A. I may have fanned through them; but I did not analyze them
02:06 25 separately, no.

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02:06 1 Q. For purposes of your second rebuttal report, did you look
02:06 2 at the IADC reports?

02:06 3 A. I don't believe I did, no.

02:06 4 Q. For purposes of your deposition, had you looked at the
02:06 5 IADC reports?

02:06 6 A. No, because the same information was contained in the
02:06 7 daily log of operations. I did not need to.

02:06 8 Q. Did you review any cement pump data with respect to the
02:06 9 opinions that you have expressed today?

02:06 10 A. The only pump data from the cementing unit that I focused
02:06 11 on was where I had Halliburton's reports on the leak-off tests
02:06 12 and formation integrity tests, the PITs.

02:06 13 Q. Understanding that you haven't been on an offshore rig,
02:06 14 are you able to explain the difference between a cement pump on
02:06 15 a rig and the rig pump on a rig?

02:06 16 A. That's not in my area of expertise, Counsel.

02:06 17 Q. Are you able to explain why LOT tests or leak-off tests
02:06 18 would be performed on a cement pump on a rig, or a cement
02:06 19 unit --

02:06 20 A. Yes.

02:06 21 Q. -- rather than with a rig pump?

02:06 22 A. It's my understanding that the cement pumps are more
02:06 23 accurate in terms of their ability to control the pump flow and
02:06 24 pressure than the main pumps on the rig.

02:06 25 Q. Not having ever been on an offshore rig when it's in

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02:06 1 operation, it's also true you have never been on an offshore
02:07 2 rig when it actually conducts one of the tests that you have
02:07 3 testified about?

02:07 4 A. That is correct. I have only been on onshore rigs that
02:07 5 have done it, not offshore.

02:07 6 Q. At the time of your deposition, was it true that you had
02:07 7 not read Robert Neal, the MMS inspector's deposition? Is that
02:07 8 correct?

02:07 9 A. I believe that is correct, yes.

02:07 10 Q. You had not read Eric Neal, the MMS inspector's
02:07 11 deposition, correct?

02:07 12 A. That is correct.

02:07 13 Q. Is it your testimony that the Neals and Mr. Patton were
02:07 14 not qualified to do their job?

02:07 15 A. I believe Mr. Patton was qualified, from what I have seen.
02:07 16 I don't know Mr. Patton. I have never interacted with him.
02:07 17 But from his credentials and his experience, I believe he is.

02:07 18 Q. Dr. Huffman, the United States never asked you to speak
02:07 19 with Frank Patton, the MMS drilling engineer who actually
02:07 20 oversaw the filings, before you expressed your opinions?

02:07 21 A. I have not met Mr. Patton, no.

02:07 22 Q. Not before you issued your report or after?

02:08 23 A. No. I merely read his -- the e-mails that he was on and
02:08 24 his own deposition.

02:08 25 Q. Well, didn't you have a moment in preparing your opinions

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02:08 1 where you thought, Somebody with contemporaneous views of
02:08 2 critical information, he could be important to me, I should see
02:08 3 if I could talk to him, he is a government employee?

02:08 4 A. Counselor, I want to be careful how I answer this. Okay?

02:08 5 Getting contemporaneous views by talking to people
02:08 6 can be extremely subjective because you're now talking to them
02:08 7 a year later.

02:08 8 What I relied on as my primary line of evidence in
02:08 9 this case were e-mails and other communications that were
02:08 10 contemporaneous with the events on the rig plus the actual data
02:08 11 from the well.

02:08 12 Q. Right. You think it would be better to look at what
02:08 13 happened contemporaneously rather than look at something one or
02:08 14 two years later, after somebody knows there's been a blowout
02:08 15 and other things that happened, right?

02:08 16 A. Yes. I think that contemporaneous information is more
02:08 17 reliable in terms of what people perceived or thought at the
02:08 18 time.

02:08 19 Q. The people who contemporaneously reviewed the regulations
02:09 20 did not find any violations of drilling margin, correct?

02:09 21 A. Yes, but they were -- they were issued later on,
02:09 22 Counselor.

02:09 23 Q. They were issued one or two years later after a blowout,
02:09 24 after a lot of information was out, correct?

02:09 25 A. And after my analysis of the well, yes.

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02:09 1 Q. Would you find the former to be more reliable or the
02:09 2 latter? The contemporaneous evidence, that is that not a
02:09 3 single incident of noncompliance was issued on this well by the
02:09 4 people paid to do that job, would you find that more reliable
02:09 5 or an analysis done two years after the blowout?

02:09 6 A. There's two responses to that, Counselor. As I noted
02:09 7 earlier, the IADCs did not have the same information as other
02:09 8 documents.

02:09 9 The second thing I would note is that the last
02:09 10 inspection of the rig by the Neals was April 1, if I recall.
02:09 11 They were not on the rig after the serious events occurred in
02:09 12 early April.

02:09 13 Q. They visited the rig shortly after the October interval
02:09 14 that you criticize, correct?

02:09 15 A. I would have to go back and check. That's not something I
02:10 16 kept in memory.

02:10 17 Q. You don't remember their visit that was, I think, two days
02:10 18 after the period of time that you said was beyond anything you
02:10 19 have ever seen in your career?

02:10 20 A. Again, Counselor, you would have to show me the actual
02:10 21 inspection reports. I don't remember the specific dates.

02:10 22 Q. I have a demonstrative that I will get to in a minute that
02:10 23 I think would be helpful for you and the Court, so we can get
02:10 24 our dates, locations, and times correct.

02:10 25 I just used a word, but I don't think I have defined

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02:10 1 it, *incident of noncompliance*. Are you familiar with that
02:10 2 term?

02:10 3 A. I am familiar with it, yes.

02:10 4 Q. Who issues them?

02:10 5 A. The MMS inspectors on the rig can issue them. But I also
02:10 6 believe they can be issued by the district office, as I
02:10 7 understand it.

02:10 8 Q. Prior to submitting your expert report in this case,
02:10 9 Dr. Huffman, had you ever seen an INC before?

02:10 10 A. I had not.

02:10 11 Q. Dr. Huffman, you are not aware of any INCs, any incidences
02:10 12 of noncompliance, that had been issued to any operator for
02:10 13 drilling margin issues anywhere prior to April 20, 2010, right?

02:11 14 A. I believe that's what I just stated, Counselor. I have
02:11 15 not seen them.

02:11 16 Q. You have not seen one as to BP, correct?

02:11 17 A. I have not seen one, period, until now.

02:11 18 Q. You have not seen one as to Exxon or Chevron or Shell or
02:11 19 other major operators in the Gulf, correct?

02:11 20 A. That is correct. My clients don't share those with me
02:11 21 when I'm doing analysis for them, typically.

02:11 22 They provide me the raw data from the rig, and I
02:11 23 analyze the data. I don't worry about whether they were INC'd
02:11 24 on a particular event or not.

02:11 25 Q. Similarly, you are not aware of any operations ever being

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02:11 1 shut down for drilling margin violations, correct?

02:11 2 A. No, sir. Not that I'm aware of.

02:11 3 Q. So the answer is: That's correct. You are not aware of
02:11 4 that?

02:11 5 A. Yes.

02:11 6 Q. You testified just a second ago about the fact that INCs
02:11 7 were issued at some point in time with respect to this
02:11 8 accident, correct?

02:11 9 A. Yes.

02:11 10 Q. Those INCs, the first one was issued in October 2011; is
02:11 11 that right?

02:11 12 A. I would have to go back and look at the press releases and
02:11 13 information. I don't recall off the top of my head.

02:12 14 Q. Well, you know that as of the time of your first expert
02:12 15 report, there had not been a single INC issued, correct?

02:12 16 A. I believe that's correct, yes.

02:12 17 Q. Then you filed an expert report, rebuttal report, and you
02:12 18 were deposed in late November, early December 2011, correct?

02:12 19 A. I believe that's right, yes.

02:12 20 Q. Then after your deposition, additional INCs were issued,
02:12 21 correct?

02:12 22 A. That's correct.

02:12 23 Q. Were you consulted by the government, by BSEE, with
02:12 24 respect to whether or not INCs should be issued in connection
02:12 25 with your work in this case?

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02:12 1 A. I did not speak to anyone at BSEE about that, no.

02:12 2 Q. You said you have never worked for the MMS. Have you ever
02:12 3 worked as a regulatory specialist for any company?

02:12 4 A. No, sir.

02:12 5 Q. Have you ever worked for any regulatory body?

02:12 6 A. Regulatory body?

02:12 7 Q. Yes.

02:12 8 A. No, I don't believe so.

02:12 9 Q. Is there anything on your CV about your professional
02:12 10 experience in interpreting regulations?

02:12 11 A. Not directly, no.

02:12 12 Q. In fact, there's nowhere in your professional experience
02:12 13 on your CV where you list interpretation of regulations,
02:13 14 correct?

02:13 15 A. As a profession, no.

02:13 16 Q. No client has ever asked you to review their operations to
02:13 17 see whether or not they are in compliance with regulations,
02:13 18 correct?

02:13 19 A. Actually, that's not true. I have had several clients
02:13 20 outside the U.S. that have asked me to review what they were
02:13 21 doing to make sure that it complied with the U.S. regulations.

02:13 22 **MR. REGAN:** Deposition, page 98 of Dr. Huffman.

02:13 23 **BY MR. REGAN:**

02:13 24 Q. Dr. Huffman, I will ask you if you were asked these
02:13 25 questions and gave these answers on page 98, starting at line 4

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02:13 1 through line 12:

02:13 2 "QUESTION: Has the BOEM ever asked you to analyze
02:13 3 whether an operator violated MMS regulations outside of
02:13 4 this project?

02:13 5 "ANSWER: I have never been asked to by the BOEM to
02:13 6 analyze a well, no.

02:13 7 "QUESTION: And none of your clients have ever asked
02:13 8 you to review their operations to see if they violated the
02:13 9 MMS regulations?

02:13 10 "ANSWER: No."

02:13 11 A. At that time that answer was correct. Both the cases I'm
02:13 12 speaking of are since the deposition. So they're more recent
02:14 13 experience.

02:14 14 Q. So it was after your deposition and after you had filed
02:14 15 your expert reports before Judge Barbier?

02:14 16 A. That is correct.

02:14 17 Q. You taught at the University of Oklahoma for two years; is
02:14 18 that right?

02:14 19 A. Yes, sir.

02:14 20 Q. You have never taught anything with respect to MMS
02:14 21 regulations there, correct?

02:14 22 A. The margin -- the safe margin concepts are embodied in my
02:14 23 teaching materials; but I don't specifically quote and teach
02:14 24 the students the regulations, no.

02:14 25 Q. Have you ever in your life taught any courses about how to

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02:14 1 apply regulations?

02:14 2 A. Not as a direct practice, no.

02:14 3 Q. Now, your CV is about 13 or 15 pages long. Is that about
02:14 4 fair? We can pull it up if you prefer.

02:14 5 A. I haven't counted it recently, Counsel.

02:14 6 Q. You would say it's extensive?

02:14 7 A. Yes. It's a CV.

02:14 8 MR. REGAN: Let's pull up TREX-7510 at page 87.

02:14 9 BY MR. REGAN:

02:14 10 Q. There you are. If we were to page through -- it's Roman
02:14 11 numerals, which I'm not very good at -- but you have three,
02:15 12 four, five, six, seven -- and you have listed activities,
02:15 13 patents, honors, research, abstracts. Let's stay there on
02:15 14 abstracts and publications.

02:15 15 MR. REGAN: Next page, Donny. Thank you.

02:15 16 Again, for the Court, this is 7510.

02:15 17 BY MR. REGAN:

02:15 18 Q. Is it true, Dr. Huffman, that there's no publication on
02:15 19 your CV that discusses MMS regulations?

02:15 20 A. That is correct, yes.

02:15 21 The pore pressure articles that are in my CV are
02:15 22 focused on technical aspects of drilling and predicting
02:15 23 pressures.

02:15 24 Q. It's also true that not one of your articles that are put
02:15 25 forth in your CV even cite the CFRs that you have cited in your

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02:15 1 expert report in this case, correct?

02:15 2 A. Yes. In our profession we normally do not focus on citing
02:15 3 regulations in our discussions of technical matters. The
02:15 4 papers are focused on technical matters.

02:15 5 Q. So your expert reports in this case are the first time in
02:15 6 your professional career you have ever written a paper that
02:15 7 cites the drilling margin regulations?

02:16 8 A. That cites the regulations specifically, yes.

02:16 9 Q. You have never filled out an APM, or an application for
02:16 10 permit to modify, correct?

02:16 11 A. No. That is not part of my job. I provide the client
02:16 12 with the data, and they fill it out.

02:16 13 Q. You have never filled out an application for permit to
02:16 14 drill, correct?

02:16 15 A. Same answer from the last question.

02:16 16 Q. You have never looked at any instructions that the MMS
02:16 17 provides about what should be put in those documents, correct?

02:16 18 A. No. I have looked at the instructions, Counselor.

02:16 19 Q. Deposition page 191, lines 20 through 23.

02:16 20 "QUESTION: Have you looked at any instructions about
02:16 21 what information is expected to be put into the forms?

02:16 22 "ANSWER: No."

02:16 23 Were you asked that question, and did you give that
02:16 24 answer under oath at your deposition?

02:16 25 A. Yes, I did, and I have looked at the information since.

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02:16 1 It has been over a year, almost a year and a half, since my
02:16 2 deposition, Counselor. I have reviewed a lot of things since
02:17 3 then.

02:17 4 Q. Did you feel like you were qualified as an expert as of
02:17 5 the time you issued your first expert report?

02:17 6 A. As I stated earlier, I am an expert in planning,
02:17 7 designing, and then monitoring wells to keep them within the
02:17 8 safe boundaries of drilling. The regulations, as they stand,
02:17 9 embody the same principles that I use every day in my
02:17 10 profession. The oil companies that I work for, when I provide
02:17 11 them with a report on a well that they are planning, that well
02:17 12 includes all of the critical information: the kick margin or
02:17 13 safe drilling margin, the trip margins, accurate pore pressure
02:17 14 predictions, all the information that they need to fill out
02:17 15 their APDs.

02:17 16 And I wish I could show these to you here, but they
02:17 17 are all confidential to those oil companies. They don't
02:17 18 release them, unfortunately.

02:17 19 Q. Is it your testimony that you have done this, you have
02:17 20 cited these regulations, but they are in confidential
02:17 21 documents?

02:17 22 A. No. I provide them with the information to enable them to
02:17 23 tell the government what they need. I don't deal with the
02:18 24 regulatory issues specifically, but all of my well designs
02:18 25 embody the nature of the regulations. I have to do that. In

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02:18 1 Section 400, I'm accountable to the regs. I'm a contractor to
02:18 2 the oil company, just like our colleagues here at the table.

02:18 3 Q. Let's make that point clear, and we can move on.

02:18 4 Section 400 of the regs applies to the operator and the
02:18 5 drilling contractors and the cement contractors, correct?

02:18 6 A. Contractors and subcontractors.

02:18 7 Q. Right. That would include Halliburton and Transocean,
02:18 8 correct?

02:18 9 A. That is correct.

02:18 10 Q. And the drilling margin regulations are in that same
02:18 11 subsection, correct?

02:18 12 A. Correct.

02:18 13 Q. You did not look at all about whether Halliburton or
02:18 14 Transocean had any involvement in the violations that you
02:18 15 presented in your expert report, correct?

02:18 16 A. My analysis tells me that, again, as I stated earlier, BP
02:18 17 was the responsible party that was making the decisions on the
02:18 18 rig. That is -- from all my 23 years of experience, Counselor,
02:18 19 when I was at Exxon, we were in charge of that rig when we were
02:19 20 hiring a contractor. When I was at Conoco, the same rules
02:19 21 apply.

02:19 22 What I see when I monitor wells in my current role --
02:19 23 and I do half a dozen a year -- the oil company operator is
02:19 24 calling the shots on the rig while drilling is going on, and
02:19 25 the drillers are taking directives from them. That is the

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02:19 1 chain of command at all times.

02:19 2 Q. So you're an expert in offshore operations?

02:19 3 A. I am an expert in helping the client drill the well safely
02:19 4 as it pertains to the pore pressure and the fracture gradient
02:19 5 issues and safe drilling. That is my area that I deal with.

02:19 6 Q. Do you know what a toolpusher does?

02:19 7 A. I believe I do.

02:19 8 Q. Do you know what a morning meeting is on the rig?

02:19 9 A. I attend them when I'm monitoring a well, yes.

02:19 10 Q. It's your testimony, having never been on a rig, that you
02:19 11 believe you are capable of explaining the relationship of
02:19 12 people who work on them?

02:19 13 A. In some cases, yes. I don't know every worker on the rig
02:19 14 and what they do. But --

02:19 15 Q. Let me ask you about --

02:19 16 A. -- certain jobs, yes.

02:19 17 Q. I'm sorry. Had you finished?

02:19 18 A. Yes. Certain jobs on the rig I do understand.

02:20 19 Q. With respect to your work here, did you look at the
02:20 20 filings that were made by any operator for any well other than
02:20 21 BP?

02:20 22 A. I did not believe I needed to, Counselor.

02:20 23 Q. I'm not asking you whether you thought you needed to; I'm
02:20 24 just asking you whether you did.

02:20 25 A. I did not.

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02:20 1 Q. Did you look at a single filing by any other operator
02:20 2 anywhere with respect to the opinions that you have reached in
02:20 3 this case?

02:20 4 A. No.

02:20 5 Q. So you have no basis to express an opinion to the judge as
02:20 6 to how BP's filings compare to that of Exxon, Shell, or others,
02:20 7 correct?

02:20 8 A. That is correct.

02:20 9 Q. You have no basis to compare BP's conduct to the industry
02:20 10 standard conduct with respect to the documents that you cited,
02:20 11 correct, having never looked at them?

02:20 12 A. My judgment in this was based on BP's behavior in this
02:20 13 well. The documents I looked at were only for this well
02:20 14 because I was asked to analyze this well.

02:20 15 Q. Right. You looked at this well and you looked at BP's
02:20 16 conduct on this well, correct?

02:20 17 A. That is correct.

02:20 18 Q. You looked at regulations that you had never published
02:20 19 anything about or expressed an opinion about before this
02:21 20 report, correct?

02:21 21 A. Regulations that I use every day in my job, yes.

02:21 22 Q. You did not look at any other operator's policies with
02:21 23 respect to how they fill out forms to the MMS, correct?

02:21 24 A. The only information that I would have on that issue would
02:21 25 be dating back to my years at Exxon and Conoco, and I was

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02:21 1 familiar with their procedures at the time, but I have long
02:21 2 since forgotten them.

02:21 3 Q. The United States collects all of those documents by
02:21 4 regulation from all of the operators out in the Gulf, correct?

02:21 5 A. I believe so.

02:21 6 Q. Those documents were available to you to review, if you so
02:21 7 chose, correct?

02:21 8 A. In this case I was given a directive by my client to
02:21 9 evaluate certain aspects of this well, and those aspects are
02:21 10 what my report is about. If it was outside those aspects, I
02:21 11 did not look at any documents.

02:21 12 Q. The directive that you received in connection with the
02:21 13 work that you have performed was to look exclusively at this
02:21 14 well and not look at documents or filings or the conduct of
02:22 15 other operators?

02:22 16 A. That is correct.

02:22 17 Q. If we could go back to your CV, TREX-7510, page 87, I note
02:22 18 at the top of it you have a date of July 2011. Do you see
02:22 19 that?

02:22 20 A. Yes.

02:22 21 Q. This CV was attached to your expert report, correct?

02:22 22 A. Correct.

02:22 23 Q. If you go to the second paragraph of your CV -- first
02:22 24 paragraph, sorry -- do you see the sentence: "Recognized
02:22 25 internationally as a technology leader and lecturer in several

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02:22 1 areas, including pore pressure and fracture pressure
02:22 2 prediction, and detection while drilling."

02:22 3 Do you see that?

02:22 4 A. Yes, I do.

02:22 5 Q. Was that sentence, including the phrase "and detection
02:22 6 while drilling" always in your CV?

02:22 7 A. I have updated my CV every few months for the last
02:22 8 23 years, Counselor. I don't remember when I put the words in.

02:22 9 Q. Do you remember if you put the words in "detection while
02:23 10 drilling" in connection with putting the CV together for
02:23 11 purposes of your expert report in this case?

02:23 12 A. I honestly don't remember, Counselor.

02:23 13 Q. You certainly have spent a lot of time in your career in
02:23 14 pore pressure and fracture pressure prediction, correct?

02:23 15 A. Yes, probably 50 to 60 percent of my time for the last
02:23 16 23 years.

02:23 17 Q. That prediction is something that you can do with
02:23 18 3D seismic and really fancy proprietary models that you are
02:23 19 very comfortable using that I wouldn't understand. Fair?

02:23 20 A. That's fair, yes.

02:23 21 Q. But with respect to pore pressure and fracture pressure
02:23 22 detection while drilling, can you tell us who has recognized
02:23 23 you internationally as a technology leader in that area, in the
02:23 24 detection while drilling area?

02:23 25 A. I guess the most recent example would be where I spent

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02:23 1 half of the month of January in Dhahran in Saudi Arabia,
02:23 2 working with Saudi Aramco on their first deepwater well in the
02:23 3 Red Sea. They brought me from the United States to monitor the
02:23 4 well after I had done the predrill prediction for them.

02:23 5 Q. Did you go out on the rig and help them do LOT tests?

02:24 6 A. No. They actually had a full digital center set up to
02:24 7 feed the data to us in the office. So there was no need to go
02:24 8 to the rig.

02:24 9 Q. How would you define *predrill prediction work*?

02:24 10 A. Predrill prediction work usually involves taking the 3D or
02:24 11 2D seismic data along with offset well calibration, as we call
02:24 12 it -- these are other wells nearby that we have information on.
02:24 13 And we take all of the log and the pressure and the leak-off
02:24 14 test data, all the available drilling information from those
02:24 15 offset wells, and construct a stress and pressure model for the
02:24 16 subsurface that we then apply to the 3D seismic data to predict
02:24 17 three-dimensionally how the pressures are changed.

02:24 18 Q. Is it a simple mathematical exercise, just very
02:24 19 straightforward?

02:24 20 A. The way I describe this to people, to laymen like
02:24 21 yourself, is, the physics is straightforward, but the devil is
02:24 22 in the details of all the information we have to integrate to
02:25 23 get the right answers.

02:25 24 Q. You can have errors --

02:25 25 A. So -- and typically it's simple to understand.

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02:25 1 Q. You can have errors in your predrill work, correct?

02:25 2 A. Yes. And, in fact, every prediction that I do has error
02:25 3 bars on it.

02:25 4 Q. With respect to monitoring while drilling -- that work,
02:25 5 not the prediction work, but the monitoring while drilling
02:25 6 work -- at Conoco you didn't do much of that work, correct?

02:25 7 A. Yeah. There were only a few wells at Conoco. There was
02:25 8 one well in the North Sea that we had a problem with that I was
02:25 9 called in to look at. And I was involved in a few wells in the
02:25 10 Gulf of Mexico, one in Venezuela, and one in Trinidad, where
02:25 11 they asked me to look at the data. In Conoco I managed the
02:25 12 team of experts that did that full time for the company. I was
02:25 13 in a managerial position and was only called in where there
02:25 14 were challenges.

02:25 15 Q. Your normal work, Dr. Huffman, at Sigmacubed is to do a
02:25 16 separate, independent analysis of the predrill prediction that
02:25 17 was originally done for a well. That's what you would normally
02:25 18 do, correct?

02:25 19 A. If you were to look at the volume of work that we do, it's
02:26 20 probably 80 percent predrill prediction and 20 percent
02:26 21 monitoring of wells. So the monitoring is a smaller component
02:26 22 of our overall work in this area.

02:26 23 Q. Did you testify -- and I can put it up, if you'd like.
02:26 24 The normal procedure in evaluating what happened in the well
02:26 25 would be to do a separate, independent analysis of the

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02:26 1 predrill; is that correct?

02:26 2 A. I'm a sorry. With all the static there, I lost you,
02:26 3 Counselor.

02:26 4 (Discussion off the record.)

02:26 5 THE COURT: You need a break?

02:26 6 THE WITNESS: Yeah, in a few minutes.

02:26 7 THE COURT: Just let me know when.

02:26 8 THE WITNESS: Yeah, maybe five minutes.

02:26 9 MR. REGAN: Do you want to take a break?

02:26 10 THE WITNESS: Yeah, it would be a good time for a
02:27 11 biological break.

02:27 12 THE COURT: All right. Let's take about a 15-minute
02:27 13 recess.

02:27 14 THE WITNESS: Thank you, Your Honor.

02:27 15 (Recess.)

02:43 16 THE COURT: Please be seated, everyone.

02:51 17 Mr. Regan, you may proceed again.

02:51 18 BY MR. REGAN:

02:51 19 Q. Dr. Huffman, I was asking you when we broke about
02:52 20 materials that you reviewed and may not have reviewed. I was
02:52 21 asking about IADC reports.

02:52 22 It's true, as of the time of your deposition which
02:52 23 followed both of your reports, that you did not use the IADC
02:52 24 daily drilling reports in your work, correct?

02:52 25 A. That is correct. I had not read them at that time.

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02:52 1 Q. You did not use those IADC drilling reports in forming
02:52 2 your opinions, correct?

02:52 3 A. Yes. They were not relevant to my opinions.

02:52 4 Q. You know that those IADC reports are filled out and signed
02:52 5 by both an operator's representative and a Transocean
02:52 6 representative in this case, correct?

02:52 7 A. I believe I did see that on the documents, yes.

02:52 8 Q. Did you also see that many of the numbers that you put
02:52 9 before the Court with respect to leak-off test values are
02:52 10 recorded in those IADC reports themselves?

02:52 11 A. In reviewing them after deposition, what I discovered was
02:52 12 that the IADC reports in general had downhole values of the
02:52 13 leak-offs and FITs reported, which is different and
02:52 14 inconsistent from what was reported to the MMS on the other
02:53 15 documents, including the weekly activity reports, and also
02:53 16 where they updated them on the APDs and other application
02:53 17 documents.

02:53 18 Q. An inspector, who does this for a living and was out on
02:53 19 the rig reviewing those documents, would have the personnel who
02:53 20 actually performed the tests there on the rig to ask questions
02:53 21 that he had about the tests that had been performed, correct?

02:53 22 A. Not necessarily. With shift changes on the rig, it could
02:53 23 be those people weren't there when he was on the rig.

02:53 24 Q. Did you do anything to determine whether or not, when the
02:53 25 inspections was done in late October/early November 2009, the

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02:53 1 same people that had done the leak-off test that you complained
02:53 2 were -- as part of your expert report -- were still on the rig?

02:53 3 A. No, sir. It was not germane to my analysis.

02:53 4 Q. You did not read the inspectors' depositions, correct?

02:53 5 A. I read them after my deposition.

02:53 6 Q. They were not germane to your analysis, correct?

02:53 7 A. At the time, yes, they were not.

02:53 8 Q. Is there anything about your expert report that would
02:53 9 change after reading their depositions?

02:53 10 A. No.

02:54 11 MR. REGAN: Now, I would like to pull up
02:54 12 Demonstrative 4363, if we could.

02:54 13 BY MR. REGAN:

02:54 14 Q. Dr. Huffman, if you will indulge us. What we have here
02:54 15 is something that's vertical to scale but not to horizontal
02:54 16 scale.

02:54 17 First, it shows the *Marianas* rig -- actually, the
02:54 18 riser and BOP. When you are doing predictive pore pressure
02:54 19 analysis, there's -- nothing has been drilled, correct?

02:54 20 A. At the well location they are going to drill, no. That's
02:54 21 correct.

02:54 22 Q. So in essence, you are using different techniques to try
02:54 23 to predict, analyze, assess, but express an opinion about what
02:54 24 you think the pore pressure or frac reading could be, correct?

02:54 25 A. That's correct.

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02:54 1 Q. Then just so that we can get our terms correct, I'm going
02:54 2 to go down here a little bit.

02:54 3 The way the well is drilled, as you explained on your
02:54 4 direct examination, is that casing strings proceed in sequence.
02:54 5 On this well there's a sidetrack right there going down into
02:55 6 the productive zone, correct?

02:55 7 A. That's correct.

02:55 8 Q. I want to make sure we have the definitions correct for
02:55 9 the questions I'm going to ask you.

02:55 10 Does this, first of all, appear to be the casing
02:55 11 strings for the MC252 No. 1 well?

02:55 12 A. From the 22-inch down, that's correct. I really didn't
02:55 13 pay attention to the section that was drilled at the riserless
02:55 14 part of the well. I only paid attention to the deeper part of
02:55 15 the well.

02:55 16 Q. Let me make sure we are all on the same page.

02:55 17 22-inch or 18-inch on this chart, that represents the
02:55 18 outer diameter of the casing, correct?

02:55 19 A. I believe that's correct, yes .

02:55 20 Q. So if we were to hold two pieces of paper next to each
02:55 21 other 11 inches wide, the 22-inch would be about that wide?

02:55 22 A. I believe that's correct.

02:55 23 Q. That's one of the casing strings that's pretty high up in
02:55 24 the well, right?

02:55 25 A. It is.

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02:55 1 Q. By the time we get to the casing strings that are down
02:55 2 below, when we get to a 9 7/8 or a 7-inch, it actually -- the
02:55 3 outside of the circle of the casing would be inside the width
02:55 4 of a piece of paper, a normal piece of paper, right?

02:55 5 A. Yeah. The 9 7/8 would be inside the long dimension, but
02:56 6 not the --

02:56 7 Q. Right. The 7-inch. I'm sorry.

02:56 8 A. The 7-inch would be, yes.

02:56 9 Q. These inches, just dimensions, are outside diameters of
10 the casing, correct?

02:56 11 A. I believe that's correct, yes.

02:56 12 Q. It's called OD?

02:56 13 A. Right.

02:56 14 Q. And then there's an ID, correct?

02:56 15 A. That is correct.

02:56 16 Q. As you said in direct, they proceed in a series when you
17 drill the well, correct?

02:56 18 A. Yes.

02:56 19 Q. I want to backup and just talk about what you mean when
20 you say *shoe*. So I'm just going to pick one for an example.
21 Let's pick 11 7/8.

02:56 22 The shoe is where one of these strings of casing, in
23 this case an intermediate string, ends, correct?

02:56 24 A. That is correct.

02:56 25 Q. And the procedure, as you understand it, is to then cement

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02:56 1 the shoe, correct?

02:56 2 A. You cement the bottom of the casing to get cement behind
02:56 3 the casing in what's called the annulus. And you are trying to
02:56 4 create a condition where the well has integrity so that the
02:56 5 casing and the cement prevents any movement of fluids.

02:56 6 Q. The regulations that you cite, and as His Honor asked you
02:56 7 questions about this morning, the leak-off test, or it's called
02:57 8 the pressure integrity test, has nothing to do with the
02:57 9 negative pressure test. But the pressure integrity test is
02:57 10 done after then drilling proceeds 10 feet below the shoe,
02:57 11 correct?

02:57 12 A. The requirement is a minimum of 10, maximum of 50 feet,
02:57 13 correct.

02:57 14 Q. In your testimony, when you are referring to different
02:57 15 pressure integrity tests or leak-off tests or FIT tests, what
02:57 16 we are talking about is at these various shoes where the
02:57 17 casings stop as they go?

02:57 18 A. That is correct.

02:57 19 Q. Now, there are a number of shoes in the MC252 well,
02:57 20 correct?

02:57 21 A. Correct.

02:57 22 Q. Your opinion is limited to four of them, right?

02:57 23 A. That is correct.

02:57 24 Q. The 22-inch leak-off tests that were done on October 21st
02:57 25 through October 25, correct?

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02:57 1 A. I would have to go back and look at my records, but it was
02:57 2 October. I don't remember the exact dates.

02:57 3 Q. The depth at that point in time in the well was around
02:57 4 8,000 feet from the rig, correct?

02:58 5 A. That is correct, from surface.

02:58 6 Q. About 3,000 feet below what's called the mud line,
02:58 7 correct?

02:58 8 A. Correct.

02:58 9 Q. And the leak-off tests that were performed were in the
02:58 10 area that was drilled below the 22-inch casing, correct?

02:58 11 A. They drilled -- yes. They drilled a small amount out of
02:58 12 the shoe, correct.

02:58 13 Q. So just definitionally, when we talk about the 22, the
02:58 14 22-inch casing has been cemented and they are actually drilling
02:58 15 a new hole and making a new hole for the next section, which is
02:58 16 the 18-inch section?

02:58 17 A. That's correct.

02:58 18 Q. The leak-off test is to determine fracture gradient
02:58 19 numbers and other information for that next hole section?

02:58 20 A. That's correct.

02:58 21 Q. The issues with respect to the 22-inch casing, your
02:58 22 drilling margin opinions, do they have anything to do with the
02:58 23 blowout on April 20, 2010, nine months later?

02:58 24 A. It is true that that 22-inch was now behind several other
02:58 25 layers of casing. So that part of the well was now isolated

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02:58 1 from where they were drilling in April.

02:59 2 Q. With respect to the next shoe, the 18-inch shoe, they
02:59 3 cased it and then they started to drill a new hole section
02:59 4 beneath it, correct?

02:59 5 A. That is correct.

02:59 6 Q. They did a leak-off test, correct?

02:59 7 A. Correct, multiple tests.

02:59 8 Q. That was for the 16-inch hole section, correct?

02:59 9 A. Correct.

02:59 10 Q. So they had to get a 16-inch pipe. They couldn't go wider
02:59 11 than 18 unless they wanted to use an expandable, correct?

02:59 12 A. Correct.

02:59 13 Q. So for that shoe, did you have any issue with the
02:59 14 reporting that was done or testing that was done by BP?

02:59 15 A. No. For the 18-inch test I had no issues with the
02:59 16 leak-off tests.

02:59 17 Q. Now, just to be clear, the 22-inch shoe, the *Marianas* was
02:59 18 the rig at the well, right?

02:59 19 A. I believe that's right.

02:59 20 Q. It was not the *Deepwater Horizon*?

02:59 21 A. That's correct.

02:59 22 Q. The *Deepwater Horizon* came to the well site in
02:59 23 approximately late January/early February 2010, correct?

02:59 24 A. Correct.

02:59 25 Q. And then there were multiple tests done at this 18-inch

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03:00 1 shoe from February 12 to February 15, correct?

03:00 2 A. I believe those dates are right. Again, I don't remember
03:00 3 them exactly.

03:00 4 Q. Do you challenge those tests?

03:00 5 A. No. The final tests reported here was acceptable, in my
03:00 6 opinion.

03:00 7 Q. The same people that were involved in the tests that you
03:00 8 think showed egregious behavior, truly egregious behavior,
03:00 9 extreme behavior, were also involved in tests that you found
03:00 10 were perfectly fine?

03:00 11 A. I want to just make a distinction here. I did not look at
03:00 12 who was physically pumping the tests on the rig. So the people
03:00 13 that physically ran the tests may have been different people,
03:00 14 based on shift change on the rig. But I believe the people on
03:00 15 shore, Mr. Albertin and his colleagues, and Ms. Paine on the
03:00 16 rig, were the same consistent eyes looking at the test data
03:00 17 from BP's perspective.

03:00 18 Q. Have you seen any Transocean documents describing how to
03:00 19 do leak-off tests and the narrowed pore pressure margins in the
03:01 20 Gulf of Mexico?

03:01 21 A. I don't believe I've reviewed those, no.

03:01 22 Q. Have you seen any teaching materials that were put
03:01 23 together by a gentleman named Steve Hand of Transocean with
03:01 24 respect to drilling deepwater wells?

03:01 25 A. I don't believe so.

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03:01 1 Q. It's not something you looked at in connection with your
03:01 2 opinions in this case?

03:01 3 A. I don't think I saw a document by someone with that name,
03:01 4 no.

03:01 5 Q. Is it your opinion that the men on the rig that do not
03:01 6 work for BP, that they have no knowledge or understanding about
03:01 7 how to conduct the leak-off test or what it might mean?

03:01 8 A. I have no basis for an opinion on that, Counselor. I
03:01 9 didn't look at that.

03:01 10 Q. So you have no basis to know whether or not five, 10, 15,
03:01 11 20 or more people knew about tests that you have testified to
03:01 12 the Court represented things that nothing like -- like nothing
03:01 13 you have ever seen in your career; is that fair?

03:01 14 A. At this level, that's not what I said. The two tests that
03:01 15 I made those statements about were the deeper intervals, the
03:01 16 March and the April.

03:01 17 Q. Right. But even those intervals, you would agree with me
03:01 18 that there were maybe 10, 15, 20 or more people that would have
03:02 19 been either directly involved or aware of those tests having
03:02 20 been performed, both from BP, Transocean, and perhaps even
03:02 21 Halliburton, because they were down on the cement pumps,
03:02 22 correct?

03:02 23 A. The number 20, I don't know if that's right. I would
03:02 24 agree with you that there were probably multiple people that
03:02 25 looked at the data.

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03:02 1 Q. It could also include inspectors who came and then looked
03:02 2 at the reports, including the daily drilling reports -- which
03:02 3 we understand you didn't look at -- looked at the daily
03:02 4 drilling reports that contained that information, correct?

03:02 5 A. But again, as I stated earlier, I did look at the IADCs
03:02 6 later after my deposition. And when I looked at them, what I
03:02 7 discovered was that the numbers being reported on the IADCs,
03:02 8 which the inspectors were using during their inspections, were
03:02 9 different than what was reported on the WARs and the APDs.

03:02 10 Q. You don't know what the inspectors were using for their
03:02 11 inspections because you never read their depositions.

03:02 12 A. I read them after my deposition, Counselor.

03:02 13 Q. You did that work, again, after you had issued expert
03:02 14 reports and testified?

03:02 15 A. Yes. I had not read their inspectors' reports because I
03:03 16 was focused on the operations of the well, not on the
03:03 17 inspectors that come once a month.

03:03 18 Q. If we continue then with the well, the 16-inch goes down
03:03 19 to 11,638. And the leak-off tests were performed on or about
03:03 20 March 7, 2010. That was into the 13 5/8 interval, correct?

03:03 21 A. Correct.

03:03 22 Q. That's one of the tests that you challenged, correct?

03:03 23 A. Yes.

03:03 24 Q. But that test you -- I think you testified today was
03:03 25 something that you had a slight problem with, or you used some

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03:03 1 kind of qualifier with respect to your concern about that test.

03:03 2 A. Yes. The test itself looked okay. The concern was how
03:03 3 they used the test data in requesting the waiver from MMS to
03:03 4 drill with a 12.3, when their test was actually a 12.55, but
03:03 5 they reported it as a 12.6. So they were asking for .3 waiver
03:03 6 on a test result that was rounded up a full half a pound to
03:03 7 12.6.

03:03 8 Q. You have thrown a lot of numbers around today. But for
03:03 9 that interval, it was a 16-inch shoe, correct?

03:04 10 A. Yes.

03:04 11 Q. The test result was 12.55?

03:04 12 A. I believe that's correct, yes.

03:04 13 Q. The mud weight was 12.3?

03:04 14 A. The mud weight that they requested to drill with was 12.3.
03:04 15 But the test result that they gave the MMS in their waiver
03:04 16 request was 12.6.

03:04 17 Q. Right. So let's start there. Do you know what eWells is?

03:04 18 A. I do.

03:04 19 Q. What is it?

03:04 20 A. It is the digital online reporting system that the MMS
03:04 21 used at the time.

03:04 22 Q. Can you report tests in hundredths? That is, could you
03:04 23 even type 12.55 into that system?

03:04 24 A. It is my understanding that it only allows you to type
03:04 25 into the tenths.

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03:04 1 Q. You would not be able to type 12.55 into the system that
03:04 2 the United States government uses for the reporting of this
03:04 3 data?

03:04 4 A. That's correct. However, the waiver was not done through
03:04 5 eWells. The waiver was done through e-mail. And the current
03:04 6 state-of-the-art for pressure measurements is now the
03:04 7 hundredth, in my view, to the hundredth of the unit. That is
03:05 8 what we are using in reporting data these days because we have
03:05 9 more accurate tools.

03:05 10 Q. That may be your view about what the current
03:05 11 state-of-the-art is. But what's the current state-of-the-art
03:05 12 of what the United States government uses for operators to
03:05 13 report this information? Is it eWells?

03:05 14 A. They use the eWell System. But the eWell System does not
03:05 15 contemplate the use of e-mails and other media to request
03:05 16 waivers.

03:05 17 And if you look back at Scherie Douglas' e-mail to
03:05 18 Mr. Leonard Carter, which we looked at this morning, she was
03:05 19 reporting information to him in the hundredths. And this is
03:05 20 one of the issues I have with the reporting, Counselor.

03:05 21 Q. If I can ask just a new question.

03:05 22 A. Okay.

03:05 23 Q. I want to just go down the well. We'll come back up to
03:05 24 your review of e-mails.

03:05 25 A. All right.

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03:05 1 Q. After the 16-inch shoe, they drilled a 13 5/8-inch
03:05 2 interval?

03:05 3 A. Correct.

03:05 4 Q. They had a kick, correct?

03:05 5 A. They did.

03:05 6 Q. The bottom hole assembly got stuck, correct?

03:05 7 A. Yes.

03:05 8 Q. They had to cement it, correct?

03:05 9 A. I believe so, yes.

03:05 10 Q. They had to sidetrack, correct?

03:05 11 A. Yes.

03:05 12 Q. Is that an unusual operation in your view?

03:05 13 A. No. It happens all the time.

03:06 14 Q. Just like losses. Losses happen all the time too,
03:06 15 correct?

03:06 16 A. But we try to avoid them.

03:06 17 Q. But they happen all the time in the Gulf of Mexico,
03:06 18 correct?

03:06 19 A. I wouldn't say all the time, Counselor. They happen on
03:06 20 certain wells in certain circumstances.

03:06 21 Q. In all of the studies and travels that you do, and all of
03:06 22 these conferences, you have heard a number of presentations
03:06 23 about the issue of how much nonproductive time, NPT time, there
03:06 24 is in drilling because of lost circulation, correct?

03:06 25 A. Lost circulation and other factors, yes.

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03:06 1 Q. It is not an unusual thing at all, is it?

03:06 2 A. It is not unusual, but it's something that is telling you
03:06 3 that you are encroaching on your fracture gradient somewhere in
03:06 4 the well.

03:06 5 Q. You also know that the Gulf of Mexico deepwater is a
03:06 6 well-known narrow pore pressure frac gradient area, correct?
03:06 7 You know that?

03:06 8 A. Portions of the Gulf are; portions are not. You'd have to
03:06 9 be a little more specific.

03:06 10 Q. Well, you are familiar with the Mississippi Canyon area,
03:06 11 the MC in MC252. You are familiar that that is a narrow pore
03:06 12 pressure frac gradient area?

03:06 13 A. Yes. Parts of the Mississippi Canyon were known for being
03:07 14 narrow margin.

03:07 15 Q. We were talking about the sidetrack. The actual tool, the
03:07 16 drill bit, got stuck. They couldn't get it out, and so they
03:07 17 cemented it in and sidetracked. It's represented here on the
03:07 18 demonstrative.

03:07 19 A. Yes.

03:07 20 Q. Then you have a new shoe, 13 5/8. Then we are going to
03:07 21 drill the 11 below it, right?

03:07 22 A. That's correct.

03:07 23 Q. Now, the 13 below the 11, leak-off test on March 27,
03:07 24 correct?

03:07 25 A. Yes.

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03:07 1 Q. Below that is then a 9 7/8-inch hole. Another shoe,
03:07 2 correct?

03:07 3 A. Correct.

03:07 4 Q. And then in early April, in terms of the drilling, is the
03:07 5 first time that we get into the hydrocarbon-bearing zones for
03:07 6 this well, correct?

03:07 7 A. I believe that's correct, yes.

03:07 8 Q. With respect to all of your testimony on various drilling
03:07 9 margin zones, it was just the last zone that you focus on with
03:07 10 respect to the actual drilling past the leak-off test, the
03:07 11 drilling -- the open-hole area below shoe?

03:08 12 A. Would you repeat that, Counselor, please?

03:08 13 Q. Let me ask you a different way.

03:08 14 With respect to the leak-off tests that were done
03:08 15 before the 9 7/8 -- so everything on the chart up, okay -- the
03:08 16 well, at that point in time, was not near the
03:08 17 hydrocarbon-bearing zones, correct?

03:08 18 A. That's correct.

03:08 19 Q. Do you believe that the hydrocarbon-bearing zones were
03:08 20 what -- was the hydrocarbons that came up onto the rig on
03:08 21 April 20, 2010?

03:08 22 A. Counsel, that's outside my expertise area. I was not
03:08 23 asked to opine on that.

03:08 24 Q. So we have identified what a shoe is. We've identified
03:08 25 what a test is. And now I want to go to your answer to one of

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03:08 1 the Court's questions this morning.

03:08 2 He asked about the definition of *drilling margin*. Do
03:08 3 you recall the question?

03:08 4 A. Yes.

03:08 5 Q. I believe you said something to the effect that the base
03:08 6 assumption of drilling margin is that you measure the fracture
03:08 7 gradient at the shoe -- that is, in the 10 to 50 feet below --
03:08 8 and measure that against your mud weight, correct?

03:09 9 A. You take the shoe test and you provide the half-pound safe
03:09 10 drilling margin off of that shoe test as the presumed weakest
03:09 11 point. And your highest mud weight in the open hole must not
03:09 12 infringe on that half-pound margin.

03:09 13 Q. Using the value you get from the shoe test -- that is the
03:09 14 test you actually do, for example, here on March 27, 2010 --
03:09 15 the value you get at the shoe is what you use to measure mud
03:09 16 weights against, correct?

03:09 17 A. Assuming that you believe it's a valid test, yes.

03:09 18 Q. All right. We are going to get into the belief issues in
03:09 19 a minute. But that's what the regulations specify as well,
03:09 20 correct?

03:09 21 A. The regulation specifies you must do a pressure integrity
03:09 22 test. And implicit in the regulations is that it's a valid
03:09 23 test, that it's a test that truly measures the rocks.

03:09 24 Q. And explicit -- that is, actually using words on the page
03:09 25 in the regulation -- is that you do that test 10 to 50 feet

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03:09 1 below the shoe, correct?

03:09 2 A. That is correct.

03:10 3 Q. You indicated to the Court, though, that in your view,
03:10 4 drilling margin should actually be defined as using the weakest
03:10 5 point in the open hole for safe drilling margin, correct?

03:10 6 That's your view?

03:10 7 A. That is only if you have a zone in the well as you're
03:10 8 drilling that appears -- shows evidence of being weaker than
03:10 9 the fracture gradient at the last casing shoe.

03:10 10 Q. All right.

03:10 11 A. So as a general statement it would be yes, if you assume
03:10 12 that the casing shoe is the weakest point, initially. The
03:10 13 statement is correct on its face.

03:10 14 Q. There is no regulation that you are aware of that says
03:10 15 what you just did, which is that for a safe drilling margin
03:10 16 under the regulations, you have to use the weakest formation in
03:10 17 the open hole, correct?

03:10 18 A. That is not true. 427 specifically states that you have
03:10 19 to use hole behavior observations. And a loss of mud or other
03:10 20 such event in the well is an indication that you have a weaker
03:10 21 fracture gradient at which location you are losing mud. That
03:10 22 information must be taken into account.

03:11 23 Likewise -- likewise, Geo Taps and other downhole
03:11 24 data that allow you to calculate a fracture gradient should
03:11 25 also be used as another measurement of what's happening in the

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03:11 1 hole as you are drilling.

03:11 2 Q. You don't have any regulation that explicitly says,
03:11 3 Dr. Huffman, you should use the weakest fracture gradient minus
03:11 4 .5 to be the safe drilling margin, correct?

03:11 5 A. I don't need a regulation to state what is obvious,
03:11 6 Counselor. Everyone at MMS agrees with my interpretation. All
03:11 7 their depositions showed that that was correct. And
03:11 8 Ms. Scherie Douglas' deposition, BP's own regulatory
03:11 9 specialist, indicated that she understood the same principles,
03:11 10 as did Mr. Albertin and Mr. Alberty, the other two experts from
03:11 11 inside BP.

03:11 12 Q. I believe you testified that you haven't spoken with
03:11 13 anyone at MMS, correct?

03:11 14 A. No. I read their depositions, Counselor.

03:11 15 Q. You read some of their depositions, correct?

03:11 16 A. I read Mr. Saucier, Mr. Trocquet, and Mr. Patton. And
03:11 17 then, as you mentioned later, the Neals.

03:11 18 Q. Did you read your own deposition?

03:12 19 A. Yes, I did.

03:12 20 MR. REGAN: If we could go to page 264, lines 3
03:12 21 through 7.

03:12 22 BY MR. REGAN:

03:12 23 Q. Were you asked this question, and did you give this
03:12 24 answer, Dr. Huffman:

03:12 25 "QUESTION: And you don't have any regulation that

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03:12 1 explicitly says weakest fracture gradient minus .5 is the
03:12 2 safe drilling margin, right?

03:12 3 "ANSWER: That is correct."

03:12 4 Were you asked that question, and did you give that
03:12 5 answer?

03:12 6 A. Yes. That is essentially correct. It is defined in the
03:12 7 APD, and the APD is specified in the regulations. The margin
03:12 8 is defined as being on that document that you submit to the MMS
03:12 9 and they approve. That's where the margin is determined.

03:12 10 You don't need to write .5 in the regs if you are
03:12 11 going to approve it on a case-by-case basis.

03:12 12 Q. With respect, Dr. Huffman, at your deposition, you were
03:12 13 also asked if you could provide one example where someone used
03:12 14 the weakest fracture gradient in the open hole and dropped
03:12 15 their mud weight by a .5 because that's what the safe drilling
03:13 16 margin required.

03:13 17 You were asked that question, correct?

03:13 18 A. Yes, I was.

03:13 19 Q. You could not identify a single example, correct?

03:13 20 A. At the time of my deposition, I was not prepared to give a
03:13 21 laundry list of previous projects that I had done, mainly
03:13 22 because they are confidential to my other oil company clients.

03:13 23 But I, after deposition, went back and tried to look
03:13 24 for any data that I had on that topic.

03:13 25 Q. Are you saying that you came to your deposition in this

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03:13 1 case unprepared to support the opinions that you had rendered?

03:13 2 A. No. The --

03:13 3 Q. Do you deny the answer you gave in your deposition when
03:13 4 you were asked under oath shortly after writing your reports
03:13 5 where you claim that BP violated regulations that you could not
03:13 6 name a single example where someone took the weakest fracture
03:13 7 gradient in the open hole and dropped their mud weight by .5
03:13 8 because that's what safe drilling margin required?

03:13 9 Were you asked that question, and did you give that
03:13 10 answer?

03:13 11 A. I believe I was, and at that time I had not gone back and
03:13 12 reviewed all of the details that I still had in my records for
03:14 13 previous projects.

03:14 14 One of the challenges that I face in responding to
03:14 15 questions like that --

03:14 16 Q. My question was just whether you were asked that, and did
03:14 17 you give me an answer?

03:14 18 A. Yes, I did. Yes.

03:14 19 The problem I face is I don't keep --

03:14 20 Q. I don't have a question pending, Dr. Huffman.

03:14 21 A. Okay.

03:14 22 Q. There are other definitions of *drilling margin* that you
03:14 23 disagree with, correct?

03:14 24 A. Can you be more specific, Counselor?

03:14 25 MR. REGAN: TREX-4019. Let's go to page 2 of the

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03:14 1 pdf. Well, first let me show you page 1 -- if we could, Donny.

03:14 2 Page 1 of TREX-4019.

03:14 3 **BY MR. REGAN:**

03:14 4 **Q.** This is titled BOEMRE National Office Potential Incident
03:14 5 of Noncompliance, or PINC list? Do you recognize this
03:14 6 document?

03:14 7 **A.** I believe I've seen a version of this. I don't know if
03:14 8 it's the same one, but I've seen a version.

03:14 9 **Q.** Do you know what it is?

03:14 10 **A.** I believe it is the instructions for how to handle the
03:14 11 reporting events.

03:14 12 **Q.** Instructions to whom?

03:14 13 **A.** I don't remember off the top of my head. I don't deal
03:14 14 with this type of thing on a regular basis.

03:14 15 **Q.** Because you don't work for BOEMRE?

03:15 16 **A.** That's correct.

03:15 17 **Q.** Right. So the instruction that BOEMRE would give to its
03:15 18 personnel about how to look at these issues, you would not be
03:15 19 familiar with?

03:15 20 **A.** I'm not concerned with those, no.

03:15 21 **Q.** You are not concerned with them?

03:15 22 **A.** It's not part of my job.

03:15 23 **Q.** Page 2. It indicates that "These are the preferred
03:15 24 guidelines" under Inspection Procedure there.

03:15 25 **MR. REGAN:** There, Donny, yes. Thank you. Right

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03:15 1 there.

03:15 2 **BY MR. REGAN:**

03:15 3 **Q.** "These are the preferred detailed guidelines to be used by
03:15 4 BOEMRE personnel to ensure that the stated requirement is met."

03:15 5 It says it's not a directive to supersede regulatory
03:15 6 language.

03:15 7 Do you see that?

03:15 8 **A.** It's the first time I have read this, Counselor. Let me
03:15 9 read it.

03:15 10 Yes, I see it.

03:15 11 **Q.** Go to page 30, then, of the document, of the pdf. There's
03:15 12 an Item D-831 in this instruction to MMS inspectors. Do you
03:15 13 the see title: "Are drilling operations suspended when the
03:16 14 safe margin, as approved in the APD, between the drilling fluid
03:16 15 weight in use and the equivalent drilling fluid weight at the
03:16 16 casing shoe is not maintained?"

03:16 17 Do you see that?

03:16 18 **A.** Yes, I do.

03:16 19 **Q.** Is there any mention of -- the drilling rig fluid weight
03:16 20 in use is the mud weight that's being used during drilling
03:16 21 operations, correct?

03:16 22 **A.** That is correct.

03:16 23 **Q.** And the, quote, equivalent drilling fluid weight at the
03:16 24 casing shoe is the reported leak-off or FIT value at the shoe,
03:16 25 correct?

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03:16 1 A. That's the way I would interpret those words.

03:16 2 Q. There's nothing in the instructions that the federal
03:16 3 government gives to MMS inspectors that they should be
03:16 4 evaluating drilling margin between the weakest point in the
03:16 5 formation in the open hole and the mud weight, correct?

03:16 6 A. On reading this on its face, it states that you should be
03:16 7 using the shoe. But again, that is assumed to be the weakest
03:16 8 point in the hole. That does not -- you cannot ignore 427(a)
03:16 9 in applying this, Counselor. 427(a) is still there. You have
03:17 10 to use the hole behavior observations.

03:17 11 As I stated this morning in direct, it is physically
03:17 12 absurd to drill with mud weights that are heavier than your
03:17 13 weakest fractured rate. It will cause you to lose control.

03:17 14 Q. Dr. Huffman, do you believe that the federal government's
03:17 15 instructions to its own inspectors about the regulations that
03:17 16 you have cited for the first time in your life in your
03:17 17 report -- do you believe that the instructions the federal
03:17 18 government is giving to its inspectors are absurd?

03:17 19 A. I wouldn't say they are absurd, Counselor. Again, without
03:17 20 studying this in more detail, it's not something that I would
03:17 21 offer an expert opinion on at this point. It appears to be not
03:17 22 consistent with what I understand.

03:17 23 Q. But you have --

03:17 24 **THE COURT:** Wait a minute, Mr. Regan, because I want
03:17 25 to clear up something. I want to understand something, since I

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03:17 1 have to understand all of this.

03:17 2 MR. REGAN: Yes.

03:17 3 THE COURT: Are what we are talking about, is this
03:17 4 like a *weakest link* issue? In other words, if there's a weaker
03:17 5 part placed somewhere down the interval, you have to look at
03:18 6 that as opposed to where you normally look?

03:18 7 THE WITNESS: That is the practice that I have seen
03:18 8 industry-wide, Your Honor, yes. This is using the standard
03:18 9 assumption that the casing shoe is the weakest point.

03:18 10 But that's not always the case. As we showed in
03:18 11 the Demonstrative B this morning, if you have a weaker zone in
03:18 12 the well, you have to honor that zone in your drilling margin.

03:18 13 THE COURT: It just sounds like common sense to me.

03:18 14 THE WITNESS: It's very much common sense, and
03:18 15 it's --

03:18 16 MR. REGAN: Maybe I can clear it up with this
03:18 17 question, the issue is whether the regulation that Dr. Huffman
03:18 18 claims was violated --

03:18 19 THE COURT: I think you are beating a dead horse,
03:18 20 Mr. Regan. Why don't you move on. He has explained it.

03:18 21 MR. REGAN: We'll move on.

03:18 22 BY MR. REGAN:

03:18 23 Q. With respect to your testimony that BP misreported or did
03:18 24 not report certain information, we have established that you
03:18 25 did not look at all of the documents that may have contained

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03:18 1 that information, including the daily driller's report or IADC
03:18 2 reports, correct?

03:18 3 A. At the time I wrote my expert report and rebuttal, I had
03:18 4 not looked at them, that is correct. I did review them later.

03:19 5 Q. You make that determination that BP employees misreported
03:19 6 information based on looking at documents and e-mails, correct?

03:19 7 A. Both their internal documents, their e-mails and the
03:19 8 documents they submitted to the MMS, yes.

03:19 9 Q. Is there any testimony from any of the MMS inspectors in
03:19 10 this case to the effect that they felt that things were
03:19 11 misreported to them?

03:19 12 A. Again, I don't recall the depositions of Mr. Neal and his
03:19 13 son. At this point it's been over a year since I have read
03:19 14 them. But they were looking at a subset of documents, not all
03:19 15 of the documents that I looked at; and it's unclear to me that
03:19 16 they ever saw any of BP's internal documents. So I can't
03:19 17 really assess what they knew or didn't know when they were on
03:19 18 the rig several years ago.

03:19 19 Q. Just like you can't assess what BP employees knew or
03:19 20 didn't know when they were filling out forms, correct?

03:19 21 A. I can't know what a BP employee filled -- thought while
03:19 22 filling out a form, but I can make an opinion based on e-mails
03:20 23 that communicate data and information as to what BP believed
03:20 24 the condition of the well was at the time. That's what I used
03:20 25 in my analysis.

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03:20 1 Q. With respect to Mr. Neal's testimony --

03:20 2 MR. REGAN: Donny, can we bring up Robert Neal
03:20 3 deposition, page 107.

03:20 4 BY MR. REGAN:

03:20 5 Q. I understand that you did not review this at the time of
03:20 6 your deposition, Dr. Huffman. Do you see Mr. Neal, who was an
03:20 7 inspector, testified on line 19:

03:20 8 "QUESTION: When you review the APDs, do you look at
03:20 9 the most recent, or do you look at the histories" --

03:20 10 A. Yes.

03:20 11 Q. It continues:

03:20 12 "QUESTION: To the extent there were multiple APDs,
03:20 13 you would look at each one of them, correct?"

03:20 14 "ANSWER: Yes, sir."

03:20 15 That doesn't surprise you, right?

03:20 16 A. No. If they were on the rig, I would expect the inspector
03:20 17 to look at those.

03:20 18 Q. You would expect them also to look at the weekly activity
03:21 19 reports, correct?

03:21 20 A. It's my understanding that the inspectors were not always
03:21 21 looking at the WARs. They were looking at the IADCs, what you
03:21 22 call the *driller's report*. They may have looked at WARs.
03:21 23 Again, I don't remember their specific depositions.

03:21 24 Q. You don't remember?

03:21 25 A. I just don't remember at this point, yes.

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03:21 1 Q. They would look at cement pump data for the LOTs?

03:21 2 A. That would be reasonable, yes.

03:21 3 MR. REGAN: If we could go back to the
03:21 4 Demonstrative 4363.

03:21 5 BY MR. REGAN:

03:21 6 Q. You were shown a PowerPoint that was with respect to this
03:21 7 interval, the 22. The shoe test that was done there
03:21 8 approximately late October. You were shown a PowerPoint where
03:21 9 you testified with respect to the potential risk of an
03:21 10 uncontrollable well event. Do you recall that?

03:21 11 A. Yes.

03:21 12 Q. There was a kick that occurred as they were drilling the
03:21 13 18-inch shoe -- 18-inch hole section after this shoe, correct?

03:22 14 A. That is correct.

03:22 15 Q. Was it controlled?

03:22 16 A. I believe it was, yes.

03:22 17 Q. Are you a drilling engineer?

03:22 18 A. No, sir. I'm a geophysicist.

03:22 19 Q. You have never been a drilling engineer at any point in
03:22 20 your career, correct?

03:22 21 A. No, but I have been trained in aspects of that in my days
03:22 22 at Exxon and Conoco. We had a lot of internal training for
03:22 23 that purpose.

03:22 24 Q. Are you a registered engineer?

03:22 25 A. No, sir.

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03:22 1 Q. With respect to an engineering decision about where to set
03:22 2 casing, do you believe you are qualified to make that decision?

03:22 3 A. When I am involved in monitoring wells for my clients,
03:22 4 they -- the drilling engineers consult me on when they should
03:22 5 set casing. So they work with me in a collaborative way to
03:22 6 take advantage of my knowledge and integrate it with their own
03:22 7 knowledge to make the best decision possible on where to set
03:22 8 casing.

03:22 9 Q. But with respect to an engineering decision about where to
03:22 10 set casings, do you understand that people have to use
03:22 11 engineering judgment?

03:22 12 A. Oh, yes, absolutely.

03:22 13 Q. That includes drilling engineering judgment?

03:22 14 A. It requires engineering judgment. I wouldn't specify just
03:22 15 drilling.

03:22 16 Q. But it would include drilling engineering judgment?

03:23 17 A. Yes.

03:23 18 Q. With respect, then -- I'm going to go into the intervals
03:23 19 now. The 18-inch shoe and the 16-inch hole section beneath it,
03:23 20 there were multiple tests done for that shoe as well, correct?

03:23 21 A. That is correct.

03:23 22 Q. What was the leak-off test value?

03:23 23 A. I don't remember off the top of my head. I believe it was
03:23 24 11.78.

03:23 25 Q. You remember correctly, 11.78.

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03:23 1 And what was the recorded number for eWells?

03:23 2 A. I don't remember what was in eWells, Counselor. That
03:23 3 wasn't germane to what I was analyzing.

03:23 4 Q. The submissions that BP made to the regulatory authorities
03:23 5 was not germane?

03:23 6 A. No. I believe -- no. On their revised documents they
03:23 7 reported 11.8, as I recall.

03:23 8 Q. BP asked for permission to go to 11.5 mud weight for that
03:23 9 interval, correct?

03:23 10 A. That's correct.

03:23 11 Q. They received permission for that, correct?

03:24 12 A. They did.

03:24 13 Q. You do not believe using 11.8 for that interval was a
03:24 14 false reporting, do you?

03:24 15 A. It was very close to the 11.78. I did not quibble with
03:24 16 that interval.

03:24 17 Q. You believe that BP accurately reported that interval when
03:24 18 they got an 11.78 test and reported 11.8, correct?

03:24 19 A. Yes.

03:24 20 Q. Then using your hundredths, 11.78 would have been
03:24 21 11 1/2 mud weight --

03:24 22 MR. REGAN: If we could go to the ELMO.

03:24 23 BY MR. REGAN:

03:24 24 Q. 11.78, 11.5, that's a difference of .28?

03:24 25 A. That is correct.

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03:24 1 Q. You don't have any problem with that?

03:24 2 A. No, Counselor, because they only drilled with 11.4 in this
03:24 3 interval, not 11.5. They had a .38 margin in this interval.
03:24 4 That's why I didn't raise a concern.

03:24 5 Q. So you would want to look at what they actually drilled
03:24 6 with, right?

03:24 7 A. Yes.

03:24 8 Q. But in terms of the reporting, there was nothing wrong
03:24 9 with that difference in reporting, correct?

03:24 10 A. I had no issue with it because they did not infringe on
03:25 11 the .3 margin.

03:25 12 Q. With respect to the next shoe, there was a 12.5 you
03:25 13 criticized, and it's the 16-inch shoe, and then the drilling of
03:25 14 the 13, correct?

03:25 15 A. Yes. It was a 12.55.

03:25 16 Q. 12.55. It was reported as 12.6, correct?

03:25 17 A. Correct.

03:25 18 Q. You think that was inaccurate?

03:25 19 A. I believe that when they requested the waiver, which did
03:25 20 not require rounding, they should have reported the 12.55 and
03:25 21 asked for a 12.25 for their actual mud. Instead they asked for
03:25 22 a 12.3, which technically they infringed on the .3 margin that
03:25 23 they requested.

03:25 24 Q. The mud weight that was -- a waiver was requested,
03:25 25 correct?

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03:25 1 A. Yes, it was.

03:25 2 Q. The mud weight that was used was 12.3, correct?

03:25 3 A. Correct.

03:25 4 Q. The difference was 0.25, correct?

03:25 5 A. That is correct.

03:25 6 Q. You think that was an inaccurate --

03:25 7 MR. REGAN: If we can go back to the ELMO. Thank
03:25 8 you.

03:25 9 BY MR. REGAN:

03:25 10 Q. Sorry for switching around.

03:26 11 You think the 0.28 was okay, but the 0.25 was not?

03:26 12 A. That's not what I said, Counselor. What I said was that
03:26 13 in the first interval on the left, they requested a .3 margin
03:26 14 from an 11.8; and they told the MMS they would drill with 11.5.
03:26 15 They never went above 11.4. So they had a .38 margin in that
03:26 16 interval. They didn't infringe on the .3.

03:26 17 We got into this in deposition, Counselor, and I
03:26 18 think it's important to clarify. This is a rounding game --

03:26 19 MR. REGAN: I would like to ask him questions, if I
03:26 20 could, Your Honor.

03:26 21 THE COURT: Wait a minute. Let the witness explain
03:26 22 his answer. You asked the question, Mr. Regan.

03:26 23 THE WITNESS: This is a rounding game that we went
03:26 24 through in deposition as well. And I think what's
03:26 25 fundamentally important here to understand is that when you ask

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03:26 1 for a drilling waiver to drill with a .3 margin, .3 means what
03:26 2 it means. You don't go below that .3 margin. You don't
03:26 3 impinge on it.

03:26 4 If you are requesting to MMS with a 12.6
03:27 5 reporting number and asking for 12.3, my view is, if you know
03:27 6 that number is 12.55, you drill it at 12.25. You honor the
03:27 7 difference that the government has approved for you to drill
03:27 8 with. You don't play games with rounding.

03:27 9 As counsel pointed out this morning, you can
03:27 10 play games with these numbers to make a .3 a .21 if you want to
03:27 11 play that game. And that makes a mockery of the regulations,
03:27 12 Counselor.

03:27 13 **MR. REGAN:** With respect, Your Honor, I just would
03:27 14 like the witness to -- I think that was outside of the scope of
03:27 15 my question, but I will ask a new question.

03:27 16 **BY MR. REGAN:**

03:27 17 **Q.** The difference of .28 and .25 is 3/100, correct?

03:27 18 **A.** That is correct.

03:27 19 **Q.** Have you ever been a mud engineer?

03:27 20 **A.** No.

03:27 21 **Q.** You understand that mud engineers are drilling fluids
03:27 22 specialists, mix up mud on rigs to certain densities, correct?

03:27 23 **A.** That is correct.

03:27 24 **Q.** You understand how they do that, right?

03:27 25 **A.** Yes, I do.

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03:27 1 Q. Is it your belief that mud can be mixed to a hundredth of
03:28 2 a pound?

03:28 3 A. I believe that you can control it to that level, but it is
03:28 4 not always easy, which is why I did not make an issue of the
03:28 5 .28.

03:28 6 Q. With respect to Mr. Frank Patton, he had a phone call with
03:28 7 BP with respect to this interval, the 16-inch shoe and the
03:28 8 13-inch hole section, correct?

03:28 9 A. I believe that's correct, yes.

03:28 10 Q. He approved BP's going to a .3 margin, correct?

03:28 11 A. He did.

03:28 12 Q. With respect to the last two shoes, it's your statement or
03:28 13 opinion that the shoe at the 13 5/8 and the shoe at the 9 7/8,
03:28 14 so the bottom shoe, 9 7/8 and the 13 5/8, that those two tests
03:28 15 were -- that the number received on the test was reported
03:29 16 accurately, correct?

03:29 17 A. The number received on the test for the max pressure was
03:29 18 reported as it was measured, yes.

03:29 19 Q. But you criticize those tests because you think that BP
03:29 20 did not believe that it was a valid test?

03:29 21 A. I don't criticize it just for that reason, Counselor. I
03:29 22 criticize it because as an expert -- and I've done thousands of
03:29 23 leak-off test analyses in my 23 years doing this -- I would
03:29 24 never have accepted those two tests as valid leak-off tests,
03:29 25 and I don't believe that other experts would have either. And

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03:29 1 BP's own specialists internally had serious doubts about the
03:29 2 validity of those tests.

03:29 3 There's a basic rule: When in doubt, retest. The
03:29 4 time it takes to retest a shoe and get a correct number that
03:29 5 you trust is very small. It's a small amount of NPT that is
03:29 6 required to do that additional test.

03:29 7 And be sure where you are before you put your
03:29 8 wellbore in jeopardy by getting a shock or a surprise down the
03:30 9 hole --

03:30 10 Q. Dr. Huffman --

03:30 11 A. -- when you're drilling.

03:30 12 Q. -- are you finished?

03:30 13 A. Yes.

03:30 14 Q. Do you know Dr. Ted Bourgoyne, Jr.?

03:30 15 A. Yes, I know of him.

03:30 16 Q. He is a professor emeritus of petroleum engineering from
03:30 17 LSU, correct?

03:30 18 A. Yes, I do.

03:30 19 Q. He was at LSU since 1971?

03:30 20 A. Yes.

03:30 21 Q. Is that correct?

03:30 22 A. Yes.

03:30 23 Q. He was dean of the college of engineering there?

03:30 24 A. I don't remember his whole CV, but I do recall he was in
03:30 25 the administration at the university for a while.

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03:30 1 Q. Are you aware he disagrees with your judgments with
03:30 2 respect to the 13 5/8-inch test and the 9 7/8-inch test as to
03:30 3 whether they were valid tests, correct?

03:30 4 A. I believe I addressed that issue clearly in my rebuttal
03:30 5 report. As stated in that report, Dr. Bourgoyne is taking the
03:30 6 approach that those two tests represented incredibly strong
03:30 7 rock; and yet the two tests on their face suggest that that is
03:31 8 not what was happening.

03:31 9 In particular, the 13 5/8 test, as I stated this
03:31 10 morning, showed clear evidence of a cement channel. So even if
03:31 11 you accept the fact that it was very strong rock, you still
03:31 12 must -- you should have retested that shoe to confirm integrity
03:31 13 of the wellbore before you drilled forward.

03:31 14 Q. Is it possible, Dr. Huffman, that you -- as you say, you
03:31 15 have done thousands of these tests -- or you haven't done
03:31 16 thousands. You have looked at thousands?

03:31 17 A. I have looked at thousands of them, yes.

03:31 18 Q. You have looked at thousands of them.

03:31 19 And Dr. Bourgoyne, who has been in this area for his
03:31 20 own entire professional career, that you have a difference of
03:31 21 engineering opinion?

03:31 22 A. If you look at Dr. Bourgoyne's deposition, I believe that
03:31 23 he testified that he has not done work in deep water. So I
03:31 24 would argue that deep water, as an area of drilling, is outside
03:31 25 his experience base.

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03:31 1 Q. That would be your view of Dr. Bourgoyne?

03:31 2 A. I have great respect for Dr. Bourgoyne in general, and I
03:31 3 have read his textbooks and other information that he has
03:31 4 published.

03:31 5 Q. Right.

03:31 6 A. But there is a big difference between onshore and shallow
03:32 7 water drilling experience and deepwater, ultra deepwater
03:32 8 experience.

03:32 9 Q. Dr. Bourgoyne has published textbooks that talk about
03:32 10 leak-off tests, correct?

03:32 11 A. He has, yes.

03:32 12 Q. Dr. Bourgoyne has published articles that talk about
03:32 13 leak-off tests, correct?

03:32 14 A. He has.

03:32 15 Q. Do you have great respect for the LSU petroleum
03:32 16 engineering department?

03:32 17 A. Yes, I do. I wouldn't dare say otherwise and be in the
03:32 18 state of Louisiana, would I? I would never get home.

03:32 19 **THE COURT:** Well, I went to Southeastern and Loyola,
03:32 20 so I'm kind of neutral here.

03:32 21 **BY MR. REGAN:**

03:32 22 Q. Have you ever been a member of an API committee concerning
03:32 23 the determination of formation pore pressures and frac
03:32 24 gradient, Dr. Huffman?

03:32 25 A. No, I have not.

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03:32 1 Q. You understand that Dr. Bourgoyne has?

03:32 2 A. That's possible. Again, I didn't review his CV.

03:32 3 Q. With respect to determining whether or not -- I'll just
03:32 4 try and simplify it, but please tell me if I have it wrong.

03:32 5 One of your views is that you think they may not have
03:33 6 actually drilled into new formation in these last two tests,
03:33 7 correct?

03:33 8 A. The data from the daily log of operations, which is,
03:33 9 again, a document that I relied heavily on because it's the
03:33 10 actual drilling document on the rig, indicates that they did
03:33 11 drill forward 10 feet. However, as we noted this morning in
03:33 12 direct, Mr. Morel documented in late April that they put the
03:33 13 casing at the bottom of the well, which means they didn't have
03:33 14 the normal amount of rathole. That alone could have
03:33 15 significantly affected the quality of the test.

03:33 16 In both cases, in my view, they should have squeezed
03:33 17 the shoe and then drilled out another 10 to 20 feet and
03:33 18 retested. This is a simple procedure to confirm that you have
03:33 19 a valid leak-off test.

03:33 20 Q. You did not look at the actual IADC reports to see what
03:33 21 the crew reported with respect to whether they drilled 10 feet
03:33 22 further, did you? Did you look at those reports or not?
03:33 23 That's the question.

03:33 24 A. I looked at the IADCs, and the IADCs confirmed the same
03:34 25 information in general that I had already reviewed on the daily

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03:34 1 log of operations months earlier. The two are consistent in
03:34 2 most cases.

03:34 3 Q. They show that 10 additional feet was drilled beneath the
03:34 4 shoe, correct?

03:34 5 A. That is correct. That's what they show.

03:34 6 Q. You disagree with that statement?

03:34 7 A. I do not believe, whether they drilled the 10 feet or not,
03:34 8 that those tests are indicative of a valid leak-off test or
03:34 9 formation integrity test, Counselor.

03:34 10 Q. With respect to your pore pressure prediction work -- and
03:34 11 that, again, is what you do when the well looks like this,
03:34 12 right? There's nothing there -- do you look at offset well
03:34 13 information?

03:34 14 A. Yes, I do.

03:34 15 Q. Why do you look at that?

03:34 16 A. That is the only nearby calibration, as we call it, of the
03:34 17 pore pressures, the fracture gradients from other leak-off
03:34 18 tests nearby, and so forth.

03:34 19 Q. There was offset well information analyzed by BP in
03:34 20 connection with looking at the values that had come in for the
03:34 21 13 5/8-inch test, correct?

03:35 22 A. That is correct.

03:35 23 Q. The offset well information was from a well called Yumuri,
03:35 24 correct?

03:35 25 A. That is correct.

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03:35 1 Q. Before I throw jargon, there's a question of what's called
03:35 2 *overburden*; is that right?

03:35 3 A. Yes.

03:35 4 Q. Overburden is, in essence, further out from the frac
03:35 5 gradient or it could be the frac gradient?

03:35 6 A. Yes.

03:35 7 To clarify for the Court, the overburden is the total
03:35 8 vertical weight of sediment and water that exists at any point
03:35 9 in the subsurface. So that is the stress of all the materials
03:35 10 above you that are weighing down on you at any point in the
03:35 11 subsurface.

03:35 12 Q. BP's engineers, in assessing this test, looked at offset
03:35 13 well information, correct?

03:35 14 A. They did, yes.

03:35 15 Q. There is also a relief well that was drilled very close to
03:35 16 this area after the accident, correct?

03:35 17 A. That is correct.

03:35 18 MR. REGAN: I would like to pull up 7250. What I'm
03:35 19 pulling up is the leak-off test plot for the MC252 No. 3 well.

03:36 20 And, Your Honor, the relief wells each had a
03:36 21 different number sequence. This is No. 3.

03:36 22 BY MR. REGAN:

03:36 23 Q. The vertical depth of the leak-off test that was performed
03:36 24 here was approximately 13,461 feet, correct?

03:36 25 MR. REGAN: If we could focus on that. It's page 31

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03:36 1 of the pdf. I'm sorry.

03:36 2 **BY MR. REGAN:**

03:36 3 **Q.** While they are looking for it, Dr. Huffman, are you aware
03:36 4 of the leak-off test that was performed for the relief well?

03:36 5 **A.** I believe it's an exhibit that was shown in deposition, if
03:36 6 I'm not mistaken, if it's the same test.

03:36 7 **Q.** The value for the leak-off test at the same depth of
03:36 8 rock -- here we are -- was 14.66. Do you recall that from your
03:36 9 deposition? We can find it on the chart, but do you recall
03:37 10 that?

03:37 11 **A.** Yes, I do.

03:37 12 **Q.** The leak-off test in the No. 1 well for the same area was
03:37 13 14.7, correct?

03:37 14 **A.** That is not correct, Counselor. I want to specify why.

03:37 15 **Q.** Was the value that was received on the rig -- when they
03:37 16 believed they had drilled 10 feet below, was the value 14.7?
03:37 17 That's my question.

03:37 18 **A.** In the original well?

03:37 19 **Q.** Yes.

03:37 20 **A.** The value they reported was 14.7.

03:37 21 **Q.** Was the value that was reported from the relief well --
03:37 22 which was just in the same depth but a different location to
03:37 23 drill to intersect the well, at that same area. Was that value
03:37 24 14.66?

03:37 25 **A.** The maximum pressure on the test was reported as 14.66.

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03:37 1 That is not the leak-off pressure, Counselor. I
03:37 2 analyzed this test myself after it was provided to me, and the
03:37 3 leak-off value in this test was much lower than 14.66.

03:37 4 Q. You did not rely in any way on the information from the
03:38 5 relief well in reaching your opinions in this case, correct?

03:38 6 A. I did not, no. This was not available at the time.

03:38 7 Q. Let's look at a document that I believe you showed earlier
03:38 8 this morning, that your counsel showed you, TREX-3715.

03:38 9 This is a series of e-mails. I want to direct your
03:38 10 attention to the -- first of all, you were shown this document
03:38 11 in your deposition, and do you recall testifying that you
03:38 12 excluded it from your consideration?

03:38 13 A. I may have, Counselor. I don't remember all the
03:38 14 statements that I made. It's been a while.

03:38 15 Q. If we could focus on the bottom half, there's a discussion
03:38 16 of the Yumuri LOC test. Do you see that?

03:38 17 A. Yumuri was one of the offset wells nearby. They used
03:38 18 Isabella, Yumuri, and Rigel, if I recall correctly.

03:38 19 Q. The Yumuri well, when they did a leak-off test in a
03:38 20 similar area, meaning similar depth, they received a result
03:39 21 that was also above overburden, correct?

03:39 22 A. That's correct.

03:39 23 Q. So three wells around the same depth, reasonably proximate
03:39 24 to each other, all received values that were over overburden,
03:39 25 correct?

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03:39 1 A. That is not correct, Counselor.

03:39 2 I want to make two notes here that are important for
03:39 3 the Court to understand. Look at the bottom of what you have
03:39 4 blown up here. You will notice that in Mr. Albertin's
03:39 5 e-mail -- and this is very fundamental to this issue -- he
03:39 6 states: "For the record, we discounted the reported Yumuri
03:39 7 leak-off test and added a BP-calculated value of 14.4 to the
03:39 8 archived mud file."

03:39 9 He did not believe that test was actually above
03:39 10 overburden.

03:39 11 Q. But you are not a belief expert, right? You are not a
03:39 12 psychiatrist, correct?

03:39 13 The question I'm asking you is an engineering
03:39 14 question or a geophysical question. You, as a geophysicist,
03:39 15 claim in your independent analysis that that test is invalid,
03:39 16 correct?

03:39 17 A. That's correct, the test on the original wellbore, yes.

03:39 18 Q. That's your opinion, correct?

03:40 19 A. That's correct.

03:40 20 Q. You do not include in your analysis the Yumuri offset well
03:40 21 or the relief well, do you?

03:40 22 A. That is not correct, Counselor.

03:40 23 And again, let me clarify. I had this kind of
03:40 24 information available to me. I was aware that there was a high
03:40 25 leak-off test reported at Yumuri, but I was also aware that BP

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03:40 1 discounted that leak-off and lowered the value to below
03:40 2 overburden.

03:40 3 Furthermore, going back to your relief well diagram
03:40 4 that you put up a minute ago, as I stated very clearly a minute
03:40 5 ago, I analyzed that leak-off test myself, and the leak-off was
03:40 6 occurring on that test far below the max pressure that BP
03:40 7 reported.

03:40 8 I do not believe that that test was anywhere near as
03:40 9 high in its actual leak-off pressure as what they were claiming
03:40 10 in the 13 5/8 shoe test in the original Macondo well.

03:40 11 Q. In the e-mails that you reviewed in making your judgment
03:40 12 that people did not believe a test, you looked at TRES-3733.

03:40 13 MR. REGAN: Can you pull that up.

03:40 14 BY MR. REGAN:

03:41 15 Q. It's an e-mail from Marty Albertin, correct?

03:41 16 A. Yes.

03:41 17 Q. In that e-mail that you saw earlier today, he wrote about
03:41 18 the test result, correct?

03:41 19 A. He did.

03:41 20 Q. He sent the e-mail to Randall Sant and Mark Alberty,
03:41 21 correct?

03:41 22 A. Correct.

03:41 23 Q. In it he has four different possibilities with an
03:41 24 explanation, correct?

03:41 25 A. Yes.

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03:41 1 Q. Is there anywhere in that e-mail that Mr. Albertin says,
03:41 2 This is an invalid test?

03:41 3 A. I believe I answered this question this morning on direct,
03:41 4 Counselor. He ruled out -- there were four options. The 3 and
03:41 5 4 are on the next page of the document. He ruled out Option 3
03:41 6 and 4. And, in fact, one of his explanations for Yumuri being
03:41 7 so high was that it was closer to the salt near Yumuri, and so
03:41 8 he thought it was not valid.

03:41 9 Q. You were shown this document in your deposition, correct?

03:41 10 A. That is correct.

03:41 11 Q. Page 445 of your deposition, Dr. Huffman?

03:41 12 A. That's correct.

03:41 13 Q. I'm sorry. I'll pull it up.

03:41 14 A. Yes.

03:41 15 Q. Line 25 of page 445, you were asked this question:

03:42 16 "QUESTION: And Martin Albertin does not say that
03:42 17 it's an invalid test, correct?

03:42 18 "ANSWER: I don't believe he specifically said that,
03:42 19 no."

03:42 20 Was that your answer?

03:42 21 A. He did not specifically say it, but --

03:42 22 Q. Okay.

03:42 23 A. -- if you look at his note on its face, he discounted two
03:42 24 of his four options, which means there was a 50 percent chance,
03:42 25 toss of a coin, that it was not a valid test. In that

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03:42 1 circumstance you should retest the shoe.

03:42 2 Q. You agree that there was an engineering and science
03:42 3 discussion about the validity of the test amongst the BP
03:42 4 personnel, correct?

03:42 5 A. Yes. I saw several e-mails to that effect.

03:42 6 Q. None of the people involved in that discussion wrote an
03:42 7 e-mail or testified that they believed it was an invalid test,
03:42 8 correct?

03:42 9 A. None of them said it was valid either, Counselor.

03:42 10 Q. My question to you, sir, is: None of those people
03:42 11 involved in this discussion wrote an e-mail or testified under
03:42 12 oath that they believed it was an invalid test, correct?

03:42 13 A. I would disagree with that, Counselor. If you look back
03:42 14 to Mr. Morel's document from April 28, he clearly shows that he
03:43 15 had concerns about the test, along with the other e-mails from
03:43 16 earlier in the process. I would argue they didn't have
03:43 17 confidence in this test, period.

03:43 18 Q. Page 446 of your deposition, were you asked this question
03:43 19 and did you give this answer:

03:43 20 "QUESTION: And you believe that all three of them
03:43 21 thought that the test was invalid?

03:43 22 "ANSWER: No. I believe there were questions about
03:43 23 the test."

03:43 24 A. Yes, that's what I said.

03:43 25 Q. You don't know whether or not --

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03:43 1 THE COURT: Wait a minute. Wait a minute, Mr. Regan.
03:43 2 You are using the witness' deposition, and it's exactly what he
03:43 3 just said in court. So it's not a proper use of a deposition.

03:43 4 MR. REGAN: I'll move on, Your Honor.

03:43 5 THE COURT: It's supposed to be if he said something
03:43 6 different, but I heard him say the same thing.

03:43 7 MR. REGAN: I may have heard him slightly different,
03:43 8 Your Honor, but I will move on.

03:43 9 THE COURT: We both need to get our hearing checked.

03:43 10 BY MR. REGAN:

03:43 11 Q. Do you know what Marty Albertin believed about these
03:43 12 tests, Dr. Huffman, other than what you see in e-mails?

03:43 13 A. The e-mails are the primary documents that I relied on as
03:44 14 indicators of what BP's people were -- the way they viewed the
03:44 15 results of the tests.

03:44 16 Q. I would like to now turn to the final production interval,
03:44 17 which is the 9 7/8-inch shoe. And you gave some testimony
03:44 18 about that this morning. Do you recall that?

03:44 19 A. Yes.

03:44 20 Q. With respect to determining whether or not they tested the
03:44 21 new hole -- that is, actually went below the shoe -- can an
03:44 22 operator analyze the depth of the bit to determine that they
03:44 23 actually made a new hole?

03:44 24 A. They can do that, and they use what's called a pipe tally
03:44 25 to determine where they are.

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03:44 1 Q. They evaluate the changes in the weight on the bit to
03:44 2 indicate that they were drilling new formation?

03:44 3 A. That is correct. And also the rate of penetration.

03:44 4 Q. In reaching your opinion that they may have not actually
03:44 5 drilled new hole, you did not review the weight on the bit or
03:44 6 the ROP?

03:44 7 A. At the time of my deposition, I had not. I went back
03:44 8 later and determined that the information was equivocal. It
03:44 9 really didn't change my mind either way.

03:44 10 Q. You again saw in e-mails that there were discussions
03:45 11 amongst a number of people about the leak-off test at the
03:45 12 9 7/8, correct?

03:45 13 A. Yes.

03:45 14 Q. You saw testimony from Pinky Vinson about the test at the
03:45 15 9 7/8, correct?

03:45 16 A. I read his deposition a long time ago, Counselor. I don't
03:45 17 remember what his opinion was on the test.

03:45 18 Q. Do you recall Mr. Vinson testifying that he thought the
03:45 19 test results indicated a strong rock, in his view? Do you
03:45 20 recall that?

03:45 21 A. He may have said that, Counselor. You would have to show
03:45 22 it to me.

03:45 23 Q. Do you agree that there's a lot of technical analysis
03:45 24 that's involved in trying to evaluate these test results,
03:45 25 things that are -- using either geophysicists or other

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03:45 1 techniques?

03:45 2 A. I would answer that in two steps, Counselor.

03:45 3 If you have what looks like a valid test, there are
03:45 4 steps you take to analyze the test. If the test on its face is
03:45 5 absurd, is not valid -- and I believe the 9 7/8 falls into that
03:45 6 category, based on what I stated in direct this morning -- you
03:45 7 retest. You don't analyze something that's absurd. You retest
03:46 8 the shoe.

03:46 9 Q. To be clear, Dr. Huffman, it would be your testimony that
03:46 10 anyone who thought that test was valid would be reaching an
03:46 11 absurd judgment, in your mind?

03:46 12 A. In my expert opinion, yes. You don't pump to the same
03:46 13 pressure as your casing test.

03:46 14 Q. With respect to drilling the final interval, you had some
03:46 15 discussion about the mud weights that were seen and the ESD,
03:46 16 the equivalent static density, and the ECD, the equivalent
03:46 17 circulated density. Do you recall that testimony generally?

03:46 18 A. Yes.

03:46 19 Q. There was a detail that I wanted to ask you about, tools
03:46 20 you can use to strengthen the wellbore. One of the tools that
03:46 21 can be used to strengthen the well bores is called *loss*
03:46 22 *circulation material*, correct?

03:46 23 A. Correct.

03:46 24 Q. Or LCM?

03:46 25 A. Correct.

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03:46 1 Q. LCM exists in drilling to help remedy loss zones?

03:46 2 A. That's correct.

03:46 3 Q. There's a lot of study and there's specialized companies
03:46 4 that develop different types of LCM materials to help remediate
03:47 5 loss zones in wells, correct?

03:47 6 A. Yes.

03:47 7 Q. Use of LCM can not only remedy a loss zone but can
03:47 8 actually strengthen the fracture gradient of an area of rock
03:47 9 that had had a loss, correct?

03:47 10 A. Not exactly, Counselor.

03:47 11 Q. Is that an opinion of yours?

03:47 12 A. No. If you look at LCM as a general type of material, LCM
03:47 13 is used to strengthen formations as long as you have not done
03:47 14 severe damage to a formation so that the rocks are so badly
03:47 15 fractured and broken that the LCM can't be effective.

03:47 16 And there are different types of that material. Some
03:47 17 are polymer mixes that gel in the cracks. Some are things with
03:47 18 fibers in them. There's a whole range of materials that are
03:47 19 used. And Mr. Alberty went into great length in his deposition
03:47 20 about that subject.

03:47 21 Q. In terms of the dates -- and I think we went through this
03:47 22 earlier with His Honor -- the drilling that went to a depth of
03:47 23 approximately 18,260 was on or about April 4, 2010; is that
03:48 24 correct?

03:48 25 A. That's about right, yes.

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03:48 1 Q. The final 100 feet was drilled on April 9, 2010, correct?

03:48 2 A. I believe that's correct, yes.

03:48 3 Q. So there was no drilling that took place between April 4,
03:48 4 2010, and April 9, 2010. Is that fair?

03:48 5 A. Again, I would have to go back and look at the master log
03:48 6 to be sure. But, yeah, I don't want to speak without looking
03:48 7 at the data.

03:48 8 Q. On April 9, 2010, the total depth was reached of 18,360,
03:48 9 and there was no further drilling after that date, correct?

03:48 10 A. I believe that's correct, yes.

03:48 11 Q. You testified -- it may have been on either Transocean or
03:48 12 Halliburton's cross-examination -- but that the drilling margin
03:48 13 regulations apply while you are drilling, correct?

03:48 14 A. The safe drilling margin regulations apply while drilling
03:48 15 the well, correct.

03:48 16 Q. The drilling had ceased on April 9 around 12:30 in the
03:48 17 afternoon when they reached 18,360, correct?

03:48 18 A. That is correct.

03:48 19 Q. Between April 4 and April 9, when you were looking at the
03:49 20 mud weights, did you also look at the use of loss circulation
03:49 21 materials during those dates?

03:49 22 A. I did.

03:49 23 Q. You saw that loss circulation materials were used on
03:49 24 several days between those dates?

03:49 25 A. That is correct.

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03:49 1 Q. Did you do any assessment as to whether those loss
03:49 2 circulation materials would actually remedy the loss zones that
03:49 3 were seen?

03:49 4 A. It's my opinion that they did not remedy the loss zones,
03:49 5 as we demonstrated in the PowerPoint from Mr. Randall Sant this
03:49 6 morning, with the third loss event.

03:49 7 Q. A loss circulation pill was circulated on April 9. Do you
03:49 8 recall that?

03:49 9 A. Again, Counselor, I don't remember every detail.

03:49 10 Q. With respect to -- do you recall that a circulation took
03:49 11 place on April 9 with no losses after an LCM pill was used?

03:49 12 A. I believe they may have circulated with a downhole EC --
03:49 13 with an ECD that was a little less than 14.4.

03:49 14 Q. Do you agree, after five days of using LCM pills, BP and
03:50 15 Transocean on April 9 circulated the well without losses?

03:50 16 A. I believe that there were some more losses in there,
03:50 17 Counselor. There was a total of 51 barrels lost at the end,
03:50 18 and it's not clear exactly when that occurred. But there
03:50 19 was -- there were more losses. The margin in the well was
03:50 20 very, very close.

03:50 21 Q. So with respect to the use of LCM pills for five days,
03:50 22 it's your expert opinion that that would not reestablish the
03:50 23 fracture gradient?

03:50 24 A. That's correct. I believe it was still below 14.4, at
03:50 25 best.

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03:50 1 Q. It's your opinion, after using five days of loss
03:50 2 circulation materials, the fracture gradient would not have
03:50 3 been reestablished for purposes of drilling forward the final
03:50 4 100 feet, correct?

03:50 5 A. Not only would it have not been reestablished, but they
03:50 6 did no measurements to confirm it was reestablished.

03:50 7 Q. And so with respect to that last 100 feet of drilling, how
03:50 8 many losses did they have in that last 100 feet?

03:50 9 A. I believe they had a total of 51 barrels, as I recall.
03:51 10 That's the number that sticks in my head during the last
03:51 11 100 feet or so. But that might not be quite right.

03:51 12 MR. REGAN: I'd like to pull up TREN-41063, which is
03:51 13 the April 9 daily drillers report.

03:51 14 This is a daily drillers report. I think a
03:51 15 couple have been shown to Your Honor, but we would like to go
03:51 16 to the remarks section, if we could, in the middle of the page.
03:51 17 There we go. It's on the second page.

03:51 18 Again, this is TREN-41063. We can just go ahead
03:51 19 and make that . . .

03:51 20 BY MR. REGAN:

03:51 21 Q. This details the activities that have taken place on the
03:51 22 rig during the designated time periods, correct?

03:51 23 A. Yes. In both shifts, yes.

03:52 24 Q. It shows that there was a drilling that took place here
03:52 25 8:30 to noon, drill with 8 1/2-inch drilling assembly from

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03:52 1 18,260 to 18,330, correct?

03:52 2 A. Yes.

03:52 3 Q. All right. They are saying they are monitoring the active
03:52 4 system for gains and losses in that same entry. Do you see
03:52 5 that?

03:52 6 A. Yes, I do.

03:52 7 Q. That was with a surface mud weight of what?

03:52 8 A. Let's see. Do they actually say it?

03:52 9 Q. Do you know?

03:52 10 A. I believe that they had surface mud weight here of
03:52 11 14 pounds per gallon.

03:52 12 Q. 14.0?

03:52 13 A. 14.0, yes.

03:52 14 Q. If we go to the next remarks, which continue there below
03:52 15 the header, they say: "Circulate hole clean at 18,330."

03:52 16 **MR. REGAN:** If we can just zoom that whole paragraph
03:52 17 up there. The middle of the page there, the details of
03:52 18 operation.

03:52 19 My question, if you can see it on the screen -- you
03:53 20 can take off the magnification there.

03:53 21 **BY MR. REGAN:**

03:53 22 Q. Do you see any evidence of losses that took place?

03:53 23 A. Again, Counselor, I would have to read this whole thing
03:53 24 before I answer.

03:53 25 The other thing I'm concerned about here is that, as

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03:53 1 I stated earlier, this is a derivative document from the daily
03:53 2 log of operations. And I have found cases where the
03:53 3 information here is not consistent with the master daily log of
03:53 4 operations that we showed this morning. I would want to look
03:53 5 at both to make sure there's nothing missing.

03:53 6 Q. The master document you're talking about is the
03:53 7 spreadsheet that you showed earlier today, right?

03:53 8 A. The daily log of operations, yes.

03:53 9 Q. Do you know that the IADC reports are actually kept and
03:53 10 maintained by the drilling contractor, not BP?

03:53 11 A. The drilling team on the rig is also filling in the daily
03:53 12 log of operations. They are doing both. And I want to make
03:53 13 sure. In most cases I found the details here of operations
03:53 14 were the same as what's in the daily log of operations.

03:53 15 I did find a few cases where there were differences.
03:53 16 And so I don't want to rely on just this document without
03:53 17 looking at the daily log of operations for comparison.

03:54 18 Q. Drilling stops on April 9, as evidenced here, in terms of
03:54 19 reaching 18,360 in this report, correct?

03:54 20 A. That is correct.

03:54 21 Q. Between April 9 and April 20, the well was -- no further
03:54 22 hole was made, no further drilling operations, correct?

03:54 23 A. That's correct.

03:54 24 Q. Were there any further losses over those 11 days?

03:54 25 A. I don't recall, Counselor.

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03:54 1 Q. It's your testimony that the well was in an extremely
03:54 2 fragile state, and you used some different descriptions of
03:54 3 that. But it stayed that way for 11 days and did not have any
03:54 4 further losses?

03:54 5 A. And the reason for that is straightforward. As you noted
03:54 6 a minute ago, they had a surface mud weight of 14. That
03:54 7 provided them a downhole static density of about 14.22, I
03:54 8 believe was reported in the first half of the document we are
03:54 9 looking at.

03:54 10 And as they noted in their MOC and other documents,
03:54 11 they circulated very gently after this point. Whenever they
03:54 12 were circulating the well for any purpose, they were trying to
03:54 13 keep the ECD as low as possible while circulating so that it
03:55 14 would not go over that 14.4 to 14.5 that they were concerned
03:55 15 about.

03:55 16 They understood the delicate nature of the well.
03:55 17 That is clear in all their documents.

03:55 18 Q. They understood the delicate nature of the well, they took
03:55 19 action with respect to it, and there were no further losses
03:55 20 between April 9 and April 20, correct?

03:55 21 A. I believe that's correct.

03:55 22 Q. There were no further losses in the hole interval that you
03:55 23 believe was -- basically had no margin, correct?

03:55 24 A. It had very little margin, yes.

03:55 25 Q. Not a single barrel lost from April 9th to 20th?

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03:55 1 A. Again, I would have to go back and look at the data to be
03:55 2 sure of that, Counselor.

03:55 3 MR. REGAN: Thank you, Dr. Huffman.

03:55 4 I will pass the witness, Your Honor.

03:55 5 THE WITNESS: Thank you, sir.

03:55 6 THE COURT: Cameron?

03:55 7 MR. JONES: No questions, Your Honor.

03:55 8 THE COURT: M-I SWACO?

03:55 9 MR. TANNER: No questions, Your Honor.

03:55 10 THE COURT: Redirect by the U.S.A.?

03:55 11 MR. SPIRO: Can we have five minutes to work with our
03:55 12 technical people before that?

03:56 13 THE WITNESS: I could use a bio break here,
03:56 14 Your Honor.

03:56 15 THE COURT: We will try to keep this to about five
03:56 16 minutes. Don't venture too far.

03:56 17 I'm talking to everybody else.

03:56 18 (Recess.)

04:17 19 THE COURT: Please be seated. Our five-minute break
04:17 20 was a little extended, but it was only because we had another
04:17 21 little technical transmission problem to the other courtrooms.
04:17 22 Some device had to be changed out, but it's all done now, I
04:18 23 understand.

04:18 24 I was asked to mention by someone -- I forgot to
04:18 25 do it earlier today. When you-all submit your lists of

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04:18 1 exhibits to us, to Ben and Stephanie and all, I think good
04:18 2 protocol courtesy would be that you simultaneously give copies
04:18 3 of that to counsel for all parties. Apparently that hasn't
04:18 4 been happening. Let's try to do that.

04:18 5 **MR. REGAN:** On that subject, Your Honor, we will put
04:18 6 together a list with respect to the exhibits that I've used
04:18 7 with Dr. Huffman.

04:18 8 **THE COURT:** Good. Thank you.

04:18 9 **MR. REGAN:** Before I get to the very small number of
04:18 10 redirect questions, I gather the protocol would be to move the
04:18 11 various exhibits in tomorrow?

04:18 12 **THE COURT:** You can do that today when the witness is
04:18 13 finished, if you would like. We have kind of been doing it at
04:18 14 the end of each witness. I think that's what we have been
04:18 15 doing.

REDIRECT EXAMINATION

04:18 16 **BY MR. SPIRO:**

04:18 17 **Q.** Dr. Huffman, we heard questions earlier about how
04:19 18 Dr. Bourgoyne disagreed with you about the PIT that was taken
04:19 19 before they drilled ahead in the second margin interval; is
04:19 20 that correct?
04:19 21

04:19 22 **A.** Yes.

04:19 23 **Q.** I would like to show you Dr. Bourgoyne's deposition
04:19 24 Volume 2, page 96. Do you see line 15?

04:19 25 **A.** Yes, I do.

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04:19 1 Q. Now, Dr. Huffman offered the explanation that mud is being
04:19 2 lost through a shoe in a cement canal.

04:19 3 Do you remember reading that? Is that the interval
04:19 4 we were talking about earlier?

04:19 5 A. Yes, it is, the 13 5/8 shoe.

04:19 6 MR. SPIRO: Can we go back to just the page without
04:19 7 even the fly-out part?

04:19 8 BY MR. SPIRO:

04:19 9 Q. The statement is:

04:19 10 "QUESTION: Is that a yes?"

04:19 11 Can you read on.

04:19 12 A. Yes. He say -- the question is:

04:19 13 "QUESTION: Is that a yes?"

04:19 14 "ANSWER: I remember reading that, yes.

04:19 15 "QUESTION: Do you dispute that as a possibility?"

04:19 16 Then an objection, and his answer is:

04:20 17 "ANSWER: It's possible."

04:20 18 MR. SPIRO: Can we go to TREN-4533. This is a mud --
04:20 19 let's go to the top--

04:20 20 BY MR. SPIRO:

04:20 21 Q. Mud loss event summary from John LeBleu, drilling
04:20 22 excellence group. Have you seen this before?

04:20 23 A. Yes, I have.

04:20 24 Q. It's a portion of one of the documents we looked at
04:20 25 earlier dated May 13, 2010?

ALAN HUFFMAN - REDIRECT

04:20 1 A. Correct.

04:20 2 MR. SPIRO: Let's go to the second page and then the
04:20 3 fly-out for the second page.

04:20 4 BY MR. SPIRO:

04:20 5 Q. So correct me if I'm wrong. What this indicates is they
04:20 6 continued to wash and ream from 18,234 to 18,260 and drill to
04:21 7 18,360, losing a total of 51 barrels. Do you see that?

04:21 8 A. Yes, I do.

04:21 9 Q. And the total mud losses for this interval were
04:21 10 3,271 barrels?

04:21 11 A. That's correct.

04:21 12 Q. Do you know how many gallons roughly 3,271 barrels would
04:21 13 be?

04:21 14 A. If you multiplied by 42, which is the number of gallons in
04:21 15 a barrel, it is a substantial amount. You are looking at well
04:21 16 over 100,000 gallons of mud was lost.

04:21 17 Q. Is that something you want to avoid in an interval with
04:21 18 hydrocarbons?

04:21 19 A. You want to avoid it anywhere but especially in a
04:21 20 hydrocarbon-bearing zone, yes.

04:21 21 Q. 51 barrels that was lost from 18,234 to 18,360, that would
04:21 22 be about 2,000 gallons?

04:21 23 A. That's correct.

04:21 24 MR. SPIRO: Let's go to TREN-3995, which has not been
04:21 25 shown earlier today. Let's go to the first page, please. The

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04:21 1 very first page. Can we see the very first page of the
04:22 2 exhibit. TREX-3995. There you go.

04:22 3 **BY MR. SPIRO:**

04:22 4 **Q.** So this purports to have attached to it a Macondo mud loss
04:22 5 summary from John LeBleu. Have you seen this before?

04:22 6 **A.** Yes, I have.

04:22 7 **MR. SPIRO:** Let's go to the last page we were just
04:22 8 looking at. Let's zoom in on the column with those numbers --
04:22 9 there you go, 68. Can we see the top of it so that everybody
04:22 10 knows what each column indicates.

04:22 11 **BY MR. SPIRO:**

04:22 12 **Q.** So downhole mud losses were being marked on a few of the
04:22 13 days?

04:22 14 **A.** That's correct.

04:22 15 **MR. SPIRO:** Can we go to the last page. The next
04:23 16 fly-out. No, no, no. The next fly-out. It's two pages after
04:23 17 this.

04:23 18 There we go.

04:23 19 **BY MR. SPIRO:**

04:23 20 **Q.** Look at April 9. Do you see that?

04:23 21 **A.** Yes, I do.

04:23 22 **Q.** It says: "Drilled last 100 feet to 18,360 feet."

04:23 23 **A.** Correct.

04:23 24 **Q.** Does it show that there were mud losses on the last day?

04:23 25 **A.** Yes, the 51 barrels that I quoted earlier.

ALAN HUFFMAN - REDIRECT

04:23 1 Q. You had seen this document before?

04:23 2 A. Yes, I had.

04:23 3 Q. So they did lose mud on the last day -- according to this
04:23 4 document, the last day of drilling?

04:23 5 A. That is correct.

04:23 6 Q. You say that as a contractor, you are obligated to apply
04:23 7 the drilling margin regulations to your work. Is that how you
04:23 8 testified earlier?

04:23 9 A. Yes.

04:23 10 Q. Would that also apply to BP personnel?

04:23 11 A. Yes. As employees of the lessee that's -- operator
04:24 12 lessee, they are obligated to follow the regs as well.

04:24 13 Q. We talked before about the incidents of noncompliance or
04:24 14 INCs?

04:24 15 A. Yes.

04:24 16 Q. MMS's ability to issue INCs is based on what?

04:24 17 A. Having accurate information reported to them by the
04:24 18 operator.

04:24 19 Q. Did you find that the information provided to MMS was
04:24 20 consistent with the information in the internal records of BP?

04:24 21 A. No, it was not. It was reported selectively and in some
04:24 22 cases not reported at all.

04:24 23 **MR. SPIRO:** Those are all of the redirect questions
04:24 24 that I have. I would like to offer a list of documents into
04:24 25 evidence. I have not provided that list to any other parties.

04:24 1 That's something I need to do.

04:24 2 **THE COURT:** Are all these documents that you used
04:24 3 here today in connection with the examination of this witness?

04:25 4 **MR. SPIRO:** Absolutely.

04:25 5 **THE COURT:** Does anybody have any objection to any of
04:25 6 those documents?

04:25 7 **MR. REGAN:** No objection.

04:25 8 **THE COURT:** Hearing none, those are admitted.

04:25 9 Provide the list to opposing counsel as soon as
04:25 10 you can and to us, of course.

04:25 11 **MR. SPIRO:** Okay.

04:25 12 **THE COURT:** Mr. Regan, do you have documents you want
04:25 13 to submit?

04:25 14 **MR. REGAN:** They're generating a list for me right
04:25 15 now.

04:25 16 **THE COURT:** That's fine. Whenever you are ready.
04:25 17 But just don't forget to do it.

04:25 18 **MR. REGAN:** We will circulate it.

04:25 19 **THE COURT:** We are finished with this witness?

04:25 20 Okay. Thank you, sir.

04:25 21 **THE WITNESS:** Thank you, Your Honor.

04:25 22 **MR. SPIRO:** The statement earlier is that the report
04:25 23 needs to be put in, but that was the first thing I did was move
04:25 24 the report.

04:25 25 **THE COURT:** The report, the rebuttal report, and the

04:25 1 CV were put in at the beginning. If not, I am admitting them.

04:25 2 MR. GODWIN: Thank you, sir.

04:25 3 THE COURT: Who is up next for the plaintiffs?

04:26 4 MR. STERBCOW: The PSC calls Mark Bly, Your Honor.

04:26 5 MARK BLY,

04:26 6 having been duly sworn, testified as follows:

04:26 7 THE DEPUTY CLERK: State your full name and correct
04:26 8 spelling for the record, please.

04:26 9 THE WITNESS: My name is Mark Bly, M-A-R-K, B-L-Y.

04:27 10 MR. STERBCOW: May it please the Court, Paul
04:27 11 Sterbcow, plaintiffs steering committee, on cross-examination.

04:27 12 CROSS-EXAMINATION

04:27 13 BY MR. STERBCOW:

04:27 14 Q. Good afternoon, Mr. Bly.

04:27 15 A. Good afternoon.

04:27 16 Q. Let's begin with your background, please.

04:27 17 MR. STERBCOW: If we could pull up D-2747,
04:27 18 TREX-22784.

04:27 19 BY MR. STERBCOW:

04:27 20 Q. My understanding, Mr. Bly, is that you have degrees in
04:27 21 both civil engineering and structural engineering, correct?

04:27 22 A. That's correct.

04:27 23 Q. Civil engineering from the University Cal Davis,
04:27 24 structural engineering degree from the University of California
04:27 25 Berkeley, correct?

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04:27 1 A. Correct.

04:28 2 Q. Did you ever have the opportunity to be taught by Dr. Bea
04:28 3 while you were at Berkeley?

04:28 4 A. No, sir, I didn't.

04:28 5 Q. Do you know him?

04:28 6 A. I do not know him.

04:28 7 Q. Is it a fact that you started with BP right out of
04:28 8 college?

04:28 9 A. I started with Exxon Corporation right out of college,
04:28 10 then back to graduate school, and BP right after that.

04:28 11 Q. Graduate school entailed what?

04:28 12 A. That was the master's degree in structural engineering.

04:28 13 Q. Structural engineering.

04:28 14 Were you with BP from 1984 uninterrupted until this
04:28 15 year?

04:28 16 A. Yes.

04:28 17 Q. My understanding is you recently retired?

04:28 18 A. I will in just a couple more months, that's right.

04:28 19 Q. Do you have plans to resume a new or different career?

04:28 20 A. I haven't made any type of plans yet.

04:28 21 Q. So how long will your career with BP have spanned when you
04:28 22 retired?

04:28 23 A. Twenty-nine years.

04:28 24 Q. In 1984, what position did you start?

04:28 25 A. I started as a project engineer working on North Slope

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04:28 1 things and did that for a very brief time before I moved to
04:29 2 Lafayette to become a drilling engineer.

04:29 3 Q. Did you hold a drilling engineer's job in a similar
04:29 4 fashion as Mr. Morel and Mr. Hafle held on the Macondo project,
04:29 5 or was it a different responsibility?

04:29 6 A. It was a bit junior to them. I was a brand-new engineer
04:29 7 in that role.

04:29 8 Q. Would you have been training under a more senior engineer
04:29 9 during the time you were there?

04:29 10 A. Yes.

04:29 11 Q. Did you have the opportunity to do any actual drilling
04:29 12 engineering work on offshore wells in the Gulf of Mexico?

04:29 13 A. Yes, I did.

04:29 14 Q. I assume at that time this is the early '80s, mid-'80s?

04:29 15 A. Yes, that's right.

04:29 16 Q. That would have all been shallow water work?

04:29 17 A. Yeah, it was out to about 1,000 feet of water at that
04:29 18 time, maybe 1500. So it was starting to move into the deeper
04:29 19 water.

04:29 20 Q. Did you have the opportunity to actually work aboard and
04:29 21 sleep aboard any rigs, semisubmersibles or jack-up rigs?

04:29 22 A. Yes. I did both several times.

04:29 23 Q. So you had the experience in actual hands-on work on
04:29 24 drilling rigs in the Gulf?

04:29 25 A. Yes.

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04:30 1 Q. Did you hold any job positions other than drilling
04:30 2 engineer on any rigs in the Gulf of Mexico?

04:30 3 A. Not really. There were times when I was offshore where I
04:30 4 would operate as the night company man, but it was really in a
04:30 5 drilling engineering role.

04:30 6 Q. I assume, given what you have told us and what we know
04:30 7 about the industry, you never held any roles that would have
04:30 8 involved responsibilities in drilling, actual drilling,
04:30 9 drilling crew, support crew, anything like that?

04:30 10 A. That's correct.

04:30 11 Q. Has all of your oil field experience, in terms of actual
04:30 12 hands-on operations, been on the operations side with BP, the
04:30 13 oil company side?

04:30 14 A. It has, yeah.

04:30 15 Q. In that capacity, though, am I not correct that you would
04:30 16 have had to have attended well training -- well control school
04:30 17 as part of your drilling engineering training?

04:30 18 A. Yes. Back at that point in the early to mid-'80s, that's
04:30 19 right.

04:30 20 Q. Do you know if BP continued to require its drilling
04:30 21 engineers to undergo well control school training as part of
04:31 22 their engineering responsibilities?

04:31 23 A. I don't know that for a fact. I assume that to be the
04:31 24 case.

04:31 25 Q. Do you have any specific knowledge as to whether either

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04:31 1 Mr. Morel or Mr. Hafle had any well control school training as
04:31 2 of the time the Macondo project was conceived and designed?

04:31 3 A. I assume that, but I don't know it for a fact, no.

04:31 4 Q. I take it you never personally spoke to either one of
04:31 5 those gentlemen as part of the investigation, correct?

04:31 6 A. That is correct.

04:31 7 Q. We will get into that in a little while.

04:31 8 Now, when did you leave the drilling engineering
04:31 9 phase of your career and go into something else?

04:31 10 A. Probably two years, two years after I started, and then I
04:31 11 shifted to another role.

04:31 12 Q. What was that role?

04:31 13 A. The next thing I did was construction work. I worked on a
04:31 14 platform, an offshore platform project in Morgan City,
04:31 15 Louisiana.

04:31 16 Q. Were you actually part of the engineering of the
04:31 17 construction of the platform?

04:31 18 A. Yes, that's right.

04:31 19 Q. That didn't involve specifically engineering any
04:31 20 exploration or production, correct?

04:32 21 A. This was building the platform structure itself.

04:32 22 Q. Structural in nature?

04:32 23 A. That's right.

04:32 24 Q. How long did you do that type of work?

04:32 25 A. That project lasted about 18 months or so, and I was with

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04:32 1 it from beginning to end.

04:32 2 Q. What did you do from there?

04:32 3 A. From there it was a move to Houston, where I spent time in
04:32 4 the production engineering side. So I went drilling projects
04:32 5 into production in Houston.

04:32 6 Q. About what year did you move into production?

04:32 7 A. It would have been the late '80s, '87, '88.

04:32 8 Q. Is it fair to say, then, that at least by 1990, you had
04:32 9 experience with BP in the drilling engineering component, the
04:32 10 construction engineering component, and the production
04:32 11 engineering component of design, drilling, and management of
04:32 12 offshore wells and facilities?

04:32 13 A. Yes.

04:32 14 Q. You had done all of them?

04:32 15 A. Yes, I had good exposure to all of that.

04:32 16 Q. How long did you stay in the production engineering?

04:32 17 A. Again, that was a couple years. There was a point where I
04:32 18 went back into project work. I was seconded into the Shell
04:33 19 company for a year. That was in 1990.

04:33 20 Q. What did you do after that?

04:33 21 A. After that I did one more project, an onshore gas plant;
04:33 22 and then I actually moved into what we call *commercial*, the
04:33 23 more financial side of our business.

04:33 24 Q. So that took you out of the actual operation engineering
04:33 25 phase of the business and moved you to more of the business

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04:33 1 side of the business?

04:33 2 A. That's right.

04:33 3 Q. What position was that?

04:33 4 A. I started as a business analyst running economic models
04:33 5 and things like that and planning and pulling plans together.

04:33 6 Q. Did you get any type of background in that work either by
04:33 7 education, training, or experience before you moved into that
04:33 8 field?

04:33 9 A. No, I really didn't. It was engineering background and
04:33 10 being taught this as on-the-job training basically.

04:33 11 Q. Through that on-the-job training, did you learn a lot of
04:33 12 the business end of offshore drilling?

04:33 13 A. Yeah. You learn a lot of the economics, the numbers that
04:33 14 underpin the business, how cash flow works and those kind of
04:34 15 things.

04:34 16 Q. How long did you do that?

04:34 17 A. That was about five years, multiple assignments. Maybe
04:34 18 six years, I guess.

04:34 19 Q. That takes us up to around '06 or '07?

04:34 20 A. I'm sorry, we are still in the mid-'90s.

04:34 21 Q. Oh, I'm sorry. We're still in the mid-'90s. I jumped
04:34 22 ahead. I apologize.

04:34 23 A. Yeah.

04:34 24 Q. What areas of the company did you specifically deal with
04:34 25 in terms of this economic position, the business side?

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04:34 1 A. It was -- it had two parts. The first part was looking
04:34 2 exclusively at Gulf of Mexico activity, because I was stationed
04:34 3 in that part of the company. At the end I was transferred to
04:34 4 the headquarters in London where I was involved in looking at
04:34 5 more global projects.

04:34 6 Q. What job position did you hold when you were first
04:34 7 transferred to London?

04:34 8 A. It was one of these commercial jobs. It was called
04:34 9 planning and performance management.

04:34 10 Q. You actually lived and worked in London at that point?

04:34 11 A. Yes.

04:34 12 Q. Who was your superior?

04:34 13 A. I worked for a gentleman named Andy Inglis first and Andy
04:35 14 Hopwood second in that job.

04:35 15 Q. My understanding in going through the information, you and
04:35 16 Mr. Inglis continued to proceed through BP promotion-wise and
04:35 17 continued to work together for a number of years. Is that
04:35 18 fair?

04:35 19 A. Not consistently, but our paths did cross, yes.

04:35 20 Q. Mr. Inglis was employed by BP in '09 and through April 20,
04:35 21 2010?

04:35 22 A. Yes.

04:35 23 Q. Did he have any role in the Macondo project, to your
04:35 24 knowledge?

04:35 25 A. Well, he was the chief executive officer of the upstream

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04:35 1 under -- the very top structure under which the Gulf of Mexico
04:35 2 and the Macondo project sat.

04:35 3 Q. Would he have been in an executive management position at
04:35 4 that time?

04:35 5 A. Yes.

04:35 6 Q. Again, you said during this time period leading from the
04:35 7 mid-'90s up to 2010, 2009, your career paths crossed
04:35 8 occasionally?

04:35 9 A. Yeah.

04:35 10 Q. Is that fair?

04:35 11 A. That's fair.

04:35 12 Q. You knew each other?

04:35 13 A. We knew each other, yes.

04:36 14 Q. How long did you stay in London?

04:36 15 A. Less than two years, 18, 20 months.

04:36 16 Q. Then what did you do?

04:36 17 A. From there -- that was sort of the point at which I really
04:36 18 shifted into more senior operational management jobs. My first
04:36 19 one of those was a move to Alaska to look after part of our
04:36 20 operating activity up there.

04:36 21 Q. When you say you looked into part of the operating
04:36 22 activity, can you tell the Court what you did?

04:36 23 A. Yes. Yes. Sorry.

04:36 24 So I moved up to be -- the job was operations
04:36 25 manager. That was for a field called Milne Point, which is to

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04:36 1 the west of the big Prudhoe field that most people know about.

04:36 2 Q. What did you do specifically?

04:36 3 A. I was the operations manager.

04:36 4 Q. How long were you in Alaska?

04:36 5 A. Three and a half years.

04:36 6 Q. From Alaska did you go to the North Sea?

04:36 7 A. I did.

04:36 8 Q. What did you do there?

04:36 9 A. I had two different roles there. They were both business
04:37 10 unit leader roles. This is one level higher in the company.

04:37 11 And they were operational, looking after -- responsible for
04:37 12 operating activity in the North Sea.

04:37 13 Q. From a business standpoint?

04:37 14 A. Business and operations and safety. It was the whole
04:37 15 thing.

04:37 16 Q. So that was a major position in BP's North Sea drilling
04:37 17 exploration and production?

04:37 18 A. That's right.

04:37 19 Q. Would that have been considered an executive position at
04:37 20 that point?

04:37 21 A. I think of executives as the team that's at the top in
04:37 22 London, so I would say it was below that level.

04:37 23 Q. When you worked in the North Sea, did you have to move
04:37 24 back to London again?

04:37 25 A. I moved to Scotland.

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04:37 1 Q. So you did go overseas again?

04:37 2 A. Yes.

04:37 3 Q. How long did you hold that position in the North Sea?

04:37 4 A. Three years. Three years all told. That took us up to
04:37 5 early 2004.

04:37 6 Q. At that time what happened? What did you do from there?

04:37 7 A. I went into the headquarters for an assignment. I was an
04:37 8 executive assistant to the CEO of the company. It was a
04:38 9 training-type role. I did that for a couple more years before
04:38 10 I went back into the operations.

04:38 11 Q. Was that job, in essence, a training job to move up into
04:38 12 executive position in BP in some form or fashion?

04:38 13 A. Yeah, I think so. It was a development job. It was an
04:38 14 opportunity to see the world through the eyes of the chief
04:38 15 executive officer and provide support inside the senior part of
04:38 16 the company.

04:38 17 Q. Who was CEO at that time?

04:38 18 A. That was John Browne at that time.

04:38 19 Q. Was Mr. Inglis working in a similar capacity, if you
04:38 20 recall?

04:38 21 A. I don't recall the role he had. He was in the upstream at
04:38 22 the time. I don't frankly remember which job he had at that
04:38 23 point.

04:38 24 Q. Was Mr. Hayward employed at that time?

04:38 25 A. He would have been. I think he was in the treasury

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04:38 1 department at that point.

04:38 2 Q. Did you all interact at all at that point?

04:38 3 A. Not much. I mean, it was the senior team occasionally
04:38 4 interacting; but they weren't people I spent a lot of time
04:39 5 with.

04:39 6 Q. Mr. Baxter, who we will talk about later, he was not there
04:39 7 at that time, was he?

04:39 8 A. No. He joined the company after that.

04:39 9 Q. How long did you remain in that position? Till '06?

04:39 10 A. Yeah. That was still from '04 to early '05, so it was
04:39 11 just under two years.

04:39 12 Q. Then what?

04:39 13 A. Then I moved to lead our North American gas business,
04:39 14 which was -- at that point they were called strategic
04:39 15 performance units.

04:39 16 Q. SPUs?

04:39 17 A. SPUs. They had been consolidated into larger units.

04:39 18 Q. You went from this executive training-type job to actually
04:39 19 leading the strategic performance unit for North American gas?

04:39 20 A. That's correct.

04:39 21 Q. Would you have moved back to Houston at that point --

04:39 22 A. Yes.

04:39 23 Q. -- or moved to Houston?

04:39 24 A. Yeah, I moved to Houston.

04:39 25 Q. From that point forward in your job duties and

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04:39 1 responsibilities with BP, did you live and work in Houston?

04:39 2 A. No. I actually went back to London one more time.

04:40 3 Q. We'll get to that.

04:40 4 So how long were you SPU leader for North American
04:40 5 gas?

04:40 6 A. A little over two years.

04:40 7 Q. Then at that point, does that take us to about 2007?

04:40 8 A. Yeah, early 2007.

04:40 9 Q. Were you promoted to group vice president at that time --

04:40 10 A. That's right.

04:40 11 Q. -- for exploration and production?

04:40 12 A. Correct.

04:40 13 Q. My understanding is -- if we can have that on the
04:40 14 screen -- your geographic scope of your authority included Gulf
04:40 15 of Mexico, Trinidad, Angola, North Africa, and Egypt?

04:40 16 A. That's correct.

04:40 17 Q. You were a group head, the vice president of E&P for those
04:40 18 five divisions, if you will?

04:40 19 A. Yeah. Those were the ones I was tagged to.

04:40 20 Q. That's a global position with BP at that point?

04:40 21 A. Correct.

04:40 22 Q. Would that have put you in an executive position, if you
04:40 23 will?

04:40 24 A. Again, in my definition, that didn't sit on the executive
04:41 25 team of the company. So it was still below that most senior

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04:41 1 level.

04:41 2 Q. Were you also a member of any exploration and production,
04:41 3 what BP calls operating committees at that time?

04:41 4 A. The operating committee existed inside of E&P at that
04:41 5 time, so I would have been a member of that, yes.

04:41 6 Q. So as part of your duties and responsibilities as vice
04:41 7 president, you're a member of the committee within that group?

04:41 8 A. Yeah.

04:41 9 Q. So it's fair to say by the end of 2007, you have been
04:41 10 promoted and earned your way from starting out as essentially a
04:41 11 drilling engineer in the Gulf of Mexico, and you are now an
04:41 12 executive on a global scale, vice president of exploration and
04:41 13 production?

04:41 14 A. Yes, sir.

04:41 15 Q. At that point in time, I would assume you were very
04:41 16 familiar with Gulf of Mexico exploration and production
04:41 17 division and activities, correct? You would have to be.

04:41 18 A. Yes, I was.

04:41 19 Q. As you would have been in the other geographic areas:
04:42 20 Trinidad, Angola, North Africa, and Egypt?

04:42 21 A. Right.

04:42 22 Q. You knew how BP was structured, and you knew how it ran
04:42 23 its Gulf of Mexico exploration and production unit?

04:42 24 A. Yes.

04:42 25 Q. And the major decisions that were made during that time

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04:42 1 had to either be made by you or passed through you, correct?

04:42 2 A. Effectively. It was really between -- the real linkage
04:42 3 was from the chief executive of upstream to the SPU leader, and
04:42 4 I had tag responsibility, but the direct accountability
04:42 5 relationship was that way.

04:42 6 Q. Okay. And in that position and specifically within the
04:42 7 Gulf of Mexico, obviously you would know how E&P was
04:42 8 structured?

04:42 9 A. Yes.

04:42 10 Q. You would be aware of all assets in the Gulf dealing with
04:42 11 exploration and production?

04:42 12 A. Yes, I would.

04:42 13 Q. You'd be familiar with most, if not all, of the personnel?

04:42 14 A. Well, I wouldn't say "all." The senior team.

04:42 15 Q. Senior team?

04:42 16 A. Yeah.

04:42 17 Q. Onshore?

04:42 18 A. Yeah.

04:42 19 Q. Organizational structure?

04:42 20 A. I would have a pretty good understanding of that, yeah.

04:42 21 Q. You would be dealing with safety issues that got to your
04:42 22 level?

04:42 23 A. Yes.

04:43 24 Q. You would be dealing with the business side budget issues,
04:43 25 etc.?

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04:43 1 A. Right.

04:43 2 Q. So you had an intimate knowledge of how that operation ran
04:43 3 because you had to?

04:43 4 A. Yeah. I mean, I would say the leader of that had an
04:43 5 intimate knowledge. I had as intimate knowledge as you could
04:43 6 have looking after five things that size globally.

04:43 7 Q. What about drilling and completions in the Gulf at this
04:43 8 time? Did it fall under the ambit of your authority as vice
04:43 9 president of the E&P?

04:43 10 A. Yeah. At that time the structure was that everything
04:43 11 operational that happened in the Gulf of Mexico was through
04:43 12 that Gulf of Mexico SPU structure. That included D&C.

04:43 13 Q. That included D&C?

04:43 14 A. Yes.

04:43 15 Q. So operational issues, including business issues,
04:43 16 operations issues, safety issues specifically pertaining to
04:43 17 operations offshore were, again, part of your duties and
04:43 18 responsibilities?

04:43 19 A. Well, as I say, they flowed from the SPU leader to the
04:43 20 head of the upstream. But I had this tag relationship where I
04:44 21 looked over and supported those. And, yeah, you know, I was
04:44 22 involved in those decisions.

04:44 23 Q. And not only were you handling Gulf of Mexico at that time
04:44 24 but you also had four other geographic areas: Trinidad,
04:44 25 Angola, North Africa, and Egypt?

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04:44 1 A. That's correct.

04:44 2 Q. Your responsibilities for each of those areas mirrored
04:44 3 your responsibilities that were described in the Gulf?

04:44 4 A. Yeah.

04:44 5 Q. It was a big job?

04:44 6 A. It was a big job.

04:44 7 Q. How long did you hold that job?

04:44 8 A. Just for a year, and then I was asked to do the next one.

04:44 9 Q. There's a term that's used called *group level disciplines*.
04:44 10 Is that a term you're familiar with?

04:44 11 A. No, I'm not.

04:44 12 Q. You have never heard that term?

04:44 13 A. No, it's not familiar.

04:44 14 Q. If I were to ask you whether or not you were responsible
04:44 15 for or had any authority over what's been called "group level
04:44 16 disciplines," that's not something that you are familiar with?

04:44 17 A. No, sir. That's not . . .

04:44 18 Q. It's my understanding -- and it's up on the screen -- by
04:44 19 2008, you became head -- or group head of safety and
04:45 20 operations, correct?

04:45 21 A. That's right.

04:45 22 Q. That would have been the next job you just referred to,
04:45 23 moving from vice president?

04:45 24 A. That's right.

04:45 25 Q. As group head of safety and operations, you had

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04:45 1 accountability for group-level disciplines, including projects,
04:45 2 operations, engineering, health, safety, security, and
04:45 3 environment, correct?

04:45 4 A. Yes. That sounds right.

04:45 5 Q. Having said that, what you have now done is gone from a
04:45 6 very big job as VP of exploration and production in various
04:45 7 areas around the world to a job that takes you even above that
04:45 8 where your overall overarching responsibility for safety and
04:45 9 operations and even a broader area, correct?

04:45 10 A. Yeah. I would describe it differently than above that,
04:45 11 because the nature of the role changes quite a bit, moving from
04:45 12 the operating organization to the functional organization.

04:45 13 Q. How is that?

04:46 14 A. Well, the operating organization, you know, the
04:46 15 accountability for all of the business, all of the safety, all
04:46 16 of the operations flows through that line.

04:46 17 The functional side, which is this S&O role, is more
04:46 18 of a support and -- you know, it's more of a support function
04:46 19 to the company. It's not in the direct line.

04:46 20 Q. You're above the direct line in a sense, aren't you?

04:46 21 A. I don't think of it that way. Because you're more of a
04:46 22 peer with the tops of the direct line.

04:46 23 Q. The tops of the direct line, if there are significant
04:46 24 safety and operations issues, would they come to you to discuss
04:46 25 those with you?

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04:46 1 A. The real conversation would be up the line. So they would
04:46 2 go to the CEO, and I would -- you know, I may support that or
04:46 3 be involved. But the real, you know, conversation about safety
04:46 4 performance is down the operating line.

04:46 5 Q. It doesn't directly involve you in this position?

04:46 6 A. That's right. It doesn't have to. I mean, I was
04:47 7 involved. I was providing support and doing things. But
04:47 8 the -- you know, conversation about safety or business
04:47 9 performance is down the operating line.

04:47 10 Q. Did that remain true -- conversations about safety and
04:47 11 business performance, did it remain down the direct operating
04:47 12 line through April 20, 2010? Is that how the company remained
04:47 13 structured?

04:47 14 A. Yes.

04:47 15 Q. So in the Gulf of Mexico, when the Macondo project
04:47 16 started, or was conceived in June of 2009, through the date of
04:47 17 the event, who would have been the number one person in the
04:47 18 Gulf of Mexico charged with safety responsibility for drilling
04:47 19 and completions?

04:47 20 A. So the number one person for the Gulf of Mexico would have
04:47 21 been the SPU leader for the Gulf of Mexico. That was -- at the
04:47 22 time you asked, I think was 2009, I believe it was Mr. Shaw,
04:47 23 Neil Shaw at that time.

04:47 24 Just prior to the incident, a gentleman named James
04:48 25 Dupree took over that role.

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04:48 1 Q. Mr. Dupree was in that role as of the date of the blowout?

04:48 2 A. That's correct.

04:48 3 Q. Did Mr. Dupree report directly to you at that time?

04:48 4 A. No.

04:48 5 Q. In your role as group head of safety and operations, the
04:48 6 sphere of your authority, or at least to the extent you can say
04:48 7 it was an authoritative role, given what you just said,
04:48 8 included the Gulf of Mexico, did it not?

04:48 9 A. Yes.

04:48 10 Q. It was worldwide?

04:48 11 A. Yeah. It was worldwide, that's right.

04:48 12 MR. STERBCOW: Let's pull up D-2670, TREN-21722.001.

04:48 13 BY MR. STERBCOW:

04:48 14 Q. This is an organizational chart we have seen before, but I
04:48 15 want you to take a look at it, if you will.

04:48 16 Where would you be on this chart as of 2008?

04:48 17 A. So in 2008 -- excuse me. 2008, I would be in the group
04:49 18 safety and operations integrity box there.

04:49 19 Q. So board of directors at the top, executive management
04:49 20 underneath. And to the right, the box that just turned yellow,
04:49 21 group safety and operations integrity, correct?

04:49 22 A. That's right.

04:49 23 Q. Would you have been the head of group safety and
04:49 24 operations integrity?

04:49 25 A. Yeah, that's right. It wasn't exactly the name of the

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04:49 1 group. But, yeah, for the sake of argument, that's what it
04:49 2 would be.

04:49 3 Q. In addition to that, next to you would have been a -- I'll
04:49 4 call it a sister group called group engineering?

04:49 5 A. I don't recognize those as two separate groups at that
04:49 6 point.

04:49 7 Q. Were they one?

04:49 8 A. Yeah.

04:49 9 Q. So based on your knowledge and your participation,
04:49 10 obviously, group safety and operations integrity and group
04:49 11 engineering were really one -- I'll call it unit -- at that
04:49 12 point, not two separate divisions?

04:49 13 A. Correct.

04:49 14 Q. Were they both, as this chart reflects, part of executive
04:49 15 management of BP?

04:49 16 A. No, not -- with the definition I hold, which is membership
04:50 17 on the executive team, they were not.

04:50 18 Q. Did you report directly to executive management?

04:50 19 A. I did.

04:50 20 Q. Were you also, as of 2008, a member -- if you look at the
04:50 21 far left -- the group operating risk committee, which we have
04:50 22 come to know as GORC?

04:50 23 A. Yes.

04:50 24 Q. What was the responsibility of that committee?

04:50 25 A. So the GORC is the executive management level committee

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04:50 1 charged with monitoring safety performance, performance --
04:50 2 managing safety performance across the company.

04:50 3 Q. At this point in 2008, who was the CEO?

04:50 4 A. Tony Hayward.

04:50 5 Q. He was a member of that committee, correct?

04:50 6 A. He was, yes.

04:50 7 Q. Mr. Baxter was a member of that committee?

04:50 8 A. Yes, he was a sitting member.

04:50 9 Q. Was he part of the group engineering team?

04:50 10 A. Yes, he was.

04:50 11 Q. You were a member of that committee?

04:50 12 A. Yes, I was.

04:50 13 Q. That committee was specifically charged with the
04:50 14 responsibility of dealing with safety issues?

04:50 15 A. That's right.

04:50 16 Q. How often did you meet?

04:51 17 A. Six times a year, if I had to estimate. It was more than
04:51 18 once a quarter. I think it was six to seven times a year.

04:51 19 Q. Those meetings were in London?

04:51 20 A. Usually, yes.

04:51 21 Q. Did that committee, if I understand correctly, set and
04:51 22 then ensure implementation of global BP safety policy on a
04:51 23 grand -- a broader scale?

04:51 24 A. Yeah. I don't remember the committee spending time
04:51 25 setting policy. It more spent time reviewing risk management,

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04:51 1 safety management, and safety performance in the company.

04:51 2 I think safety policy would have been discussed. I
04:51 3 guess you could say they set policy, but it wasn't really what
04:51 4 the committee met for. It was more to look at performance and
04:51 5 progress.

04:51 6 Q. When you looked at performance and progress in the
04:51 7 committee meetings, which would have included you, Mr. Baxter
04:51 8 and the CEO, Dr. Hayward, were you specifically looking at the
04:52 9 safety performance of the various SPUs or units of BP across
04:52 10 the globe?

04:52 11 A. Yes. That's exactly what it was looking at.

04:52 12 Q. You would look at it with a critical eye?

04:52 13 A. Very much.

04:52 14 Q. If you saw things that needed to be changed, you would
04:52 15 discuss it and discuss how to take action if action was
04:52 16 necessary?

04:52 17 A. Yes. That was part of the conversation.

04:52 18 Q. That committee had the authority, if necessary, to dictate
04:52 19 to -- if you go down -- exploration and production, Gulf of
04:52 20 Mexico SPU, etc., changes in safety policy. Is that correct?

04:52 21 A. Yeah. Because the nature -- the nature of that committee
04:52 22 is that it's comprised of the heads of those chains. So they
04:52 23 are there with the CEO reviewing performance. So they are the
04:52 24 authorities at the top of those operating organizations.

04:52 25 Q. You said the committee met once about every eight weeks?

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04:52 1 A. I said six. I think it was a bit more than four times a
04:52 2 year, so I'm estimating six to seven times a year.

04:52 3 Q. The meetings were in London?

04:52 4 A. Yes, most of the time.

04:53 5 Q. Is it fair to say that in that membership in the group
04:53 6 operating risk committee, from 2008 through April 2010, would
04:53 7 have placed you in a position of being on top of and extremely
04:53 8 knowledgeable of BP's global safety policy, problems with the
04:53 9 policy, and any changes that needed to be made to the policy?

04:53 10 A. I'm not sure if I understand what you mean by *BP's global*
04:53 11 *safety policy*. As I say, it was more to look at performance of
04:53 12 the -- safety performance of the various parts of the company.

04:53 13 Q. I will rephrase it.

04:53 14 Would that position have given you access to
04:53 15 information and involved you in conversations with other
04:53 16 executives where you specifically discussed safety performance
04:53 17 in the various units of BP throughout the world?

04:53 18 A. Yes, it would have.

04:53 19 Q. So you knew what was going on?

04:53 20 A. Yes, at a high level. At a high level.

04:53 21 Q. At a high level.

04:53 22 A. Because you are looking at, you know, information covering
04:53 23 a very large company. But yes, indeed.

04:53 24 Q. And you, in the position that you had after all the years
04:54 25 that you had been with the company and all the promotions that

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04:54 1 you had attained, I would assume brought to the committee
04:54 2 experience in drilling engineering, offshore construction,
04:54 3 exploration and production, drilling and completions. You were
04:54 4 able to bring all of that amassed experience to these meetings
04:54 5 when you-all would discuss these safety issues?

04:54 6 A. Yes, I guess that's right.

04:54 7 Q. So if there may have been an issue that involved drilling
04:54 8 engineers in the Gulf of Mexico or production personnel in
04:54 9 Egypt, those are the type of issues that you could engage
04:54 10 conversation with these other executives in, intelligent
04:54 11 conversation?

04:54 12 A. Yeah. I think I would have been able to, yeah.

04:54 13 Q. In fact, you did?

04:54 14 A. And did, indeed.

04:54 15 Q. Because that's what you-all discussed?

04:54 16 A. Yeah.

04:54 17 Q. It's my understanding that at some point -- and it may
04:54 18 have been in '08, when you became group head of safety and
04:54 19 operations -- that you were appointed to oversee the worldwide
04:54 20 group-wide operating management system implementation; is that
04:55 21 correct?

04:55 22 A. Yes.

04:55 23 Q. OMS?

04:55 24 A. OMS.

04:55 25 Q. Now, is OMS a system that you actually created?

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04:55 1 A. Myself?

04:55 2 Q. Yeah.

04:55 3 A. No. It was well under development when I took that role
04:55 4 in 2008.

04:55 5 Q. Did you play any role in the development of BP's OMS
04:55 6 system?

04:55 7 A. Yes, I did.

04:55 8 Q. What role did you have?

04:55 9 A. At the time it was being piloted, I was running an
04:55 10 operating business, North American gas. We said we would like
04:55 11 to be early adopters or pilot testers of it. So I was involved
04:55 12 in testing it from the operating end, not from the design end,
04:55 13 and contributing, you know, inputting into the work.

04:55 14 Q. So in the time where you were vice president of
04:55 15 exploration and production, would you have been involved in
04:55 16 implementing OMS in any aspect of BP's business?

04:55 17 A. When I was --

04:55 18 Q. Oh, I'm sorry. When you were in Alaska, is that what you
04:56 19 said?

04:56 20 A. No, no. I'm sorry. I didn't understand your question.

04:56 21 Q. When were you responsible -- or where were you when you
04:56 22 took on the role of implementing OMS at a particular location?

04:56 23 A. So what I just spoke to -- I'm sorry if I misunderstood
04:56 24 your question.

04:56 25 I was speaking to -- OMS was rolled out in

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04:56 1 November 2008. That was the point in time when the company
04:56 2 began the rollout of the pilot-tested and ready-to-go
04:56 3 management system.

04:56 4 Prior to that I was involved in the pilot testing,
04:56 5 when I was working in the North American gas business prior to
04:56 6 the official rollout.

04:56 7 Q. So when you were working in North American gas, was OMS --
04:56 8 the implementation process took place in the North American gas
04:56 9 division as a test, if you will, to see how it worked?

04:56 10 A. Yeah. Testing subsets of the system, etc.

04:56 11 Q. Like a pilot test?

04:56 12 A. It was a pilot test.

04:56 13 Q. What role did you play in the actual implementation and
04:57 14 observation of the system to see how it functioned?

04:57 15 A. At that point in time, there were draft versions of it and
04:57 16 what I was really doing was working with my operations
04:57 17 management folks, you know, to say, "Look, does this make
04:57 18 sense? Could we adopt this? What kind of feedback would we
04:57 19 give to the designers?"

04:57 20 So to be fair, I would say we weren't really
04:57 21 implementing, we were testing it and giving feedback into the
04:57 22 design effort.

04:57 23 Q. Did you have a single point of reference, that being some
04:57 24 type of handbook or manual that was distributed amongst you and
04:57 25 those others involved in North American Gas, that was your

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04:57 1 reference manual for OMS?

04:57 2 A. I can't recall if there was -- if there was that detail of
04:57 3 information available at that pilot phase. I remember, you
04:57 4 know, materials; but I don't remember a particular reference
04:57 5 manual.

04:57 6 Q. Were you working off of different documents, then?

04:57 7 A. Yeah. It was pretty high-level documents. And there's
04:58 8 people -- the designers of it were working with us to explain
04:58 9 what they were attempting to do, etc.

04:58 10 Q. So the designers, the people who actually came in were
04:58 11 those folks who were involved in the nuts and bolts of creating
04:58 12 the system?

04:58 13 A. Yes, they were.

04:58 14 Q. So if you had questions, or anybody else who was involved
04:58 15 in the pilot testing had questions, the designers would be
04:58 16 folks with the knowledge that could address the questions?

04:58 17 A. That's right.

04:58 18 Q. I assume you learned about the OMS through this process?

04:58 19 A. I certainly got my first, you know, access to the thinking
04:58 20 behind it, yes.

04:58 21 Q. How was it, then, that that being part of the pilot
04:58 22 testing took you to the position of actually overseeing
04:58 23 worldwide implementation of OMS?

04:58 24 A. Well, the oversight of it came with the group S&O job.

04:58 25 Those designers of the OMS existed in this S&O group I stepped

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04:58 1 into.

04:58 2 And I think as part of the decision for the company
04:58 3 asking me to take that role was the interest I had had in OMS
04:59 4 and promoting it while I was in the operating business.

04:59 5 Q. When you say group S&O, what are you referencing?

04:59 6 A. This is the one that you've got shown as safety and
04:59 7 operations integrity on your chart, that functional group in
04:59 8 the company.

04:59 9 Q. We distinguish that from an S&O audit, which is a
04:59 10 completely different thing, right?

04:59 11 A. Yeah. That's an audit activity.

04:59 12 Q. The audit activity is part of the OMS, though, correct?

04:59 13 A. OMS provides for doing self-auditing, and it recognizes
04:59 14 independent auditing. So the system recognizes the need to
04:59 15 audit, yes.

04:59 16 Q. Being more specific, if OMS is implemented in North
04:59 17 American gas or as a pilot or as it developed over time going
04:59 18 to Gulf of Mexico, anyplace in the world, it involves specific
04:59 19 requirements, both internal auditing of performance and
04:59 20 external auditing of performance, correct?

04:59 21 A. That's one of the parts of OMS is it calls for that, yes.

05:00 22 Q. When we say *external*, we mean BP employees, but BP
05:00 23 employees who don't work specifically in the area that's being
05:00 24 audited?

05:00 25 A. Yeah. Independent of the business is how we think about

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05:00 1 it.

05:00 2 Q. These are teams that conduct auditing, is that correct,
05:00 3 the independent auditing?

05:00 4 A. Yes, they are.

05:00 5 Q. At this time, when you assumed this job -- well, let me
05:00 6 back up.

05:00 7 Did you have this job position and this
05:00 8 responsibility of overseeing worldwide/group-wide operating
05:00 9 management system implementation? Is that the job you had all
05:00 10 the way through April 20, 2010?

05:00 11 A. Yes.

05:00 12 Q. So you had been in that position from '08 -- approximately
05:00 13 two years?

05:00 14 A. About two years, right.

05:00 15 Q. At that time, was there anyone higher up in the area of
05:00 16 safety and operations, other than maybe Dr. Hayward himself,
05:00 17 than you were?

05:00 18 A. No. I was the highest up in that functional area, safety
05:00 19 and operations.

05:00 20 Q. You reported directly to Dr. Hayward in that capacity?

05:01 21 A. That's right.

05:01 22 Q. I assume, based on what we've said, the main method of
05:01 23 communicating safety and -- operational safety issues would be
05:01 24 these group operating risk committee meetings that you-all had?

05:01 25 A. That was the main way at the executive level.

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05:01 1 Q. At the executive level.

05:01 2 A. The main subsidiary meetings, you know, on down in the
05:01 3 operating organizations. But at the executive level, that was
05:01 4 our primary caucus for working on safety issues.

05:01 5 Q. In terms of your implementation activities, did you
05:01 6 actually physically travel to different locations, different
05:01 7 specific performance units within BP, to assist with OMS
05:01 8 implementation in those areas?

05:01 9 A. I didn't personally, no.

05:01 10 Q. You didn't go?

05:01 11 A. No.

05:01 12 Q. Did you monitor that activity?

05:01 13 A. Yes. We had -- after the rollout, we -- our goal was to
05:01 14 have the implementation, the switchover to OMS accomplished,
05:01 15 and all of the subparts of the company by the end of 2010.
05:02 16 There were some specific steps that the company -- that the
05:02 17 units had to accomplish to make that switchover. We monitored
05:02 18 the -- you know, the switchover, so we could track who had
05:02 19 successfully made the switch to OMS and watch that go through
05:02 20 the two-year period.

05:02 21 Q. Was that something that you did alone, or was that
05:02 22 tracking process part of what the group operating risk
05:02 23 committee did?

05:02 24 A. That was one of the things that the GORC looked at.

05:02 25 Q. If the GORC had a problem or an issue, say, with the OMS

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05:02 1 implementation in refining or in production, would the GORC
05:02 2 communicate questions, concerns, back down to that specific
05:02 3 area of the company?

05:02 4 A. Yeah. In this case what you would see is a typical GORC
05:02 5 review looking at OMS progress, an assessment of where the
05:02 6 various units were. If it was seen that some units were
05:02 7 falling behind the pace that they had set out to achieve, then
05:03 8 there might be a conversation. But typically, the leader of
05:03 9 that part of the organization would then engage in a
05:03 10 discussion, you know, a performance discussion with that part
05:03 11 of the company.

05:03 12 Q. Were there specific goals set, to your knowledge -- let's
05:03 13 say North American refining. Was there a specific goal that
05:03 14 the BP group operating risk committee executive management
05:03 15 wanted OMS fully implemented, in whatever division it was, by a
05:03 16 certain date?

05:03 17 A. So we didn't set that goal that way. We said we had an
05:03 18 overall goal of having every one done by the end of 2010.

05:03 19 Underneath of that objective, we allowed or we
05:03 20 encouraged the operating organizations, so the R&M business and
05:03 21 the E&P business, to set their own -- or agree to their own
05:03 22 pace of transformation with the SPUs.

05:04 23 Q. Okay.

05:04 24 A. So we didn't attempt to set one rigid goal for all of the
05:04 25 subsets. We said, We would like to have this done in two years

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05:04 1 and, you know, you guys work out the best way to do that.

05:04 2 Q. You allowed the units themselves to set goals and try to
05:04 3 attain those goals, implementation goals?

05:04 4 A. Right. And, of course, that would have to have been
05:04 5 approved up their chain of command.

05:04 6 Q. Right. Was the GORC committee, yourself and the others we
05:04 7 have discussed, monitoring the progress of each of those units
05:04 8 in achieving whatever goal they may have set?

05:04 9 A. Yeah. The monitoring we had in place was to be able to
05:04 10 know when a unit had achieved that implementation step so we
05:04 11 could track that.

05:04 12 I don't recall if we had a time line that, you know,
05:04 13 we were measuring whether we were ahead or behind because we
05:04 14 didn't know that. But we had a pretty good sense of whether
05:04 15 the units were accomplishing their conversion rates that they
05:04 16 had set out to do.

05:04 17 MR. STERBCOW: Let's go to D-2675, TREX-21722.006.

05:05 18 BY MR. STERBCOW:

05:05 19 Q. Does this graphic accurately reflect the group operating
05:05 20 risk committee membership as best you can recall, from the time
05:05 21 that you joined in '08 forward through April 20, 2010?

05:05 22 A. The one I'm not sure about is Steve Westwell, the group
05:05 23 chief of staff gentleman, the second from the right. I can't
05:05 24 remember if he sat on that committee or not at that time.

05:05 25 Q. Would the others, though, yourself, chief executive E&P

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05:05 1 Andy Inglis, who we talked about a few minutes ago, correct,
05:05 2 same guy?

05:05 3 A. Yes.

05:05 4 Q. Iain Conn, chief executive refining and marketing and John
05:05 5 Baxter, group head of engineering, would they have all -- do
05:05 6 you recall all of them being members of the committee?

05:05 7 A. Yes, I do.

05:05 8 Q. Was anyone else a member of the committee who's not
05:05 9 depicted in our graphic?

05:05 10 A. We may have had another leader. There's a part of the
05:06 11 company that's got alternative energy and shipping, some of the
05:06 12 other parts that aren't in the core of R&M and E&P, and I just
05:06 13 can't remember. But we may have had a representative that
05:06 14 looked after that part of the operating business well.

05:06 15 Q. Fair enough.

05:06 16 I see, based on the descriptions, Mr. Baxter is --
05:06 17 his authority is in engineering, correct?

05:06 18 A. That's right.

05:06 19 Q. Mr. Conn is in refining and marketing?

05:06 20 A. Correct.

05:06 21 Q. Would that be marketing even further beyond refining,
05:06 22 marketing across the company, or is it just refining and
05:06 23 marketing within the refining business, if you know?

05:06 24 A. So that part of the company is what's -- it's selling
05:06 25 gasoline products. That's the marketing part of it.

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05:06 1 Q. That's why it's linked to refining?

05:06 2 A. Yes.

05:06 3 Q. Mr. Inglis, chief exec, exploration and production; and
05:06 4 yourself, group head, safety and operations?

05:06 5 A. Correct.

05:06 6 Q. Who within this group that we see here would have had
05:07 7 primary authority and responsibility over drilling and
05:07 8 completions?

05:07 9 A. Mr. Inglis.

05:07 10 Q. So as part of his job with exploration and production,
05:07 11 that also filtered down to drilling and completions?

05:07 12 A. Yeah. All the drilling and completions operating activity
05:07 13 is within exploration and production.

05:07 14 Q. So if there were any issues in any part of the drilling
05:07 15 and -- BP's drilling and completions operations around the
05:07 16 world having to do with safety that would rise to the level of
05:07 17 the group operating risk committee, I would assume those
05:07 18 typically would be brought to your attention, to the group's
05:07 19 attention, through Mr. Inglis?

05:07 20 A. Correct.

05:07 21 Q. Would he, then, be the one who would communicate back down
05:07 22 the line to address the issues and give guidance down to
05:07 23 whatever D&C group it was on what your committee decided or
05:07 24 what they needed to do?

05:07 25 A. Yeah. That would be the flow, yes, sir.

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05:07 1 Q. Was Mr. Inglis also primarily responsible for monitoring
05:08 2 OMS implementation in exploration and production, or was that
05:08 3 your function?

05:08 4 A. We provided the monitoring support to them, but the
05:08 5 accountable line managers monitored and were really driving the
05:08 6 pace of implementation.

05:08 7 Q. But in terms of going up the chain, would it have been
05:08 8 more your duty and responsibility to monitor implementation
05:08 9 rather than Mr. Inglis, even if it was in E&P or D&C?

05:08 10 A. I don't quite know what you mean by *monitor*. Could you
05:08 11 ask the question, just to make sure?

05:08 12 Q. Sure. I'll rephrase it. I'm sorry.

05:08 13 In terms of the ongoing effort, the OMS
05:08 14 implementation effort that we have touched on --

05:08 15 A. Right.

05:08 16 Q. -- if issues arose, problems arose, things that needed to
05:08 17 be addressed, regardless of where the problem arose --
05:08 18 exploration and production, drilling and completions, refining
05:08 19 and marketing -- would you still be the one that was primarily
05:08 20 responsible for addressing those issues related to
05:08 21 implementation, or did that spread across the group?

05:09 22 A. Yeah. No. The way that that implementation was driven
05:09 23 was -- the accountability for getting it done was through the
05:09 24 operating organizations. My team, you know, developed a
05:09 25 system, provided support, and we did help people monitor so we

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05:09 1 could track performance. But if there was shortfalls or things
05:09 2 needed to be, you know, moved along, that would have flowed
05:09 3 right down the operating line.

05:09 4 Q. Was there anyone more knowledgeable in this group
05:09 5 operating risk committee about the contents, the nuts and bolts
05:09 6 of the system and how to implement the system than you?

05:09 7 A. I would have been the most knowledgeable about the system
05:09 8 itself.

05:09 9 Q. Am I correct in concluding that the OMS system created
05:09 10 over time by BP -- and I think you said rolled out in November
05:09 11 of 2008 -- was BP's effort to do its best to ensure that risk
05:09 12 was being managed in a consistent and high-level efficient
05:10 13 manner all across the company?

05:10 14 A. Yeah, I think that's a fair statement. It's an integrated
05:10 15 system that looks at risk and safety and operations. It's an
05:10 16 attempt to do that well across the entire operating --

05:10 17 Q. The way it was set up and designed, it was supposed to do
05:10 18 that whether we are talking about a refinery or exploration or
05:10 19 production or drilling or North American gas. The system
05:10 20 itself was designed, based on what you have said, I'm assuming,
05:10 21 to apply to all of those, correct?

05:10 22 A. Yes. It's at a high enough level to be applicable to
05:10 23 those. And you have to fill in the detail below for exactly
05:10 24 the point you make. There's different operating activity.
05:10 25 But, yes, that's the idea.

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05:10 1 Q. We will get into that in a minute. But it's my
05:10 2 understanding that the -- as OMS developed from the higher
05:10 3 level and the high-level goal of overarching risk management
05:10 4 down to E&P or D&C, they would actually implement their own
05:11 5 local OMS manual to fit their specific needs?

05:11 6 A. That's the design, yes.

05:11 7 Q. Would those manuals or the contents of the manuals or the
05:11 8 authorship of those manuals have to pass through the group
05:11 9 operating committee, risk committee, for review and approval?
05:11 10 Or was that left to them?

05:11 11 A. The design of the -- of the individual manuals was left to
05:11 12 the business. The requirements and the shaping of the manual
05:11 13 and what was expected was part of the OMS architecture. So
05:11 14 there was an outline of what was expected.

05:11 15 Q. So each unit would take the outline of the system and then
05:11 16 apply it specifically to their activity, their specific needs?

05:11 17 A. Yes, that's right.

05:11 18 Q. I'm assuming that would also include their specific unique
05:11 19 risks, whatever those risks may be?

05:11 20 A. That's right.

05:11 21 Q. So if refining had a specific set of identified risks low
05:11 22 to high, frequent to infrequent, refining would deal with those
05:12 23 in its local OMS manual against the background of this
05:12 24 overarching system?

05:12 25 A. Yes, I think that's well-described.

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05:12 1 Q. E&P did that?

05:12 2 A. Yes, it would. Yes.

05:12 3 Q. Drilling and completions did that too?

05:12 4 A. I don't know if you would have seen a separate drilling
05:12 5 and completions or you would see that as part of the fabric of
05:12 6 E&P, because it's a subunit of E&P. But, yes, that would be
05:12 7 the way you would do this.

05:12 8 Q. And all of these, regardless of what division we are
05:12 9 talking about, fell under the umbrella, the OMS umbrella that
05:12 10 required S&O audits, correct?

05:12 11 It didn't matter whether you were drilling and
05:12 12 completions or refining, if you were going to implement the OMS
05:12 13 system in your division, you were going to start having
05:12 14 internal and external audits of your activity?

05:12 15 A. Yes, that's right.

05:12 16 Q. And *internal* means -- again, we will use drilling and
05:13 17 completion because that's, obviously, what we're going to talk
05:13 18 about -- there would be internal auditors within Gulf of Mexico
05:13 19 drilling and completions that would perform the internal audit
05:13 20 described in the OMS?

05:13 21 A. I don't think that's quite right.

05:13 22 Q. Correct me.

05:13 23 A. So the audits, there's -- what OMS requires is to prepare
05:13 24 for external audits, which means the independent audits that
05:13 25 the S&O team did.

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05:13 1 And it also says you have to have self-verification
05:13 2 and self-assessment practices and process in place. I don't
05:13 3 believe it defines that you have to have certain internal
05:13 4 audits inside of your unit, just to be really crystal clear.

05:13 5 Q. Good. And I appreciate the clarification.

05:13 6 Would the same external S&O audit teams, the group of
05:13 7 people, travel to different areas of the business to conduct
05:13 8 audits? In other words, would have a team or two or three,
05:13 9 whatever it is that would go to refineries, would go to
05:13 10 production, would go to drilling and completions? Or did you
05:14 11 have dedicated external units that would just handle a
05:14 12 particular area of your business?

05:14 13 A. So the structure of that independent auditing function
05:14 14 is -- there will be some people that are flexible to move
05:14 15 across, but what we do is we supplement that with subject
05:14 16 matter experts, depending on the type of audits you are doing.
05:14 17 So it's a bit of a blended answer to your question. Some
05:14 18 people travel globally and do it. Others are sort of targeted
05:14 19 at certain areas of expertise.

05:14 20 Q. Fair enough.

05:14 21 Now, you held the position, as I understand it, of
05:14 22 group head of safety and operations, you were a GORC member;
05:14 23 and the duties and responsibilities we just discussed,
05:14 24 including OMS implementation in the manner we just discussed,
05:14 25 throughout the time that the Macondo project was conceived,

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05:14 1 planned, and executed up to April 20, 2010, correct?

05:14 2 A. Yes, I think that's right.

05:15 3 Q. You sat on the GORC committee throughout that time period
05:15 4 as well?

05:15 5 A. That's right.

05:15 6 Q. Now, less than 72 hours after the blowout, it's my
05:15 7 understanding Dr. Hayward contacted you and asked you to lead
05:15 8 the accident investigation?

05:15 9 A. Yes, that's right.

05:15 10 Q. Phone call? He called you?

05:15 11 A. Yeah, he called me.

05:15 12 Q. He said he needed you?

05:15 13 A. He did.

05:15 14 Q. The result of that phone call and then the subsequent
05:15 15 effort is what we have marked as TRES-1, the *Deepwater Horizon*
05:15 16 Accident Investigation Report, correct?

05:15 17 A. Yeah, that's the report from that group.

05:15 18 Q. Colloquially, for better or for worse, it's come to be
05:15 19 known as the *Bly Report*?

05:15 20 A. I'm afraid that's right.

05:15 21 Q. My understanding is that the effort essentially began, at
05:15 22 least in its formative stages, around April 23, and the report
05:15 23 was published September 8, 2010?

05:15 24 A. Yes, that's right.

05:15 25 Q. Does it represent the complete and full reported findings

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05:16 1 of the BP investigative team into the facts and circumstances
05:16 2 surrounding the Macondo disaster?

05:16 3 A. Yes, it does.

05:16 4 Q. There is no other report, published report, correct?

05:16 5 A. There's no other report that I worked on.

05:16 6 Q. That's what I was going to ask you. There's no other
05:16 7 report that involves such an organized, systemwide review of
05:16 8 what happened other than this?

05:16 9 A. No, none, sir.

05:16 10 Q. To your knowledge, in terms of public reports, it's the
05:16 11 only report that the CEO of the company, Dr. Hayward,
05:16 12 commissioned?

05:16 13 A. Yeah, that's right.

05:16 14 Q. You led the way?

05:16 15 A. I led that team, yes.

05:16 16 MR. STERBCOW: Pull up D-2671, TREN-21722.002.

05:16 17 BY MR. STERBCOW:

05:16 18 Q. What we have up now is the investigation team. You at the
05:16 19 top; and then two down to the left is Tony Brock, technical and
05:17 20 operations lead; to the right, Matthew Lucas, RCFA and
05:17 21 interview lead.

05:17 22 Did you choose both Mr. Brock and Mr. Lucas?

05:17 23 A. Yes, sir.

05:17 24 Q. Why Mr. Brock?

05:17 25 A. Mr. Brock was my first choice. I made the call to him in

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05:17 1 the first 12 hours after I was asked to do this. I had known
05:17 2 Tony for a number of years. I knew he had a deep drilling
05:17 3 background, including Gulf of Mexico experience, and I knew
05:17 4 that he also had an operation and safety background. And I
05:17 5 thought he would be a very good place to start.

05:17 6 Q. He had the hands-on practical experience in drilling and
05:17 7 safety that you thought you would need?

05:17 8 A. That's right.

05:17 9 Q. Now, on the right, Mr. Lucas, RCFA. Is that root
05:17 10 cause. . .

05:17 11 A. It's probably root cause failure analysis.

05:17 12 Q. Analysis and interview lead. What was it about Mr. Lucas'
05:17 13 background that you felt was appropriate to put him in that
05:17 14 position?

05:17 15 A. Well, this was -- even in the early days, it was clear it
05:18 16 was going to be a big and significant and terrible tragedy,
05:18 17 significant event, big investigation. So I knew I wanted to
05:18 18 have the top investigation expert that we had in the company.
05:18 19 That's who Mr. Lucas is.

05:18 20 Q. Would Mr. Lucas then represent, in your opinion, BP's best
05:18 21 and brightest accident investigation employee as far as you
05:18 22 knew?

05:18 23 A. He certainly is the one that knows our policy and process
05:18 24 the best. That was really what I looked to him for.

05:18 25 Q. Very good. So really Mr. Brock, it sounds like, you

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05:18 1 wanted more for his drilling and safety experience?

05:18 2 A. Yes.

05:18 3 Q. And Mr. Lucas was there more for his expertise, training,
05:18 4 and experience in actually conducting an investigation of this
05:18 5 type?

05:18 6 A. Yes, that's right.

05:18 7 Q. That would explain, it seems to me, the two branches: One
05:18 8 being experience on what the activity was that you were
05:18 9 investigating, the Macondo well; and the other side being how
05:19 10 do we go about investigating the Macondo well?

05:19 11 A. Yes. Yes.

05:19 12 Q. Now, under Mr. Brock you have it then divided into four:
05:19 13 Steve Robinson, operations; Kent Corser, engineering; Dave
05:19 14 Wall, hazard analysis; and Fereidoun Abbassian -- is that how
05:19 15 you pronounce his name?

05:19 16 A. Yes.

05:19 17 Q. -- vice president of technology.

05:19 18 Again, were these your choices?

05:19 19 A. With all those choices, Tony Brock actually helped me with
05:19 20 those selections. So I can't remember if I picked them or he
05:19 21 did, but he is the one that identified a bunch of these
05:19 22 candidates for us.

05:19 23 Q. In terms of operations, my understanding is Mr. Robinson
05:19 24 would have been responsible for looking at, analyzing,
05:19 25 investigating the operations portion of the Macondo project?

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05:19 1 A. Yes, that's right.

05:19 2 Q. What happened on the rig, how did they work?

05:19 3 A. Right.

05:19 4 Q. Mr. Corser obviously has an engineering background, and he
05:19 5 is looking at it from the drilling engineering standpoint?

05:19 6 A. That's right.

05:19 7 Q. What did we do in design, what kind of decisions did we
05:20 8 make, and how did we implement our engineering?

05:20 9 A. Yes.

05:20 10 Q. Mr. Wall, hazard analysis. What exactly was he supposed
05:20 11 to do?

05:20 12 A. So what -- David's part was to look at the fire and
05:20 13 explosion aspect of it. So when we began, we had no idea what
05:20 14 had happened other than there was a fire and explosion. So
05:20 15 this was to look at -- to try to evaluate that part of it and
05:20 16 how had that happened.

05:20 17 Q. So when you reference hazard analysis, really it's
05:20 18 confined to why did the rig catch on fire and why did the
05:20 19 explosion occur, essentially?

05:20 20 A. Yes, that's right.

05:20 21 Q. Last -- you have this on here. Mr. Abbassian, it looks
05:20 22 like, was responsible for looking into the blowout preventer,
05:20 23 the BOP?

05:20 24 A. That's correct.

05:20 25 Q. They each had people under them that were charged with the

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05:20 1 responsibility of helping them accomplish their piece of the
05:20 2 investigation, correct?

05:20 3 A. Yes. They built teams to do that.

05:20 4 Q. On Mr. Lucas' side, we have three people: Mr. Martin,
05:20 5 root cause specialist; Rex Anderson, crisis management and
05:21 6 planning root cause specialist; Mr. Fontenot, root cause
05:21 7 specialist.

05:21 8 Are these essentially three internal, trained BP
05:21 9 accident investigators? Is that who these guys are?

05:21 10 A. Yeah. They have that process experience that Mr. Lucas
05:21 11 does.

05:21 12 Q. So if an accident happens in BP and it involves
05:21 13 North American gas or it involves a refinery someplace, would
05:21 14 these gentlemen, under Mr. Lucas' supervision, if you will,
05:21 15 potentially go out and start investigating the root cause of
05:21 16 the accident?

05:21 17 A. They may provide the same kind of support as this team did
05:21 18 in this case, yes.

05:21 19 Q. So they weren't specifically trained to do this in
05:21 20 drilling and completions in the Gulf; they could do it
05:21 21 anywhere?

05:21 22 A. That's right.

05:21 23 Q. Now, look under Mr. Anderson, it says: "Crisis management
05:21 24 and planning."

05:21 25 What makes him different, if anything, than the other

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05:21 1 two?

05:21 2 A. I really don't know what that title is about.

05:21 3 Q. Fair enough. But they all worked under the supervision of
05:21 4 Mr. Lucas?

05:22 5 A. Yes.

05:22 6 Q. Would Mr. Lucas, Mr. Brock, and yourself meet regularly
05:22 7 during the course of the accident investigation?

05:22 8 A. Yeah. We had team meetings every day where myself and the
05:22 9 team leads would get together to get an update on the progress
05:22 10 for the day.

05:22 11 Q. Did you have the opportunity to personally meet with
05:22 12 anybody in the next row -- Robinson, Corser, or Wall, etc.?
05:22 13 Would you have regular meetings with them as well?

05:22 14 A. They would be part of that morning meeting.

05:22 15 Q. Oh, they would be?

05:22 16 A. Yes.

05:22 17 Q. And you did this every day?

05:22 18 A. Effectively, yes.

05:22 19 Q. A phone call?

05:22 20 A. No. We were all working in one office building in one
05:22 21 floor, so it was face-to-face.

05:22 22 Q. Were you at Westlake in Houston?

05:22 23 A. Yes, we were.

05:22 24 Q. So you-all actually got together personally at a table or
05:22 25 tables in a room every day and talked about the next 24 hours'

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05:22 1 progress of your accident investigation?

05:22 2 A. Yeah. It wasn't quite that way. It was more about did
05:22 3 anyone need any additional resources, what was going on, any
05:22 4 request for information that we wanted to make, and then a bit
05:23 5 of an update about anything new to report. Every day is a
05:23 6 little of a rapid cycle, but it was really more just a staff
05:23 7 meeting really to keep track of where things were.

05:23 8 Q. Were the other folks underneath Martin -- well, not
05:23 9 Martin, but underneath operations, engineering, and hazard
05:23 10 analysis, were they in these meetings as well?

05:23 11 A. Not typically, no.

05:23 12 Q. Were they more out in the field conducting investigation
05:23 13 activity? Is that fair?

05:23 14 A. Sir, were you pointing to a specific one of the lower team
05:23 15 there?

05:23 16 Q. Just anybody -- we'll take Mr. Robinson, for example. He
05:23 17 is doing the operations portion?

05:23 18 A. Yes.

05:23 19 Q. He has got Jim Weatherbee, Jim Cowie, and Walter Guillot
05:23 20 beneath him. I assume they are at his disposal to help him
05:23 21 accomplish the operations portion of the investigation?

05:23 22 A. Amongst others. I don't know if this is exactly accurate;
05:23 23 but for the sake of argument, that's -- I understand your
05:23 24 question then.

05:23 25 Q. Well, was the concept of the organization that Weatherbee,

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05:23 1 Cowie, and Guillot, for example, would go out and begin to
05:24 2 gather the forensic operations evidence that you needed?

05:24 3 A. Yeah. If you think about it, there wasn't -- given that
05:24 4 the thing happened on the rig, you couldn't actually go get
05:24 5 that type of forensic information. So the types of
05:24 6 investigative work involved data collection, identifying
05:24 7 information, if we wanted to request from BP or one of the
05:24 8 other companies involved, potentially interviews, going to do
05:24 9 interviews of the witnesses. And then there was quite a bit of
05:24 10 analysis, analysis-type work done in the office, in the team.

05:24 11 Q. Would these folks -- Weatherbee, Cowie -- and again, using
05:24 12 them as an example -- and Guillot be involved in the analysis
05:24 13 phase as well?

05:24 14 A. They might. Yeah. That's a way to understand it.

05:24 15 **MR. STERBCOW:** Let's pull up TREN-0001, which is the
05:24 16 Bly Report, Appendix A, page 194. If you would, pull out --
05:25 17 thank you.

05:25 18 **BY MR. STERBCOW:**

05:25 19 Q. First of all, do you recognize Appendix A as the page that
05:25 20 gave a general description of how the investigation was to be
05:25 21 conducted?

05:25 22 A. Yes, I do.

05:25 23 Q. It also included paragraph 3, which tells us how -- what
05:25 24 was going to be included in your report, correct?

05:25 25 A. Yes. The terms of reference are stated, that's right.

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05:25 1 Q. That's what -- I was going to ask you. That's what we all
05:25 2 refer to as "the terms of reference"?

05:25 3 A. Yes.

05:25 4 Q. The terms of reference tell us, if we read this, basically
05:25 5 what's going to be in the report if we read the report. Fair?

05:25 6 A. That's what we hoped to accomplish when we set out.

05:25 7 Q. Okay. Very good. So it defines the scope, breadth, and
05:25 8 content?

05:25 9 A. I think that's right.

05:25 10 Q. So this report -- and we will get into it -- was to
05:25 11 conclude from the beginning, as of April 23, 2010, background
05:25 12 information, whatever you felt was relevant and needed to lend
05:26 13 context, I assume?

05:26 14 A. Right.

05:26 15 Q. Time line of events?

05:26 16 A. Yes.

05:26 17 Q. Description of what happened?

05:26 18 A. Correct.

05:26 19 Q. And then D, critical factors, immediate causes, system
05:26 20 causes; and then proposed recommendations, I assume, based on
05:26 21 the body of work of your group, what you learned and what we
05:26 22 could all learn in terms of going forward?

05:26 23 A. Yes, sir.

05:26 24 Q. What is an immediate cause?

05:26 25 A. Immediate cause tends to be the thing -- if you look at

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05:26 1 the structure, we described four critical factors. The
05:26 2 immediate cause is the thing that happened to enable that
05:26 3 factor to come into play.

05:26 4 Q. When you say "the thing," it's the specific event that
05:26 5 precipitated?

05:26 6 A. Yeah, yeah.

05:26 7 Q. That drills down -- no pun intended. But that takes us
05:26 8 all the way down to what somebody may have done to push a wrong
05:26 9 button or pull a wrong lever or be in the wrong place at the
05:27 10 wrong time?

05:27 11 A. Yes. I think that's right.

05:27 12 Q. Now, draw back, if you would, and tell us what *system*
13 *causes* are.

05:27 14 A. System would be just the next level down. So if someone
15 pushed the wrong button, you would be trying to understand why.

05:27 16 Q. That's the next step?

05:27 17 A. That's the next step.

05:27 18 Q. Then you took those, you analyzed those two areas of
19 causation as it applied to this accident and then explained
20 what you found. And based on that analysis, you then give the
21 public recommendations on how we can avoid pushing the wrong
22 button and why we pushed the wrong button in the future?

05:27 23 A. I really gave those to the company, and the company
24 decided to give them to the public.

05:27 25 Q. Right, understood. But as we know now, it's public

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05:27 1 knowledge?

05:27 2 A. Yes, sir.

05:27 3 Q. It seems to me, and correct me if I'm wrong, one of the
05:27 4 goals of this was not both for BP but the industry in general
05:27 5 to try to learn lessons on immediate and system causes so
05:28 6 something like this wouldn't happen again?

05:28 7 A. We were certainly very open in sharing those, and the
05:28 8 company took this work and shared it very openly. So I think
05:28 9 that is fair.

05:28 10 MR. STERBCOW: Let's go to D-2017, TREX-0001.018.

05:28 11 BY MR. STERBCOW:

05:28 12 Q. We are going to get into a lot of this, or this a lot in
05:28 13 the next day, but commonly known as the Swiss cheese model,
05:28 14 correct?

05:28 15 A. Yeah, I think that's the vernacular.

05:28 16 Q. We have had some discussions about this to this point; but
05:28 17 if I understand this diagram correctly, your four critical
05:28 18 factors are up at the top: "Well integrity not established or
05:28 19 failed, hydrocarbons entered the well undetected and well
05:28 20 control loss, hydrocarbons ignited on the *Deepwater Horizon*,
05:28 21 blowout preventer did not seal the well." Correct?

05:28 22 A. Yes, sir.

05:28 23 Q. Then you come down from those and look at eight -- what do
05:28 24 we call these eight slices?

05:28 25 A. We call them key findings.

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05:28 1 Q. Key findings. It looks like you group your key findings
05:29 2 into relationship to critical factors. Fair?

05:29 3 A. Yeah, that's fair.

05:29 4 Q. Say the first two, annular cement, mechanical barriers,
05:29 5 those two relate specifically to the fact that well integrity
05:29 6 was not established or it failed?

05:29 7 A. Yes.

05:29 8 Q. And so on down the line, correct?

05:29 9 A. Yeah, that's right.

05:29 10 MR. STERBCOW: Let's go to the report, TREX-1 at
05:29 11 page 33.

05:29 12 BY MR. STERBCOW:

05:29 13 Q. What we are going to do, Mr. Bly, so you know what I'm
05:29 14 doing, rather than do something that I'm going to get into a
05:29 15 lot of trouble for with the judge, we are not going to read
05:29 16 this report; but we're going to try to highlight your key
05:29 17 findings and significant conclusions that you came to.

05:29 18 A. Okay.

05:29 19 Q. Key Finding 1 on page 33 of the report: "The annulus
05:29 20 cement barrier did not isolate the hydrocarbons. The annulus
05:29 21 cement barrier failed to prevent hydrocarbons from migrating
05:30 22 into the wellbore. The investigation team's analysis
05:30 23 identified a probable technical explanation for the failure.
05:30 24 Interactions between BP and Halliburton and shortcomings in the
05:30 25 planning, design, execution, and confirmation of the cement job

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05:30 1 reduced the prospects for successful cement job."

05:30 2 That is the sum and substance of Key Finding 1,
05:30 3 correct?

05:30 4 A. Yes, sir, that's right.

05:30 5 Q. It appears that you looked at the design and installation
05:30 6 of the production casing annulus cement, correct? That's what
05:30 7 you were doing at this point?

05:30 8 A. That's right.

05:30 9 Q. Would you agree with me that in order to conduct as
05:30 10 thorough an investigation as you could into the design and
05:30 11 installation of the production casing annulus cement, you had
05:30 12 to have some cooperation on some level from Halliburton?

05:30 13 A. Yes, sir, I would agree with that. Yes.

05:30 14 Q. Correct?

05:30 15 Did your findings include looking into the
05:30 16 relationship between BP and Halliburton insofar as what
05:30 17 Halliburton's responsibilities were for the production casing
05:31 18 cement job? Is that something you-all had to figure out?

05:31 19 A. To do this, we really looked at the involvement that
05:31 20 people had so that we could understand how the decision -- to
05:31 21 the extent we could understand, the decision-making
05:31 22 communication and the things that you described. We really
05:31 23 didn't look at it through the lens of responsibility.

05:31 24 Q. Fair enough. But from a fact-gathering --

05:31 25 A. Yes.

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05:31 1 Q. -- standpoint, based on what we have heard and what we are
05:31 2 going to hear in this case and what we all know, it would be
05:31 3 very difficult, if not impossible, for you as BP to learn the
05:31 4 critical facts about the failure of the annular cement without
05:31 5 some cooperation from the company who designed and tested the
05:31 6 annular cement. Is that fair?

05:31 7 A. That is fair.

05:31 8 Q. Seems like common sense?

05:31 9 A. It's common sense.

05:31 10 Q. Were you allowed access to Halliburton personnel to
05:32 11 conduct this investigation?

05:32 12 A. We did get to do some interviews, yes, with Halliburton
05:32 13 personnel.

05:32 14 Q. Do you know how many you were able to do?

05:32 15 A. Sir, I don't recall exactly.

05:32 16 Q. Do you recall any problems with Halliburton in terms of
05:32 17 obtaining information from the company as part of your effort
05:32 18 to analyze the production casing cement?

05:32 19 A. Yes, sir, I do.

05:32 20 MR. STERBCOW: Pull up, if you would -- before we do
05:32 21 that, let me go to D-2024.

05:32 22 BY MR. STERBCOW:

05:32 23 Q. This is a demonstrative or an illustration directly from
05:32 24 your report. Do you recognize that?

05:32 25 A. Yes, I do.

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05:32 1 Q. For orientation purposes, before we get a little deeper
05:32 2 into this, correct me if I'm wrong. On the left we have a
05:32 3 diagram of what is a long tube, and essentially that's the
05:32 4 production casing, right?

05:32 5 A. Yes, that's right.

05:32 6 Q. Okay. And at the top it says: "Fluid locations while
05:32 7 pumping."

05:32 8 Now, that references while the cement job is ongoing.
05:32 9 Is that fair?

05:33 10 A. Yes.

05:33 11 Q. So at the bottom you have SOBMs, which is synthetic
05:33 12 oil-based mud?

05:33 13 A. Correct.

05:33 14 Q. That's followed by a yellow strip called "base oil"?

05:33 15 A. Yes, sir.

05:33 16 Q. That's followed by a light blue called "spacer"?

05:33 17 A. Correct.

05:33 18 Q. If I'm correct -- and if I'm getting beyond what you know,
05:33 19 let me know.

05:33 20 A. I will.

05:33 21 Q. But my understanding is spacer is designed to literally
05:33 22 space or separate two different fluids that shouldn't mix.
05:33 23 Fair enough?

05:33 24 A. I think that's correct, yes.

05:33 25 Q. Behind that is a bottom wiper plug, which we will talk

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05:33 1 about later. Then cap cement, foam cement, tail cement,
05:33 2 correct?

05:33 3 A. Yes, sir.

05:33 4 Q. And behind that is another plug. We'll get into that
05:33 5 later. Then more spacer, then more synthetic oil-based mud,
05:33 6 right?

05:33 7 A. Correct.

05:33 8 Q. Am I correct in concluding, based on your investigation,
05:33 9 that from spacer to spacer, everything in between those two was
05:33 10 designed by Halliburton? Were you able to determine that?

05:34 11 A. We determined that the slurry itself, the material that
05:34 12 those places you're pointing to is made of, was designed by
05:34 13 Halliburton, yes.

05:34 14 Q. Was it tested by Halliburton?

05:34 15 A. Yes, it was.

05:34 16 Q. Now, if you look to the right, "fluid locations after the
05:34 17 job," meaning now the cement job is over, right? We are
05:34 18 finished pumping?

05:34 19 A. Yeah. It's in place, yeah.

05:34 20 Q. Which in this case -- and I don't want to get too far
05:34 21 ahead; but which in this case occurred early, early morning
05:34 22 hours of April 20, correct, when the cement job ended, if you
05:34 23 recall?

05:34 24 A. That's right, I think.

05:34 25 Q. So now we have taken the fluids and shown -- when we

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05:34 1 showed them while pumping, they are actually in the production
05:34 2 casing, in the area we call the *shoe track*, right?

05:34 3 A. Yeah, the shoe track and above --

05:34 4 Q. We'll get to that as well.

05:34 5 Now we have shown it after it has been pumped,
05:34 6 because our base oil has come down and gone around and is now
05:34 7 up above in the annular space?

05:35 8 A. Yes, that's right.

05:35 9 Q. The annular space being the space between the pipe and the
10 earth?

05:35 11 A. Correct.

05:35 12 Q. Then again, just like on the left, the spacer follows it.
13 The cap cement, which is obviously the top level, why it's
14 called *cap*.

05:35 15 A. Yeah.

05:35 16 Q. The foam cement which, correct me if I'm wrong, is the
17 critical cement in terms of zonal isolation, correct? Am I --

05:35 18 A. Getting to the edge. I believe both of those would be
19 important.

05:35 20 Q. All right. But the foam cement is clearly laying
21 across --

05:35 22 A. Correct.

05:35 23 Q. And I didn't make this clear; I should have. The little
24 yellow lines on the side appear to me to be
25 hydrocarbon-producing zones, right, and their pressures?

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05:35 1 A. That's what those indicate, yes.

05:35 2 Q. So the foam cement lays across those zones?

05:35 3 A. Correct.

05:35 4 Q. Then we come back around, and the tail cement is what
05:35 5 stays in the shoe track?

05:35 6 A. Yes, that's right.

05:35 7 Q. Beneath that is some synthetic oil-based mud. Then you go
05:35 8 behind the plugs. You have more spacer, and then you have
05:36 9 synthetic oil-based mud that goes back up, essentially all the
05:36 10 way up to the rig at this point, correct?

05:36 11 A. That would be right, yeah.

05:36 12 Q. When the cement job is over, there's been no displacement.
05:36 13 That SOBMs goes all the way back, right?

05:36 14 A. That's right, yes.

05:36 15 Q. Can you tell me whether or not it's within your knowledge
05:36 16 that the SOBMs is actually what's providing what's called a
05:36 17 *hydrostatic head* to make sure everything stays in place and the
05:36 18 well doesn't flow? Is that fair? Providing the downward
05:36 19 pressure?

05:36 20 A. That's providing downward pressure, that's right.

05:36 21 Q. As an engineer, you're comfortable with that?

05:36 22 A. Yeah.

05:36 23 Q. Fair enough.

05:36 24 MR. STERBCOW: Go to the next slide, 0001.25. That's
05:36 25 D-2024 -- oh, I'm sorry. No, I wanted to go back. We did it

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05:36 1 the right way.

05:36 2 **BY MR. STERBCOW:**

05:36 3 **Q.** Now, this is an individual photograph rather than two
05:36 4 together, but is it my understanding that at the end -- what
05:36 5 you found is that at the end of the cement job, this is what
05:37 6 the fluids in this part of the well were supposed to look like?

05:37 7 **A.** Yes. There's planned cement slurry placement, so I'm sure
05:37 8 you are correct.

05:37 9 **Q.** It comes from the report, so --

05:37 10 **A.** The report. Yeah, that's right.

05:37 11 **Q.** -- I don't want you to think I'm tricking you.

05:37 12 **A.** Yeah, right.

05:37 13 **Q.** But this graphic also has information that the other one
05:37 14 didn't, which is the weights of the various fluid in pounds per
05:37 15 gallon, correct?

05:37 16 **A.** Yes, it does.

05:37 17 **Q.** If you can tell me from an engineering standpoint, why is
05:37 18 it important to know these various weights in pounds per
05:37 19 gallon?

05:37 20 **A.** I believe it's because you need to be aware of the
05:37 21 hydrostatic balance inside the casing and outside the casing,
05:37 22 and you need to know, on the outside, that it's enough to
05:37 23 overcome the pressure of the reservoir. And then this U-tube
05:37 24 effect you described is another thing that you would worry
05:37 25 about here, you'd be concerned with.

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05:37 1 Q. Two things: You don't want hydrocarbons escaping from the
05:37 2 earth into the annulus?

05:38 3 A. Yes, that's right.

05:38 4 Q. But you also don't want any liquids -- what you say,
05:38 5 U-tubing, coming back down the annulus and then back up through
05:38 6 the pipe?

05:38 7 A. Correct. Right.

05:38 8 Q. Two things we have to avoid?

05:38 9 A. Right.

05:38 10 Q. These weights are specifically carefully calculated to
05:38 11 accomplish that, correct?

05:38 12 A. Yes, that's right.

05:38 13 Q. In order for this to work, the weights have to be correct;
05:38 14 and the composition of the fluids -- spacer, cap cement, foam
05:38 15 cement, tail cement, spacer -- have to also be correct?

05:38 16 A. I think that's right.

05:38 17 Q. All right. Now, in order to figure out exactly what you
05:38 18 were dealing with -- you couldn't go down there. No way to do
05:38 19 that, right?

05:38 20 A. That's true, right.

05:38 21 Q. This is gone?

05:38 22 A. Right.

05:38 23 Q. So you have got to have help.

05:38 24 MR. STERBCOW: Let's go to TRES-47541. This is an
05:38 25 e-mail -- can we pull up the -- thank you.

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05:39 1 BY MR. STERBCOW:

05:39 2 Q. Who is James Lucari?

05:39 3 A. Mr. Lucari was one of the -- a legal support member for my
05:39 4 team.

05:39 5 Q. This is an e-mail, Wednesday, June 16. Obviously the
05:39 6 investigation is under way, correct?

05:39 7 A. That's right.

05:39 8 Q. He's e-mailing Kelley Green, who is legal litigation. Do
05:39 9 you know if she's at Halliburton?

05:39 10 A. I don't know that.

05:39 11 Q. Do you know who Mr. Corser is?

05:39 12 A. Yes. Mr. Corser was on the investigation team.

05:39 13 Q. He gets cc'd on an e-mail from BP counsel assisting the
05:39 14 investigation to Ms. Kelley Green, who we will learn in a
05:39 15 second, is in fact counsel at Halliburton?

05:39 16 A. Okay.

05:39 17 Q. Mr. Lucari tells her: "As a follow-up to my request of
05:39 18 June 10 and further to our discussion this morning, I'm writing
05:39 19 to refine and further focus our request for information from
05:39 20 Halliburton relative to the BP incident investigation team's
05:39 21 ongoing investigation of the tragedy *Deepwater Horizon* rig
05:39 22 incident."

05:39 23 This is obviously, at least according to what
05:40 24 Mr. Lucari says, not his first contact, correct?

05:40 25 A. That's right.

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05:40 1 Q. I would assume your investigation team didn't wait until
05:40 2 June 10 to contact Halliburton to see if you could get
05:40 3 information to start figuring out what had happened?

05:40 4 A. That's right.

05:40 5 Q. I would assume you got on that as quickly as you possibly
05:40 6 could?

05:40 7 A. Yeah. Within the first couple of weeks, we would have had
05:40 8 a sense of where we wanted to begin to make information
05:40 9 requests. I don't remember the exact timing.

05:40 10 Q. We are now into the investigation almost two months?

05:40 11 A. Right.

05:40 12 Q. At the bottom, the highlighted portion: "We are still
05:40 13 missing the lab testing report for the final lab tests for the
05:40 14 9 7/8-by-7-inch production casing cement job that was begun on
05:40 15 April 18."

05:40 16 Based on what you know, would the lab testing report
05:40 17 for the final lab tests for the cement slurry that was pumped
05:40 18 into the hole be a critical piece of information for you to
05:40 19 forensically try to figure out what went wrong with the cement?

05:40 20 A. It certainly had the potential to be that, yes.

05:41 21 Q. As of June 16, you didn't have that?

05:41 22 A. It appears not from the letter, no.

05:41 23 Q. Let's go to 47549. Again, we have an e-mail, James Lucari
05:41 24 to Kelley Green at Halliburton, and you got cc'd on this,
05:41 25 Monday, July 26. So now we're another five weeks later and

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05:41 1 three months post-accident?

05:41 2 A. Correct.

05:41 3 Q. Assuming you were well into your investigation, because
05:41 4 your report was published two months later, not even two months
05:41 5 later?

05:41 6 A. Right.

05:41 7 Q. "Kelley, attached is a follow-up letter to BP's letter to
05:41 8 Halliburton dated July 7."

05:41 9 Let's go to the attachment. This is a letter from
05:41 10 Mr. Lucari to Ms. Green -- and by the way, you were cc'd on the
05:41 11 letter. That's why you were cc'd on the e-mail.

05:41 12 If we look at the letter, it says: "I'm writing to
05:42 13 follow up on BP's letter of July 7 demanding immediate
05:42 14 production to BP's *Deepwater Horizon* incident investigation
05:42 15 team of certain laboratory testing results. The letter also
05:42 16 requested access to samples of Halliburton cement products and
05:42 17 additives used in the Macondo well casing string job. As set
05:42 18 forth in our letter, BP is contractually entitled to all
05:42 19 consulting information and lab testing data generated as part
05:42 20 of Halliburton's services in support of the Macondo well
05:42 21 project."

05:42 22 Now, you were cc'd on this letter, correct?

05:42 23 A. Yes, I was.

05:42 24 Q. First question: As the leader of this investigation, do
05:42 25 you know of any reason whatsoever why three months later you

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05:42 1 had still not gotten either laboratory testing that was deemed
05:42 2 critical or, probably even more importantly, samples of the
05:42 3 actual cement that was pumped in the hole?

05:43 4 Is that critical to what you are trying to
05:43 5 accomplish?

05:43 6 A. It was very important, yes.

05:43 7 Q. Would you agree or do you have any reason to disagree with
05:43 8 the unanimous opinions of everyone who has been deposed in this
05:43 9 case, including Halliburton personnel, that the longer you wait
05:43 10 after a cement slurry is mixed and pumped, the harder it
05:43 11 becomes to use that slurry for forensic testing purposes
05:43 12 because it deteriorates?

05:43 13 Do you have any reason to disagree with that?

05:43 14 A. I don't have any reason to disagree with that.

05:43 15 Q. Do you have any reason to disagree with the premise that
05:43 16 you should use the rig blend with the rig water and the rig
05:43 17 additives in the exact way that it was mixed and the exact
05:43 18 concentrations it was mixed if you are trying to do
05:43 19 post-accident forensic testing to figure out whether this
05:43 20 cement slurry would work?

05:43 21 A. That makes sense to me.

05:43 22 Q. Yet we are three months out, and you don't even have
05:43 23 either a lab report on what the final lab test showed or any of
05:43 24 the samples so you could conduct your own independent testing,
05:43 25 correct?

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05:43 1 A. Correct.

05:44 2 Q. If you go down to the start of the next paragraph:

05:44 3 "Halliburton's lack of responsiveness to our repeated requests
05:44 4 for information and access to representative samples of the
05:44 5 Macondo well continues to impede the BP *Deepwater Horizon*
05:44 6 incident investigation team's effort to investigate the causes
05:44 7 of this tragic incident. As such, we renew our demand for
05:44 8 access to cement and additive samples from the same lot/batch
05:44 9 used in the Macondo well so we can conduct independent testing
05:44 10 of the cement program slurry designed by Halliburton."

05:44 11 As you sit here today, almost two years after the --
05:44 12 over two years after the investigation, are you aware of BP
05:44 13 ever having received any representative samples of the slurry
05:44 14 pumped at Macondo?

05:44 15 A. Not to my awareness, no.

05:44 16 Q. Has anybody ever brought to your attention or given you a
05:44 17 report that showed post-accident testing of the lot and batch
05:45 18 slurry with the rig water of the stuff that was pumped in the
05:45 19 hole?

05:45 20 A. No, sir.

05:45 21 Q. As the lead investigator for BP responsible for
05:45 22 publication of this report, if those tests had occurred, would
05:45 23 you think it incumbent upon whoever did that testing to either
05:45 24 let your investigation team or you know if the point of this is
05:45 25 to learn lessons to make sure we don't do this again?

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05:45 1 A. Yeah. I think people should share information that can
05:45 2 help learn about accidents, yes.

05:45 3 Q. Has anybody ever told you that while Halliburton didn't
05:45 4 give you the samples you wanted and you the information you
05:45 5 wanted, they conducted their own internal post-accident
05:45 6 testing?

05:45 7 A. I'm not aware of that.

05:45 8 Q. You're not aware of that?

05:45 9 A. No, sir.

05:45 10 Q. You're not aware of the fact they conducted multiple
05:45 11 post-accident tests and didn't report the results. Nobody has
05:46 12 ever told you that?

05:46 13 A. Not that I recall, no.

05:46 14 Q. Now, given these limitations and the lack of cooperation,
05:46 15 I assume your team did the best you could to piece the cement
05:46 16 saga together, correct?

05:46 17 A. Yeah, we did.

05:46 18 Q. If we go to D-2029, TREX-1.030, this comes from your
05:46 19 report. It's Table 2.

05:46 20 A. Okay.

05:46 21 Q. You were at least able to discern from the information you
05:46 22 had that the cement used basically had two components. It was
05:46 23 a base cement slurry that is, quote, nonfoamed, that has a
05:46 24 density of 16.74 pounds per gallon, and then a nitrified foam
05:46 25 cement slurry on average of 14.5 pounds per gallon, correct?

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05:46 1 A. Right.

05:46 2 Q. Given that it was a foamed cement job, that's what you
05:46 3 would expect, right, a lighter nitrified foam cement with a
05:46 4 base cement slurry?

05:46 5 A. Yes, I think that's right.

05:47 6 Q. Was the base cement slurry, in whatever composition it
05:47 7 took, designed by Halliburton?

05:47 8 A. Yes, it was.

05:47 9 Q. Was the nitrified foam cement slurry, whatever composition
05:47 10 it took, designed by Halliburton?

05:47 11 A. That's my understanding, yes.

05:47 12 Q. Was the nitrified foam cement slurry and the base cement
05:47 13 slurry, were they both tested by Halliburton?

05:47 14 A. Yes, sir.

05:47 15 Q. Again, you never were able to put your hands, or your
05:47 16 investigation team, was never able to put their hands on either
05:47 17 of these slurries to do your own independent testing?

05:47 18 A. Correct.

05:47 19 Q. You were able to come to some conclusions, though,
05:47 20 correct?

05:47 21 A. Yes, we did.

05:47 22 Q. You did the best you could under the circumstances?

05:47 23 A. Yeah.

05:47 24 MR. STERBCOW: If we'd go to TREN-1, page 35. If we
05:47 25 pull out the conclusions.

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05:47 1 BY MR. STERBCOW:

05:48 2 Q. BP actually did go out and hire an independent lab,
05:48 3 CSI Technologies, correct?

05:48 4 A. That's right.

05:48 5 Q. You did whatever representative lab testing you could do,
05:48 6 given the limitations we just described?

05:48 7 A. Tried to make the best match of the slurry possible and
05:48 8 then do the testing on that.

05:48 9 Q. You concluded, based on that, that the nitrified foam
05:48 10 cement slurry probably would have experienced nitrogen
05:48 11 breakout, nitrogen migration, and incorrect cement density,
05:48 12 which would explain the failure to achieve zonal isolation of
05:48 13 hydrocarbons. Nitrogen breakout and migration would have also
05:48 14 contaminated the shoe cement and may have caused the shoe track
05:48 15 cement barrier to fail.

05:48 16 It sounds like, in layman's terms, the conclusion --
05:48 17 the overarching conclusion you made, number one, was that the
05:48 18 slurry was bad.

05:48 19 A. It appears that -- I don't know how to judge *bad*. It
05:48 20 looks like it didn't work.

05:48 21 Q. It didn't work. Okay. And when it --

05:49 22 MR. GODWIN: I object to this. The witness is just
05:49 23 guessing with these answers. He has already previously
05:49 24 testified in deposition he has no knowledge about cementing.
05:49 25 He is just going along with Mr. Sterbcow to whatever -- to say,

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05:49 1 Well, it looks bad. I guess it didn't work.

05:49 2 THE COURT: I think he's reporting on his
05:49 3 investigation and -- which is in evidence as to what the whole
05:49 4 team discovered or didn't discover. So I will overrule the
05:49 5 objection.

05:49 6 MR. GODWIN: May I take him on voir dire briefly on
05:49 7 this subject, Judge, with regard --

05:49 8 THE COURT: Not right now. You can take him on
05:49 9 cross-examination.

05:49 10 MR. GODWIN: Thank you, Your Honor.

05:49 11 THE COURT: Okay.

05:49 12 BY MR. STERBCOW:

05:49 13 Q. Now, you mentioned contamination of the shoe cement. Is
05:49 14 that a conclusion -- obviously, it's a conclusion that your
05:49 15 team came to as well?

05:49 16 A. We said it would have -- it may have done that. If you
05:49 17 look further in the conclusions, we said we weren't exactly
05:49 18 sure what the mechanism was.

05:49 19 Q. What the mechanism was. You couldn't get to that point in
05:49 20 your analysis?

05:49 21 A. Right.

05:50 22 Q. Would it have been helpful to you to get to a
05:50 23 conclusion -- or a more definitive conclusion on breakout,
05:50 24 contamination, and the other things we've talked about if you
05:50 25 had had the opportunity to test the actual cement pumped in the

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05:50 1 Macondo well?

05:50 2 A. It potentially would, yes.

05:50 3 Q. You also looked at the placement of the cement and
05:50 4 determined: "Although the decision not to use 21 centralizers
05:50 5 increased the possibility of channeling above the main
05:50 6 hydrocarbon zone" -- do you know what *channeling* is?

05:50 7 A. I learned through the investigation, yes.

05:50 8 Q. We had some testimony about it earlier. Is channeling
05:50 9 basically where you have points in the cement where things can
05:50 10 channel whatever it might be, hydrocarbons --

05:50 11 A. Instead of a nice smooth top to the cement, you get
05:50 12 channels that go up the back of the casing.

05:50 13 Q. It allows breach of the barrier, if you will?

05:50 14 A. It could do that, yes.

05:50 15 Q. "The decision likely did not contribute to the cement's
05:51 16 failure to isolate the main hydrocarbon zones or the failure of
05:51 17 the shoe track cement."

05:51 18 So you specifically looked at whether or not the
05:51 19 decision not to use centralizers -- which is a BP decision,
05:51 20 correct?

05:51 21 A. Yes, it was.

05:51 22 Q. You are not disputing that?

05:51 23 A. No, I'm not.

05:51 24 Q. In terms of number of centralizers, placement of
05:51 25 centralizers, etc., that's all a BP decision, correct?

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05:51 1 A. Yes, that's right.

05:51 2 Q. Do you know enough now, having done the investigation, to
05:51 3 know that the final decision on number and placement of
05:51 4 centralizers in this case rested with the well team leader,
05:51 5 Mr. Guide?

05:51 6 A. I believe that's correct, yes.

05:51 7 Q. Your conclusion or your team's conclusion as published was
05:51 8 that while there were issues about the number of the
05:51 9 centralizers, because of what you were able to learn, that
05:51 10 didn't contribute to the failure of the cement to achieve zonal
05:51 11 isolation, correct?

05:51 12 A. We said it wasn't causal because we concluded the path of
05:52 13 the hydrocarbons went a different way. They went through the
05:52 14 centralized part of the hole.

05:52 15 Q. And actually, it's funny you said that.

05:52 16 MR. STERBCOW: Let's pull up D-2022, TREX-1.023.

05:52 17 BY MR. STERBCOW:

05:52 18 Q. Again, an illustration from your report, correct?

05:52 19 A. That's right.

05:52 20 Q. Does this show us the potential path for the hydrocarbons
05:52 21 to have flowed in the Macondo well when well control was lost?

05:52 22 A. This was really indicating our view of the potential for
05:52 23 it to first get into the casing, so yes.

05:52 24 Q. The inset that you have -- again, back to what we talked
05:52 25 about -- shows the bottom part of -- it actually goes a little

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05:52 1 higher on this. But it shows us the production casing, the
05:52 2 shoe track, shows us the hydrocarbon-bearing zones, and it
05:52 3 shows the -- I assume the gray is the cement as it was placed,
05:53 4 correct, the inset part on the right?

05:53 5 **MR. GODWIN:** Objection, Your Honor, calls for
05:53 6 speculation. Mr. Sterbcow said himself that he assumes this
05:53 7 and he assumes that.

05:53 8 **THE COURT:** I think he is asking if the witness
05:53 9 knows. If the witness doesn't know, he can say that.

05:53 10 I'll overrule the objection.

05:53 11 **THE WITNESS:** Could you ask the question again,
05:53 12 please?

05:53 13 **BY MR. STERBCOW:**

05:53 14 **Q.** You tell me what the inset on the right shows.

05:53 15 **A.** The inset on the right is just showing the way the casing
05:53 16 string sits across the zones there. And it's got the gray that
05:53 17 indicates cement. I don't know if it's perfectly accurate to
05:53 18 scale, but that's a cartoon of it.

05:53 19 **Q.** But on the left you have red arrows in your illustration
05:53 20 that appear to show what your team concluded was the -- were
05:53 21 the two possible paths of hydrocarbon flow once well control
05:53 22 was lost, correct?

05:53 23 **A.** If I can -- I would say this was really at the stage when
05:53 24 we were trying to understand how hydrocarbons got into the
05:53 25 wellbore. So this was a long time before well control was

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05:54 1 lost. This was just trying to understand, having moved from
05:54 2 within these permeable yellow zones, how did they get in. And
05:54 3 we were looking at three different possible scenarios. That
05:54 4 was what our investigation looked at.

05:54 5 Q. What were those three?

05:54 6 A. The first was through the shoe track, this one that's
05:54 7 indicated as flow up casing here, the one on the left.

05:54 8 The second possibility was to go through some kind of
05:54 9 a breach in the casing itself.

05:54 10 The third possibility was to go through a seal
05:54 11 assembly that sits at the top of this casing as it's hung into
05:54 12 the well.

05:54 13 Q. Did your team investigate to the best of its ability all
05:54 14 three of those possible flow paths?

05:54 15 A. Yes, sir. We looked at all three of those.

05:54 16 Q. Given the mechanical realities of this system, other than
05:54 17 those three, are there any other possibilities out there?

05:54 18 A. Those were the three that we could see.

05:54 19 Q. It has to be one of these three?

05:54 20 A. That was our belief, yes.

05:55 21 Q. You looked at all three of them carefully?

05:55 22 A. We did.

05:55 23 Q. What did you conclude?

05:55 24 A. We concluded it came -- the flow came up through the shoe
05:55 25 track through the casing.

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05:55 1 Q. And what did you do, if you can recall, to determine that,
05:55 2 in terms of forensic investigation?

05:55 3 A. So this was something the team spent considerable effort
05:55 4 on to try to understand. It had multiple parts, but it -- the
05:55 5 big ones that I remember were considerable fluid modeling,
05:55 6 which was to understand -- we had pressure data on the surface,
05:55 7 and you can use fluid flow modeling in the well to try to match
05:55 8 that pressure data. You know, you will get a different
05:55 9 pressure data on the surface, depending on which way the oil
05:55 10 came up the well, or the hydrocarbons came up the well. That
05:55 11 was a big piece of it.

05:55 12 There were some things that we learned during the
05:55 13 response, or the kill efforts, where we got more pressure
05:55 14 information from the well we got to see.

05:55 15 And then a compelling piece of information came at
05:56 16 the end -- it was actually after the report came out, when this
05:56 17 seal assembly at the top became available to see, and you could
05:56 18 see there was no -- had been no flow by that.

05:56 19 Q. Okay. That's an important point. That is actually a
05:56 20 piece of equipment, the casing hanger seal assembly, that was
05:56 21 recovered?

05:56 22 A. Yes, it was.

05:56 23 Q. So it was available for forensic examination?

05:56 24 A. Yeah. You could see it.

05:56 25 Q. Correct me if I'm wrong. But your investigation

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05:56 1 concluded, based on examination, that there was no damage to
05:56 2 the casing hanger seal assembly, certainly not the type of
05:56 3 damage you would expect to see from an encounter with gas at
05:56 4 this high temperature and this high pressure?

05:56 5 A. Yes is the answer. To be perfectly accurate, I think our
05:56 6 report was completed before that seal assembly was actually
05:56 7 seen. So we had a strong view, you know, underpinned by all
05:56 8 these other things that was confirming the information to us
05:56 9 post-report.

05:56 10 Q. Have you seen the photographs or any documents talking
05:56 11 about the condition of the casing hanger seal assembly?

05:57 12 A. I remember seeing a photograph, yeah.

05:57 13 Q. Do you have any reason to disagree with me that if the
05:57 14 evidence is going to show that the casing hanger seal assembly
05:57 15 was nearly pristine, that that clearly indicates that it could
05:57 16 not have been exposed to the high pressure/high temperature
05:57 17 hydrocarbon?

05:57 18 A. That's definitely my understanding.

05:57 19 Q. The modeling that you did was based on real data that you
05:57 20 could recover, correct?

05:57 21 A. Yes. This was electronic pressure information that was
05:57 22 available from off the rig, yes.

05:57 23 Q. This is not speculation; this is hard data that you had?

05:57 24 A. Correct.

05:57 25 Q. It discounted flow up the annulus through the casing as

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05:57 1 well?

05:57 2 A. Yeah. There was additional -- yes, it did. And we had --
05:57 3 I forgot to mention we also evaluated that casing string
05:57 4 itself, and looked at all the running information -- casing
05:57 5 running data, etc., and that was part of our conclusion as
05:57 6 well. We couldn't see a potential for a breach there.

05:57 7 Q. So the final conclusion of the team, and as you have just
05:57 8 stated, is this flow came right up the casing?

05:58 9 A. That was our conclusion, yes.

05:58 10 Q. Would that then indicate to you that, in fact, it left the
05:58 11 hydrocarbon-bearing zones, had to travel down to what's called
05:58 12 the reamer shoe, and then back up through the casing to
05:58 13 eventually reach the mud line BOP riser, etc., as your red line
05:58 14 shows?

05:58 15 A. That's what we believe, yes.

05:58 16 Q. As you sit here today, you know of no information that
05:58 17 would call that conclusion into question?

05:58 18 A. Not at all.

05:58 19 MR. STERBCOW: Let's go to page 36 of TRES-1.

05:58 20 BY MR. STERBCOW:

05:58 21 Q. You also came to a second, but very related conclusion,
05:58 22 and this one pertains to a BP procedure, correct?

05:58 23 A. Yes.

05:58 24 Q. You talk about "Evaluating lift pressure and lost returns
05:58 25 and say it "did not constitute a proven cement evaluation

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05:59 1 technique, per Section 5 of ETP GP 10-60."

05:59 2 Now, lift pressure and lost returns, as we have sort
05:59 3 of heard to this point and will hear a lot about as we go, was
05:59 4 the method that was used to determine whether or not the cement
05:59 5 job went well, fair?

05:59 6 A. Yes, that's right.

05:59 7 Q. Lift pressure, do you know what we are referring to?

05:59 8 A. I understand that to be the pressure between the fluid
05:59 9 inside the pipe and the fluid outside the pipe as it turns the
05:59 10 corner. So if it's heavier on the outside, you will have
05:59 11 pressure inside.

05:59 12 Q. But the pressure readings were such that it appeared that
05:59 13 the pressure was -- showed that the cement, as pumped, flowed
05:59 14 down through the shoe track, through the reamer, back up the
05:59 15 annulus, as you would have hoped and expected?

05:59 16 A. Yes. That was what the team that pumped it on -- you
05:59 17 know, on the rig team felt good about the job, yes.

05:59 18 Q. The absence of lost returns simply means that you were
06:00 19 getting enough fluid back to the rig where you weren't losing
06:00 20 spacer, cap cement, foam cement, or any other of the fluids
06:00 21 into the formation, correct?

06:00 22 A. That's right.

06:00 23 Q. All right. You conclude that these two things were not
06:00 24 sufficient -- these two pieces of data were not sufficient to
06:00 25 constitute a proven cement evaluation technique per BP's own

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06:00 1 policy?

06:00 2 A. That was the conclusion of my team, right.

06:00 3 Q. So at the end of the day, by not conducting a formal risk
06:00 4 assessment of the annulus cement per ETP recommendations, it's
06:00 5 the view of the investigation team that the Macondo well team
06:00 6 did not fully conform to the intent of this engineering
06:00 7 technical practice, correct?

06:00 8 A. That was what my team concluded.

06:00 9 Q. Simply translated, they didn't do the proper risk
06:00 10 assessment to determine whether or not the cement job really
06:00 11 went as planned?

06:00 12 A. The cement placement, and -- you said the proper risk
06:00 13 assessment. We said they didn't do a formal enough -- and I
06:01 14 won't mince words. I think that's fair.

06:01 15 Q. And then finally, your overarching conclusion for the
06:01 16 cement, the annular cement, based on everything we've talked
06:01 17 about, is that improved engineering rigor -- that would be a BP
06:01 18 function?

06:01 19 A. We sort of broke this into two, and we made some comments
06:01 20 about our views of Halliburton, and our second comments were
06:01 21 about views of BP.

06:01 22 Q. So you're talking about engineering rigor in terms of
06:01 23 cement design engineering?

06:01 24 A. Design of the slurry.

06:01 25 Q. ". . . cement testing and communication of risk by

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06:01 1 Halliburton could have identified the low probability of the
06:01 2 cement to achieve zonal isolation."

06:01 3 Translated, it sounds like to me if Halliburton had
06:01 4 done -- in your mind, in your investigating team's mind -- had
06:01 5 done a better job in designing, testing, and communicating
06:01 6 risks with their cement slurry design to you, you could have
06:02 7 identified what you concluded was a low probability of the
06:02 8 cement achieving its goal?

06:02 9 A. It had the chance of doing that, right.

06:02 10 Q. It's something that could have been discussed, identified,
06:02 11 and dealt with before the cement was ever put in the hole?

06:02 12 A. I think that's right, yeah.

06:02 13 Q. Improved technical assurance, risk management, and
06:02 14 management of change -- which, by the way, correct me if I'm
06:02 15 wrong. But management of change is critical in the
06:02 16 identification and management of risk in a particular
06:02 17 operation, correct?

06:02 18 A. It can be, that's right.

06:02 19 Q. If an operation is planned to go a certain way and then
06:02 20 for whatever reason it's decided that it needs to change, the
06:02 21 change can create new risks that didn't exist before?

06:02 22 A. It can in certain instances, that's right.

06:02 23 Q. The management of change analysis is designed exactly to
06:02 24 deal with that?

06:02 25 A. Philosophically, that's exactly what it's for, yeah.

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06:02 1 Q. If we change our mind and because we changed our mind
06:03 2 we've created a risk we didn't face before, we need to deal
06:03 3 with it now?

06:03 4 A. Yes.

06:03 5 Q. "Improved technical assurance, risk management and
06:03 6 management of change by BP well team could have raised
06:03 7 awareness of the challenges of achieving zonal isolation and
06:03 8 led to additional mitigation steps."

06:03 9 So we have a -- it's a two-prong issue with the
06:03 10 cement, correct? Essentially, it's bad design and testing by
06:03 11 Halliburton and it's a failure to appropriately manage risk on
06:03 12 BP's part that you-all felt combined to cause the annular
06:03 13 cement failure?

06:03 14 MR. GODWIN: Objection, Your Honor. This -- while it
06:03 15 would appear --

06:03 16 THE COURT: Overruled.

06:03 17 MR. GODWIN: May I state my --

06:03 18 THE COURT: Overruled.

06:03 19 MR. GODWIN: It would appear --

06:03 20 THE COURT: Overruled.

06:03 21 MR. GODWIN: Thank you, Your Honor.

06:03 22 MR. STERBCOW: Judge, I'm done with this. Is this a
06:03 23 good place to stop?

06:03 24 THE COURT: I don't know if the witness answered the
06:03 25 last question.

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06:03 1 MR. STERBCOW: Oh. All right.

06:03 2 THE COURT: I didn't hear an answer.

06:03 3 THE WITNESS: I didn't answer the question.

06:03 4 THE COURT: I don't know if you completed your
06:03 5 question.

06:03 6 MR. STERBCOW: I did.

06:03 7 THE COURT: Okay.

06:04 8 THE WITNESS: I'm sorry. Could we do it again?

06:04 9 THE COURT: Do you want to restate it?

06:04 10 MR. STERBCOW: I should.

06:04 11 THE COURT: And then we will recess. This will be
06:04 12 the last question, and then we will recess for the day.

06:04 13 **BY MR. STERBCOW:**

06:04 14 **Q.** Simply put, what you concluded about the annular cement is
06:04 15 that a combination of the failure of Halliburton to
06:04 16 appropriately design from an engineering standpoint the cement,
06:04 17 test the cement, and alert BP of risks that may be associated
06:04 18 with their cement, correct, combined with the BP personnel's
06:04 19 involved failure to appropriately manage risk and conduct a
06:04 20 management of change analysis so that you could deal with new
06:04 21 risks that were introduced, those things combined to cause the
06:04 22 annular cement failure?

06:04 23 **A.** I think we concluded --

06:04 24 MR. GODWIN: Objection, Your Honor.

06:04 25 THE COURT: It's the same question. I overruled your

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06:04 1 objection, Mr. Godwin.

06:04 2 MR. GODWIN: He restated, Your Honor. I lodged my
06:04 3 objection.

06:04 4 THE COURT: That's fine. Okay. Thank you.

06:04 5 BY MR. STERBCOW:

06:04 6 Q. Go ahead.

06:04 7 A. We concluded that those two things together, the two
06:04 8 companies working together, the weaknesses that we identified,
06:05 9 may have made a difference. We didn't just say they would
06:05 10 have. We just said those may have contributed.

06:05 11 Q. The best you could do with the data you had?

06:05 12 A. Yes, sir.

06:05 13 THE COURT: We will resume at 8:00 a.m. in the
06:05 14 morning.

06:05 15 Before everyone leaves, let's check the
06:05 16 witnesses for tomorrow. I'm not sure how much longer Mr. Bly
06:05 17 will take; but after Mr. Bly, we are going to have who?

06:05 18 MR. ROY: We're going to have Andrew Hurst.

06:05 19 THE COURT: Andrew Hurst. He's an expert, correct?

06:05 20 MR. ROY: And then Randy Ezell, if we run out of
06:05 21 time.

06:05 22 THE COURT: Randy Ezell. Okay. Good.

06:05 23 Everyone have a good evening.

06:05 24 THE DEPUTY CLERK: All rise.

06:05 25 (Proceedings adjourned.)

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CERTIFICATE

I, Toni Doyle Tusa, CCR, FCRR, 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 matter.

s/ Toni Doyle Tusa
Toni Doyle Tusa, CCR, FCRR
Official Court Reporter

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847/21 858/12 870/23 870/25 871/3 873/21 873/21 873/22 873/25 873/25 874/6 874/7 874/8 884/5 884/6 884/8 884/9 884/10 895/24 897/21 903/10 903/11 903/12 903/12 903/13 905/2 905/4 905/5 905/6 905/23 906/20 906/21 907/4 907/10 910/16 910/19 924/13 931/23 931/24 931/25 935/6 935/7 935/8 935/9 945/2 he's [6] 750/7 778/11 778/12 924/8 932/2 945/19 head [16] 787/13 821/13 828/23 852/10
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[12] 875/17 878/20 879/19 879/19 879/25 882/5 882/23 887/18 896/5 897/4 902/22 921/17</p> <p>header [1] 853/15</p> <p>headquarters [2] 870/4 873/7</p> <p>heads [1] 885/22</p> <p>health [1] 880/2</p> <p>hear [4] 765/15 917/2 940/3 944/2</p> <p>heard [8] 737/14 813/22 846/6 846/7 857/18 879/12 917/1 940/3</p> <p>hearing [2] 846/9 862/8</p> <p>heavier [2] 823/12 940/10</p> <p>heavily [2] 772/17 837/9</p> <p>held [6] 736/20 737/1 781/1 865/4 866/7 902/21</p> <p>help [7] 798/5 849/1 849/4 898/25 910/20 923/23 929/2</p> <p>helped [1] 906/19</p> <p>helpful [3] 780/7 785/23 932/22</p> <p>helping [2] 794/3 908/1</p> <p>her [1] 924/17</p> <p>here [73] 738/1 738/11 739/20 739/25 739/25 740/1 740/5 740/7 740/9 740/13 740/15 740/20 741/9 741/24 742/25 743/6 743/8 750/5 751/2 752/20 752/21 758/13 758/19 759/13 760/9 760/20 761/2 761/4 761/16 762/15 762/16 765/18 765/24 766/18 767/7 769/25 770/1 770/3 773/4 776/20 778/1 778/9 779/20 780/19 792/16 793/2 794/19 802/14 803/2 808/5 808/11 814/17 816/14 831/25 836/20 839/24 840/8 842/2 842/4 852/24 853/10 853/25 854/3 854/13 854/18 856/13 862/3 897/6 907/21 922/25 928/11 936/7 939/16</p> <p>hereby [1] 946/4</p> <p>Herman [3] 725/22 725/22 725/23</p> <p>high [20] 747/19 758/24 765/2 765/5 803/23 842/24 843/9 844/7 886/20 886/20 886/21 890/7 899/12 899/22 900/3 900/22 938/4 938/4 938/16 938/16</p> <p>high-level [3] 890/7 899/12 900/3</p> <p>higher [10] 747/18 748/12 748/24 759/20 759/20 760/5 872/10 892/15 900/2 935/1</p> <p>highest [2] 816/11 892/18</p> <p>highlight [1] 915/16</p> <p>highlighted [1] 925/12</p> <p>HILL [1] 730/9</p> <p>him [22] 737/3 758/14 760/13 762/14 780/4 783/16 784/3 812/19 831/19 834/15 846/6 846/7 864/5 864/6 904/25 905/13 905/24 908/25 910/20 910/20 932/6 932/8</p> <p>himself [2] 892/16 935/6</p> <p>hire [1] 931/2</p> <p>hired [1] 759/16</p> <p>hiring [1] 793/20</p> <p>his [43] 737/4 748/3 760/8 765/17 776/3 776/5 778/16 778/23 779/13 780/20 780/23 780/23 780/24 783/17 783/17 783/23 783/24 805/6 808/15 825/12 831/22 834/24 835/19 835/25 836/3 837/2 844/6 844/23 844/24 847/16 847/17 847/19 849/19 849/22 858/16 896/17 897/10 906/1 906/3 906/15 910/20 924/24 932/2</p> <p>histories [1] 826/9</p> <p>hit [1] 741/13</p> <p>hold [10] 738/10 761/18 761/19 803/20 865/3 866/1 870/6 873/3 879/7 883/16</p> <p>Holdings [5] 729/5 729/8 729/12 729/16</p>	<p>729/19</p> <p>hole [38] 740/17 743/3 747/17 748/23 755/16 806/15 806/15 806/19 807/3 807/8 813/6 815/1 815/11 816/11 817/5 817/17 817/19 818/1 819/14 820/7 823/5 823/8 823/10 827/13 828/19 833/8 834/9 846/21 846/23 847/5 853/15 854/22 855/22 925/18 927/3 928/19 934/14 942/11</p> <p>Holthaus [1] 727/2</p> <p>home [1] 836/18</p> <p>honestly [1] 797/12</p> <p>honor [56] 735/19 737/7 749/16 750/7 756/23 756/23 758/11 758/21 759/12 760/22 761/5 761/7 761/17 762/7 762/10 762/15 762/20 762/23 762/24 763/2 764/4 764/10 765/11 765/19 766/11 766/16 766/22 766/24 773/9 779/20 780/3 800/14 805/6 824/8 824/12 831/20 832/6 832/13 839/20 846/4 846/8 849/22 852/15 856/4 856/7 856/9 856/14 857/5 862/21 863/4 932/10 935/5 943/14 943/21 944/24 945/2</p> <p>HONORABLE [1] 725/15</p> <p>honors [1] 790/13</p> <p>hope [1] 770/5</p> <p>hoped [2] 912/6 940/15</p> <p>hopwood [1] 870/14</p> <p>HORIZON [8] 725/4 807/20 807/22 903/15 914/20 924/21 926/14 928/5</p> <p>horizontal [1] 802/15</p> <p>horse [1] 824/19</p> <p>Houma [1] 726/20</p> <p>hour [4] 763/17 778/25 781/13 781/14</p> <p>hourly [1] 768/8</p> <p>hours [6] 778/19 779/2 779/7 903/6 905/1 919/22</p> <p>hours' [1] 909/25</p> <p>Houston [13] 727/7 729/10 729/21 730/5 730/13 730/17 868/3 868/5 874/21 874/23 874/24 875/1 909/22</p> <p>how [72] 741/15 749/22 751/3 753/1 753/5 755/11 757/4 757/5 761/12 765/12 769/18 769/23 770/12 770/13 770/15 771/13 776/9 784/4 789/25 795/6 795/23 798/9 798/17 808/18 809/7 811/2 813/23 821/10 821/18 832/24 852/7 857/18 859/12 861/7 864/21 867/24 868/16 869/14 869/16 871/14 872/4 873/3 874/9 875/4 876/22 876/22 877/7 878/2 879/7 880/13 881/12 884/16 885/15 889/9 889/14 890/21 891/25 899/6 906/9 906/14 907/2 907/8 907/16 911/20 911/23 913/21 916/20 917/14 931/19 935/24 936/2 945/16</p> <p>However [3] 769/3 812/4 837/11</p> <p>HUFFMAN [79] 732/5 732/11 732/22 733/7 734/5 734/8 735/4 735/18 735/23 736/8 736/19 737/18 737/24 739/5 739/22 740/23 741/4 741/18 743/12 744/4 746/24 748/18 749/2 750/6 750/11 750/15 750/25 751/21 752/2 753/17 753/21 754/1 754/5 755/25 756/3 756/5 756/19 757/13 758/12 758/15 761/20 761/22 763/4 765/13 765/17 767/1 767/6 767/8 771/21 776/21 778/6 781/19 783/18 786/9 786/11 788/22 788/24 790/18 799/15 800/19 802/14 818/3 818/24 819/12 820/20 823/14 824/17 826/6 834/10 835/14 836/24 840/3 844/11 846/12 848/9 856/3 857/7 857/18 858/1</p> <p>Huffman's [6] 735/1 747/9 747/10 760/7</p>	<p>762/1 762/2</p> <p>HUGH [1] 730/15</p> <p>Hughes [1] 729/19</p> <p>hundredth [3] 812/7 812/7 833/1</p> <p>hundredths [3] 811/22 812/19 829/20</p> <p>hung [1] 936/11</p> <p>Hurst [2] 945/18 945/19</p> <p>hydrocarbon [23] 747/20 748/25 758/17 758/25 759/11 759/20 760/11 760/15 762/12 764/6 764/7 765/14 815/5 815/17 815/19 859/20 920/25 933/6 933/16 935/2 935/21 938/17 939/11</p> <p>hydrocarbon-bearing [14] 747/20 748/25 758/25 759/11 760/11 762/12 764/6 764/7 815/5 815/17 815/19 859/20 935/2 939/11</p> <p>hydrocarbon-producing [1] 920/25</p> <p>hydrocarbons [16] 761/23 762/4 765/23 815/20 859/18 914/19 914/20 915/20 915/21 923/1 931/13 933/10 934/13 934/20 935/24 937/10</p> <p>hydrostatic [2] 921/17 922/21</p> <p>HYMEL [1] 729/16</p> <p>I</p> <p>I'd [2] 762/7 852/12</p> <p>I'll [10] 751/8 760/7 780/4 837/3 844/13 846/4 883/3 883/11 898/12 935/10</p> <p>I'm [84] 738/11 739/10 740/24 742/17 743/8 743/24 747/13 750/4 752/2 752/25 753/22 757/19 757/23 758/9 758/20 761/15 762/13 762/21 765/18 765/23 766/17 767/7 773/5 777/12 781/20 786/21 787/2 789/11 790/11 793/1 793/1 794/9 794/17 794/23 794/23 800/2 803/1 803/9 804/7 804/20 821/20 827/18 828/18 836/20 839/18 840/1 840/6 842/13 844/13 853/25 856/17 859/5 869/20 869/21 879/11 886/2 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797/9 799/19 799/23 802/12 802/14 803/20 809/23 810/18 812/17 812/21 817/7 817/11 818/20 819/10 819/13 821/1 821/7 824/4</p>
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