

# Deposition Testimony of:

## **David Rainey**

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Page 11:13 to 11:15

00011:13 DAVID RAINEY,  
14 having been first duly sworn, testified as  
15 follows:

Page 16:09 to 16:10

00016:09 EXAMINATION  
10 BY MR. WILLIAMS:

Page 17:10 to 18:09

00017:10 Could you tell me what your job  
11 was on April 20th, 2010?  
12 A. I was vice president of  
13 exploration for the Gulf of Mexico.  
14 Q. Okay. And as vice president of  
15 exploration for the Gulf of Mexico, what were  
16 your specific job responsibilities?  
17 A. The scope of the job extended  
18 from describing leads and prospects before  
19 access. In other words, before we acquired  
20 the leases through after acquiring the  
21 leases, my teams would mature the prospects,  
22 describe the prospects. Then once the  
23 prospect was mature, as much work as could be  
24 done had been done, we would make the  
25 recommendation whether or not to drill the  
00018:01 prospect. That recommendation would be taken  
02 to our global exploration forum; and if the  
03 exploration forum approved the well, then we  
04 would move forward to drill the well, but my  
05 teams had no accountability for the actual  
06 operations of the well. I had teams who  
07 reported to me who supported operations, but  
08 the operations were carried out under the  
09 drilling and completions function.

Page 19:17 to 22:16

00019:17 Q. Okay. Okay. Fair enough. Now,  
18 you said you did have some operations people  
19 reporting to you. I'm paraphrasing. It's  
20 not exactly what you said, but could you  
21 explain that relationship in detail for us,  
22 please?  
23 A. So those are geoscientists, what  
24 we call the TIGER team. They are  
25 geoscientists have -- that have a particular  
00020:01 interest in operations. They speak the  
02 language of the drilling engineers, where  
03 most of the explorers don't, and they don't

04 have much interaction with the drilling  
05 engineers. So we have a team called the  
06 TIGER team that specializes in pore pressure  
07 prediction, fracture gradient prediction,  
08 operations geology, and they tend to stay in  
09 those roles because they have an interest in  
10 those roles. And they're -- a part of the  
11 role of the TIGER team is to support the  
12 drilling function and the operations.

13 Q. Okay. So they assist you and  
14 your people in determining whether or not  
15 it's a prospect worth drilling, at least from  
16 a geoscientist standpoint, correct?

17 A. That's correct.

18 Q. And then if the approval is  
19 granted and you go ahead to -- and you go  
20 ahead and drill a well, the TIGER team and  
21 the geoscientists stay involved in support of  
22 the D&C operation as well, correct?

23 A. That's correct.

24 Q. Okay. Now, you mentioned global  
25 exploration, that once you gather the data  
00021:01 and make a recommendation, it goes to global  
02 exploration for consideration and approval,  
03 correct?

04 A. Right. That's correct.

05 Q. Where is global exploration  
06 physically located?

07 A. Well, the global exploration  
08 forum is -- it's a -- essentially a committee  
09 chaired by Mike Daly, who is the global head  
10 of exploration. I was the deputy chair of  
11 the exploration forum. And then exploration  
12 managers from around the world made up the  
13 rest of the exploration forum. So  
14 essentially a body that the exploration  
15 managers would bring their recommended  
16 prospects to and get challenged by the other  
17 exploration VPs.

18 Q. So it's kind of a peer --

19 A. Exact.

20 Q. -- peer-review process?

21 A. It's a peer-review process.  
22 That's exactly right.

23 Q. Okay. Does the forum actually  
24 physically meet? Does the group of people in  
25 the forum --

00022:01 A. It meets in general once a  
02 quarter.

03 Q. Okay. And where do they meet?

04 A. Usually once a year in London,  
05 once a year in Houston. Other meetings --  
06 could be sometimes London, sometimes Houston.  
07 Sometimes other parts of the world, we go and  
08 try and visit and touch base with the

09 explorers in other parts of the world.  
10 Q. Okay. What is your job today  
11 with BP?  
12 A. I retired from BP on Tuesday,  
13 June the 1st.  
14 Q. Tuesday, June -- just a couple  
15 of days ago?  
16 A. Yeah.

Page 23:09 to 24:01

00023:09 Q. Did you change jobs after  
10 April 20th, 2010?  
11 A. I became part of the response.  
12 So I was deputy incident commander in Robert  
13 under Doug Suttles through the end of June.  
14 And then the first week of July, after the  
15 July 4 holiday, I started a new role as vice  
16 president of Science, Technology, Environment  
17 and Regulatory Affairs for the Gulf Coast  
18 Restoration Organization.  
19 Q. What is the Gulf Coast  
20 recovery -- or Restoration?  
21 A. Restoration. That's the  
22 separate organization that BP set up to carry  
23 out the -- after the -- beyond response into  
24 restoration. So to deal with the restoration  
25 of the Gulf Coast and the aftermath of the  
00024:01 incident.

Page 24:11 to 25:15

00024:11 Q. Now, I'm going to go back to  
12 April 20th, 2010. Who were your direct  
13 reports? Who reported to you directly?  
14 A. So I had Cindy Yeilding who was  
15 exploration manager, renewal. I had Jay  
16 Thorseth who was exploration manager. I  
17 forgotten the title that they had, but Cindy  
18 Yeilding, Jay Thorseth were my two  
19 exploration managers, and Jami Zinkham was  
20 appraisal advisor, Kirk Wardlaw who was my  
21 chief negotiator, Kemper Howe who was my land  
22 manager.  
23 Q. Okay.  
24 A. I think that's all.  
25 Q. Was there an HSSE person or  
00025:01 section assigned to exploration?  
02 A. No.  
03 Q. Now, who did you report to?  
04 And, again, I'm talking about April 20th,  
05 2010.  
06 A. I reported to James Dupree.  
07 Q. And what was his title?

08 A. He was the SPU leader for the  
09 Gulf of Mexico.  
10 Q. Okay. And you -- your  
11 exploration was part of that SPU, was it not?  
12 A. That's right.  
13 Q. And who did Mr. Dupree report  
14 to, do you know?  
15 A. He reported to Andy Inglis.

Page 28:06 to 28:09

00028:06 Q. (BY MR. WILLIAMS) Yeah. Before  
07 the DEEPWATER HORIZON disaster, were  
08 incentive bonuses primarily based on the  
09 implementation of cost saving measures?

Page 28:11 to 31:02

00028:11 A. I think management of cost was  
12 an element.  
13 Q. (BY MR. WILLIAMS) Do you know  
14 how much weight that element had in the  
15 determination of the incentive pay or bonus?  
16 A. No, I don't.  
17 Q. Okay. Did Mr. Dudley take over  
18 for Mr. Hayward while you were still employed  
19 by BP?  
20 A. Yes, he did.  
21 Q. After Mr. Dudley took over, do  
22 you know whether or not the algorithm used to  
23 determine incentive pay and bonuses was  
24 changed to a safety based system?  
25 A. I believe that there is more  
00029:01 emphasis on safety, but I don't know the  
02 details of the algorithm.  
03 Q. Okay. I want to ask you some  
04 questions about HSSE. What was Steve Tink's  
05 job on April 20th, 2010?  
06 A. I know he had been the HSE  
07 representative for drilling and completions,  
08 I believe. And I think he was in the --  
09 either had recently retired or was in the  
10 process of retiring, but I'm not sure.  
11 Q. Okay. I'm just talking about on  
12 April 20th right now.  
13 A. Well, I --  
14 Q. April 20th, 2010.  
15 A. I'm not sure.  
16 Q. Is -- in your capacity as vice  
17 president of exploration, did you have any  
18 interaction with Mr. Tink and/or any of  
19 his -- any of the people that work for him?  
20 A. Either he or some of his direct  
21 reports were -- certainly had a standing

22 invitation to my staff meeting, as did  
 23 representatives of the drilling leadership  
 24 team.  
 25 Q. Okay. And did they attend those  
 00030:01 staff meetings on occasion?  
 02 A. Yes.  
 03 Q. Were his direct reports the HSE  
 04 field and office advisors?  
 05 A. I'm not sure.  
 06 Q. Do you know what the difference  
 07 in drilling and completions, HSE, do you know  
 08 what the difference is between an office  
 09 versus a field advisor?  
 10 A. I'm not sure I've heard the term  
 11 "office advisor."  
 12 Q. Okay. Have you heard the term  
 13 "field advisor"?  
 14 A. I believe so, yes.  
 15 Q. And what is your understanding  
 16 of what the field -- the HSSE field advisors  
 17 did?  
 18 A. I believe they spent a lot of  
 19 time in the field working with the drilling  
 20 crews, in this case, on HSE.  
 21 Q. So "in the field" would mean  
 22 offshore, correct?  
 23 A. That's correct.  
 24 Q. And just to clarify, did the  
 25 field advisor sometimes attend the meetings  
 00031:01 you described just a few minutes ago?  
 02 A. I don't believe so.

Page 32:05 to 32:21

00032:05 Q. (BY MR. WILLIAMS) Why don't you  
 06 just take a quick look at those for me.  
 07 A. Two packs? Yeah.  
 08 Q. Yeah. One is dated August 10th,  
 09 2009, and the other is dated January 7th,  
 10 2010. The title of the document is  
 11 "Deepwater Drilling and Completions  
 12 Organization Chart," is it not?  
 13 A. Yes.  
 14 Q. On the August 10th, 2009  
 15 document -- it's the one you're looking at  
 16 right now.  
 17 A. Right.  
 18 Q. Could you turn to Page 31 for  
 19 me, please?  
 20 MR. WILLIAMS: And that's -- Page 31.  
 21 It's got Bates No. 1566076.

Page 33:04 to 34:18

00033:04 Q. And we see the drilling and  
05 exploration HSSE manager is Mr. Tink,  
06 correct?  
07 A. That's correct.  
08 Q. And he has -- I mean, as you go  
09 down his chain of command, you've got  
10 exploration and appraisal, Thunderhorse and  
11 Atlantis Production and New Development,  
12 correct?  
13 A. That's correct.  
14 Q. Did the new development HSSE  
15 manager, here it's indicated it was office  
16 advisor Clint Honeycutt, did he report to you  
17 in any way, shape or form?  
18 A. No.  
19 Q. Okay. Have you seen this org  
20 chart before?  
21 A. Not that I can remember. It  
22 doesn't mean I haven't, but I certainly don't  
23 remember seeing it.  
24 Q. Okay. Well, that's fair enough.  
25 If you go to Page 34.  
00034:01 A. Okay.  
02 Q. The Gulf of Mexico SPU  
03 leadership team, correct?  
04 A. That's correct.  
05 Q. And you're listed there as vice  
06 president of exploration, correct?  
07 A. That's correct.  
08 Q. Also listed is a fellow by the  
09 name of Fergus Addison who was vice president  
10 of development?  
11 A. That's correct.  
12 Q. Mr. Kevin Lacy, vice president  
13 of drilling and completion?  
14 A. That's correct.  
15 Q. Dan Replogle, vice president of  
16 Thunderhorse, and you as vice president of  
17 exploration?  
18 A. Uh-huh.

Page 34:23 to 38:05

00034:23 Q. Okay. Were you of equal rank  
24 with all of those fellows?  
25 A. I believe so.  
00035:01 Q. Okay. Let's go back to Page 31.  
02 Okay. Let's start at exploration and  
03 appraisal. You've got an office HSE advisor  
04 for the HORIZON and Bob Palmer, correct?  
05 A. That's correct.  
06 Q. And reporting to him are two  
07 field HSE advisors from the DEEPWATER  
08 HORIZON, Mr. Mitch Galtier and Mr. Mitch  
09 Galtier, correct?

10 A. That's correct.  
11 Q. Okay. It says "HORIZON," that  
12 means DEEPWATER HORIZON, does it not?  
13 A. That's correct.  
14 Q. Okay. The Thunderhorse  
15 Atlantis, you've got a field HSE advisor,  
16 Jeremy Galtier, or that's how we would  
17 pronounce it here, I think.  
18 A. Right.  
19 Q. And under him, you've got two  
20 field advisors assigned to the Thunderhorse  
21 PDQ, two field -- correct?  
22 A. I'm not sure it's under -- I'm  
23 not sure how I would read the org chart.  
24 Q. Okay.  
25 A. I'm not sure -- I'm not sure  
00036:01 that Kenny Johnson and Reggie -- I don't even  
02 know how to pronounce that -- report to  
03 Jeremy.  
04 Q. Well, in any --  
05 A. They're under the org chart. It  
06 looks like they report --  
07 Q. Okay. In any event, it looks  
08 like Kenny Johnson and Reggie Schexnaider are  
09 assigned to Thunderhorse PDQ, correct?  
10 A. That's correct.  
11 Q. And there is another field  
12 advisor for the -- field advisors for the  
13 enterprise. You've got two fellows,  
14 Mr. Duhon and Mr. Lenoir?  
15 A. That's correct.  
16 Q. And then you've got another  
17 office advisor, Mr. Schonacher, for the  
18 Atlantis?  
19 A. Right.  
20 Q. Development Drillers II and III,  
21 correct?  
22 A. Correct.  
23 Q. And you've got two field  
24 advisors that's assigned to DDII and two  
25 assigned to DDIII, correct?  
00037:01 A. That's correct.  
02 Q. And on the production side,  
03 you've got office HSE advisor for Holstein,  
04 Mr. Honeycutt?  
05 A. Uh-huh.  
06 Q. You've got two field advisors  
07 assigned to Holstein, Messrs. Courtney and  
08 Urik?  
09 A. Right.  
10 Q. And you've got an office advisor  
11 for the Marianas/Intervention,  
12 Mr. Thibodeaux --  
13 A. Yes.  
14 Q. -- and a field advisor,



15 Mr. Montanez, correct?  
 16 A. That's correct.  
 17 Q. And then there is just one  
 18 office advisor for new developments, correct?  
 19 A. That's correct.  
 20 Q. Now, was it your understanding  
 21 these field advisors -- let's go to the  
 22 HORIZON, for instance, Mr. Gill and  
 23 Mr. Williford, is it your understanding that  
 24 these fellows were permanently assigned to  
 25 the DEEPWATER HORIZON?  
 00038:01 A. That's what the organization  
 02 chart would imply, yes.  
 03 Q. They only worked on those rigs,  
 04 correct? And, again, we're talking about  
 05 August 8th.

Page 38:07 to 38:16

00038:07 A. I don't know.  
 08 Q. (BY MR. WILLIAMS) Okay. Do you  
 09 know whether or not they would alternate  
 10 hitches on the rig?  
 11 A. No, I don't.  
 12 Q. Let take a look real quick at  
 13 the January 7th, 2010 chart, if you would.  
 14 We're going to mark the first org chart as  
 15 Exhibit 3200, the first page, and the Bates  
 16 range is 1566046.

Page 38:19 to 40:11

00038:19 (Exhibit No. 3200 was marked.)  
 20 Q. (BY MR. WILLIAMS) Okay. You've  
 21 got the January 7th org chart?  
 22 A. Yeah.  
 23 Q. Okay. Could you turn to the  
 24 last page, please, Page 32. And, again,  
 25 we've got a depiction here of the Gulf of  
 00039:01 Mexico SPU leadership team, correct?  
 02 A. Correct.  
 03 Q. It shows Mr. Dupree as the SPU  
 04 leader?  
 05 A. That's correct.  
 06 Q. And you're vice president of  
 07 exploration?  
 08 A. Uh-huh.  
 09 Q. Still?  
 10 A. Yeah.  
 11 Q. And we've got Simon Todd as vice  
 12 president of Thunderhorse?  
 13 A. Correct.  
 14 Q. Mr. Pat O'Bryan, drilling and  
 15 completions --

16 A. Correct.  
 17 Q. -- vice president. And Mr. Gary  
 18 Imm, vice president of developments?  
 19 A. Uh-huh.  
 20 Q. Okay. Now, could you turn to  
 21 Page 28, please. And this shows that  
 22 Mr. Steve Tink is still the D&C HSSE manager,  
 23 correct?  
 24 A. That's correct.  
 25 Q. And under Mr. Tink are listed  
 00040:01 the HSSE office advisors and the HSSE field  
 02 advisors, correct?  
 03 A. Correct.  
 04 Q. Now, with respect to the field  
 05 advisors, unlike the August 10th, 2009 org  
 06 chart -- do you still have that in front of  
 07 you?  
 08 A. I do.  
 09 Q. Okay. They apparently are not  
 10 assigned to particular rigs or fields or  
 11 projects, correct?

Page 40:13 to 43:10

00040:13 Q. (BY MR. WILLIAMS) If you know?  
 14 A. No, I don't -- I don't know.  
 15 Q. Did you ever learn at any point  
 16 between August 10th, 2009, and January 7th,  
 17 2010, that BP cut Mr. Tink's HSSE staff?  
 18 A. I don't -- I don't remember that  
 19 for a fact, but I do have some memory that  
 20 that was the case.  
 21 Q. Do you recall what the  
 22 circumstances of that cut were?  
 23 A. No, I don't.  
 24 Q. Okay. According to charts when  
 25 you compare the two, it appears that  
 00041:01 Mr. Tink's staff -- and I'm just talking  
 02 about field advisors -- were cut from a total  
 03 of 14 to a total of eight. Does that sound  
 04 right to you?  
 05 A. I'm -- well, I can count them  
 06 all up, but if that's what's on the org  
 07 chart, that's what's on the org chart.  
 08 Q. You said you recalled some  
 09 discussion or you recalled hearing at least  
 10 that Mr. Tink's staff had been cut. Do you  
 11 recall any discussion of why or what the  
 12 reason for that cut was?  
 13 A. No, I don't.  
 14 Q. Do you recall whether or not it  
 15 had anything to do with issues regarding  
 16 cost?  
 17 A. No, I don't remember.  
 18 Q. Okay. Now, on the January 7th,

19 2010 org chart, if you could turn to Page 31  
20 for me, please. And this is the org chart  
21 for the SPU HSSE team, is it not?  
22 A. Yes.  
23 Q. And who is the director as of  
24 the date -- as of January 7th, 2010?  
25 A. Curtis Jackson.  
00042:01 Q. Did you have any interaction --  
02 during your tenure as vice president of  
03 exploration, did you have any interaction  
04 with Mr. Jackson?  
05 A. Yes.  
06 Q. Could you describe that for us,  
07 please?  
08 A. Let me just replay the question.  
09 During my tenure as vice president of  
10 exploration?  
11 Q. Correct.  
12 A. When I began as vice president  
13 of exploration, Curtis was the drilling  
14 assurance manager for exploration. So in  
15 that role, I had a lot of interaction with  
16 him, and then he moved into the HSSE arena,  
17 and he was the director of HSSE for the SPU.  
18 I don't -- I can't remember what the dates  
19 were when that transition took place. But,  
20 clearly, I had interactions with him because  
21 he frequently sat at the leadership team  
22 table with the leadership team.  
23 Q. And that would be the SPU  
24 leadership team?  
25 A. Yes.  
00043:01 Q. Now, how long did Mr. Jackson  
02 actually work for you when you -- after you  
03 became vice president of exploration?  
04 A. I don't remember. But it wasn't  
05 long because --  
06 Q. Less than a year?  
07 A. I don't -- my memory would say  
08 around about that length of time, but I can't  
09 say for certain. And then he was replaced by  
10 Mike Zangi.

Page 43:15 to 44:22

00043:15 Q. Now, when Mr. Jackson worked for  
16 you, did you note any deficiencies in his job  
17 performance, his personality or any other  
18 negative issues or problems?  
19 A. Not at all.  
20 Q. Was he in all respects  
21 professional?  
22 A. I believe so.  
23 Q. Did you ever have to discipline  
24 him or take any kind of disciplinary action

25 of any type against him?  
00044:01 A. No.  
02 Q. Who made the decision to move  
03 him to HSSE director?  
04 A. I don't know.  
05 Q. Now, is this HSSE team that he  
06 heads, at least as of January 7th, 2010,  
07 that's the HSSE team for the entire SPU,  
08 correct?  
09 A. Yes, I believe so.  
10 Q. Do you have any idea how that --  
11 the SPU HSSE team interacted with the  
12 drilling and completions HSSE folks, i.e.,  
13 Mr. Tink or any of his folks?  
14 A. No, I don't.  
15 Q. Now, at any time during your  
16 tenure as vice president of exploration, did  
17 Mr. Curtis Jackson leave the employment of  
18 BP?  
19 A. I can't remember whether he --  
20 he left prior to first quarter 2010 or  
21 whether he was in the process of leaving. It  
22 was in that 2009-2010 time frame.

Page 45:06 to 45:21

00045:06 Q. Okay. We're still on the same  
07 org chart, January 7th, 2010. Could you turn  
08 to the last page again, Page 32.  
09 A. Uh-huh.  
10 Q. Right down at the bottom is a  
11 box containing Cindi Skelton's name. Are you  
12 familiar with her?  
13 A. Yes, I am.  
14 Q. Did you work with her in your  
15 capacity as vice president of exploration?  
16 A. I did.  
17 Q. And her job title here at least  
18 is vice president HSSE and engineering,  
19 correct?  
20 A. That's correct.  
21 Q. What was her job?

Page 45:23 to 46:23

00045:23 A. I don't know the details of her  
24 role.  
25 Q. (BY MR. WILLIAMS) You don't  
00046:01 know what type of input or assistance or  
02 anything like that that she offered or gave  
03 the SPU leadership team, correct?  
04 A. Not in the detail, no.  
05 Q. Well, describe for me your  
06 experience with her, your interaction with

07 her. I'm talking about professionally.  
 08 A. I think I first met Cindi when  
 09 she was still working in the pipeline  
 10 business unit during our response to Katrina  
 11 and Rita. I think that's when I first met  
 12 her. And then she moved into the SPU, and I  
 13 can't actually remember what her specific  
 14 role was. I can't remember what her role  
 15 was.  
 16 Q. Okay. Did she provide you with  
 17 any kind of regular input on issues of any  
 18 kind?  
 19 A. Not that I can remember, no.  
 20 Q. Do you have any idea of how  
 21 Cindi Skelton fits in with the SPU HSSE team  
 22 and chain of command run by Mr. Jackson?  
 23 A. No, I don't remember.

Page 50:03 to 51:25

00050:03 Q. Now, Mr. O'Bryan's predecessor  
 04 was Mr. Kevin Lacy, was it not?  
 05 A. That's correct.  
 06 Q. How long had you known -- have  
 07 you known Mr. Lacy?  
 08 A. I'm going to say two or three  
 09 years.  
 10 Q. How long had you worked with  
 11 Mr. Lacy on a leadership team? How long had  
 12 you been -- both been vice presidents of your  
 13 individual areas of responsibility?  
 14 A. I had been five years and I  
 15 think Kevin was one year.  
 16 Q. Did you know him before he  
 17 became vice president of D&C?  
 18 A. I did because he was head of  
 19 discipline, and he represented the drilling  
 20 function on the exploration forum.  
 21 Q. I'm sorry. He represented --  
 22 A. The drilling function on the  
 23 exploration forum.  
 24 Q. Head of discipline, was that a  
 25 Gulf of Mexico SPU leadership position?  
 00051:01 A. No, it was a drilling and  
 02 completions functions leadership position.  
 03 Q. Did you consider Mr. Lacy  
 04 professionally competent?  
 05 A. Obviously I'm not an expert in  
 06 the matter, but, yes.  
 07 Q. I'm just asking based on your  
 08 personal/professional experience, you  
 09 considered him competent professionally in  
 10 all respects?  
 11 A. Right.  
 12 Q. No complaints with him?

13 A. No.  
14 Q. Did you consider him a good  
15 leader in the drilling and completions team?  
16 A. Again, I'm not an expert, but I  
17 believe so, yes.  
18 Q. Do you have any reservations at  
19 all with respect to his -- did you have or do  
20 you have now any reservations at all with  
21 respect to his abilities as a leader of the  
22 drilling and completions team?  
23 A. No, I had no reservations.  
24 Q. Was Mr. Lacy a team player in  
25 your opinion?

Page 52:02 to 52:24

00052:02 A. Again, I had no issues with  
03 Kevin, but I don't know about his  
04 relationships with other people.  
05 Q. (BY MR. WILLIAMS) Right. I'm  
06 just interested in your relationship with him  
07 and what you know about him.  
08 A. Right.  
09 Q. So I guess we can sum this up.  
10 Do you have anything bad to say about  
11 Mr. Lacy professionally or personally?  
12 A. Not from any of the interactions  
13 that I had with him.  
14 Q. Okay. Do you have any idea why  
15 Mr. Lacy left BP?  
16 A. No.  
17 Q. Do you know who made the  
18 decision to terminate or end Mr. Lacy's  
19 employment with BP?  
20 A. I don't know -- I don't know for  
21 a fact, but his functional leader was Barbara  
22 Yilmaz, so I don't know where the decision  
23 was made between that leader versus SPU  
24 leadership versus higher levels of the firm.

Page 54:14 to 55:08

00054:14 Q. Did Mr. Lacy ever express to you  
15 any concerns about process or personal safety  
16 issues with respect to BP at any time?  
17 A. We had conversations about --  
18 the one conversation I can remember having  
19 with Kevin was he felt that there was no  
20 prioritization in how safety incidents were  
21 investigated. So every incident, whether it  
22 was a minor incident that had no potential to  
23 be any anything else versus another similar  
24 incident but which had the potential to be  
25 something greater, they were all treated the

00055:01 same way. And I do remember having  
02 conversations with Kevin about that.  
03 Q. That was his opinion?  
04 A. Yeah.  
05 Q. Did you agree with that?  
06 A. Again, I'm not an expert in  
07 operations or safety, so I'm not sure that my  
08 opinion is relevant.

Page 55:22 to 56:13

00055:22 Q. And I asked you if you agreed  
23 with his position that minor incidents and  
24 other issues that could lead to an incident  
25 should be treated with the same degree of  
00056:01 importance is something you agree with or  
02 disagree with?  
03 A. I think there is probably  
04 arguments on both sides. There is -- there  
05 is validity to his argument and there is  
06 validity to you need to address all  
07 incidents.  
08 Q. Well, I thought I understood  
09 from your answer that his argument or his  
10 view was that all incidents involving safety  
11 should be treated with the same degree of  
12 respect, consideration and attention,  
13 correct?

Page 56:15 to 57:22

00056:15 A. His view was -- that's  
16 actually -- that was the philosophy in the  
17 SPU. His view was that the incidents that  
18 had the higher potential should receive  
19 greater attention.  
20 Q. (BY MR. WILLIAMS) And what type  
21 of incidents that had a higher potential was  
22 he talking about?  
23 A. I don't know in specifics, but  
24 in principle, you can have two incidents that  
25 have exactly the same outcome, but there was  
00057:01 potential -- there was greater potential in  
02 one of those incidents for it to be a more  
03 serious incident. And the degree of  
04 attention that the incident received was  
05 based on the incident itself, not on the  
06 potential for the incident.  
07 Q. That was his view or the  
08 company's view, as you understood it?  
09 A. The SPU approach at the time was  
10 all incidents will receive the same degree of  
11 focus. And his view was that the incidents  
12 that had the higher potential should receive

13 greater focus than -- in fact, his view was  
14 there was too much focus going on the  
15 incidents that had less potential.

16 Q. And were those incidents like  
17 personal safety issues as opposed to process  
18 safety issues?

19 A. Yeah, I think that's -- in  
20 general that's what he was referring to.  
21 But, again, I can't remember the details of  
22 the conversations.

Page 63:17 to 64:08

00063:17 Q. Can you tell me exactly what the  
18 functional leadership team does? What is it  
19 responsible for?

20 A. Again, I've never been a member  
21 of that team, but in general the functional  
22 leadership teams in the firm are responsible  
23 for the technical quality of that function.

24 Q. Okay. And does technical  
25 quality of that function mean how well or  
00064:01 efficiently they drill wells?

02 A. And how -- efficiently and  
03 safely.

04 Q. Efficiently and safely?

05 A. Yeah.

06 Q. How long were you employed by  
07 BP?

08 A. 31 years.

Page 64:12 to 64:25

00064:12 Q. And what was your job before you  
13 were vice president of exploration?

14 A. I was performance unit leader  
15 for deepwater exploration in the Gulf of  
16 Mexico.

17 Q. Describe for me briefly what  
18 your job responsibilities were in that  
19 capacity?

20 A. Essentially the same as vice  
21 president of exploration except just the  
22 deepwater. I didn't have the shallow water  
23 piece. And at that time, the performance  
24 unit leaders, the drilling teams reported to  
25 the performance unit leader.

Page 66:02 to 66:06

00066:02 Q. Let me ask you a couple of  
03 questions about your educational background.  
04 What is your professional specialty by virtue



05 of your education?

06 A. I'm a geologist.

Page 66:14 to 66:20

00066:14 Q. On April 20th, 2010, did BP have  
15 a real-time operations center?

16 A. We had an operations room that  
17 had real-time feed of MWD and mud logs, but  
18 it wasn't manned 24 hours a day.

19 Q. What floor was that on?

20 A. Second floor.

Page 68:21 to 71:10

00068:21 Q. Do you know whether or not there  
22 was a real-time feed of data from the  
23 DEEPWATER HORIZON back to the Westlake  
24 facility?

25 A. I would expect that there was  
00069:01 into the operations room on the second floor.

02 Q. Did you ever visit this  
03 operations room on the second floor?

04 A. Yes.

05 Q. And what -- could you describe  
06 for me what it looked like?

07 A. Gosh, I suspect it had a table  
08 in the middle, a tech table in the middle.  
09 It had screens in either corner. It had a  
10 set of sliding boards that the data from the  
11 current well was permanently mounted on, and  
12 the screens were capable of having the MUD  
13 log and the MWD log and the -- some of the  
14 drilling information --

15 Q. Would the --

16 A. -- displayed.

17 Q. I'm sorry. Did you ever -- was  
18 that second floor -- do you call that a  
19 real-time operations center?

20 A. It was called the operations  
21 room. We had -- there were two on the second  
22 floor.

23 Q. Was it manned on a 24/7 basis,  
24 do you know?

25 A. I don't believe it was.

00070:01 Q. Okay. Now, did you ever visit  
02 it yourself?

03 A. Uh-huh, yes.

04 Q. Did you ever visit it when --  
05 visit it when real-time data was being  
06 transmitted from offshore?

07 A. I did.

08 Q. Did this real-time operations  
09 center, whatever you call it, command center,

10 on the second floor gather data from all  
 11 drilling rigs working for BP?  
 12 A. No. Just those that were  
 13 working either exploration or appraisal  
 14 wells.  
 15 Q. How would you define the other  
 16 wells that were being drilled? In other  
 17 words, if they weren't exploration and  
 18 appraisal wells, what other drilling activity  
 19 would be going on?  
 20 A. There's development drilling and  
 21 production drilling.  
 22 Q. Under which category would the  
 23 Macondo project fall under?  
 24 A. Exploration.  
 25 Q. Okay. On or about April 20th,  
 00071:01 2010, do you know which wells or which  
 02 drilling projects were being monitored or  
 03 were capable of being monitored on -- in the  
 04 second floor real-time operations center?  
 05 A. I would expect that Macondo was.  
 06 Q. Any other projects that were  
 07 ongoing at the time?  
 08 A. Certainly not in exploration.  
 09 Other -- I don't think there were any  
 10 appraisal wells at the time either. So...

Page 74:11 to 75:05

00074:11 Q. Okay. Are you sure that the  
 12 room on the second floor that you've  
 13 described previously --  
 14 A. Uh-huh.  
 15 Q. -- had the capability to receive  
 16 real-time data?  
 17 A. Yes, I believe I am.  
 18 Q. Do you know whether or not  
 19 there's any type of watch bill that is  
 20 instituted and disseminated requiring BP  
 21 personnel, wherever they might work, to  
 22 monitor well operations in real-time on a  
 23 periodic or regular basis?  
 24 A. I'm not aware.  
 25 Q. Do you know whether or not the  
 00075:01 real-time operations center or conference  
 02 room that you've described on the second  
 03 floor still exists?  
 04 A. I don't know for a fact, but I  
 05 think it does.

Page 76:20 to 78:11

00076:20 Q. Thank you. Mr. Rainey, giving  
 21 me as complete a definition as you can,

22 describe for me in your own words what safety  
 23 culture means.  
 24 A. That safety is above everything  
 25 else. It is the most important thing. And  
 00077:01 that that's clearly understood at all levels  
 02 of the firm.  
 03 Q. Now, when you say "the firm,"  
 04 are you talking about BP group?  
 05 A. Uh-huh.  
 06 Q. All of BP, correct?  
 07 A. All of BP.  
 08 Q. Now, is that your personal  
 09 opinion or is that the -- an opinion that BP  
 10 shares, as best you know?  
 11 A. As best as I know, that's an  
 12 opinion that BP shares.  
 13 Q. Has that always been BP's  
 14 attitude with respect to safety as far as you  
 15 know?  
 16 A. I believe so, yes.  
 17 Q. Does your definition of safety  
 18 culture include both process safety and  
 19 personal safety?  
 20 A. Absolutely.  
 21 Q. Would you agree with me that  
 22 safety culture includes a culture of  
 23 leadership responsibility for safety?  
 24 A. I would.  
 25 Q. And, in fact, that's dictated by  
 00078:01 the OMS, is it not?  
 02 A. Uh-huh, uh-huh.  
 03 Q. Would you agree with me that  
 04 drilling oil and gas exploration wells in  
 05 deep water in the Gulf of Mexico is a  
 06 high-risk endeavor?  
 07 A. There is certainly the potential  
 08 for risk.  
 09 Q. And BP in various documents  
 10 quantifies the potential for those risks,  
 11 does it not?

Page 78:13 to 78:13

00078:13 A. I believe so.

Page 78:15 to 78:20

00078:15 Q. (BY MR. WILLIAMS) What are some  
 16 of those risks, in your opinion?  
 17 A. The greatest risk is the risk of  
 18 a blowout.  
 19 Q. Is risk of a blowout?  
 20 A. A blowout.

Page 79:17 to 80:13

00079:17 Q. And a blowout can have  
18 disastrous consequences, can it not?  
19 A. It can.  
20 Q. One of the risks is loss of  
21 life?  
22 A. That's correct.  
23 Q. Loss of business representation?  
24 A. That's correct.  
25 Q. Damage to the environment?  
00080:01 A. That's correct.  
02 Q. Loss of license to operate?  
03 A. That's correct.  
04 Q. Those are all risks that BP  
05 recognizes, correct?  
06 A. I believe so, yes.  
07 Q. And isn't it true that failure  
08 to appropriately appreciate and analyze risks  
09 can result in disastrous consequences?  
10 A. That's a reasonable conclusion,  
11 yes.  
12 Q. Okay. What is your definition  
13 of a safety critical activity?

Page 80:15 to 81:01

00080:15 A. I'm not an expert in operations.  
16 I'm a geologist. So I don't think I'm the  
17 right person to answer that question.  
18 Q. (BY MR. WILLIAMS) Okay. Well,  
19 your work at BP is governed by the OMS, is it  
20 not?  
21 A. It is.  
22 Q. Is safety critical activity  
23 defined in the OMS?  
24 A. It is for functions like  
25 drilling and completion. So, yes. But I'm  
00081:01 not an expert in drilling and completions.

Page 82:07 to 82:18

00082:07 Q. Do you know whether or not there  
08 was a risk register for the Macondo well?  
09 A. I don't know for a fact, but I  
10 would expect that there was.  
11 Q. What is the risk register  
12 intended to do, to accomplish?  
13 A. As I understand it, expected to  
14 articulate the risks for the well and the  
15 plan to mitigate those risks.  
16 Q. Is there a requirement that the  
17 risk register be updated periodically during

18 a project?

Page 82:20 to 83:17

00082:20 A. Again, I'm not an expert, but I  
 21 would expect that that's the case.  
 22 Q. (BY MR. WILLIAMS) Would you  
 23 agree with me that safety should always be an  
 24 element of the risk register?  
 25 A. I would.  
 00083:01 Q. Would you also agree with me  
 02 that the risk register should never be  
 03 primarily devoted to impact that risks might  
 04 have on time and cost of a project, correct?  
 05 A. Again, I'm not an expert but  
 06 that sounds reasonable.  
 07 Q. Does it sound reasonable that  
 08 safety should always be the primary  
 09 consideration in the formulation of a risk  
 10 register?  
 11 A. Uh-huh. It does, yes.  
 12 Q. Okay. Would you agree with me  
 13 that in the business of offshore oil and gas  
 14 exploration there should never ever be a bias  
 15 that favors time and cost at the expense of  
 16 safety?  
 17 A. Yes.

Page 84:04 to 84:23

00084:04 Q. (BY MR. WILLIAMS) I know you --  
 05 I know you've not -- you haven't been  
 06 tendered as an expert --  
 07 A. Right.  
 08 Q. -- in operational safety, but  
 09 you've been with the company for many years.  
 10 A. Right, uh-huh.  
 11 Q. I'm just asking you your  
 12 opinion. And I had asked you a previous  
 13 question that you agreed with.  
 14 A. Uh-huh.  
 15 Q. I proposed to you that in the  
 16 business of offshore oil and gas exploration  
 17 there should never ever be a bias that favors  
 18 time and cost over safety, and you agreed  
 19 with that, correct?  
 20 A. I did, yes, uh-huh.  
 21 Q. And then I asked you, that would  
 22 be an example of an unhealthy safety culture,  
 23 wouldn't it, if there were such a bias?

Page 84:25 to 85:01

00084:25 A. From my perspective, that would  
00085:01 be a reasonable statement, yes.

Page 85:08 to 85:09

00085:08 Q. If you could turn to Tab 2 for  
09 me, sir.

Page 85:13 to 86:01

00085:13 Q. (BY MR. WILLIAMS) The first  
14 document is an e-mail from Mark Hafle --  
15 Do you know Mark Hafle?  
16 A. I do.  
17 Q. -- to various people and it  
18 begins with Bates number 3660.  
19 A. All right.  
20 Q. Now, turn, if you would -- the  
21 way these documents are produced, if you turn  
22 to the next page.  
23 A. Uh-huh.  
24 Q. The Excel spreadsheets do not  
25 have Bates numbers on them. That's the way  
00086:01 they were produced.

Page 86:08 to 86:18

00086:08 Q. So skip the document that says  
09 "document produced natively," and go to the  
10 next page and take a look at it for me, if  
11 you would. Just that page.  
12 A. All right.  
13 Q. Can you tell me what that page  
14 represents, please?  
15 A. It looks like -- actually, I'm  
16 not sure. I see the word "pay out" here. It  
17 looks like some relationship with pay out to  
18 drilling performance.

Page 86:23 to 86:24

00086:23 Q. Do you know whether or not  
24 depending on the results of drilling --

Page 87:01 to 87:04

00087:01 Q. -- and how efficient it was,  
02 whether or not you got any type of  
03 incentive --  
04 A. Yeah, in the past --

Page 87:06 to 87:12

00087:06 A. In the past, I do know we've had  
07 incentive programs for wells.  
08 Q. Does that -- isn't that what  
09 this is?  
10 A. That's -- that's what it looks  
11 like, but I could not -- I couldn't explain  
12 it to you.

Page 87:19 to 89:18

00087:19 Q. The second box on the first  
20 one-third of the page from the left says:  
21 Benchmark data?  
22 A. Uh-huh.  
23 Q. It says: Days per 10K?  
24 A. Right.  
25 Q. Can you tell us what that means,  
00088:01 please?  
02 A. That's the number of days to  
03 drill 10,000 feet.  
04 Q. What is that? Is that a measure  
05 of productivity?  
06 A. It's a measure of drilling  
07 performance.  
08 Q. Okay. And on the left we've got  
09 top quartile, second, third and fourth,  
10 correct?  
11 A. Correct.  
12 Q. And on the right it says:  
13 Macondo potential pay outs, and there are a  
14 series of numbers there from \$6,000 to zero,  
15 pay out extrapolated either way, correct?  
16 A. Correct.  
17 Q. And it appears, looking at the  
18 chart, correct me if I'm wrong, that there is  
19 only a pay out if this well is drilled in the  
20 first quartile.  
21 A. I --  
22 Q. If the days it takes to drill  
23 this well fall in the first quartile?  
24 A. I could reach that conclusion,  
25 but I don't know that that's actually what  
00089:01 this means. I don't -- there's a -- I would  
02 need to see a lot more context behind this to  
03 be able to answer these questions.  
04 Q. Okay.  
05 A. And I'm sure there's a lot more  
06 documentation than just this.  
07 Q. Do you get involved in  
08 determining AFE cost of a well? Are you  
09 involved in any way in that determination?  
10 A. Yes.  
11 Q. And what is your involvement or

12 what was your involvement on or about  
13 April 20th, 2010, and before?  
14 A. I -- I approve the AFEs.  
15 Q. For all exploration wells --  
16 A. Yes.  
17 Q. -- drilled by the SPU?  
18 A. Uh-huh.

Page 89:20 to 89:24

00089:20 A. I'm not the final approval  
21 because usually they -- the final approval  
22 goes above my authority.  
23 Q. Doesn't the AFE normally include  
24 an incentive payout for drilling efficiency?

Page 90:01 to 90:04

00090:01 A. I can't actually remember the  
02 details of what's on the AFE form.  
03 Q. (BY MR. WILLIAMS) Okay. Turn  
04 to the last page of that tab, please.

Page 90:06 to 90:07

00090:06 Q. It says: Macondo D & C cost  
07 estimate --

Page 90:09 to 94:24

00090:09 Q. -- and benchmarking?  
10 A. Right.  
11 Q. Now, up at the top where it  
12 says: Wells cost estimate?  
13 A. Yeah.  
14 Q. You've got: Not to exceed NTE  
15 of 139.5 million.  
16 Correct?  
17 A. Right.  
18 Q. And then it -- just above that  
19 is a performance target number which is 96.1  
20 million, correct?  
21 A. Correct.  
22 Q. What is the difference between  
23 performance target, PT, and not to exceed,  
24 NTE?  
25 A. I'd have to spend some time  
00091:01 reminding myself on all this. But they're --  
02 when the drillers do a well plan and they do  
03 a cost estimate and they look at nearby  
04 wells, they come up with a probabilistic  
05 analysis of what the well cost is going to  
06 be. So it's a range of possible outcomes.



07                   And over the years what --  
08 precisely what they're not to exceed, whether  
09 that's -- I suspect that's the P90 in the  
10 analysis -- 90 percent chance of delivering  
11 the well under that number, but I -- I don't  
12 know that for a fact because those -- those  
13 numbers have changed over the years.

14           Q.       Okay.

15           A.       The performance target would be  
16 the P50 or potentially the P mean. And in  
17 different -- in different times that number  
18 has changed as well, but it's -- there are  
19 different levels of probability for  
20 delivering the well under that cost when you  
21 look at what industry has done in surrounding  
22 wells and similar wells.

23           Q.       So a big part of this analysis  
24 is historical, correct?

25           A.       That's correct.

00092:01       Q.       And down the bottom -- near the  
02 bottom of that sheet it says: Significant  
03 risks to delivery, and obviously we're  
04 talking about the Macondo --

05           A.       Right.

06           Q.       -- well, correct?

07           A.       Uh-huh, that's correct.

08           Q.       You've got weather, narrow pore  
09 pressure fracture gradient window slash  
10 uncertainty.

11           A.       Uh-huh.

12           Q.       Can that delay a well, cause it  
13 to be more expensive than originally?

14           A.       Absolutely.

15           Q.       And BOP stack issues, riserless  
16 section, what does that mean?

17           A.       The riserless section, that's  
18 the -- I'm not quite sure why it says  
19 weather/seas. But before you connect up the  
20 riser, you have to have several casing  
21 strings in place. So you're -- those early  
22 sections are drilled without riser. So  
23 that's what that means. It's a very early  
24 part of the well.

25           Q.       Okay. And then you've got:  
00093:01 Depleted gas sands in 16-inch section  
02 faulting into high pressure below --

03           A.       Uh-huh.

04           Q.       -- the M56, which was --

05           A.       Uh-huh.

06           Q.       -- the target geological zone  
07 for this well, at least as planned.

08                   Was it not or was it?

09           A.       I can't actually remember.

10           Q.       Okay. Now, the significant  
11 risks, they're all associated with cost and

12 schedule, correct?

13 A. They all have implications to

14 cost and schedule.

15 Q. Okay. I'm going to mark that as

16 Exhibit 3202 and attach it to your

17 deposition.

18 (Exhibit No. 3202 was marked.)

19 Q. (BY MR. WILLIAMS) Could you

20 turn to Tab 3 for me, please. Now, Tab 3 is

21 a two-page document, Bates 1893, last four

22 numbers, and it's called, "Execute Financial

23 Memorandum"; is that right?

24 A. Yes.

25 Q. And you were actually the

00094:01 approval authority on this document, it

02 appears, correct?

03 A. Correct.

04 Q. The copy we have hasn't been

05 signed by you, but --

06 A. Uh-huh.

07 Q. -- is it -- can I assume that

08 you were the approval authority for this

09 execute --

10 A. Right.

11 Q. -- memo?

12 A. So the financial authority -- I

13 can't remember the legal definition around

14 these words, but either Mike Daly or Andy

15 Inglis has the financial authority. I'm

16 approving as an officer of BP America, just

17 from a legal perspective.

18 Q. Is Mike Daly or was Mike Daly on

19 September 30th, 2009, he was in head of E&A

20 in London, correct, Exploration and Access?

21 A. That's correct.

22 Q. And Andy Inglis, CEO of

23 Exploration and Production?

24 A. Right.

Page 95:03 to 95:04

00095:03 Q. Okay. Let me ask you a couple

04 of questions about this --

Page 95:06 to 95:09

00095:06 Q. -- document. The sanction

07 request 139.5 million, that's the NTE that

08 was -- actually, we saw that same number

09 at --

Page 95:11 to 96:16

00095:11 Q. -- Tab 2, correct?  
 12 A. Uh-huh, uh-huh.  
 13 Q. And the PT or performance  
 14 target, same number --  
 15 A. Right.  
 16 Q. -- 96.1 million, correct?  
 17 A. Right.  
 18 Q. Now, go to the second page. It  
 19 says: Key risks and other significant points  
 20 for discussion.  
 21 Who actually drafts this  
 22 document?  
 23 A. Our commercial team.  
 24 Q. Where would they get the  
 25 input -- your commercial team, where would  
 00096:01 they get the input for the key risks and  
 02 other significant points for discussion  
 03 section of this memorandum?  
 04 A. They would get it off from the  
 05 drilling -- from the drilling team, from the  
 06 exploration manager.  
 07 Q. Okay. And it says: Key risks  
 08 other significant points for discussion.  
 09 Subsurface and drilling risks including  
 10 narrow pore pressure and fracture gradient  
 11 window --  
 12 A. Uh-huh.  
 13 Q. -- stuck pipe, gas kick and  
 14 shallow depletion from the adjacent Rigel gas  
 15 field?  
 16 A. Right.

Page 96:19 to 97:22

00096:19 Q. That was in the same block,  
 20 right, Mississippi Canyon 252 or right on the  
 21 border?  
 22 A. Right on the border, if I  
 23 remember right.  
 24 Q. Now, with respect to the Macondo  
 25 before April 20th, 2010, before the  
 00097:01 catastrophe, the DEEPWATER HORIZON  
 02 encountered all of those risks, actually  
 03 encountered those risks except for depletion  
 04 from the adjacent Rigel gas field, didn't it?  
 05 A. I don't know that for a fact.  
 06 Q. You don't know whether or not  
 07 they had pore pressure, fracture gradient  
 08 difficulties?  
 09 A. Yes, they did.  
 10 Q. Do you know whether or not they  
 11 actually got a pipe stuck and had to  
 12 sidetrack the well?  
 13 A. I'm not -- I remember -- I'm not  
 14 sure I remember that for a fact.

15 Q. Do you remember or not whether  
16 there was one or more gas kicks during the  
17 drilling of this well?  
18 A. There were certainly kicks, yes.  
19 Q. Okay. We're going to attach  
20 that as Exhibit 3203 to Mr. Rainey's  
21 deposition.  
22 (Exhibit No. 3203 was marked.)

Page 101:04 to 101:07

00101:04 Q. (BY MR. WILLIAMS) Mr. Rainey,  
05 during the period of time you were the vice  
06 president of exploration, did you ever  
07 participate in any -- in any way --

Page 101:09 to 101:17

00101:09 Q. -- in any type of SPU or  
10 group-wide OMS gap assessment?  
11 A. I participated in the  
12 exploration OMS gap assessment that was  
13 carried out in 2009.  
14 Q. Turn to Tab 5 for me, if you  
15 would, please, sir. Have you seen this --  
16 you know what, it would be easier -- it's  
17 produced in two formats --

Page 101:19 to 101:19

00101:19 Q. -- black and white --

Page 101:21 to 101:21

00101:21 Q. -- and color.

Page 101:23 to 102:01

00101:23 Q. The color is easier -- easier to  
24 read. And if you -- just on the other side  
25 of the yellow --  
00102:01 A. Okay.

Page 102:04 to 103:20

00102:04 Q. Have you seen this gap ranking  
05 matrix before?  
06 A. I can't say for a fact that I  
07 have. I've seen many matrixes like this. I  
08 don't know if I've seen this specific one.  
09 There's not much information on here.  
10 Q. Okay. So you know how to

11 read -- do you know how to read an OMS gap  
 12 assessment?  
 13 A. Yes, I think so. In general.  
 14 Q. Okay. On the first page we've  
 15 got a depiction of the general idea which is  
 16 the gap risk, the business, and the  
 17 importance of that risk, correct?  
 18 A. Correct.  
 19 Q. And on the second page, it's  
 20 titled: OMS gap detail 8, 9 and 10.  
 21 Those would be the numbers that  
 22 you see on the first page, correct?  
 23 A. I can't say for certain. I  
 24 don't -- I'm not sure.  
 25 Q. Okay. 8, 9, 10, does it -- does  
 00103:01 it look to you like it's -- this is a detail  
 02 of the upper right-hand corner of the ranking  
 03 matrix shown on the first page?  
 04 A. I don't know.  
 05 Q. Did you actually see this OMS  
 06 gap assessment after it was completed?  
 07 A. I don't know if I ever saw it in  
 08 its entirety.  
 09 Q. Do you know whether or not it  
 10 was ever discussed at any of the SPU  
 11 leadership team meetings that you attended?  
 12 A. There were various meetings with  
 13 different parts of the leadership team. I do  
 14 think I was in some of the meetings. I'm not  
 15 sure that I can remember if there was ever a  
 16 conversation about the finished product at  
 17 the leadership team meeting. But I -- there  
 18 were many meetings in which I participated in  
 19 some.  
 20 Q. That involved discussion --

Page 103:22 to 104:23

00103:22 Q. -- of the OMS gap ranking  
 23 matrix?  
 24 A. Right, right.  
 25 Q. But you -- were you asked for  
 00104:01 input from exploration?  
 02 A. Some aspects of it, yes.  
 03 Q. Do you remember what that -- the  
 04 topics of that input were?  
 05 A. No. This is two -- two, three  
 06 years ago.  
 07 Q. And you don't recall ever  
 08 discussing in a leadership team meeting the  
 09 results of the 2010 gap -- OMS gap ranking  
 10 matrix, correct?  
 11 A. 2010, no, I don't remember that.  
 12 Q. When would this have come out?  
 13 Do you -- do you have any idea?

14           A.       I say -- no, I don't. I would  
15 have expected it to be -- to have been  
16 carried out during the year and -- and upped  
17 it to the local OMS made at the end of the  
18 year.

19           Q.       Okay. We're going to attach  
20 this as Exhibit 3205 to Mr. Rainey's  
21 deposition, and we've got to take a break to  
22 change the tape.

23                   (Exhibit No. 3205 was marked.)

Page 138:25 to 141:19

00138:25           Q.       (BY MR. CERNICH) Mr. Rainey, if  
00139:01 I could please direct you to Tab 4 in your  
02 binder. And I believe this is the same  
03 e-mail and attachments that you were going  
04 over with Mr. Cunningham, but I'm not quite  
05 certain that all of the attachments were in  
06 that one, so I'm going to go ahead and work  
07 with this one.

08           A.       Right.

09           Q.       This is an e-mail from yourself  
10 to Jane Wallace dated Tuesday, April 27th,  
11 with some -- Subject: spill vol.xls, with  
12 some spreadsheets attached.

13                   If you would turn to -- do you  
14 recall this e-mail, Mr. Rainey?

15           A.       Yes.

16           Q.       And you said Ms. Wallace was an  
17 assistant?

18           A.       She was an administrative  
19 assistant that was supporting the folk in the  
20 room that we were in in Robert.

21           Q.       And why did you send it to  
22 Ms. Wallace?

23           A.       I believe because I wanted to  
24 have some copies made prior to the 4:30  
25 meeting so that other folk in the room would  
00140:01 have copies when we were talking about the  
02 issue.

03           Q.       And the 4:30 meeting, can you  
04 describe that meeting to me?

05           A.       It was a telecom between the --  
06 our room in Robert and the source control  
07 group in Houston.

08           Q.       And who was in the room in  
09 Robert for those meetings?

10           A.       Doug Suttles, myself, Richard  
11 Morrison, a variety of other -- usually BP  
12 folk were in that room.

13           Q.       And so Ms. Wallace would have  
14 printed out this -- the attachments to this  
15 e-mail and distributed them?

16           A.       They'd have been on the table.

17 Again, I can't remember the details of it,  
18 but that's what I -- having read the various  
19 e-mails, that's what I think was going on.  
20 Q. Okay. And then you would  
21 discuss these calculations during that --  
22 A. Yeah.  
23 Q. -- during that --  
24 A. Right.  
25 Q. -- meeting on the phone with the  
00141:01 team in Houston as well?  
02 A. Right.  
03 Q. And when you refer to the team  
04 in Houston, that's the source control team  
05 headed up by Mr. Inglis?  
06 A. Andy -- it appeared to be in  
07 the -- we were -- it was by telephone so we  
08 couldn't see what was going on at the other  
09 end. Andy certainly appeared to be in the  
10 chair for some of the meetings. Sometimes  
11 James Dupree would be in the chair.  
12 Q. And would Richard Lynch be  
13 involved in those --  
14 A. Yes.  
15 Q. -- discussions?  
16 A. Yeah. Richard was definitely in  
17 the room.  
18 Q. And Paul Tooms?  
19 A. I don't know of a Paul Tooms.

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00146:02 Okay. If you'll turn to Tab 6,  
03 please. This is an e-mail from yourself  
04 dated Tuesday, April 27th, to Ian Cavanaugh,  
05 Subject: spill vol 4-27.  
06 And who is Mr. Cavanaugh?  
07 A. His role in BP is he's the  
08 technology vice president for subsurface and  
09 wells. His role in the response by this time  
10 was I think best described as science advisor  
11 to the incident commander in Houma.  
12 Q. And were you sending -- do you  
13 recall sending this e-mail to Mr. Cavanaugh?  
14 A. I don't actually recall doing  
15 it. Of course, I've seen the documents  
16 and --  
17 Q. Okay. And were you sending this  
18 to Mr. Cavanaugh like the -- like when you  
19 sent the other e-mail to Ms. Wallace to  
20 distribute for a meeting?  
21 A. No. This is -- this is later.  
22 This is after the meeting.  
23 Q. Okay.  
24 A. My belief is, and this -- this  
25 is reconstructed from looking at the

00147:01 documents and my notes, is that Ian would  
02 have been on the 4:30 telecom, and he simply  
03 expressed interest as a scientific advisor  
04 for Houma in what I was doing, and he thought  
05 it might help him as he was working in Houma  
06 to assist in planning and applying  
07 dispersants.  
08 Q. So he was using this -- using  
09 these numbers to consider how much dispersant  
10 he was going to --  
11 A. He needed --

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00147:15 A. My belief is he thought it might  
16 be useful, but I don't know what he did with  
17 it after he got it.  
18 Q. (BY MR. CERNICH) Did you ever  
19 discuss these -- these calculations with him?  
20 A. I can't say specifically. I  
21 have many phone calls with Ian during this  
22 period, and I can't say specifically whether  
23 I talked about this with him or not.  
24 Q. Okay. If you'll look at the  
25 attachment, your attachment has the Bonn  
00148:01 Agreement approach there and includes --  
02 MR. HEBERLIG: Counsel, I'm familiar  
03 with this document and it's not complete.  
04 MR. CERNICH: (Hands document to  
05 Mr. Heberlig.)  
06 MR. HEBERLIG: Thank you.  
07 A. Okay.  
08 MR. CERNICH: Does that satisfy you,  
09 Counsel?  
10 MR. HEBERLIG: Yes, that's got all  
11 three pages.  
12 MR. CERNICH: Okay.  
13 Q. (BY MR. CERNICH) And if you'll  
14 look at the first spreadsheet, which is  
15 using -- I'm trying to recall, is that one  
16 using the ASTM method or the Metcalf method?  
17 A. Neither, actually. The heading  
18 says it's using ASTM, but what it's actually  
19 using is a hybrid between ASTM and Bonn.  
20 Q. Okay. Is that a method that you  
21 found on the Internet?  
22 A. No. It's the method that I  
23 created having had conversations with the  
24 folk in the science room, conversations with  
25 various other people and at least one other  
00149:01 person in NOAA, a senior NOAA official in  
02 Seattle, and then more ongoing conversations  
03 with folk in the science room. That's --  
04 that's where it came from.  
05 Q. Is the NOAA official that you're



06 referring to Bill Lehr?  
07 A. That's correct.  
08 Q. And who did you discuss it with  
09 in the science room?  
10 A. I can't specifically remember,  
11 but there were a lot of folk in that room.  
12 Q. Did you discuss it with Doug  
13 Suttles?  
14 A. I did discuss it with Doug  
15 Suttles, yes.  
16 Q. Did you show him the -- your  
17 hybrid calculations?  
18 A. I showed him the -- I don't know  
19 whether I showed him the Metcalf & Eddy or  
20 the ASTM, but one or other of those two and  
21 the Bonn and we discussed the differences in  
22 the results. And we discussed sort of the  
23 relevance of the upper end of the Bonn  
24 Agreement to this particular situation and  
25 agreed that it wasn't relevant to this  
00150:01 particular situation. And we -- we pulled  
02 back from the upper end of Bonn, but we still  
03 allowed for -- went well beyond the upper end  
04 of the ASTM.  
05 Q. And what is the upper end for  
06 the -- for the Bonn calculations, for your  
07 calculations on that day? I believe it's in  
08 the second page, second attachment?  
09 A. So the upper end, if I applied  
10 the Bonn Agreement and honor the thicknesses  
11 that would be implied by the upper end of  
12 Bonn, then you get a number of 92,000 barrels  
13 a day.

Page 154:22 to 155:20

00154:22 Q. At the top of the spreadsheet it  
23 appears to indicate the methodology there.  
24 Can you tell me what that is?  
25 A. But it wasn't -- this wasn't the  
00155:01 meth- -- the header was wrong.  
02 Q. Okay.  
03 A. The way I developed the  
04 methodology, I started out with Metcalf &  
05 Eddy. Then the next protocol that I found  
06 was the Bonn, and then I eventually found the  
07 American Society for Testing and Materials,  
08 the ASTM, standards. Bonn is effectively the  
09 European standard; ASTM is effectively the  
10 American, U.S. standard.  
11 When I evolved from the -- I  
12 started bringing the hybrid methodology  
13 together, I just evolved the spreadsheet.  
14 And the header, of course, doesn't -- when  
15 you're working on the screen you don't see

16 the header. So I just didn't realize that  
 17 the header hadn't changed.  
 18 So this I believe, just from the  
 19 format of the spreadsheet, is the hybrid  
 20 methodology.

Page 159:03 to 160:10

00159:03 Q. And for your hybrid methodology  
 04 there, what are your -- what is the low  
 05 range, the mid range and the high range?  
 06 A. The one, 5,700, 14,000.  
 07 Q. Excuse me, so the low end is  
 08 what?  
 09 A. 1,063 barrels per day.  
 10 Q. Barrels per day, yeah. And the  
 11 mid range is?  
 12 A. 5,758 barrels per day.  
 13 Q. And the high range is?  
 14 A. 14,266 barrels per day.  
 15 Q. And then if you'd turn to the  
 16 next page, which I believe is the Bonn  
 17 Agreement methodology; is that correct?  
 18 A. That's correct.  
 19 Q. And what is your low range  
 20 there?  
 21 A. 2,783.  
 22 Q. Barrels per day?  
 23 A. Barrels per day.  
 24 Q. And your mid range?  
 25 A. 17,328 barrels per day.  
 00160:01 Q. And the high range?  
 02 A. 92,028 barrels per day.  
 03 Q. Thank you. And now if you turn  
 04 to the next attachment to that e-mail, which  
 05 I believe is the correct -- which I believe  
 06 is the -- are the calculations from  
 07 April 29th. If you could please -- if you  
 08 could please check that third sheet where you  
 09 summarize the calculations and confirm for  
 10 me?

Page 160:12 to 161:17

00160:12 A. This is not a hybrid, so this  
 13 was not done on April the 28th. This date  
 14 says April the 26th.  
 15 Q. (BY MR. CERNICH) Okay.  
 16 A. So this -- I believe this would  
 17 have been done on April the 26th.  
 18 Q. Okay.  
 19 A. And it was -- this was probably  
 20 the very first calculation that I did using  
 21 Metcalf & Eddy.

22 Q. That would have been Metcalf &  
 23 Eddy?  
 24 A. Yeah.  
 25 Q. And what is your -- what is your  
 00161:01 low range on that one?  
 02 A. 1,620 barrel per day.  
 03 Q. And the mid range?  
 04 A. 3,004 barrels per day.  
 05 Q. And the high range?  
 06 A. 9,068 barrels per day.  
 07 Q. Okay. Thank you. And then if  
 08 you would turn to the next range. Can you  
 09 tell me what that calculation is, Mr. Rainey?  
 10 A. I don't actually recognize this  
 11 one, but I'm going to guess that it was a  
 12 Bonn -- using the Bonn standard.  
 13 Q. And what is the estimate in that  
 14 one?  
 15 A. 103,794 barrels per day.  
 16 Q. Barrels per day. Thank you. If  
 17 you could return that to me, please.

Page 173:25 to 174:05

00173:25 receiving regularly related to the interface  
 00174:01 meetings?  
 02 A. Uh-huh, yeah.  
 03 Q. And you were a recipient of the  
 04 e-mail?  
 05 A. Right.

Page 176:01 to 177:05

00176:01 Q. (BY MR. CERNICH) If we look at  
 02 the notes, 16:30, so that would be 4:30 on  
 03 April 26, 2010. Second topic of the crimped  
 04 pipe.  
 05 The fourth bullet point is an  
 06 action. I assume that's an action item  
 07 coming out of your meeting for Gordon. Is  
 08 that Gordon Birrell?  
 09 A. Yes.  
 10 Q. It says: Discuss flow  
 11 calculations with David Rainey. Action  
 12 complete.  
 13 Did Mr. Gordon -- did  
 14 Mr. Birrell discuss flow calculations with  
 15 you?  
 16 A. So we had a -- as I remember it,  
 17 this particular conversation -- I had many  
 18 conversations with Gordon, but this  
 19 particular conversation, I think the logic  
 20 was for -- the group knew that I was  
 21 beginning to work on the topic, and there

22 were some implications from the work that  
23 Gordon was doing that would bear on the work  
24 that I was doing. So he attempted to explain  
25 to me the engineering aspects of the -- of  
00177:01 the modeling work that he was doing in  
02 Houston.  
03 Q. And was that the -- that was the  
04 modeling of the crimped riser pipe?  
05 A. Right.

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00179:25 read them because I'm not an engineer. But  
00180:01 that's my understanding from my memory of the  
02 telephone conversation with Gordon and going  
03 back through my notes of those  
04 conversations -- that conversation.  
05 Q. And would -- would Gordon  
06 Birrell be the person who would have the most  
07 information --  
08 A. Yes.  
09 Q. -- related to that modeling?  
10 A. Uh-huh.  
11 MR. CERNICH: I'm going to mark that  
12 e-mail and attachment as Exhibit 3217.  
13 (Exhibit No. 3217 was marked.)  
14 Q. (BY MR. CERNICH) If you'll turn  
15 to Tab 5 in your binder, please. This is  
16 another similar e-mail, Jason Caldwell to a  
17 similar group of people dated Tuesday,  
18 April 27th with inter- -- interface meeting  
19 notes, April 27th. Actually it looks like  
20 there was another attachment, which, I  
21 apologize, isn't -- isn't there.  
22 MR. CERNICH: I'll agree that this  
23 isn't the complete document, Counsel, but I'm  
24 just concerned about the meeting notes. It's  
25 the attachment 0630, 4/27/2010.  
00181:01 Q. (BY MR. CERNICH) Going down to  
02 the Crimp Pipe, third bullet point says:  
03 Sample section of risers en route to a  
04 testing facility to be bent and tested.  
05 Estimate -- estimate commencement of testing  
06 by the weekend.  
07 Can you tell me what you know  
08 about that sample section of riser being sent  
09 to a testing facility?  
10 A. I know nothing about this.  
11 Q. Okay. Would Mr. Birrell be the  
12 person most likely to have information on  
13 that?  
14 A. I would suspect he would be,  
15 yes.

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00181:25 Q. (BY MR. CERNICH) Mr. Rainey, if  
00182:01 you could please turn to Tab 23 in your  
02 binder.

03 A. Okay.

04 Q. And this is an e-mail, it starts  
05 at the top: From Doug Suttles to John Lynch  
06 and Andy Inglis.

07 But if we work down the e-mail  
08 chain, it starts with you forwarding a flow  
09 rate note to Mr. Suttles. And the attachment  
10 to -- and this e-mail is dated May 19th,  
11 2010.

12 And the attachment is -- is a  
13 document that is entitled: Mississippi  
14 Canyon 252 #1 Flow Rate Calculations.

15 Mr. Rainey, is this the memo  
16 that you referred to earlier when you were  
17 discussing or we were discussing your  
18 May 17th calculations?

19 A. I believe it is, yes. I'm not  
20 used to seeing it printed in this format  
21 but --

22 Q. Yeah, for whatever reason that's  
23 the way it printed when we got it. And if  
24 you take a look at that and tell me whether  
25 it appears that the memo and the attachments  
00183:01 to that memo appear to be complete to you.

02 (Discussion off the record.)

03 A. Yes, this looks to be complete  
04 at first glance.

05 Q. (BY MR. CERNICH) And did you  
06 prepare this memo, Mr. Rainey?

07 A. Yes, I did.

08 Q. And did anyone assist you in  
09 preparing this memo?

10 A. It was reviewed by Doug Suttles.

11 Q. Did he ask you to prepare this  
12 memo?

13 A. No.

14 Q. Did someone ask you to prepare  
15 this memo?

16 A. A request was made. This was my  
17 response to the request, not a specific  
18 request to prepare a memo.

19 Q. Okay. And what was -- what was  
20 the request?

21 MR. LANCASTER: Object and ask you to  
22 lay some additional foundation as to who,  
23 what and where because I'm going to be  
24 instructing the witness not to answer some  
25 questions based upon privilege grounds.

00184:01 MR. CERNICH: Okay.

02 Q. (BY MR. CERNICH) Why did you

03 prepare this memo?  
04 MR. LANCASTER: That would call for  
05 disclosure of conversations with counsel, so  
06 I instruct the witness not to answer based  
07 upon privilege. You could get the "who" out  
08 there, if you want.  
09 Q. (BY MR. CERNICH) Who asked you  
10 to prepare this memo?  
11 A. Nobody asked me to prepare the  
12 memo. I prepared the memo in response to a  
13 request from BP's counsel.  
14 Q. From BP's?  
15 A. Counsel.  
16 Q. Counsel. Did BP's counsel  
17 review drafts of this memo?  
18 A. Yes, they did.  
19 Q. And is this the final version of  
20 that memo?  
21 A. I believe it is. The only --  
22 there was one edit that was made to the final  
23 sentence, and I can't remember whether this  
24 is the final or the original version.  
25 Q. Did you --  
00185:01 A. It wasn't a huge change, so it  
02 wasn't really relevant.  
03 Q. Did you receive comments from  
04 counsel to your memo?  
05 A. I believe I did, yes.  
06 Q. And did you edit this memo  
07 pursuant to the comments from counsel?  
08 A. I don't believe I did, no.  
09 Q. So this memo reflects only your  
10 thoughts and calculations?

Page 185:12 to 188:16

00185:12 A. No, it's a summary of a lot of  
13 the work I was aware of that was going on  
14 around flow rate and worst-case discharge  
15 potential.  
16 Q. (BY MR. CERNICH) And do you  
17 know why the preparation of this memo fell to  
18 you?  
19 MR. LANCASTER: If you can answer that  
20 question without divulging conversations with  
21 counsel, you can answer. Otherwise, I'd  
22 instruct you not to answer based upon  
23 privilege grounds. The first question is:  
24 Can you answer that without disclosing  
25 conversations with counsel?  
00186:01 THE WITNESS: I think probably not.  
02 MR. LANCASTER: Okay. So we would  
03 instruct the witness not to answer based upon  
04 privilege.  
05 Q. (BY MR. CERNICH) So you took it

06 upon yourself to prepare this memo based on  
07 conversations but without a direct  
08 instruction to prepare this memo. Is that --  
09 A. Right.  
10 Q. -- is that an accurate --  
11 A. Uh-huh.  
12 Q. -- statement?  
13 Let's look at the memo for a  
14 moment. Context, it says: A 30-second video  
15 clip of hydrocarbons leaking from the broken  
16 end of the DEEPWATER HORIZON drilling riser  
17 has been released to the public. Various  
18 experts are challenging the Unified Command's  
19 best guess estimate of flow rate at the  
20 seabed based on the video clip. This note  
21 summarizes the various estimates that have  
22 been made within the Unified Demand --  
23 Unified Command.  
24 So your intent in putting  
25 together this -- this memo was to summarize  
00187:01 the various estimates that had been made  
02 within the Unified Command; is that correct?  
03 A. That I was aware of, yes.  
04 Q. Well, what do you mean by, that  
05 you were aware of? Oh, calculations you  
06 were -- estimates that you were aware of?  
07 A. Yeah.  
08 Q. The first section here addresses  
09 mass balance, which as -- do I understand  
10 correctly that that's the work we were  
11 discussing earlier today?  
12 A. That's correct.  
13 Q. Okay. And then the last  
14 paragraph says: From April 27th or  
15 April 30th daily estimates of flow rate were  
16 made on the basis of visual description of  
17 oil on the surface. And those are -- you're  
18 referring to the estimates that we discussed  
19 earlier today?  
20 A. That's correct.  
21 Q. And then going on to the next  
22 page, it says: Low end was always around  
23 1,000 barrels per day.  
24 Next bullet: Best guess was  
25 between 5,000 and 6,000 barrels per day.  
00188:01 And the next bullet is that the  
02 high end varied from 12,000 to 14,000 barrels  
03 per day?  
04 A. That's correct.  
05 Q. And it says: The tables  
06 associated with these estimates are attached,  
07 attachments 1 through 4. These estimates  
08 played an important part in the Unified  
09 Command's decision to raise the estimate of  
10 flow rate from 1,000 to 5,000 barrels per

11 day.  
12 A. Uh-huh.  
13 Q. Now, this summary doesn't seem  
14 to include the calculations that you made  
15 using the bond agreement methodology. Can  
16 you tell me why?

Page 188:18 to 190:09

00188:18 A. The methodology that was used  
19 here does actually include -- it's the  
20 hybrid. So it doesn't honor the upper end of  
21 the bond protocol, but it goes, I think, to a  
22 factor of somewhere around seven or eight  
23 times beyond the upper end of the American  
24 Standard.  
25 Q. (BY MR. CERNICH) But this memo  
00189:01 doesn't explain the methodology that you  
02 actually used, does it?  
03 A. No, because it was a summary.  
04 It wasn't a technical paper on that  
05 particular methodology.  
06 Q. Well, then what was the -- what  
07 was the purpose of this summary, then?  
08 A. It was to provide a summary of  
09 the various estimates of flow rate and  
10 maximum discharge potential that had been  
11 made.  
12 Q. Was it your understanding that  
13 this was prepared for distribution to Admiral  
14 Allen and Admiral Landry?  
15 A. I didn't know that that would  
16 happen at the time. But it did subsequently  
17 happen.  
18 Q. So no one told you that this was  
19 going to be distributed outside of BP for any  
20 reason?  
21 MR. LANCASTER: And let me object to  
22 the extent that question is calling for  
23 conversations of counsel. If you could  
24 phrase it as any non-lawyers or carve your  
25 way around it. Otherwise I feel compelled to  
00190:01 apply --  
02 MR. CERNICH: Certainly.  
03 MR. LANCASTER: -- a cautionary  
04 instruction not to answer that question if it  
05 would require disclosure of conversations  
06 with counsel.  
07 Q. (BY MR. CERNICH) Did any  
08 non-lawyer ever tell you that this would be  
09 distributed outside of the BP organization?

Page 190:11 to 190:16



00190:11 A. Could you ask the question  
12 again?  
13 Q. (BY MR. CERNICH) Did any  
14 non-lawyer tell you that this -- that this  
15 memo would be distributed outside of the BP  
16 organization?

Page 190:18 to 193:02

00190:18 A. Not -- not either before or as I  
19 was writing it.

20 Q. (BY MR. CERNICH) So at some  
21 point did any non-lawyer tell you after you  
22 had completed this memo that it would be  
23 distributed to Admiral Allen, Admiral Landry,  
24 or anyone in the United States government?

25 A. I don't know if I -- I don't  
00191:01 actually remember if I knew before it was --  
02 if it was sent to the admirals, that it was  
03 going to be, but certainly I found out at  
04 this point that it was.

05 Q. Okay. I'd like to move down to  
06 the next section, the maximum discharge  
07 calculation. And if we move onto the third  
08 page of the memo, it says: An absolute worst  
09 case flow rate of 60,000 barrels per day was  
10 calculated. A more reasonable worst case  
11 scenario of 40,000 barrels per day recognizes  
12 the following BOP is in place and may be  
13 partially activated. The riser and drill  
14 pipe is crushed and kinked. Restrictions  
15 provided by cement and the casing annulus  
16 formation collapse, casing hanger, et cetera,  
17 are likely.

18 So this is saying that BP has  
19 calculated an absolute worst flow rate of  
20 60,000 barrels per day with a more reasonable  
21 worst case scenario of 40,000 barrels per  
22 day; is that correct?

23 A. That's correct.

24 Q. And that these three items, the  
25 BOP in place, the crushed and kinked riser  
00192:01 and drill pipe, and these various  
02 restrictions listed, would likely reduce that  
03 60,000 to a more likely scenario of 40,000;  
04 is that correct?

05 A. That's my understanding, yeah.

06 Q. Now, if we can -- this says --  
07 this analysis is summarized on attachment 6.  
08 Can we turn to Attachment 6, please.

09 And Attachment 6 is -- appears  
10 to be a PowerPoint slide. It has a diagram  
11 which would purport to be the kinked riser  
12 pipe; is that correct?

13 A. That's correct.

14 Q. And the title of the slide is  
15 "Sea Floor Exit 7 inch by 9-7/8 inch Casing  
16 Annulus Float Path."  
17 Does that mean that this is  
18 assuming that the flow from the well is  
19 coming up solely through the annulus?  
20 A. That's correct. That's my  
21 understanding.  
22 Q. And is it your understanding  
23 after all of the work that was done to  
24 respond to the well, to close in the well,  
25 cement the well, that the flow actually was  
00193:01 solely from -- through the annulus up to  
02 the -- up to the wellhead?

Page 193:04 to 194:03

00193:04 A. This is way beyond my area of  
05 expertise. And I've been focused on the  
06 response since then, so I can't say for sure.  
07 Q. (BY MR. CERNICH) Have you ever  
08 heard that the flow was up the production --  
09 the 7 inch by 9-7/8 inch production casing  
10 rather than through the annulus?  
11 A. I think what I understand is  
12 that it was not up the annulus.  
13 Q. And is it your understanding  
14 that flow -- flow through the production  
15 casing would be greater than flow up through  
16 the annulus?  
17 A. Right. I -- that's my  
18 understanding.  
19 Q. So in retrospect, the maximum  
20 theoretical flow rate in this slide is  
21 probably underestimated; is that correct?  
22 A. In this slide -- I think the  
23 belief at this time from the people who did  
24 this was that the likely flow path was up the  
25 annulus. So this is a worst case theoretical  
00194:01 discharge up through the annulus.  
02 Q. But you are aware that there  
03 were other calculations that were done?

Page 194:05 to 194:24

00194:05 Q. (BY MR. CERNICH) And that where  
06 there were flow estimates done for other  
07 scenarios, for example, flow up the  
08 production casing as well; is that correct?  
09 A. I believe that's the case. I  
10 think it's mentioned in my memo.  
11 Q. Then if we move on to the next  
12 section, fluid velocity at seabed on --  
13 A. Can you remind me on the tab?

14 Q. Oh, I'm sorry. We're on Tab 23.  
 15 A. Okay. Thank you.  
 16 Q. And I've gone back to the  
 17 memo --  
 18 A. To the memo.  
 19 Q. -- itself. Correct.  
 20 A. Okay.  
 21 Q. Okay. I'm done with that  
 22 exhibit. I'm going to mark that as  
 23 Exhibit 3218.  
 24 (Exhibit No. 3218 was marked.)

Page 197:20 to 199:17

00197:20 Q. Did Mr. Suttles task you as  
 21 the -- as the person at the Unified Command  
 22 who was the point person or in charge of flow  
 23 rate estimates?  
 24 A. I think by this time I had  
 25 become the science guy. That's what -- we  
 00198:01 were sort of -- Richard Morrison was focusing  
 02 in operations and I was focusing on science  
 03 issues. And flow rate fell for -- it fell  
 04 under the science issue.  
 05 Q. And in addition to flow rate,  
 06 the -- I believe one of the other science  
 07 issues you were working on was the fate and  
 08 fingerprinting of the oil; is that correct?  
 09 A. That was certainly one of them,  
 10 one of the many issues, yes.  
 11 Q. What were some of the other  
 12 issues you were working on?  
 13 A. I worked on dispersement  
 14 application, subsea and surface. I did -- I  
 15 actually did a lot of briefings to staffers  
 16 and committees in Washington, D.C. I did --  
 17 I actually started out doing a lot of  
 18 external work, a lot of external -- doing tie  
 19 holes down in St. Bernard Parish. I  
 20 testified before the Natural Resources  
 21 Committee in Baton Rouge. So I evolved from  
 22 a external role and then increasingly went  
 23 into the scientific role.  
 24 Q. But as you noted earlier, you're  
 25 not a -- you're not an engineer, you're a  
 00199:01 geologist?  
 02 A. Right.  
 03 Q. Did you ever question your --  
 04 your placement in this -- in this role in the  
 05 Unified Command?  
 06 A. I am a scientist. I'm a  
 07 geologist. So we were -- I probably was the  
 08 closest thing there to a scientist.  
 09 Q. But the flow calculations would  
 10 appear to me to be more of a -- more of an

11 engineering issue, would you agree?  
12 A. Certainly the work that was  
13 being done in Houston by the engineers, that  
14 was engineering activity.  
15 Q. And what was that work that was  
16 being done in Houston?  
17 A. Well, it was --

Page 199:19 to 200:16

00199:19 A. I don't actually -- there was a  
20 lot of work -- I know there was a lot of work  
21 going on, there was a lot of people working  
22 engineering aspects, but I don't -- I was in  
23 Robert. I don't know the details of that  
24 work.  
25 Q. (BY MR. CERNICH) Was Houston  
00200:01 sharing any flow rate estimates with you?  
02 A. In some of the documents you  
03 have in here, there's information flowing in  
04 both -- in both directions.  
05 Q. But did they ever provide -- do  
06 you ever recall Houston providing you with a  
07 flow rate estimate at any point?  
08 A. Not a flow rate estimate, no, I  
09 don't recall.  
10 Q. Early on they were primarily  
11 working off of the 5,000 barrel per day  
12 number; is that correct?  
13 A. Early on 1,000 barrels a day,  
14 then up to 5,000. There was a lot of work  
15 going on in maximum discharge potential.  
16 Some of that information was shared with me.

Page 201:25 to 202:15

00201:25 Lynch to David Rainey and Doug Suttles dated  
00202:01 Sunday, May 16th. It's redacted because  
02 Mr. Lynch is counsel, but I'd like to direct  
03 you down to the bottom of the page.  
04 There is an e-mail from Mike  
05 Mason sent May 15th, 2010, to Andy Inglis  
06 with a copy to Jasper Peijs?  
07 A. Peijs, Jasper Peijs?  
08 Q. Peijs. Okay. Thank you.  
09 Subject: Macondo oil rate.  
10 Do you know who Mr. Mason is?  
11 A. Again, a senior reservoir  
12 engineer. I don't know what his official  
13 role is.  
14 Q. So you had no interaction  
15 personally with Mr. Mason at any time?

Page 202:17 to 205:02

00202:17 A. I'm not aware of any interaction  
18 certainly before this period.

19 Q. (BY MR. CERNICH) So you  
20 never -- you don't recall ever having spoken  
21 with Mr. Mason before this e-mail, before  
22 seeing this e-mail; is that correct?

23 A. Certainly not in this response.  
24 And, again, I may have met and talked with  
25 him before the incident but I -- I'm not sure

00203:01 I could put a face to the name.

02 Q. So you've never met him  
03 personally?

04 A. I may have done, but I -- it  
05 would be one of those people I would go,  
06 okay, yeah --

07 Q. And who is Mr. Peijs?

08 A. At this time he was Mike Daly's  
09 executive assistant. And through the  
10 incident, the executive assistants were being  
11 rotated and shared by all the executives. So  
12 I believe at this point he was acting as Andy  
13 Inglis' executive assistant.

14 MR. LANCASTER: And for the court  
15 reporter, Peijs is P-e-i-j-s.

16 MR. CERNICH: Thank you.

17 Q. (BY MR. CERNICH) And in this  
18 e-mail dated May 15th to Mr. Inglis,  
19 Mr. Mason says that he just read an article  
20 in CNN stating that a researcher at Purdue  
21 believes the Macondo well is leaking up to  
22 70,000 barrels of oil per day and that BP  
23 stands by a 5,000 barrel of oil per day  
24 figure. With the data and knowledge we  
25 currently have available, we cannot

00204:01 definitively state the oil right from the  
02 well.

03 He goes on to say: We should be  
04 very cautious standing behind a 5,000 barrel  
05 of oil per day figure as our modeling shows  
06 that this well could be making anything up to  
07 approximately a hundred thousand barrels of  
08 oil per day, depending on a number of unknown  
09 variables such as flow path either through  
10 the annulus, behind the production casing, or  
11 through the production casing float shoe.  
12 The height of reservoir exposed if drill pipe  
13 is suspended in the BOP and sealed by VBR  
14 rams, reservoir skin damage, choking effects  
15 and et cetera, we can make the case for 5,000  
16 barrels of oil per day only based on certain  
17 assumptions and in the absence of other  
18 information such as a well test.

19 Do you agree that BP was, in

20 fact, standing by an estimate of 5,000  
21 barrels of oil per day on May 15th?  
22 A. I don't know specifically on May  
23 the 15th what our official -- or even if  
24 there was an official flow rate estimate.  
25 Q. But you were involved in coming  
00205:01 up with that 5,000 barrel of oil per day  
02 figure; is that correct?

Page 205:04 to 205:23

00205:04 A. In late April I was involved.  
05 Q. (BY MR. CERNICH) And I thought  
06 you said you also performed calculations on  
07 May 17th.  
08 A. But I also said that was an  
09 interesting intellectual exercise that I have  
10 no idea if it had any scientific validity  
11 whatsoever.  
12 Q. But I thought you also testified  
13 that that found its way into your flow rate  
14 memo?  
15 A. I mentioned it. If the system  
16 had been a steady steered system, then it  
17 might be -- it might be valid. The fact that  
18 it gave the same answer I thought was  
19 interesting.  
20 Q. But you didn't mention in that  
21 memo, your flow rate memo, that your  
22 methodology was without any scientific  
23 validity either, did you?

Page 205:25 to 206:07

00205:25 A. And, again, it was a summary  
00206:01 memo. I mentioned it out of interest, the  
02 fact that I had done that calculation and it  
03 gave the same answer.  
04 Q. (BY MR. CERNICH) An answer that  
05 I think we discussed earlier. It didn't  
06 account for the dispersement that was being  
07 used, correct?

Page 206:09 to 208:06

00206:09 A. I said I wasn't sure whether it  
10 did or not. It did account for surface. I'm  
11 not sure whether it accounted for subsea.  
12 Q. (BY MR. CERNICH) It's not my  
13 recollection. Let's go back to that. So  
14 you're saying -- so your testimony is that  
15 the -- that your May 17th estimate did --  
16 did, in fact, account for dispersant --

17 dispersant use on the surface?  
 18 A. I think it did. I'd have to go  
 19 back and check the numbers to be sure, but  
 20 I'd be surprised if I didn't.  
 21 Q. But you -- but it didn't -- it  
 22 didn't account for subsea dispersant use?  
 23 A. I don't know whether it did or  
 24 not, but I -- and if it didn't, that was a  
 25 flaw.

00207:01 Q. And then Mr. Mason says we can  
 02 make a case for 5,000 barrels of oil per day  
 03 only based on certain assumptions and in the  
 04 absence of other information such as a well  
 05 test.  
 06 Do you know what certain  
 07 assumptions he's referring to there?  
 08 A. Well, I think he refers to it in  
 09 the previous sentence. But other than that,  
 10 I wouldn't know.  
 11 Q. Okay. Did you ever discuss  
 12 Mr. Mason's -- Mr. Mason's e-mail with anyone  
 13 not including -- not including counsel, of  
 14 course? Did you discuss it with Mr. Suttles  
 15 or anyone else?  
 16 A. I can't specifically remember  
 17 discussing it with Mr. Suttles. I did  
 18 discuss it with Mr. Mason.  
 19 Q. Did you -- and what did -- what  
 20 were -- what did you discuss with Mr. Mason?  
 21 A. I just asked them for a bit more  
 22 information on this e-mail, and he said he  
 23 would send me a power pack -- a power pack  
 24 deck that he had talked Mr. Inglis through.  
 25 Q. Okay. And he did, in fact, send  
 00208:01 you that?  
 02 A. And he did, in fact, send me the  
 03 pack.  
 04 Q. I'm going to mark this as  
 05 Exhibit 3220.  
 06 (Exhibit No. 3220 was marked.)

Page 209:24 to 210:16

00209:24 Q. Okay. If you would turn to  
 25 Tab 21, please.

00210:01 A. In the original?  
 02 Q. Correct. This is an e-mail from  
 03 Cindy Yeilding dated Tuesday, May 18th, 2010.  
 04 It's to yourself and a number of other people  
 05 that I understand to be BP employees. Its  
 06 subject is "Info objectives and delivery  
 07 MC 252 Macondo."  
 08 And I've seen, in going through  
 09 the documents, that you received many, many  
 10 of these e-mails. I don't recall offhand

11 whether they were weekly or daily or every  
12 few days. Do you recall receiving these  
13 types of e-mails from Ms. Yeilding?  
14 A. I think, like you said, she --  
15 yes, but not specifically in any particular  
16 one.

Page 211:06 to 212:06

00211:06 Q. There is a -- there is -- on  
07 here there is the fourth subject down,  
08 reservoir engineering, Kelly McAughan. Am I  
09 pronouncing that correct?  
10 A. I'm not sure I know how to  
11 pronounce it either, so...  
12 Q. Okay. Do you know -- is -- do  
13 you know whether it's a male or a female?  
14 A. It should -- it's female.  
15 Q. Ms. McAughan?  
16 A. Yeah.  
17 Q. And that's M-c-A-u-g-h-a-n. Is  
18 she a reservoir engineer?  
19 A. I think so, yes.  
20 Q. Okay. And the reservoir  
21 engineering piece of this e-mail, if you  
22 know, is this related to calculating flow  
23 rates?  
24 A. Certainly at least some of this  
25 is related to the flow rate issue, yes.  
00212:01 Q. And it's my understanding that  
02 BP had a team working on flow rate  
03 calculations from a reservoir engineering  
04 perspective; is that correct?  
05 A. I don't know for certain, again,  
06 but that's -- I think that's the case.

Page 212:12 to 212:17

00212:12 Q. So you -- the -- in the variety  
13 of e-mails similar to this one on objectives  
14 and delivery MC 252, the names that are  
15 included in these documents mean the work  
16 they were doing, you had no -- absolutely no  
17 involvement in that?

Page 212:19 to 214:05

00212:19 A. I had many conversations with  
20 many people, so I can't say that for certain.  
21 Obviously, I did have a conversation with  
22 Mike Mason, but I don't -- I don't remember  
23 conversations with any of these other names.  
24 I did have a conversation with Kelly McAughan



25 about oil samples.  
00213:01 Q. Okay.  
02 A. She was the custodian of the NDT  
03 samples from the well.  
04 Q. Okay. And those samples, as I  
05 understand it, correct me if I'm wrong,  
06 they -- they had implications both for flow  
07 rate as well as for the fingerprinting of the  
08 oil; is that correct?  
09 A. They certainly had implications  
10 for fingerprinting, and I'm reasonably  
11 confident that most of my interactions  
12 were -- would have been in that arena.  
13 Clearly, the oil quality has an impact on  
14 flow rate.  
15 Q. Did you ever have conversations  
16 with anyone related to gas-to-oil ratio or  
17 oil shrinkage?  
18 A. I do remember this issue of the  
19 gas-oil ratio, that the RIT tool appeared be  
20 capturing oil and gas at a gas-oil ratio of  
21 10,000, if I remember right. And there  
22 was -- it was -- it was an issue because when  
23 we drilled the well and we sampled the oil  
24 from the reservoir, it had a gas-oil ratio of  
25 3,000. So there was a question of what's --  
00214:01 there is something differently, what's -- how  
02 can we explain this difference.  
03 Q. Did you or anyone at BP ever  
04 come to a conclusion with regard to what the  
05 actual gas-to-oil ratio was?

Page 214:07 to 214:17

00214:07 A. The gas-to-oil ratio when we  
08 tested from the reservoir was 3,000.  
09 Q. (BY MR. CERNICH) And you  
10 don't -- and you're not aware of any  
11 subsequent work that was done that -- that  
12 resulted in an adjustment of that gas-to-oil  
13 ratio?  
14 A. I don't -- I don't think so.  
15 I'm certainly aware of this conversation  
16 around how it could be -- how the RIT tool  
17 could be sampling it at 10,000.

Page 227:25 to 228:24

00227:25 clear about what was average and what was  
00228:01 instantaneous.  
02 Q. That's helpful. And if I  
03 understand correctly, there were  
04 instantaneous readings from the RIT tool as  
05 high as 12- and 13,000 barrels per day. Is

06 that your recollection?  
 07 A. I don't remember the -- I know  
 08 there were some high -- high readings, but I  
 09 don't know what they were specifically.  
 10 Q. You do recall, though, that  
 11 whatever the RIT tool was capturing, there  
 12 was still observable flow of oil and gas from  
 13 the end of the riser pipe --  
 14 A. Correct.  
 15 Q. -- that wasn't being captured by  
 16 the RIT?  
 17 A. Right.  
 18 Q. So the flow would have been  
 19 something above what the capture rate was; is  
 20 that correct?  
 21 A. Correct.  
 22 Q. I'm going to mark this as  
 23 Exhibit 3223.  
 24 (Exhibit No. 3223 was marked.)

Page 235:08 to 236:03

00235:08 Q. (BY MR. HASSINGER) As a vice  
 09 president of BP and somebody who's worked for  
 10 the company for over 30 years, can you  
 11 identify for me one lesson learned as a  
 12 result of the Texas City incident?  
 13 A. I think one of -- one of the  
 14 lessons was around having accommodation  
 15 structures and office structures too close to  
 16 the facility.  
 17 Q. Office structures and what?  
 18 A. Accommodation structures or  
 19 structures where people would be gathering.  
 20 Q. Too close to the facility?  
 21 A. That's correct.  
 22 Q. All right. What else? Can you  
 23 name a second one, a second lesson learned as  
 24 a result of that catastrophe?  
 25 A. Again, I'm a geologist. I  
 00236:01 describe prospects.  
 02 Q. I understand.  
 03 A. I'm not an operations person.

Page 236:09 to 237:01

00236:09 Q. (BY MR. HASSINGER) I understand  
 10 that you're an explorer; is that right?  
 11 A. That's correct.  
 12 Q. You're a scientist?  
 13 A. That's correct.  
 14 Q. You're one of the top executives  
 15 at BP, is that right, a vice president of the  
 16 company?

17 A. That's correct.

18 Q. As a scientist, as an explorer,  
19 as an executive at BP, and as somebody who's  
20 worked there for over 30 years, can you name  
21 for me a second lesson learned as a result of  
22 the Texas City explosion? And if you can't,  
23 just tell me that.

24 A. Well, off the top of my head,  
25 no, but I'm sure if I had the chance to think  
00237:01 about I could.

Page 237:05 to 237:13

00237:05 One of the comments that you  
06 mentioned earlier, which is why I wrote the  
07 note, was something to the effect that one of  
08 the lessons learned was that the company had  
09 become -- and I wasn't -- I couldn't hear  
10 what you said actually, but it was too top  
11 heavy, too complicated, I think, on the  
12 safety and risk management issues; is that  
13 right?

Page 237:15 to 237:18

00237:15 A. No, that's not what I said. I  
16 said that we recognized at or around that  
17 time that the company had become top heavy  
18 and too complicated in its processes.

Page 238:01 to 238:03

00238:01 Q. (BY MR. HASSINGER) Was that a  
02 lesson learn before or after the Texas City  
03 incident?

Page 238:06 to 238:07

00238:06 the Texas -- it wasn't a lesson learn from  
07 anything. It was just a recognition.

Page 241:08 to 241:15

00241:08 Q. (BY MR. HASSINGER) Can you, as  
09 a top executive at BP, vice president, as  
10 somebody who's worked there for 30-plus  
11 years, as somebody who was very involved in  
12 the effort to try and address the death and  
13 destruction that occurred in April of 2010,  
14 can you list for me the lessons learned as a  
15 result of that event?

Page 241:17 to 241:18

00241:17 A. As a result of the event of  
18 April 20?

Page 241:20 to 242:13

00241:20 A. No, that's not my area of  
21 expertise.  
22 Q. Can you list one lesson, one  
23 lesson learned --  
24 A. That's not my --  
25 Q. -- as a result of that event?  
00242:01 A. That's not my area of expertise  
02 and I haven't been involved in that area. I  
03 was kept very separate from the  
04 investigation. I was focussed on the  
05 response and focused on moving into  
06 restoration. That's why we created a  
07 separate organization to do that.  
08 Q. As a scientist and as a top  
09 executive at BP, have you made any effort to  
10 find out what the lessons to be learned are?  
11 A. I've heard, seen various  
12 presentations, but off the top of my head, I  
13 can't speak to the detail of those.

Page 292:09 to 297:03

00292:09 Q. All right. Earlier this morning  
10 I heard some testimony from you about you  
11 being a scientist, and you're involved in  
12 the -- in a -- I guess the identification of  
13 potential pay zones, what have you. From the  
14 geological point of view, I saw some the  
15 documents that we looked at, and they  
16 identified certain risks.  
17 A. Uh-huh.  
18 Q. Well, you remember the risks  
19 that we talked about, one was the low frac  
20 rate, pore pressure, margin, drilling margin?  
21 A. Uh-huh.  
22 Q. You're nodding your head "yes"?  
23 A. Yeah.  
24 Q. You know, the risk of kicks,  
25 those things that we were talking about this  
00293:01 morning, all of those. Those get identified  
02 from the geological point of view, correct?  
03 A. That's correct.  
04 Q. So you know from the geology  
05 that -- that that presents somewhat of an  
06 issue because they're presented as risk from  
07 the geological perspective, correct?  
08 A. That's correct.

09 Q. Now, what type of risk do they  
10 pose from the geological perspective? Let's  
11 take, you know, low drilling margin, frac  
12 rate, pore pressure, what type of risk,  
13 when -- when -- when you're talking about  
14 getting a go or no-go on a project --  
15 A. Uh-huh.  
16 Q. -- when you identify those as  
17 risks, what's the concern? Why are they a  
18 risk?  
19 A. So, the areas where you have  
20 narrow window between pore pressure and  
21 fracture gradient are more difficult to drill  
22 than areas that have wide margin between the  
23 pore pressure and the fracture gradient.  
24 Q. And I think I understand the  
25 pore pressure and frac gradients, and I don't  
00294:01 want to digress into that. But since they're  
02 more difficult --  
03 A. Uh-huh.  
04 Q. -- what I'm driving at is, what  
05 are the risks that you identify when you say  
06 it? Is it -- is it potential loss time? Is  
07 it they present a risk of not reaching TD?  
08 Is it both of those, or is it something else?  
09 Is it those in combination with other things?  
10 A. Both and others.  
11 Q. Okay. So they present risk  
12 in -- from the geological point of view in  
13 terms of achieving the objective, that is,  
14 making this well a pay zone?  
15 A. That's correct.  
16 Q. Same thing with kicks and all of  
17 the other things that we've talked about?  
18 A. That's correct.  
19 Q. They -- they present risk  
20 insofar as achieving the ultimate goal?  
21 A. From a geological perspective,  
22 yes.  
23 Q. From a geological perspective.  
24 And some the risks are not only  
25 just in ultimately achieving the goal, but  
00295:01 they present risk, for example, insofar as  
02 nonproductive time, lost circulation,  
03 interventions when you have a kick, whatever?  
04 A. That's correct.  
05 Q. So they're part of the risk  
06 that, from the geological standpoint, you  
07 identify early on when you look at the  
08 geology?  
09 A. That's correct.  
10 Q. And you present them as part of  
11 your consideration for go or no-go on a  
12 particular project?  
13 A. That is correct.

14 Q. Now, when you identify those  
15 risks from the geological point of view, who,  
16 if anyone, looks at them from the operational  
17 risk point of view?  
18 A. The drilling and completions  
19 engineers.  
20 Q. Do they have to bless it as  
21 well?  
22 A. Bless what?  
23 Q. Do they get their input on,  
24 "Man, this low drilling margin," for example,  
25 "it's kind of too risky for us to go"? Do  
00296:01 they get the say-so, or is it just you guys?  
02 A. Absolutely. They -- no, no.  
03 It's -- from an operational perspective, once  
04 we hand the information over to the  
05 engineers, then they design the well around  
06 those predictions.  
07 Q. All right. So but -- but once  
08 y'all decide to do it, it becomes their  
09 problem to design for the risk?  
10 A. That's correct.  
11 Q. And to plan for the risk?  
12 A. And subsurface teams support  
13 them in that activity, but ultimately it's  
14 their accountability.  
15 Q. All right. You identified those  
16 risks from the, I guess, ultimate -- reach  
17 the ultimate goal, problems, and then the  
18 operational people have to deal with them  
19 from the practical point of view in drilling  
20 the well, correct?  
21 A. We provide the pore pressure and  
22 frac gradient prediction.  
23 Q. All right.  
24 A. And then they determine how they  
25 design the well based on those predictions.  
00297:01 Q. All done within BP's internal  
02 staff, even before the rig gets spudded down?  
03 A. Oh, yes.