

Deposition Testimony of:

Martin Albertin

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Page 12:15 to 12:18

00012:15 Q. Good morning, Mr. Albertin. My
16 name is John deGravelles. We just met. Can
17 you tell your name, please?
18 A. My name is Martin Albertin.

Page 13:02 to 13:05

00013:02 Q. And you work for BP?
03 A. Yes.
04 Q. And what is your position?
05 A. I'm a geophysical adviser.

Page 13:09 to 13:15

00013:09 Q. All right. I'm going to first
10 ask you, what have you done to prepare for
11 your deposition?
12 A. I have reviewed some of my own
13 pore pressure work, looked at e-mails and
14 some time data from -- from the date of -- we
15 collected.

Page 13:21 to 13:25

00013:21 Q. What pore pressure information
22 did you review?
23 A. The forecast that I made in
24 preparation for drilling the Macondo well and
25 the post well forecast.

Page 14:04 to 16:05

00014:04 Q. And then you mentioned that you
05 had reviewed some e-mails. What e-mails did
06 you review?
07 A. Various e-mails from the time we
08 were operating and drilling the well.
09 Q. And can you tell me just sort of
10 time parameters, describe a little bit more
11 particularly what e-mails you looked at?
12 A. These would be e-mails regarding
13 preparation of the pressure forecast prior to
14 spud, e-mails regarding exchange of
15 information during drilling of the well,
16 e-mails regarding gathering of -- of
17 information post well and in preparation for
18 the relief efforts.
19 Q. All right. And you mentioned a
20 third item, which was time data?
21 A. That's correct.
22 Q. And what is time data?

23 A. It would be a series of log
24 information, pressure data that were
25 collected during drilling of the well, and
00015:01 depth information from drilling the well,
02 bit -- bit depth, hole TBD, time pressure
03 data.
04 Q. All right. And that would
05 come -- would have come to you how
06 frequently?
07 A. This would be the data that I
08 looked at primarily after we had drilled the
09 hole section and when we had memory data from
10 the bottom-hole assembly instruments.
11 Q. All right. I'm not sure I
12 understood your answer. Was -- did it come
13 to you at one -- on one occasion?
14 A. No, this would be a -- kind of a
15 data that we collect continuously while
16 drilling, but the final data sets are
17 compiled and -- and shared after each hole
18 section.
19 Q. And so in terms of how often you
20 would review the time data information that
21 you're talking about, how -- how often would
22 that be?
23 A. For the hole section reviews, I
24 would do it at a period dictated by how long
25 it would take to drill the hole section and
00016:01 how long we had until we started drilling the
02 next hole section. So that would be a period
03 of days or weeks. And on a daily basis I
04 might also monitor the realtime information
05 as well.

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00016:17 conversations. I'm just asking in
18 preparation for your deposition, Mr.
19 Albertin, did you meet with BP counsel?
20 A. Yes.
21 Q. And how many times did you meet
22 with them?
23 A. For a period of three days.

Page 21:02 to 21:16

00021:02 Q. (BY MR. DEGRAVELLES) With
03 respect to the National Commission report,
04 sometimes called the Presidential Commission
05 report, have you read it?
06 A. I have read one chapter in it.
07 Q. Is that Chapter 4?
08 A. I believe so.
09 Q. Do you have -- do you take any

10 exception with the conclusions reached by --
11 in that chapter of the presidential or
12 National Commission report?
13 A. I don't.
14 Q. Have you looked at the chief
15 counsel's report?
16 A. I don't believe so.

Page 21:22 to 22:02

00021:22 Q. Give me some information or
23 background about your education.
24 A. I have a bachelor's degree from
25 Indiana University of Pennsylvania, in
00022:01 geology, master's degree from University of
02 Texas at Austin in geology.

Page 22:06 to 22:09

00022:06 Q. When did you begin to work for
07 BP?
08 A. In December of 1988. For Amoco,
09 excuse me.

Page 22:12 to 24:24

00022:12 Q. Oh, Amoco. And when you were
13 hired originally in December -- was that '88,
14 did you say?
15 A. December of 1988.
16 Q. Okay. When did you grad- --
17 when did you get your master's?
18 A. I officially graduated in May of
19 1989.
20 Q. All right. Was your first job
21 after your schooling ended with Amoco?
22 A. Yes.
23 Q. And when you began to work for
24 Amoco what was your job?
25 A. I was a processing geophysicist.
00023:01 Q. All right. And what does that
02 mean?
03 A. I worked on processing seismic
04 data onshore Texas.
05 Q. And if you would, just take me
06 from that point until today in terms of your
07 career.
08 A. Okay. I was processing
09 geophysicist for five or six years, served
10 for two years as a research scientist doing
11 pore pressure work in the mid to late '90s.
12 I was an interpretation geophysicist shelf
13 subsalt, prior to the merger with BP.

14 Q. And when was merger?
 15 A. That was in 1999.
 16 Q. Okay.
 17 A. Post merger I was an
 18 interpretation geophysicist in deepwater Gulf
 19 of Mexico regional team. And in 2001 I was
 20 a -- entered my current role as a
 21 geophysicist doing pore pressure and fracture
 22 gradient work.
 23 Q. All right. And -- and before
 24 2001 you were, did I understand, an
 25 interpretation physicist?
 00024:01 A. Geophysicist.
 02 Q. Geophysicist. And what were you
 03 interpreting?
 04 A. Subsalt prospectivity, both on
 05 the shelf Gulf of Mexico and in deepwater
 06 Gulf of Mexico.
 07 Q. And in 2001 until April the 20th
 08 of 2010 did your job change either in title
 09 or function?
 10 A. I became a geophysical adviser
 11 during that time.
 12 Q. All right. And what point in
 13 time was that?
 14 A. I think it was about five years
 15 ago.
 16 Q. And from the point that you
 17 became a geophysical adviser until April the
 18 20th of 2010 did your job change either in
 19 title or function?
 20 A. No.
 21 Q. With respect to, let's say, the
 22 time frame from -- when -- when did your work
 23 on the Macondo well begin?
 24 A. At some point in 2009.

Page 25:04 to 25:21

00025:04 Q. All right. And from the time
 05 you work -- began to work on the Macondo
 06 until the accident on April the 20th did --
 07 what was your job?
 08 A. My job was to prepare the pore
 09 pressure and fracture gradient fore --
 10 forecast for the basis of design of the
 11 Macondo well.
 12 Q. Any other job duties that you
 13 had with respect to Macondo well other than
 14 what you just described?
 15 A. Post well I served on a similar
 16 role for the relief effort.
 17 Q. All right. And I'll -- I'm
 18 going to get to that later, but, really, I'm
 19 talking about before April 20th. So you

20 prepared pore pressure, fracture gradient
21 data for the design of the well?

Page 25:23 to 25:23

00025:23 A. It served as the -- I'm sorry.

Page 25:25 to 27:03

00025:25 Q. (BY MR. DEGRAVELLES) Did I
00026:01 understand you correctly?
02 A. Yeah, I prepared a peer reviewed
03 pore pressure and fracture gradient forecast
04 that served as what the drilling engineers
05 used as a basis of design for the well.
06 Q. And when did you complete that
07 forecast?
08 A. I don't remember the exact date
09 that that forecast was finalized and peer
10 reviewed.
11 Q. Can you give me some general
12 time frame?
13 A. There is a peer review document,
14 we can check the date on that, but I just
15 don't recall the exact date.
16 Q. All right. Again, I'm not
17 asking for the exact date. I'm just asking
18 if you know generally when it was.
19 A. Months before spud.
20 Q. All right. And it spudded on
21 October 6th of 2009; correct?
22 A. That sounds about right.
23 Q. And in reference to that when
24 would your peer reviewed pore pressure
25 forecast have been completed, roughly?
00027:01 A. Several months prior to spud, to
02 give the drilling engineering team adequate
03 time to prepare their design.

Page 27:09 to 28:22

00027:09 Q. And I understand that several
10 months before it spudded you completed this
11 forecast, and we're going to talk about that
12 in a moment. But from that point until
13 April 20th, if you could just describe in
14 general terms what your work consisted of on
15 the Macondo project?
16 A. After spud I served as the
17 single point of accountability for pressure
18 detection for the well. My role was to
19 incorporate the interpretations of pressure
20 that we were making based on realtime

21 information into the predrill forecast to
 22 modify it as we -- we felt was necessary and
 23 dictated by the data.
 24 Q. All right. And you mentioned a
 25 single point of accountability, pressure
 00028:01 detection. Did I get that right?
 02 A. That's correct.
 03 Q. That's a term of art, I take it?
 04 That is a specific term that is defined?
 05 A. It is a specific term that's
 06 defined.
 07 Q. All right. And if you would,
 08 give me the definition.
 09 A. It's -- the definition is
 10 described in a document.
 11 Q. And I'm not asking you to quote
 12 it.
 13 A. I can paraphrase.
 14 Q. Yeah, paraphrase is fine.
 15 A. I'll repeat myself a little bit.
 16 Pressure detection, single point of
 17 accountability, my roles would be to
 18 incorporate interpretations made in realtime
 19 about pore pressure and fracture gradient
 20 into the predrill forecast and modify it as
 21 necessary and communicate that to the team
 22 that's operating the well.

Page 29:01 to 29:02

00029:01 Q. But I was asking about what
 02 single point of accountability means.

Page 29:05 to 29:24

00029:05 A. I would describe single point of
 06 accountability as a -- a -- the person who is
 07 the -- I don't know how -- how I can phrase
 08 this, but just the -- the -- the point -- I'm
 09 the person who is collecting the data for
 10 pore pressure, and I would communicate that
 11 pressure information. So everyone knows to
 12 come to me when they're -- they're asking
 13 questions regarding the pore pressure
 14 forecast.
 15 Q. (BY MR. DEGRAVELLES) All right.
 16 Did you have any specific job as it pertained
 17 to the -- the application to -- for
 18 permission to drill?
 19 A. I may have provided data that
 20 went into the A -- the permit to drill.
 21 Q. And that data would have been
 22 what?
 23 A. Pore pressure and fracture

24 gradient forecast information.

Page 30:19 to 31:02

00030:19 Q. All right. What about risk
20 assessment, did you provide any information
21 with respect -- or did you provide any role
22 with respect to risk assessment?
23 A. It's a broad bucket term, I
24 would think. I provide pore pressure and
25 fracture gradient forecast information, and
00031:01 teams might use it for -- for risk
02 assessment.

Page 31:12 to 32:09

00031:12 Q. (BY MR. DEGRAVELLES) Are there
13 various tools of risk assessment that BP used
14 as a part of the Macondo project?
15 A. I don't know exactly what --
16 what tools were used by the various groups
17 doing the risk assessment.
18 Q. Do you know what tools are
19 available and routinely used as a part of the
20 risk assessment in drilling the well at BP?
21 A. I know what tools are available
22 to me for doing pore pressure and fracture
23 gradient forecasting.
24 Q. All right. And what tools are
25 those?
00032:01 A. There would be a pore pressure
02 assessment tool that we use predrill. There
03 would be a No Drilling Surprises assessment,
04 and there would be a peer review document.
05 Q. I got pore pressure assessment,
06 I got peer review document, and then there
07 was something about no surprises.
08 A. It's a No Drilling Surprises
09 review.

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00032:15 Q. In connection with what we just
16 were talking about in terms of risk
17 assessment and the items that you would
18 provide that would fit into the area of risk
19 assessment or tools that are -- at least deal
20 in part with risk assessment, you mentioned a
21 pore pressure assessment. Is that the
22 something you've been talking about, or is
23 this something different?

Page 33:01 to 33:12

00033:01 A. Pore pressure assessment tool is
 02 a tool we use for determining appropriate
 03 methods for pore pressure prediction.
 04 Q. (BY MR. DEGRAVELLES) And -- the
 05 pore pressure assessment tool does it have a
 06 name, number, is it a group practice? How --
 07 can you describe it more specifically?
 08 A. It's a document that describes
 09 methods used for pressure prediction that you
 10 read to determine which methods are
 11 appropriate for -- for the forecast for this
 12 phase.

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00034:07 Q. But in terms of the pore
 08 pressure assessment tool, if -- but it is --
 09 it's a document that has different parameters
 10 and definitions and things that you follow to
 11 do your assessment; is that true?
 12 A. It's a descriptive document that
 13 just describes general methodologies that we
 14 can use as a guide for helping us prepare the
 15 forecast.
 16 Q. And what information does it --
 17 does it tell us in general terms with respect
 18 to methodologies? Are there choices that you
 19 can make?
 20 A. There are three choices that you
 21 make regarding methodology for pore pressure
 22 prediction.
 23 Q. And what are those three
 24 methodologies?
 25 A. You can use geophysical
 00035:01 techniques, petrophysical techniques based on
 02 offset wells, and basin modeling techniques.
 03 Q. And the last one?
 04 A. Basin modeling techniques.
 05 Q. B-a-s-i-n?
 06 A. B-a-s-i-n.
 07 Q. And in connection with your work
 08 on Macondo did you choose one of those three?
 09 A. Two of those three.
 10 Q. And what were the two that you
 11 chose?
 12 A. Geophysical data, velocity
 13 information, and offset well pressure and log
 14 information used in pressure analysis of the
 15 offset wells.

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00035:23 Q. But of the two -- you said there

24 were two of the three. Which were the two
25 that you chose?

00036:01 A. Those two, geophysical and
02 offset well data. We did not use basin
03 modeling techniques for the pressure
04 forecast.

05 Q. All right. So you used
06 geophysical data, correct, which was the
07 offset well data; or is that the
08 petrophysical?

09 A. No. The offset well pressure
10 data is what I would call petrophysical
11 analysis of offset well pressure information.
12 Geophysical data is primarily velocity
13 information.

14 Q. I got you. All right. So the
15 three methodologies you choose -- you chose
16 geophysical and petrophysical, correct?

17 A. That's correct.

18 Q. And specifically what
19 information -- you mentioned velocity, which
20 is a geophysical piece of data that you
21 utilized, correct?

22 A. That's correct.

23 Q. And then petrophysical, which
24 was the offset well data, correct?

25 A. Correct.

Page 37:18 to 39:17

00037:18 Q. (BY MR. DEGRAVELLES) Describe
19 for me what you did with respect to your pore
20 pressure assessment utilizing the geophysical
21 data and the petrophysical data in as -- in
22 as much detail as you can tell me.

23 A. I considered the three
24 methodologies described by the pressure
25 assessment tool and chose the two appropriate
00038:01 ones for this forecast.

02 Q. All right. And then taking --
03 tell me exactly what you did with the data,
04 which I understood was velocity and offset
05 well data.

06 A. For the geophysical techniques I
07 calibrated seismic velocities, transformed
08 those to pressure to form the basis of the
09 shell pressure estimate. For offset wells I
10 would take pressure measurements in the form
11 of MDTs or RFTs leak off tests and FIT
12 information that helps me determine fracture
13 gradient information, and other drilling
14 events, kicks, losses to try and describe the
15 range of uncertainty in pore pressure and
16 fracture gradient that I expected at this
17 location.

18 Q. All right. And you were
19 gathering that information from offset wells;
20 is that true?
21 A. The -- the pore pressure
22 measurements, log data that we use in
23 pressure analysis.
24 Q. Leak off tests, FITs?
25 A. Leak off tests, FITs, and
00039:01 information such as kicks and losses would
02 come from the offset wells. Seismic
03 velocities would come from seismic data
04 processing.
05 Q. All right. And what were the
06 offset wells by name from which you gathered
07 this information?
08 A. The key offset wells that I
09 recall were Isabel and Yumuri.
10 Q. Spell, please.
11 A. Y-u-m-u-r-i. And there are a
12 number of others, but I don't recall the
13 names right now.
14 Q. All right. And approximately
15 how many were there that you used?
16 A. Approximately five. Rigel was
17 another one within the block.

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00039:20 Q. All right. You mentioned that
21 there was another tool that you utilized that
22 would have something to do with risk
23 assessment, and it was called No Drilling
24 Surprises review. Did I remember that
25 correctly?
00040:01 A. That's correct, yes.

Page 40:03 to 40:18

00040:03 Q. (BY MR. DEGRAVELLES) Explain to
04 me what No Drilling Surprises review is.
05 A. The No Drilling Surprises
06 meeting is -- and review is to get a team
07 together to come up with a list of possible
08 risks that -- that we should address in -- in
09 the -- the pressure forecast for this
10 location and to identify key offset wells
11 that should be used in the pressure forecast.
12 Q. Is the No Drilling Surprises
13 meeting -- does it take place before your
14 pore pressure assess -- your use of the pore
15 pressure assessment tool?
16 A. It would take place prior to the
17 final peer review of the pore pressure
18 forecast.

Page 40:25 to 41:24

00040:25 Q. (BY MR. DEGRAVELLES) I'm trying
00041:01 to get the sequence down.
02 A. Okay. All right. Some work
03 would already have been done in preparing
04 initial forecasts for the well prior to the
05 NDS assessment.
06 Q. And if I understood correctly,
07 there was -- you mentioned that there was
08 a -- that you -- the abbreviation or acronym
09 that you used was NDS for No Drilling
10 Surprises?
11 A. That's correct.
12 Q. The No Drilling Surprises tool
13 involved an actual sit-down, face-to-face
14 meeting with certain people; is that true?
15 A. That's correct.
16 Q. And when did that meeting take
17 place?
18 A. Again, I don't -- don't remember
19 the exact timing.
20 Q. In relation to the spud time of
21 October 6th, 2009 can you give me some
22 concept of?
23 A. Several months before -- before
24 spud, perhaps six months before spud.

Page 42:06 to 43:04

00042:06 Q. And in connection with this
07 meeting had -- did you prepare some sort of
08 written document that you presented at the
09 meeting?
10 A. Yeah, I believe there is a
11 document where we collect together risks from
12 a global collection of identified risks for
13 our wells, and so I'll select the appropriate
14 risks, and then we review those during the
15 meeting.
16 Q. All right. And -- and you
17 mentioned a term global. What does that mean
18 in -- in terms of your NDS meeting on
19 preparation?
20 A. The NDS meeting -- sorry -- a
21 collection of identified issues that we may
22 have had in drilling wells in various fields
23 across the world.
24 Q. And where do you go? Is there
25 some place, site on the computer, Website on
00043:01 the computer that you go to get this global
02 information?
03 A. There is a -- a Website where I

04 can -- I can get the -- this information.

Page 43:11 to 45:22

00043:11 Q. But it's as part of the risk
12 assessment methodology that's followed, as
13 part of the NDS meeting and review you go to
14 this Website to gather information about
15 risks which developed in other places,
16 correct? Other parts of the world?
17 A. That's basically it. I'm
18 looking at other issues that were encountered
19 in other wells drilled in similar
20 environments, and I'm trying to select those
21 that I think are appropriate for this
22 environment so we can review those with the
23 team.
24 Q. And in terms of your own
25 gathering of data from the Website, is it
00044:01 focused on pore pressure issues?
02 A. Yes.
03 Q. Fracture gradient issues?
04 A. All of this work would really
05 just be focused on my part of it, and that's
06 pore pressure and fracture gradient
07 forecasting.
08 Q. And when the meetings come
09 together I take it the other members of
10 this -- is it a team of some kind? What is
11 it called?
12 A. It's just a collection of people
13 that I -- I invite from members of that
14 type -- the team that I work on, members of
15 the subsurface team preparing the prospect
16 and perhaps drilling engineers from the --
17 the wells team.
18 Q. And would -- I take it from your
19 answer -- or maybe this is not correct. Were
20 you in charge of this process?
21 A. I facilitated that meeting.
22 Q. And by facilitate I would take
23 it that means you were or were not in charge?
24 You just got everybody together?
25 A. I -- you know, I prepared the
00045:01 document. I shared the document post
02 meeting. So I suppose that you could say
03 that I was in charge of gathering that
04 information.
05 Q. All right. And -- and you
06 mentioned that you were part of a subsea
07 team. Is that the Tiger team?
08 A. That's correct.
09 Q. And who was on the Tiger team?
10 A. Do you want the whole -- the
11 whole team that -- that I worked with?

12 Q. (Nodding head.)
13 A. The team is composed of.
14 Q. And I'm talking about at this
15 time, of course.
16 A. Okay, at this time. Well, the
17 relevant personnel for the team would be
18 myself; the other geophysicist on the team,
19 Paul Mitchell; Dave Greeley, basin modeler;
20 Bruce Wagner, petrophysicist, and then our
21 operations coordinators John Bellow, Bobby
22 Bodek.

Page 46:02 to 46:23

00046:02 Q. And were these, then, the
03 members of the Tiger team that worked on the
04 Macondo project?
05 A. No, they -- they probably didn't
06 work specifically on -- on the Macondo
07 project, but may have had in- -- experience
08 with No Drilling Surprises process.
09 Q. All right. Let's step back and
10 just ask you to describe, then, what the
11 Tiger team is sort of in the organizational
12 scheme of BP.
13 A. Okay. The Tiger team sits
14 within Gulf of Mexico deepwater exploration.
15 We are a technical group of -- whose primary
16 responsibility is predrill pressure
17 forecasting, geoscience operations during
18 drilling, and biostratigraphy, and also some
19 shallow hazard assessment.
20 Q. And with respect to the three
21 things that you mentioned, were you limited
22 to the predrill pressure forecasting or did
23 you get into these other two areas as well?

Page 46:25 to 49:22

00046:25 A. My -- my primary role was for
00047:01 pressure and fracture gradient forecasting
02 for the well.
03 Q. (BY MR. DEGRAVELLES) Was it
04 your exclusive?
05 A. Yes, yes.
06 Q. Okay. And -- and so, again, go
07 through with me in terms of the Tiger team
08 that you're describing the various roles that
09 these other folks had.
10 A. All right. Our osteologists,
11 John Bellow and Bobby Bodek would handle
12 daily interactions between subsurface staff
13 and the drilling team. They're in the
14 office. We all kind of sit in the office in

15 Houston. The geoscience staff within the
16 Tiger team, myself in this case, would be
17 responsible for predrill pressure and
18 fracture gradient forecasting work and then
19 updating the forecasts in realtime based on
20 pressure detection work. The geo hazard
21 specialist would look at seafloor hazards,
22 near seafloor hazards to -- to make sure that
23 the location that we're selecting here is
24 free of hazards. And then biostratigraphy
25 would -- would handle our age dating of the
00048:01 cuttings that were coming back so we have a
02 reference for where we are in the well.
03 Q. And that's prior to spudding?
04 A. Biostratigraphy?
05 Q. Yes.
06 A. Their involvement would be in
07 realtime looking at cuttings and trying to do
08 age dating.
09 Q. All right. And you mentioned
10 categories. Just if you would, I know that
11 John Bellow and Bobby Bodek were
12 osteogeologists. What was Mitchell, Greeley
13 and Wagner?
14 A. Paul Mitchell is a geophysicist
15 in the Tiger team. He had experience in
16 doing No Drilling Surprises reviews in the
17 past, and so I had consulted with him just to
18 make sure I was going through that process
19 and pulling things together correctly.
20 Q. All right. And the other two?
21 A. David Greeley is our basin
22 modeler or petroleum system analyst. Again,
23 had experience with No Drilling Surprises
24 reviews, but was not specifically involved in
25 the Macondo forecasting or operations.
00049:01 Q. And Bruce Wagner?
02 A. Bruce Wagner is a petrophysicist
03 geologist on the -- on the Tiger team.
04 Q. And with respect to the -- the
05 NDS review, slash, meeting, what role did he
06 play?
07 A. I don't recall if Bruce was --
08 was in attendance at that No Drilling
09 Surprises review.
10 Q. Now, what about Mr. Vincent?
11 A. Pinky Vincent is my team leader.
12 Q. You say he is. And that's
13 current today as well as then?
14 A. That's correct.
15 Q. And was -- is it called the
16 Tiger team now?
17 A. That's what we call ourselves.
18 It's -- I think current name is the New Wells
19 Delivery team.

20 Q. Just doesn't have that sex
21 appeal.
22 A. Right.

Page 50:14 to 50:20

00050:14 Q. All right. And I'm going to
15 come back to the specifics of that in a
16 moment. The third thing you talked about in
17 terms of tools used for risk analysis, you
18 mentioned peer review document was the third
19 thing I wrote down. What is that
20 specifically?

Page 50:22 to 51:21

00050:22 A. Once our -- my pore pressure
23 forecast is complete, then I will submit that
24 work to a peer review team. We'll have a
25 meeting where I'll review the forecast,
00051:01 review the data that went into it, and the
02 peer review process is -- is designed to --
03 to highlight potential weaknesses in the
04 forecast, areas for additional work that
05 needs to be done prior to freezing the
06 forecast.
07 Q. And the NDS document that
08 finally comes out of all of this, is pore
09 pressure prediction, pore pressure analysis a
10 part of that, a part of a larger analysis?
11 A. Not in any specific detail.
12 There may be specific items that we've --
13 we've highlighted as things we need to
14 address that relate to pore pressure, but the
15 forecast itself is not part of the -- the NDS
16 information.
17 Q. (BY MR. DEGRAVELLES) It's
18 really about identifying potential risk?
19 A. That's correct.
20 Q. And attempting to figure out how
21 to mitigate, eliminate, reduce those risks?

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00051:23 A. Really, identifying the risks so
24 that we can tailor our work to -- to address
25 those -- those risks.
00052:01 Q. (BY MR. DEGRAVELLES) Is a part
02 of the NDS process not only the
03 identification of risk, but the
04 identification of ways to mitigate the risk?
05 A. I don't recall that there is --
06 there is specific discussions about

07 mitigation at that time.
08 Q. Okay. I'm really not talking
09 about necessarily discussions, but the end
10 product, is there a report that is a written
11 report that comes out of the NDS process that
12 says these are the risks that we've have
13 identified?
14 A. There is a document, and I'm
15 trying to remember whether it's a PowerPoint
16 or an Excel spreadsheet, that is the end
17 result of that No Drilling Surprises meeting
18 where we'll have the -- the high graded list
19 of elements and issues from the global wells
20 risk register and offset wells identified.

Page 53:06 to 54:07

00053:06 And you mentioned another term called risk
07 register. What is a risk register?
08 A. The risk register is the -- the
09 global compilation of issues that we've
10 identified in the wells that we've drilled.
11 It's a database that we use to draw from to
12 come up with a list of possible issues that
13 we might face at this location.
14 Q. And so prepare your NDS you go
15 to the risk register and you gather
16 information that might be helpful
17 specifically to your risk assessment, true?
18 A. That's correct.
19 Q. And then once you complete your
20 own NDS assessment does that information go
21 back onto the risk register?
22 A. Not at this time. I think at
23 the end of the well, once we have collected
24 and understood the issues that we had with
25 drilling, the idea would be to feed that --
00054:01 that -- that list of issues that we
02 encountered back into the -- the risk
03 register.
04 Q. And following April 20th of 2010
05 did the information that you gathered as a
06 part of the NDS process go into the risk
07 register?

Page 54:09 to 54:10

00054:09 A. I don't know if it's in the
10 global risk register.

Page 54:18 to 55:06

00054:18 Q. (BY MR. DEGRAVELLES) And who is

19 it that has -- is charged with the task of
20 once the well is completed, taking the data
21 from the NDS analysis and getting it into the
22 risk register so others can use it?

23 A. I'm not entirely sure whose
24 responsibility that is to populate the global
25 risk register.

00055:01 Q. And in terms of information or
02 data brought to the meeting, you mentioned
03 what you brought to the table. Did anybody
04 else bring anything in writing to the NDS
05 meeting?

06 A. Not that I recall.

Page 55:23 to 56:09

00055:23 Q. Was the narrow drilling margin a
24 risk that came out of the NDS analysis?

25 A. I believe that there were issues
00056:01 in the identified risks that related to
02 drilling in -- in tight margin environments.

03 Q. All right. And -- and explain
04 that to me, please.

05 A. Explain that, what margin is or
06 tight margin, narrow margin?

07 Q. How tight margins fit into the
08 risk analysis of an NDS or did fit into the
09 risk analysis of the NDS?

Page 56:11 to 57:07

00056:11 A. I think in -- in general with
12 tight margin wells there may be issues
13 regarding losses while drilling, things of
14 that nature where -- where raising mud weight
15 to balance out of pore pressure may result
16 in -- in other issues like losses.

17 Q. (BY MR. DEGRAVELLES) All right.
18 Kicks?

19 A. In -- in response to a kick, to
20 if you raise mud weight, that that may in
21 turn result in losses and weaker formation.

22 Q. But in terms of risks associated
23 with tight margins, losses is one?

24 A. Kicks and losses would be the --

25 Q. Kicks is another?

00057:01 A. Yeah.

02 Q. This is really the flip side of
03 losses, right?

04 A. That's -- that's right, the pore
05 pressure.

06 Q. And if you have kicks, you also
07 can have blowouts?

Page 57:09 to 57:12

00057:09 Q. (BY MR. DEGRAVELLES) Right?
10 A. I don't necessarily see one
11 leading to the other.
12 Q. One can lead to the other?

Page 57:14 to 57:18

00057:14 Q. (BY MR. DEGRAVELLES) Correct?
15 A. I don't know if that's correct.
16 Q. You can't tell me, sir, with all
17 of your degrees and all of your experience at
18 BP that blowouts sometimes come from kicks?

Page 57:20 to 57:20

00057:20 A. I couldn't say that.

Page 58:03 to 58:04

00058:03 Q. (BY MR. DEGRAVELLES) Isn't it
04 true, sir, that a kick can lead to a blowout?

Page 58:06 to 58:07

00058:06 A. I don't -- I don't see that
07 that's a necessity.

Page 58:18 to 58:19

00058:18 Q. Okay. You can't tell me that a
19 blowout can lead to an explosion?

Page 58:21 to 58:25

00058:21 A. I couldn't tell you that that --
22 that's a necessity.
23 Q. (BY MR. DEGRAVELLES) And that
24 an explosion can lead to deaths and
25 environmental damage?

Page 59:02 to 59:04

00059:02 A. No.
03 Q. (BY MR. DEGRAVELLES) You can't
04 tell me that either?

Page 59:07 to 59:10

00059:07 A. No.
08 Q. (BY MR. DEGRAVELLES) That's not
09 part of your risk analysis at BP, is that
10 true sir?

Page 59:13 to 59:14

00059:13 A. I focus on pore pressure and
14 fracture gradient and forecasting.

Page 59:19 to 60:02

00059:19 Q. (BY MR. DEGRAVELLES) What are
20 the risks associated with not predicting pore
21 pressure correctly?
22 A. We may encounter flows from
23 formation, kicks, as we've spoken about.
24 Q. Okay. Is a risk of not
25 predicting pore pressure correctly not only a
00060:01 kick, but a blowout explosion and death and
02 the environmental damage?

Page 60:04 to 60:10

00060:04 A. Well control is a potential
05 outcome, having well control incidents not
06 getting pore pressure and fracture gradients
07 right.
08 Q. (BY MR. DEGRAVELLES) All right.
09 And another term for well control incident is
10 a blowout, explosion, correct?

Page 60:12 to 63:02

00060:12 A. A blowout is a form of a well
13 control issue.
14 Q. (BY MR. DEGRAVELLES) Now, were
15 there any -- with respect to your work in
16 doing your pore pressure assessment and your
17 forecast were there any standards that you
18 followed?
19 A. We have a BP standard which
20 describes the -- the pressure forecasting
21 process and what -- what the standards are
22 for that -- that pressure forecast.
23 Q. All right. And is that
24 GP 10-15?
25 A. That's correct.
00061:01 Q. And is -- did -- did you follow
02 GP 10-15 in your forecasting?
03 A. I believe that I did.
04 Q. All right. And what is

05 GP 10-16?
 06 A. It is the companion document
 07 that describes the process of pressure
 08 detection.
 09 Q. And was pressure detection part
 10 of your role on Macondo?
 11 A. I was the single point of
 12 accountability for pressure detection.
 13 Q. And specifically what would your
 14 role have been with respect to pressure
 15 detection as opposed to pressure prediction?
 16 A. My role would be to work with
 17 the pressure protection specialist on the
 18 rig, with the operations geologist, with the
 19 drilling engineering team, to incorporate all
 20 the data we're collecting, and the
 21 interpretations made about the data regarding
 22 pore pressure and fracture gradient and
 23 modify my predrill forecast, if necessary, on
 24 the basis of that data.
 25 Q. And when -- when you would
 00062:01 modify your -- your pre-forecast data, in
 02 what form would that modification take?
 03 A. I maintain a spreadsheet
 04 which -- in which I keep the forecast, and so
 05 I'll modify that pressure forecast within
 06 that spreadsheet.
 07 Q. And then what happens to the
 08 spreadsheet?
 09 A. If modification is made, I will
 10 present that at a morning operations meeting
 11 to describe the changes that I've made. I'll
 12 post a new paper copy, plot of the pressure
 13 forecast in the operations room, and provide
 14 PowerPoint images and description of the
 15 changes to the operations coordinator.
 16 Q. All right. Let me ask you
 17 about -- about that. You mentioned this
 18 operations room. Is that -- did I get that
 19 correctly?
 20 A. Operations room.
 21 Q. And -- and the time frame of the
 22 Macondo well where was the operations room?
 23 A. It's on the second floor of
 24 Westlake 4.
 25 Q. And where was your office?
 00063:01 A. Also on the second floor of
 02 Westlake 4.

Page 63:06 to 64:19

00063:06 Q. All right. And what -- was
 07 there the ability within the second floor of
 08 the op- -- the operations room within the
 09 second floor, was there the ability to do

10 realtime monitoring?

11 A. Yes, there are screens that read
12 out realtime information while drilling.

13 Q. All right. And you use the --
14 sort of the current tense of "are." And I'm
15 really asking about what the situations was
16 pre April 20th, as of 2010.

17 A. There were active screens in
18 that room displaying realtime information.

19 Q. And what were the active
20 screens?

21 A. These would be reading out
22 general drilling information at depth, hole
23 depth, various other drilling parameters.
24 And there may also be a realtime log display
25 on gamma ray resistivity, and various other
00064:01 realtime data feeds.

02 Q. In terms of your own job role,
03 what were the -- what was the data that was
04 coming across realtime on the screens --
05 screen or screens in the operations room?

06 A. I wouldn't make use of the
07 realtime screens specifically, but the data
08 that's displayed on the screens would go into
09 the pressure detection analysis. The
10 pressure detection specialists would use that
11 data, the resistivity and sonic, maybe gas
12 data, pore pressure detection interpretation.
13 And I would use that interpretation as well
14 as checking it on my own occasionally to see
15 if I'm coming up with the same
16 interpretation.

17 Q. Was there anybody within the
18 Tiger team who sat at the screen and did
19 realtime monitoring in the operations?

Page 64:21 to 64:23

00064:21 A. We have a pressure detection
22 specialist that we hire that is on the rig
23 to -- to do that work.

Page 65:03 to 67:07

00065:03 Q. And who was the pressure
04 detection specialist who was on the rig who
05 was hired for that purpose?

06 A. Kate Paine.

07 Q. And Kate Paine's job, among
08 other things -- or maybe not among other
09 things, but one of her jobs at least was to
10 do realtime monitoring on the rig?

11 A. That's correct.

12 Q. And what was the specific

13 realtime monitoring that she was to do?

14 A. She would be looking at
15 resistivity information, sonic information,
16 if we're acquiring it, to make an
17 interpretation about whether or not the pore
18 pressure, as we understood it, was being
19 supported by the data that we were
20 collecting.

21 Q. And you mentioned morning
22 meetings, too, and let's talk from
23 October 6th to April 10, and if the answer is
24 different at any point in that frame, just
25 tell me, but --

00066:01 A. Okay.

02 Q. -- what was the -- your daily
03 work on a day-to-day basis at it pertained to
04 Macondo, like from the time you got to work
05 to the time you left work.

06 A. Okay. We would have a really
07 pre-morning call geoscience meeting, not
08 necessarily every day, but during active
09 drilling phases we would have a geoscience
10 call where we would talk about the geology
11 that we were seeing. We'd have an update on
12 the pore pressure detection from the rig
13 staff. Right after that meeting we'd have
14 the morning call that would be more of the
15 drilling crew on the rig and the -- the
16 office-based drilling engineering staff,
17 discussing the -- the operations of the
18 previous day and the plans for the current
19 day. Then once those meetings were completed
20 I would look at the previous day's data of
21 the report that -- if Kate had issued a
22 report, I would glance at it, look at the
23 data that she was using for the pressure
24 forecast, if -- if there were indications
25 that I needed to -- to begin looking at a

00067:01 revision to the forecast, for whatever
02 reason, I might start looking at the data
03 specifically to -- to revise the forecast.
04 But there wasn't necessarily a revision to
05 the forecast on a daily basis.

06 Q. Okay. So take me through the
07 rest of the day until it's knock-off time.

Page 67:10 to 67:21

00067:10 A. If we're drilling, we'd continue
11 to look at the data and then, you know,
12 regarding Macondo operations, again, if there
13 was any need to discuss anything that we had
14 seen during the day's drilling, then I
15 would -- Bobby Bodek would -- would get us
16 together in the afternoon and talk about

17 something that we might be seeing. But
18 besides the morning calls and me just looking
19 at the data and compiling it, I wouldn't say
20 that there was necessarily on a daily basis
21 much more -- more than that.

Page 70:20 to 70:20

00070:20 there. This is 3700.

Page 70:24 to 71:04

00070:24 Q. (BY MR. DEGRAVELLES) Now,
25 looking at this, this is, I take it, not the
00071:01 peer review feedback for your analysis; is
02 that true?
03 A. That -- that's true. This is
04 not the pore pressure peer review feedback.

Page 71:10 to 71:13

00071:10 Q. And looking at Page 3 that's got
11 the Macondo team, does that accurately
12 reflect the Macondo team that you were a part
13 of?

Page 71:17 to 72:17

00071:17 A. This looks like the team that
18 was -- was in place at that time.
19 Q. (BY MR. DEGRAVELLES) And would
20 that have been the team in place through
21 April of 2010?
22 A. No.
23 Q. And how would that have changed?
24 A. Primarily with the change in
25 rigs after the -- after the hurricane. There
00072:01 may -- there would be changes to the core
02 team related to that. George Gray, Trent
03 Fleece.
04 Q. Because they were with the
05 Marianas?
06 A. That's correct.
07 Q. All right. And when it became
08 the Deepwater Horizon -- we're looking at the
09 last two, really, the drilling ops engineer
10 and the well teams leader. When it was the
11 Deepwater Horizon, who would have filled
12 those roles?
13 A. It would have been John Guide --
14 I'm trying to think who the other name might
15 have been. John Guide would have been
16 in I -- I think in George Gray's position as

17 wells team leader.

Page 72:25 to 73:18

00072:25 Q. Okay. And then if you would,
00073:01 turn to tab 3, and that's going to be 3701.
02 And is that the GP 10-15 pore pressure
03 prediction group practice that was in force
04 at the time that you did your work?
05 A. Yes, I be- -- I believe this was
06 in -- in -- in force at the time we were
07 developing the forecast.
08 Q. And -- and when you say "we,"
09 we're really talking about you?
10 A. Me, right.
11 Q. Okay. And --
12 A. As the SPA responsible for it.
13 Q. All right. SPA?
14 A. Single point of accountability.
15 Q. Okay. And so has the group
16 practice for pore pressure prediction changed
17 since April the 20th of 2010?
18 A. I don't believe it has.

Page 73:23 to 74:06

00073:23 Q. Okay. If you would, go to
24 tab 6, and that's 3702. Is that the standard
25 for pore pressure detection during well
00074:01 operations group practice that was in force
02 during the Macondo project?
03 A. Yes.
04 Q. Any changes since April 20th of
05 2010?
06 A. Not to my knowledge.

Page 74:14 to 74:19

00074:14 Q. The drilling -- how is the
15 drilling margin measured?
16 A. I would define drilling margin
17 and any hole section to be the difference
18 between the highest pore pressure and the
19 weakest formation.

Page 75:04 to 75:23

00075:04 In what increments or in what --
05 is it measured in gallons?
06 A. It could be expressed in terms
07 of pounds per square inch, psi, or in mud
08 weight equivalent terms, pressure gradient
09 terms, like, you know, pounds per gallon.

10 Q. All right. Is there a point in
11 pounds per gallon below which you do not want
12 the drilling margin to go we?

13 A. We would tend to begin looking
14 for TD of a hole section when the mud weight
15 required to balance formation pressure was
16 approaching the fracture gradient of the
17 weakest formation that was exposed in the
18 open hole.

19 Q. Is -- if you get to .5 pounds
20 per gallon and you go -- or you want to go
21 below that, would you need to get special
22 dispensation or special permission from the
23 MMS?

Page 75:25 to 76:11

00075:25 A. I don't know what the specific
00076:01 requirements are regarding permission to
02 drill at various margins.

03 Q. (BY MR. DEGRAVELLES) Do you
04 know whether or not in this particular
05 drilling operation the drilling margin ever
06 dropped below .5 pounds per gallon?

07 A. I believe there were instances
08 in drilling hole sections where the pore
09 pressure at the base of hole sections was
10 closer than a half a pound per gallon to
11 the -- the estimated fracture gradient.

Page 76:16 to 77:05

00076:16 Q. When your pressure prediction
17 changes and you said you would modify it as
18 you got data in, were there ever -- was there
19 a requirement that you do any kind of
20 memorandum of change?

21 A. During drilling the well,
22 changes to the pressure forecast while
23 drilling aren't -- are not accompanied by
24 a -- a change document. We discuss the
25 changes to it, but I'm not aware that there
00077:01 is a -- a requirement that we file an MOC for
02 every change made to the forecast while
03 drilling.

04 Q. Are there certain changes that
05 occur where an MOC is required?

Page 77:07 to 77:09

00077:07 A. I -- I'm not entirely sure what
08 would be re- -- requiring an MOC during
09 drilling.

Page 77:13 to 78:08

00077:13 Q. What is the maximum anticipated
14 surface pressure?
15 A. My understanding of that number
16 would be a projection from pressure at a
17 certain depth using a estimate for pressure
18 gradient as to what that pressure would be
19 at -- at the seafloor.
20 Q. Is the calculation of that
21 maximum anticipated surface pressure
22 something that forms a part of your job?
23 A. Not specifically. I may be
24 asked to provide a scoping number, but it
25 would not be in an official context.
00078:01 Q. And -- and what would be the
02 circumstances under which you would be asked
03 to provide a scoping number?
04 A. It would be early-on in
05 exploration evaluation of a prospect where we
06 are trying to determine in general what type
07 of surface equipment might be required to
08 drill to certain depths.

Page 78:17 to 78:21

00078:17 Q. All right. And did you, in
18 fact, provide a scoping number with respect
19 to the maximum anticipated surface pressure
20 on Macondo well?
21 A. In this case, no. Predrill, no.

Page 79:10 to 79:17

00079:10 Q. During that time frame, or
11 really anytime before April 20th of 2010, did
12 you calculate in any form or fashion, formal,
13 informal, scoping, whatever, the maximum
14 anticipated surface pressure with respect to
15 the Macondo project?
16 A. I don't recall doing that at any
17 time prior to the incident.

Page 79:25 to 80:03

00079:25 Q. Who would have been the person
00080:01 normally doing that?
02 A. I'm not entirely sure who would
03 do that.

Page 81:01 to 81:13

00081:01 Q. But in terms of an acronym at
02 BP, do you know what "RAT" means?
03 A. I -- I -- no, I don't.
04 Q. All right. And if you would, go
05 to Volume 2 and go to tab 109, which has
06 already been introduced as Exhibit 1312. You
07 had -- is this what you were referring to
08 earlier in terms of the work that you did?
09 Is this predrill -- did you have any role in
10 1312? Let me just ask you that.
11 A. I believe the pressure forecast
12 would -- would form a portion of the predrill
13 data package.

Page 81:18 to 82:24

00081:18 Q. For the record, we're talking
19 about BP_HZN_2179MDL00351800 through 838.
20 A. Okay.
21 Q. And if you could just tell me,
22 using the last three digits of the Bates
23 number, what pages would have captured your
24 input.
25 A. All right. On 803, expected
00082:01 pressure -- the pressure forecast may have
02 been used to define the expected pressure in
03 res- -- under reservoir information.
04 On 812, the pore pressure
05 fracture gradient plot on that page is -- is
06 my work.
07 Q. That's 812?
08 A. 812.
09 Q. Okay.
10 A. On the wellbore design,
11 Page 814, some of the numbers quoted there, I
12 assume, were derived from the pore pressure
13 forecast information that I provided.
14 Q. All right. And what is -- what
15 are we looking at on Page 814?
16 A. This is a wellbore schematic,
17 wellbore design.
18 Q. And is it of the casing program?
19 A. That's correct.
20 Q. All right.
21 A. On Page 837, there is another
22 pore pressure fracture gradient plot. That
23 looks like a -- like a repeat of the previous
24 page, but that would be my work.

Page 83:02 to 85:01

00083:02 Q. I think you earlier mentioned
03 that your pore pressure predictions form a
04 part or provide a foundation for the well

05 design; did I understand that correctly?

06 A. Yes. Once the pressure forecast
07 is peer reviewed and frozen, then I would
08 provide that to the drilling engineering
09 team, and they would use that as a basis
10 of -- of design work.

11 Q. All right. And the -- what
12 specifically part -- what portions of the
13 well design are we talking about in terms of
14 your input with pore pressure?

15 A. I believe it would impact
16 decisions on casing setting depths and mud
17 weights chosen for drilling hole sections and
18 what the -- the weight-up schedule might be
19 for those hole sections.

20 Q. All right. Other than to
21 provide pore pressure forecasting, did you
22 have any direct input with respect to the
23 casing program on the Macondo project?

24 A. No.

25 Q. Other than providing the pore
00084:01 prediction forecasting, did you have anything
02 to do with the choice of mud, the weight of
03 the mud at any particular point during the
04 drilling of the Macondo project?

05 A. No, like -- like I said, just
06 from the -- the pressure forecast itself, but
07 I don't choose the -- the mud weights used
08 for the program.

09 Q. Did -- did -- did you ever get
10 asked to consult on issues of either casing
11 or mud?

12 A. I think, depending on the
13 situation, I may be brought in to discussions
14 about what optimum setting depths might be
15 based on -- on what we're seeing in the pore
16 pressure as we're drilling.

17 Q. And when you're talking about
18 "optimum" --

19 A. Be the -- the best place to
20 set -- to stop drilling, given what -- what
21 we anticipate for the pore pressure build and
22 what we've -- we've exposed in the open hole
23 of the fracture strength for the formation.

24 Q. And was that kind of request of
25 you fairly regular?

00085:01 A. I -- I --

Page 85:03 to 85:22

00085:03 A. (Continuing) Yeah, I -- I think
04 probably occasionally during drilling some of
05 these hole sections, I would have been
06 involved in those discussions.

07 Q. (BY MR. DEGRAVELLES) All right.

08 And who else would have been involved in
 09 those discussions?
 10 A. Well, it's the primary
 11 responsibility of the drilling engineering
 12 team.
 13 Q. And once Deepwater Horizon began
 14 doing the drilling, who was the drilling
 15 engineering team with whom you -- you dealt?
 16 A. I mainly dealt with Mark Hafle,
 17 Brian Morel, the drilling engineers for the
 18 Macondo well.
 19 Q. Did you ever deal with John
 20 Guide?
 21 A. Occasionally I would -- I would
 22 speak with him in the operations meetings.

Page 86:03 to 86:15

00086:03 Q. What is a No Drilling Surprises
 04 champion?
 05 A. I -- I understand that to mean
 06 it's the person who is facilitating the No
 07 Drilling Surprises meeting. So I played that
 08 role for Macondo.
 09 Q. You were the champ?
 10 A. I don't know if I'm a champion,
 11 but I played that role.
 12 Q. Already. You were des- -- you
 13 were the designated No Drilling Surprises
 14 champion, correct?
 15 A. That's -- that's correct.

Page 87:03 to 87:07

00087:03 Q. For the drilling of the well.
 04 A. I would communicate any changes
 05 to the forecast during the operations
 06 meetings and also communicate via e-mail to
 07 Bobby Bodek, the operations coordinator.

Page 90:21 to 91:21

00090:21 Q. Okay. Did you have any direct
 22 responsibilities or did you play any role
 23 with respect to the BOP on the Macondo
 24 project?
 25 A. No.
 00091:01 Q. Now, we were talking before our
 02 break about your sort of normal day-to-day
 03 activities, beginning to end. And you
 04 started off by talking about a pre-morning
 05 call with the geoscience folks, correct?
 06 A. That's correct.

07 Q. And what time would that meeting
08 normally take, and who would be present?

09 A. I believe it was at either
10 6:30 a.m. or 7:00 a.m., and it would be
11 from -- from the rig the pressure detection
12 specialist, Kate Paine; well site geologist,
13 that would be Stuart Lacy or Gord Bennett;
14 and from the office, it would be the ops
15 geologist, Bobby Bodek; myself; and that --
16 that would be kind of a typical attendance
17 for that meeting.

18 Q. All right. And obviously the
19 folks on the rig would be participating by
20 phone?

21 A. Yes.

Page 92:04 to 94:09

00092:04 Q. All right. And -- and then what
05 would happen in the pre-morning call meeting?

06 A. We would talk about geologic
07 information, not general drilling
08 information, but more like what -- what
09 cuttings we were seeing, what type of rocks
10 we were cutting through, maybe what the age
11 was. And then for the pressure parts of it,
12 Kate would talk about what she's seeing based
13 on the realtime log information or cuttings
14 and what -- what her thinking was regarding
15 the pore pressure.

16 Q. And was there some document on a
17 daily basis that would capture the
18 information that you and the other
19 geoscientists were concerned about?

20 A. I would maintain the while
21 drilling pressure forecast spreadsheet and
22 would capture information relevant to the --
23 the -- the point forward pressure forecast in
24 that document.

25 Q. All right. Was that something
00093:01 that was filed away on a daily basis, or was
02 that sort of a moving target, it would evolve
03 over time and you didn't keep any hard
04 copies?

05 A. It's a -- an electronic
06 document, an Excel spreadsheet, that is
07 stored centrally on our server. So it -- it
08 is accessible by the drilling team. Whoever
09 needs to see it can -- can access it. It is
10 a living document in that I do revise it
11 periodically through the -- the drilling of
12 the well.

13 Q. And would it be printed in hard
14 form on a daily basis so that you'd know
15 where you were on a given day?

16 A. We would have a printed copy of
 17 it, a large format of the pressure plot
 18 that -- that was represented in PDD -- the
 19 predrill data package, and that would be
 20 posted on the wall in the operations room.
 21 And I might update that plot if we were
 22 coming up on a interval that we really want
 23 to focus on or draw some attention to. In
 24 other words, I might annotate it with
 25 information from offset wells, for example,
 00094:01 that highlights a specific inter- -- interval
 02 of interest.

03 Q. All right. And at the end of
 04 the day, what would happen to that hard copy?

05 A. It would stay on the -- the
 06 operations room wall until it was updated.
 07 Once it was -- once we posted an -- an
 08 updated plot, I'm not sure what happened to
 09 the old copies of -- of the -- the plot.

Page 94:15 to 96:02

00094:15 Q. But other than that, there was
 16 the -- you know, you have a daily drilling
 17 report, which is a form and it's filled out
 18 with certain -- there are certain boxes that
 19 you fill in information. Was there anything
 20 equivalent to that for the geoscience folks?

21 A. The pressure detection
 22 specialists has a pore pressure detection
 23 report that's issued maybe not every day, but
 24 just, you know, on -- on a nearly daily
 25 basis. I think the -- the well site
 00095:01 geologist might issue a -- a short report
 02 on -- on well site geology. Again, I don't
 03 know if it's on a daily basis, but I -- I
 04 recall it being nearly on a daily basis.

05 We -- we don't have a similar
 06 form for the in-office pore -- pore pressure
 07 detection. I just maintain a spreadsheet.

08 Q. That would have been done by
 09 Ms. Paine, what you just described, right?

10 A. The pressure detection, pressure
 11 report, yes.

12 Q. Okay. All right. Then you had
 13 the morning call, which occurred about what
 14 time?

15 A. 7:30 or 8:00 a.m.

16 Q. And who participated in that?

17 A. That would be the -- the broader
 18 wells team, the drilling engineering staff,
 19 the members of the -- the subsurface team,
 20 geologists and geophysicists from the
 21 prospecting team, members of the Tiger team,
 22 myself, Bobby Bodek, and depending on the --

23 the hole section, we may have a shallow
 24 hazards specialist in the room, usually
 25 representatives from various contractors
 00096:01 might also be sitting in that -- that morning
 02 call.

Page 96:11 to 98:25

00096:11 Q. And what is a shallow hazard?
 12 A. This would be a specialist
 13 that's looking at the geology near the mud
 14 line looking for things typically like the
 15 presence of biogenic gas that we're trying to
 16 avoid, assessing the risk of shallow water
 17 flow, looking at other issues regarding
 18 the -- the seafloor, presence of biologic
 19 communities, pipelines, and making sure that
 20 we have adequate clearance for the surface
 21 location.
 22 Q. All right. And would -- if
 23 there were particular problems with pore
 24 pressure, I assume you would take an active
 25 role in the discussion at that point?
 00097:01 A. Yes.
 02 Q. And Kate Paine?
 03 A. Kate Paine would -- would be
 04 more active, I would say, in the geoscience
 05 call prior to it. But in the operations
 06 call, if there were questions about pore
 07 pressure, typically I would talk from the
 08 office regarding the pore pressure.
 09 Q. All right. Now, I'd like to
 10 sort of focus now on the time -- from the
 11 time that the Marianas first spudded down
 12 until April 20.
 13 A. Okay.
 14 Q. And I want to see if we can
 15 agree as to sort of what the number of
 16 drilling days were between those two points.
 17 Do you -- do you recall that on
 18 October 6th, 2009 -- '9, the Marianas spudded
 19 down?
 20 A. Again, I don't remember the
 21 exact date, but that sounds like the right
 22 time frame.
 23 Q. Sounds about right?
 24 A. Yeah.
 25 Q. And do you -- do you know that
 00098:01 on November 9th, Hurricane Ida damaged the
 02 Marianas?
 03 A. That's right, I do remember
 04 the -- the hurricane. I couldn't recall the
 05 name, but, yeah, Ida.
 06 Q. All right. And there were 34
 07 days of drilling between those two points?

08 A. Sounds about right.
09 Q. And then on February 10th, 2010,
10 Deepwater Horizon began to drill. Does that
11 sound right to you?
12 A. Yeah, there was at least a
13 period of -- of a month or so, I think, or a
14 couple months before we got back to drilling,
15 yeah.
16 Q. Does -- does February 10 sound
17 about right to you?
18 A. Yes.
19 Q. And then, of course, it ended on
20 April 20th of 2010, correct?
21 A. Yes.
22 Q. And would you agree with me,
23 therefore, that we have a total of 103
24 drilling days between those two points?
25 A. Yeah, I --

Page 99:02 to 99:24

00099:02 A. (Continuing) That sounds
03 approximately correct.
04 Q. (BY MR. DEGRAVELLES) Okay.
05 Now, during those 103 days, how many days
06 were there where losses were suffered?
07 A. Give you a ballpark estimate,
08 but there may have been a period of, I'd say,
09 ten to 15 days where we were experiencing
10 losses.
11 Q. And -- and when you say
12 "losses," do -- do you include within that
13 ballooning events or do you count that
14 separately?
15 A. I -- I would include it just
16 because it's something that we're evaluating
17 and initially not sure of what the mechanism
18 is.
19 Q. In terms of your estimate of ten
20 to 15 days, would that include the ballooning
21 events that occurred during those two points
22 in time?
23 A. Yeah, but it's a ballpark
24 estimate.

Page 100:06 to 100:19

00100:06 Q. All right. And then between
07 those two points in time during the 103 days
08 that there was drilling going on, how many
09 kicks?
10 A. I recall two kicks during the
11 drilling operation.
12 Q. All right. Does that include or

13 not include April 20th?
14 A. That does not include
15 April 20th.
16 Q. All right. If you would go to
17 tab 116, please, which has already been
18 introduced as Exhibit 1319.
19 A. 116?

Page 100:22 to 102:19

00100:22 Q. And just take a moment to -- to
23 look at it. For the record, it's
24 MDL 00895195. Do you recognize that?
25 A. Yes, I -- I do recognize this,
00101:01 this e-mail.
02 Q. All right. That was an e-mail
03 string of two, one from you to Kate Paine and
04 then Kate Paine replying to you, correct?
05 A. That -- that's correct.
06 Q. All right. Look -- looking at
07 this document, can you tell me what is being
08 referred to, what y'all are talking about?
09 A. We are talking about the leak
10 off testing that we were doing, I believe at
11 the 22-inch shoe.
12 Q. And you mention that, We just
13 finished up a mini peer, p-e-e-r, assist
14 trying to understand the latest LOT and how
15 to proceed.
16 What is a "mini peer"?
17 A. It's a -- where I would call
18 together experts on interpreting leak off
19 tests, pressure buildup curves to try and
20 understand what the -- the curves were
21 telling us about the -- about the shoe
22 integrity and what we might have exposed in
23 the open hole.
24 Q. And do I -- and then you also
25 mention that, "We intend to use a stress cage
00102:01 mix."
02 What is a "stress cage mix"?
03 A. It is a -- a mixture of mud
04 additives that's designed to strengthen weak
05 sand formations.
06 Q. And -- and so what was it that
07 was going on that led most everyone to think
08 that squeezing was a good idea?
09 A. The consensus of the team was
10 that we were possibly seeing the effects of a
11 small channel through cement. So the cement
12 squeeze was designed to try and improve
13 the -- the cement integrity.
14 Q. All right. And did the -- the
15 LOT, which is -- means what?
16 A. Leak off -- leak off test.

17 Q. And you're doing a leak off test
18 to determine whether or not you've got
19 losses, correct?

Page 102:21 to 103:11

00102:21 Q. (BY MR. DEGRAVELLES) Or a
22 fracture of some kind?
23 A. We're doing a leak off test for
24 two primary reasons: To assure ourselves
25 that we have integrity of the shoe in the
00103:01 cement surrounding the casing that we just
02 ran and to determine the local strength of
03 the -- the formation just below the shoe.
04 Q. All right. And the concern that
05 you were addressing with the squeeze was that
06 there was apparently a channel that showed up
07 in the LOT test?
08 A. Yeah. It was the interpretation
09 that there could be an avenue for fluid to --
10 to escape behind the -- the cement into the
11 annulus behind the casing.

Page 103:19 to 104:19

00103:19 I've got the wrong document, I'm
20 sorry. If you would, switch to 117, please.
21 A. Okay.
22 Q. All right. You rec- -- what is
23 this document?
24 A. I'm looking at the daily
25 geologic report.
00104:01 Q. For October 26th, 2009?
02 A. That's correct.
03 Q. And is this the document earlier
04 that you said would be filled out by Kate
05 Paine on a daily basis or a regular basis, if
06 not daily basis?
07 A. No, this would be the -- an
08 example of a document filled out by well site
09 geologists.
10 Q. All right. And that would be
11 who in this case?
12 A. In this case it was Jorge Viera.
13 He was the well site geologist for the
14 Marianas at that time.
15 Q. All right. Now, what -- does
16 this reflect that on October 26th you had
17 both a kick and losses?
18 A. I'd have to -- to spend time
19 reading through it. Is that okay?

Page 104:23 to 106:06

00104:23 Q. This, incidentally, has already
24 been introduced as Exhibit 1320.
25 A. I believe this is the -- the
00105:01 reference on Page 819, it's under status.
02 The kick at 8970 measured depth is referring
03 to a flow that we experienced in -- near the
04 TD of the 18-inch hole section.
05 Q. All right. So it was a kick
06 that had occurred earlier?
07 A. It occurred at -- at drilling --
08 once we had done the leak off test at the
09 22-inch shoe and drilling the 18-inch hole
10 section, this kick would have occurred near
11 the base of that -- of drilling that hole
12 section.
13 Q. All right. This is a document
14 dated October 26th, and I guess my question
15 to you is, when did the kick occur? I'm not
16 talking about at depth -- at what depth, but
17 on what date, if you're able to tell me?
18 A. I don't recall the date the --
19 the kick occurred.
20 Q. And you're not able to
21 extrapolate that from the information you see
22 on that exhibit?
23 A. I think possibly if I spent the
24 time looking at it in detail, I might be able
25 to gather exactly the time and date that
00106:01 it -- that it occurred, but --
02 Q. But obviously some point prior
03 to October 26th, correct?
04 A. Yeah, based on what I'm reading
05 here, that's -- that's what I -- I would
06 conclude.

Page 106:15 to 106:25

00106:15 Now, one of the things that pore prediction
16 is supposed to do is to try to keep the
17 drilling team from having a kick; is that
18 true?
19 A. That is the -- the hope, that
20 with pressure forecasting, that we can
21 eliminate the non-productive time associated
22 with kicks and losses.
23 Q. But it's not just a hope; it is
24 a goal, correct?
25 A. You could call it a goal, yes.

Page 107:24 to 108:17

00107:24 Q. (BY MR. DEGRAVELLES) Okay. And
25 not just collectively, but you individually,

00108:01 of course, are interested in that, correct?
02 A. Pore pressure fracture gradient
03 forecasting is a critical component of -- of
04 well planning, and -- and I think it --
05 Q. It includes --
06 A. It does address, you know, risks
07 associated with taking flows and losses
08 and -- and under the circumstances where
09 those things might not be handled in well
10 control.
11 Q. Okay.
12 A. But the pressure forecast is
13 really designed to help eliminate the
14 nonproductive time, first and foremost,
15 associated with kicks and losses.
16 Q. And potential blowouts are
17 secondary to that, I take it?

Page 108:19 to 108:24

00108:19 A. Right. I mean, those are well
20 control incidents that I don't -- I really
21 couldn't comment on.
22 Q. (BY MR. DEGRAVELLES) Okay. And
23 you're concerned about nonproductive time
24 because that costs BP money, true?

Page 109:01 to 109:10

00109:01 A. Nonproductive time is -- is
02 inefficiency, and so we're trying to
03 eliminate it.
04 Q. (BY MR. DEGRAVELLES) And in --
05 in the world of drilling, time is money,
06 correct?
07 A. Right.
08 Q. And so you want to eliminate
09 nonproductive time because nonproductive time
10 costs BP money; is that true?

Page 109:12 to 109:15

00109:12 A. Our rigs in these projects
13 are -- are expensive, and if we can drill
14 these wells more efficiently, well, we can
15 drill it at the -- the planned costs.

Page 110:08 to 112:25

00110:08 MR. DEGRAVELLES: Yes. That's tab 134.
09 It's already been introduced as Exhibit 1337.
10 Q. (BY MR. DEGRAVELLES) And if
11 you'd take a moment to look at it and just

12 tell me what that is.
 13 Do you recognize that document?
 14 A. I do recognize this PowerPoint
 15 slide pack.
 16 Q. All right. Who created that
 17 PowerPoint slide pack?
 18 A. I don't recall exactly who put
 19 it together.
 20 Q. Did you have input into it?
 21 A. Yes.
 22 Q. Could it have been you that did
 23 it?
 24 A. I don't believe I put this --
 25 this document together.
 00111:01 Q. All right. And what was the
 02 purpose of putting the document together?
 03 A. This document is a review of the
 04 hole section that we had just drilled, the
 05 18-and-1/8 by 22-inch hole section. And so
 06 we're looking at things like what the leak
 07 off test results were, what the drilling
 08 experience was in there, in that hole
 09 section.
 10 Q. All right. On -- on Page 2,
 11 which is Bates stamped -- the full Bates
 12 stamp number is MBI -- BP-HZN-MBI 0099622
 13 through 632, but -- but it also has just 1
 14 through whatever. Look at Page 2, if you
 15 would --
 16 A. Okay.
 17 Q. -- under "Key Topics."
 18 A. Right.
 19 Q. It shows the well control event
 20 kick at 88970, correct?
 21 A. That's correct.
 22 Q. All right. Is that the one that
 23 was earlier referred to in the daily report?
 24 A. Yeah, I believe it's referring
 25 to the same event.
 00112:01 Q. All right. And then if you
 02 would go to Page 10, and it -- and it -- I'm
 03 going to read this to you and see if I read
 04 it accurately. It is entitled "Decision to
 05 Drill Ahead."
 06 Quote, The team was faced with
 07 the decision of whether to drill ahead past
 08 the interval that caused the well control
 09 event.
 10 Did I read that correctly?
 11 A. That's correct.
 12 Q. And does it then show the two
 13 different main choices?
 14 A. Yes.
 15 Q. One being stop and set casing at
 16 current depth and the other is drill ahead

17 approximately a hundred feet in order to set
 18 18-inch casing shoe below problematic sand
 19 interval?
 20 A. That's correct.
 21 Q. And the team decision was to
 22 drill ahead approximately a hundred feet to
 23 get the 18-inch CSG shoe in a shale, correct?
 24 A. That's right, to get the 18-inch
 25 casing shoe in -- in a shale.

Page 113:07 to 114:18

00113:07 Q. (BY MR. DEGRAVELLES) Who was --
 08 let me just ask you, who was involved in that
 09 decision?
 10 A. The -- it -- it's a decision
 11 that's made by the drilling engineering team.
 12 Q. With input from you and the
 13 geoscience team?
 14 A. We -- we would provide input --
 15 again, this is the same input on pore
 16 pressure fracture gradient expectations, and
 17 there would probably also be an estimate of
 18 what the lithology was in that subsequent
 19 hundred feet that we were about to drill in
 20 by the subsurface team.
 21 Q. Okay. And if you would turn to
 22 tab 128. All right. Is this a daily PPFG
 23 report?
 24 A. Yes.
 25 Q. And is that something that you
 00114:01 do, or is that something that Ms. Paine does?
 02 A. That -- that would have been
 03 made by Kate. Yeah, Kate would do this.
 04 Q. All right. And does this
 05 indicate that on February 18, 2009, we have
 06 losses?
 07 A. There is a comment in here
 08 regarding losses at measured depth of
 09 12,350 feet.
 10 Q. All right. And if you would,
 11 turn to exhibit -- I'm sorry, tab 112, which
 12 has already been introduced as Exhibit 1315.
 13 Do you recognize that document?
 14 A. No, I don't. Tab 112, did you
 15 say?
 16 Q. Yeah, just tab 112.
 17 A. Okay. I -- I don't recognize
 18 this document.

Page 115:04 to 115:15

00115:04 the left-hand side the lost returns and on
 05 the right-hand side the kicks.

06 A. Okay.
07 Q. And I'm going to ask you when
08 you get through whether you have any reason
09 to disagree with these -- this summary of
10 both lost returns and kicks.
11 A. I mean, it does look like a
12 summary of loss events during the -- the
13 well. I didn't recall that -- that many from
14 my specific work, but it does look like a
15 summary of loss events.

Page 116:05 to 116:10

00116:05 Q. But my question to you is, as we
06 sit here now, are you looking at this saying,
07 this ain't right, this can't be true; or are
08 you saying there's nothing that you have to
09 offer at this moment to dispute the
10 correctness of what is on Exhibit 1315?

Page 116:12 to 116:15

00116:12 A. Other than my recollection that
13 I don't recall this many loss events during
14 drilling the well, I couldn't dispute these
15 as being loss events.

Page 116:18 to 116:20

00116:18 Q. Then if you would turn to --
19 it's going to be in the other binder -- tab
20 22, which we will mark as Exhibit 3704.

Page 117:01 to 117:02

00117:01 on. Oh, it was already -- tab 28 -- 128 was
02 Exhibit 1331.

Page 117:04 to 117:12

00117:04 Q. (BY MR. DEGRAVELLES) Is this an
05 e-mail from Kate Paine to various folks
06 including you, dated February 18, 2010?
07 A. Yes.
08 Q. And does it show that losses
09 were occurring at the shoe?
10 A. Kate's comment in here is that
11 she's interpreting the losses as occurring at
12 the shoe.

Page 118:01 to 124:15

00118:01 Mr. Albertin, if you would go to tab 18. And
02 as you look at that, the question I'm going
03 to ask is -- because I couldn't find a date
04 as to what loss -- the date of the loss that
05 they're talking about in this losses
06 analysis, and I thought that perhaps you
07 could by perhaps looking at the depth,
08 et cetera, or whatever other information and
09 let me know when that loss occurred.

10 A. I think the analysis that JZ,
11 Jianguo Zhang, and Steve Willson are
12 presenting in this document is referring to
13 the loss event that we experienced in
14 drilling to the TD of the 16-inch hole
15 section. I don't recall the specific day,
16 but we could refer back to the drilling
17 reports that -- to see exactly what the date
18 that loss event started.

19 Q. All right. We had -- you had
20 earlier look at Exhibit 22, which was dated
21 February the 18th, and at which Ms. Paine had
22 said, we drilled to 12,350 MD and losses
23 occurred. And then looking at Exhibit 18,
24 this losses analysis, it says that the depth
25 is 9,050 feet. And so my question -- and

00119:01 I'm --

02 A. Okay.

03 Q. Please forgive me if this is a
04 stupid question, but are these two different
05 loss events?

06 A. No, I believe we're discussing
07 the same loss event. The 12350 depth is
08 the -- where the bit was, essentially the
09 hole depth.

10 Q. I got you.

11 A. And the depth quoted here,
12 9050 feet, is the interpretation of where the
13 losses actually occurred.

14 Q. I got you. Okay. Same event,
15 just one approaches it from where the losses
16 occurred, the other one from where the bit
17 was. So this would have been exhibit -- I
18 sorry tab No. 18, which we'll make 3705,
19 refers to a loss which occurred on February
20 the 18th; is that correct?

21 A. That's correct, as I'm -- I'm
22 reading it here, yes.

23 Q. Okay. All right. If you would
24 then turn to tab 24. And look at this e-mail
25 string of which you are a part of and just

00120:01 I'm going to ask you some questions about
02 what -- what this is.

03 A. All right.

04 Q. This is Exhibit 3706.

05 A. Okay.

06 Q. All right. My question is dated
07 February 25th, or at least the most recent in
08 that string is dated February 25th and the
09 earliest is February 24th. Is this referring
10 to a kick?

11 A. The main e-mail discussion here
12 is regarding analysis of the loss zone that
13 occurred on drilling to the TD of the 16-inch
14 hole section.

15 Q. All right. And the -- let me
16 just make sure I understand. When they're
17 talking about the losses here they're talking
18 about that February 18th, 2010 loss?

19 A. Right, it's the same loss we
20 were -- we were talking about, yeah.

21 Q. Okay. All right. Now, at the
22 top e-mail Mr. Bodek writes to a number of
23 people, including you, this was the depth
24 where we took the kick in near the base of
25 the 18-inch casing section.

00121:01 Was there a kick?

02 A. At this time we were looking at
03 the data to try to understand exactly where
04 the loss zone was. And based on the data,
05 we've identified a mile zone near the shoe
06 below the 18-inch shoe where we think the
07 primary losses occurred in. And I think,
08 John Bellow raises an additional interval
09 that's just above the shoe that he thinks
10 might also be worth looking at to understand
11 whether we had losses into that. And I think
12 what Bobby is responding back to John is
13 that, no, that interval was the previous hole
14 section, the interval at which we took a flow
15 and the log signature looks similar when we
16 drilled through that event. So he's saying
17 that that's probably not a culprit for where
18 we're encountering losses in this hole
19 section.

20 Q. All right. And I'm going to
21 quote this sentence so that -- and tell me if
22 I'm reading it correctly. John, this was the
23 depth where we took the kick in the end near
24 the base of the 18-inch casing section.

25 Did I read that?

00122:01 A. Yes.

02 Q. Is there a different between a
03 kick and a loss?

04 A. Certainly.

05 Q. All right. Is he -- he's
06 talking about a kick, correct?

07 A. He is talking about a kick.

08 Q. All right. Can you tell me when
09 this kick occurred?

10 A. This kick occurred in the

11 previous hole section prior to running the
12 18-inch casing.

13 Q. All right. And we've been
14 talking about February 18th as the date --
15 where there were these losses that were
16 referred to in several items. Was this kick
17 before, after, or at the same time as the
18 February 18th loss?

19 A. This kick was before.

20 Q. Okay. And do -- are you able to
21 tell me when before it was?

22 A. I'd have to look at the -- the
23 drilling reports to see exactly what the date
24 was when we were drilling that section in the
25 and the previous hole section, but it was
00123:01 maybe weeks before the -- the loss.

02 Q. Okay. And then in the --
03 Skripnikova, in her -- toward the bottom of
04 that page talks about there is a -- there is
05 formation broke down in 9,050 to 9230
06 interval. Is she talking about the loss that
07 occurred on February 18th that the earlier
08 documents refer to?

09 A. Yes.

10 Q. Okay. All right. If you would
11 turn to tab 160.

12 A. 160?

13 Q. 160. And this has previously
14 been introduced as Exhibit 3072. All right.
15 Is this a letter from Stuart Lacy -- I'm
16 sorry, an e-mail from Stuart Lacy to you
17 dated March 2nd, 2010?

18 A. Yes, it's addressed to me and --

19 Q. And others, yes.

20 A. -- and others, right.

21 Q. In any event, does he state in
22 the second sentence of his e-mail, quote,
23 Started losing mud prior to drilling all the
24 way through the shoe, close quote?

25 A. Yes, he does.

00124:01 Q. And he says, Loss rate 60 to
02 7 -- 60 to 70 barrels per hour, correct?

03 A. That's correct.

04 Q. And just finished pumping LCM
05 pill, correct?

06 A. Correct.

07 Q. So we have a second -- a loss
08 event -- or we have a loss event on March the
09 2nd, 2010, correct?

10 A. That's correct. I would
11 consider this part of the same loss event
12 that we've been discussing. It's still
13 losing in the same interval, but you could
14 call it a separate loss event. I wouldn't
15 argue with that.

Page 124:21 to 129:12

00124:21 Q. This we'll introduce as
22 Exhibit 3707. All right. Is this a e-mail
23 dated March 3rd 2010 from Stuart Lacy to you
24 and others?
25 A. Yes.

00125:01 Q. And he's talking about finished
02 pumping the LCM pill. Losses slowed down
03 from 120 barrels per hour to static, with
04 pumps off. And then he ends it with lost 442
05 barrels to date, correct?
06 A. That's correct.

07 Q. Now, is this a separate loss
08 event?
09 A. I consider this part of the same
10 bigger loss event that we started
11 encountering when we were drilling to TD of
12 this hole section.

13 Q. All right.

14 A. This is after we were running
15 casing, but it's still the same interval
16 losing. In my opinion, same loss event.

17 Q. Could one legitimately consider
18 this a separate loss event, even though you
19 do not?
20 A. Certainly, you could consider it
21 a separate loss event.

22 Q. All right. And, in fact, I
23 think if you'll look at -- I'll just pass you
24 mine. It's Exhibit 1215 -- I'm sorry, 1315,
25 which is the -- the summary we earlier talked

00126:01 to. It talks about a separate loss event
02 from March 3rd to March 5th, correct?
03 A. Right. Date wise this is
04 occurring on different dates.

05 Q. Okay. All right. If you would,
06 turn to tab 27, which we will mark as 3708,
07 e-mail from Stuart Lacy to you and others,
08 dated March 5th where he says, Continuing's
09 to pull out of hole, lost 84 barrels to date
10 on trip out of hole.

11 Separate or the same or could be
12 both?
13 A. It is the same loss event
14 that -- that he was talking about in his
15 previous e-mails.

16 Q. Okay. If you go to tab 30 of
17 these, dealing with loss events, but I just
18 have a couple questions, sort of
19 miscellaneous questions. This is going to be
20 3709, e-mail from Kate Paine to you, dated
21 March 8th of 2010. And I'll shut up so you
22 can look at it.

23 A. Okay.

24 Q. All right. Can you tell me what
25 she's talking about?

00127:01 A. Kate is talking about analysis
02 of realtime log information to understand the
03 pore pressure in the interval near where we
04 took a kick on drilling, I believe, to the
05 13 and 5/8 casing of the original hole.

06 Q. All right. And she is talking
07 about -- she's talking about the kick we
08 earlier referred to which occurred on
09 February the 18th or a there a separate kick?

10 A. I think this is a separate
11 kick -- a second kick.

12 Q. All right. Do you know when
13 this obviously it would have occurred before
14 March 8th, do you know when that second kick
15 would have occurred or separate kick would
16 have occurred?

17 A. Around March 8th, but I don't
18 recall the exact date or time.

19 Q. All right. And when she says,
20 "I have no faith in my sonic pics," do you
21 have any idea what that means?

22 A. I think what she's referring to
23 there, I understand it as being -- she's
24 looking at realtime sonic log information
25 that we're collecting and drilling that hole

00128:01 section and either because of the tool not
02 giving good results in that hole section or
03 responding to other things besides pore
04 pressure, that she doesn't have confidence
05 that the sonic values that she's picking are
06 giving her an accurate assessment of pore
07 pressure.

08 Q. Okay. If you would, turn to the
09 next tab 31, which we will mark as 3710. The
10 specific question I have is reference to
11 Mr. Stuart Lacy's e-mail to Mr. Bodek on
12 March the 8th where he says, Apparently it's
13 considered valid, as we were in communication
14 with the open hole, but it's the first time
15 I've ever not drilled the 10 feet required.

16 Do you know what he's talking
17 about?

18 A. I believe what he is referring
19 to here is the leak off test that we had
20 taken at the 16-inch shoe. The 16-inch shoe
21 was set with several hundred feet of rathole
22 beneath it. And so he's -- he's talking
23 about that un- -- unusual situation.

24 Q. All right. And what is he
25 talking about when he says, 10 feet required?

00129:01 What is the 10 feet and required by whom?

02 A. I believe there is an -- a
03 requirement, I think it's an MMS requirement,

04 that we drill new formation when we're
 05 testing the integrity of the shoe and there
 06 is a set amount of footage that you need to
 07 drill and I believe 10 feet is the minimum
 08 amount that you need to drill into open --
 09 into new formation before you begin testing
 10 the integrity of the shoe.

11 Q. All right. Is he indicating
 12 that he violated that MMS requirement?

Page 129:14 to 131:16

00129:14 A. I -- I don't know if that's what
 15 he's saying.

16 Q. (BY MR. DEGRAVELLES) Okay. All
 17 right. If you would, turn to tab 118,
 18 please. All right. Does this refer to a
 19 kick which occurred on the Macondo well on
 20 March the 8th of 2010?

21 A. Yes, I believe it does.

22 Q. And do you recall that kick?

23 A. I do recall that kick.

24 Q. And do you recall that there was
 25 a stuck pipe in connection with a kick?

00130:01 A. Yes, the stuck pipe occurred
 02 after taking the kick.

03 Q. All right. For the record, this
 04 is -- exhibit's already been introduced as
 05 1321.

06 If you would go to tab 40,
 07 please, which we will mark as 3711. Is this
 08 an e-mail from you to Mr. Viceer or Shazia
 09 Viceer?

10 A. Ms. Shazia Viceer.

11 Q. I'm sorry. Dated March the 9th
 12 of 2010?

13 A. That's correct.

14 Q. All right. Does it say, Shazia,
 15 quote, It's been frantic down here with well
 16 problems at Macondo, close quote?

17 A. Yes, it does.

18 Q. And you wrote that?

19 A. I did.

20 Q. And what -- what was frantic
 21 that you were referring to?

22 A. We took a kick and we are trying
 23 to understand the pressure ramifications of
 24 it, trying to understand what the absolute
 25 magnitude of the kick was, and how to get
 00131:01 back to -- to drilling operations.

02 Q. All right. And what were you
 03 doing at this time to try to understand what
 04 had happened that you described as frantic?
 05 What was actually going on?

06 A. We would be looking at the

07 realtime log information, resistivity and
08 sonic log information for indications of pore
09 pressure. We would be looking at the
10 drilling gas data to see if there were
11 indications in the drilling gas data that --
12 that we could use to interpret for pore
13 pressure. And I think there would also be an
14 effort by the drilling engineering team to
15 understand the -- the pore pressure
16 implications of the -- the kick.

Page 132:02 to 133:08

00132:02 Q. All right. If you would turn,
03 please, to tab 150. And I know that you were
04 not a part of this string, so I would ask you
05 just to take a moment because I'm going to
06 ask you your view of some of the statements
07 that are made here in a e-mail from Graham
08 Pinky Vinson to David Sims, dated March 10,
09 2010?

10 A. Okay.

11 Q. All right. I'm going to read
12 sections of it, then ask for comments. Hi,
13 David, Just wanting to let you know that we,
14 the Tiger team, are disappointed in our
15 performance and support of D&C on Macondo.
16 As such, we have been having, quote,
17 gloves-off conversations over the past few
18 days and looking at the data that was
19 available to us on the past two hole sections
20 and what decisions, slash, inferences, slash,
21 could be made, and should be made or what
22 communications were, slash, were not made
23 closed quote.

24 Did I read that correctly?

25 A. Yes.

00133:01 Q. Were you part of the gloves-off
02 conversations?

03 A. I don't remember what
04 conversation Pinky was talking about here
05 specifically, but I was certainly part of
06 conversations about understanding the kick
07 and trying to understand the data that we had
08 in hand prior to taking the kick.

Page 133:19 to 134:10

00133:19 Q. All right. Was Pinky your boss?

20 A. Yes.

21 Q. All right. Going on, quote, The
22 first step is to be taken is Bobby Bodek is
23 going to the rig next week to confer with the
24 mud loggers, pore pressure specialists, well

25 site geologists to reaffirm roles,
00134:01 responsibilities in terms of data
02 interpretation communications. We are going
03 to get back to our high standards for well
04 delivery in support of D&C from an SS&W
05 perspective, close quote.
06 Did I read that correctly?
07 A. Yes.
08 Q. Now, what are the high standards
09 that he is referring to that he was saying
10 you guys were going to get back to?

Page 134:12 to 134:15

00134:12 A. I believe he's referring to -- I
13 believe what Pinky's referring to there is a
14 goal that we have to drill wells with no
15 subsurface related nonproductive time.

Page 135:11 to 136:13

00135:11 Q. (BY MR. DEGRAVELLES) All right.
12 If you would, turn to 42, please, which we
13 will mark as 3712. Is this, at least the
14 bottom one, an e-mail from you to Bodek and
15 others, subject, quote, The event that
16 started it all, question mark?
17 A. That's correct.
18 Q. All right. Help -- tell me what
19 you meant by that and what you were referring
20 to in the e-mail itself.
21 A. I was analyzing time pressure
22 data prior to the kick that occurred while we
23 were drilling at 12,350 feet, so trying to
24 understand the loss event that occurred there
25 and what may have led to the losses. So the
00136:01 event is the loss event.
02 Q. All right. If you would turn to
03 the next tab which we will mark as 3713,
04 e-mail from you to Bodek and others, dated
05 March 9th, 2010. Quote, If you get bored
06 dealing with today's problem, have a look,
07 exclamation point.
08 And there was, to me, an
09 indecipherable graph. What is so exciting
10 about that graph, and what are you trying to
11 communicate there?
12 A. Again, I'm trying to understand
13 what led --

Page 136:15 to 137:10

00136:15 A. (Continuing) I'm trying to

16 understand what led to the loss event when we
 17 were drilling in that interval, and what I'm
 18 looking at here is a downhole pressure
 19 readout, that thing that I've circled there
 20 called ECD spike, it -- it's a spike up in
 21 downhole pressure that was at or -- I don't
 22 remember exactly how close it got to the --
 23 the fracture gradient at the shoe, but it
 24 looked like it had briefly exceeded the
 25 fracture gradient of the open hole.

00137:01 Q. (BY MR. DEGRAVELLES) And that's
 02 a real concern, correct?

03 A. That is a concern because we
 04 don't want to induce losses by having spikes
 05 in -- in downhole pressure.

06 Q. And what period of time -- when
 07 does that circle thing take place?

08 A. I can't read the -- the time
 09 axis. I believe it says February 17th, but I
 10 really can't read it too -- too well.

Page 137:19 to 138:10

00137:19 Q. (BY MR. DEGRAVELLES) And so
 20 it's referring to, you think -- and we'll
 21 confirm that when you get a chance to look at
 22 it with the magnifying glass. Just try to
 23 find the date that that's referring to.

24 A. Okay. Yeah, if I read this
 25 correctly, it looks like February 17th, 2010,
 00138:01 and that spike would have occurred at between
 02 7:40 and 7:50.

03 Q. All right. And it turns out
 04 that, in fact, on February 18th there were
 05 losses, correct?

06 A. I don't recall exactly when the
 07 losses started. I think this is impor- --
 08 the event I'm pointing to was an ECD spike
 09 that occurred just prior to the losses
 10 beginning.

Page 138:15 to 139:05

00138:15 Q. Okay. If you would, turn to
 16 tab 107.

17 A. 107?

18 Q. Yes. And I understand that you
 19 were not a recipient of this e-mail, but do
 20 you agree that it is an e-mail from Brian
 21 Morel to Mark Hafle, dated March the 11th,
 22 2010?

23 A. Yes.

24 Q. And that it says, quote -- or
 25 the subject is, quote, out of control. And

00139:01 the e-mail says, "I have never seen this team
 02 being so conservative before," dote dot, dot,
 03 dot.
 04 Do you know what he's referring
 05 to when he says "out of control"?

Page 139:07 to 139:11

00139:07 A. No.
 08 Q. (BY MR. DEGRAVELLES) Do you
 09 know what he means when he says, "I have
 10 never seen this team being so conservative
 11 before"?

Page 139:13 to 141:03

00139:13 A. No.
 14 Q. (BY MR. DEGRAVELLES) That's --
 15 for the record, that's already been
 16 introduced as Exhibit 1310. And if you
 17 would, turn to tab 45.
 18 Have you seen this e-mail
 19 before?
 20 A. Yes.
 21 Q. All right. Was it one of the
 22 e-mails you looked at in preparation for your
 23 deposition?
 24 A. Yes, I believe so.
 25 Q. And it's from Joseph -- Jonathan
 00140:01 sorry, Jonathan Bellow to Stuart Lacy and
 02 others with a cc to Mr. Bodek and others,
 03 including you, correct?
 04 A. That's correct.
 05 Q. And who was Mr. Bellow, again?
 06 A. John Bellow is our ops geologist
 07 on the Tiger team.
 08 Q. All right. I'm going to read
 09 some -- some statements out of this and ask
 10 you for -- for comments. This would have
 11 been four days after the kick, correct?
 12 A. Yeah, that looks about right.
 13 Q. And this we're going to mark as
 14 3714. All, colon, "As we have some time
 15 while we recover from the Macondo stuck pipe
 16 and kick event, I want to spend some time
 17 re-evaluating how we manage real time pore
 18 pressure from Macondo type wells." And he
 19 goes on to explain what he means by Macondo
 20 type wells.
 21 First of all, do you remember
 22 getting it at the time as you looked back in
 23 your mind's eye to that date, do you remember
 24 getting this e-mail?
 25 A. I do recall.

00141:01 Q. And -- and was the gist of it
02 that Mr. Bellow was saying we've got to get
03 our act together?

Page 141:05 to 142:13

00141:05 A. My understanding of this e-mail
06 from John was twofold. First of all, I think
07 there's -- he's in the sense trying to say,
08 you know, we need to, as always, pay
09 attention, and he is also trying to look at
10 specific realtime pressure detection data
11 and -- and how we're looking at it to see if
12 there is some improvement that we could
13 made -- make to our pressure detection
14 techniques.

15 Q. (BY MR. DEGRAVELLES) And he's
16 asking for input from everyone, I take it,
17 and he also offers some of his initial
18 thoughts, correct?

19 A. Yes.

20 Q. And if you'd go to the center, I
21 guess it's maybe one third of the way down,
22 beginning, quote, as for our initial
23 thoughts.

24 A. Right, okay, I see that.

25 Q. And I'm going to read that, As
00142:01 for our initial thoughts in looking at the
02 kick events, there were signs of pore
03 pressure with all events. They were in some
04 case subtle. And, again, considering the
05 type wells we usually drill, we get away with
06 having some connection gas or sonic showing a
07 PP increase. With these tighter margin wells
08 I want to get a place where we are
09 considering all data suggested -- suggesting
10 PP change much more carefully in Macondo
11 wells.

12 Did I read that correctly?

13 A. Yes.

Page 142:15 to 143:02

00142:15 Q. (BY MR. DEGRAVELLES) All right.
16 And when he's talking about tighter margin
17 wells, what's he talking about?

18 A. Wells which have a relatively
19 narrow margin between the pore pressure in
20 the open hole section, maximum pore pressure
21 in the open hole section and the weakest
22 formation strength in the open hole section.

23 Q. And when he says, "I want to get
24 to a place where we are considering the all
25 data suggesting PP change much more carefully

00143:01 in Macondo type wells," is he directing that
02 at least in part to you?

Page 143:04 to 144:14

00143:04 A. I believe he's -- he's referring
05 to the pressure detection team in this case,
06 which, you know, I would consider myself part
07 of that team as the SPA, and certainly Kate's
08 part of that team, well site geologist.

09 Q. (BY MR. DEGRAVELLES) All right.
10 And then going down a couple of sentences.
11 Quote, We can perhaps afford to wait longer,
12 raise the flag, and watch for a PP trend. We
13 were confident in thick salt wells. However,
14 in these narrow window wells we believe we
15 need to have a P -- we need to have PP
16 conversations as soon as ANY, all caps,
17 indicator shows a change in the PP.

18 Did I read that correctly?

19 A. Yes.

20 Q. And "narrow windows" meaning the
21 same thing when he talks about tighter
22 margins, correct?

23 A. Yes, I believe he's referring
24 to, again, the difference between the maximum
25 pore pressure and the hole section relative

00144:01 to the fracture strength of the weakest
02 formation.

03 Q. And then a couple lines down
04 from that he says, "Specifically to the
05 Macondo data, all three event are preceded by
06 gas events."

07 Did your own analysis of the
08 data agree with that?

09 A. I don't consider myself an
10 expert in the interpretation of drill gas
11 data for pressure detection. So I in -- in
12 some ways defer to other experts on that.

13 Q. All right. You have no reason
14 to disagree with that statement?

Page 144:16 to 144:19

00144:16 A. I don't recall the gas events
17 that he's referring to, but I would have to
18 look at it to offer my own interpretation of
19 it.

Page 145:04 to 146:03

00145:04 Q. The next sentence says, There
05 are indications of a PP increase in the

06 normalized gas values prior to the kicks.
07 The first two kicks have elevated gas levels
08 and occurrences of C2 and C3 levels to the
09 kick event. The last event was preceded by
10 two connections gas peaks.
11 Did I read that correctly?
12 A. You just left out one word.
13 Q. (BY MR. DEGRAVELLES) Oh.
14 A. C3 levels prior to the kick
15 event.
16 Q. So there were, in fact --
17 including the March 8th event from the time
18 the drilling started until March the 8th
19 there were three kick events; is that true?
20 A. I recall two kick events.
21 Q. Do you know why he would is a
22 say the first two kick events have elevated
23 gas levels, et cetera, and then say the last
24 event was preceded by two gas connection
25 peaks?
00146:01 A. I understand him to mean that
02 the second kick event was preceded by two
03 connection gas events.

Page 146:20 to 147:14

00146:20 Q. All right. So your
21 interpretation of what Mr. Bellows is talking
22 here is that there were two kicks, that first
23 one before February 18th and the second one
24 on March the 8th?
25 A. Yes, that's my understanding.
00147:01 Q. And towards the end it says,
02 "Once we recover from this event, Bobby Bodek
03 is planning to be on the rig to asset with
04 implementing the improvements thought of in
05 this conversation."
06 Did Bodek do that?
07 A. I believe Bobby did go out to
08 the rig.
09 Q. And did he implement
10 improvements?
11 A. I don't know.
12 Q. Were there any concrete
13 improvements suggested as a result of the
14 March 8 kick and all of this analysis?

Page 147:16 to 148:04

00147:16 A. In my opinion, the post
17 appraisal of the kick events, we could see
18 indications of the kicks in the log data, but
19 in reality, in realtime these things are
20 always difficult to interpret. So in

21 hindsight things are easier to see than they
22 are in realtime, with the exception of the --
23 the gas interpretation that the scrutiny of
24 resistivity and sonic data is something that
25 is -- is not a -- a new revelation on the
00148:01 basis of these kicks. The gas data is a -- a
02 technology that I'm not familiar with. And
03 the use of C2, C3 is something that other
04 experts would have to comment on.

Page 148:08 to 151:22

00148:08 Q. (BY MR. DEGRAVELLES) What I was
09 asking you is not about that. I was asking
10 you about whether there were improvements --
11 he mentions there were improvements going to
12 be made, and my question to you is were there
13 improvements made, suggested and made?

14 A. I -- I don't know specifically
15 if improvements were made.

16 Q. Okay. Do you remember whether
17 improvements were suggested?

18 A. I interpret this e-mail to --
19 regarding pore pressure detection is just to
20 really make sure we pay attention to the data
21 that we're in, but we didn't implement any
22 novel or new techniques on the basis of
23 this -- post appraising these events.

24 Q. All right. If you would turn to
25 tab 98. And I'm going to be asking you about
00149:01 the top e-mail, which is also dated
02 March 12th, 2010 from Stuart Lacy to Jonathan
03 Bellow, and it's already been introduced as
04 Exhibit 1072.

05 A. Okay.

06 Q. All right. First of all, my
07 question -- my first question is you had
08 already mentioned in the letter -- the e-mail
09 you received from Jonathan Bellow that we
10 went through in some detail on March the 12th
11 that he was asking for input from the people
12 who he was sending the e-mail to, correct?

13 A. That's correct.

14 Q. And would you agree that this is
15 Mr. Lacy's response to that e-mail?

16 A. It does appear to be his
17 response to this e-mail. I was not cc'd on
18 this.

19 Q. I understand, and I'm -- I'm
20 just going to read this for the record and
21 then ask you some questions about it. Quote,
22 Hi, John, been on radio silence all day,
23 hence the delay, but have successfully
24 severed the drill pipe. I agree with pretty
25 much everything you say, and I think we were

00150:01 all a bit complacent, having been drilling
 02 subsalt wells. This is a different kettle of
 03 fish. One thought is that we need -- that we
 04 always used to flow check sands and
 05 exploration wells, but the drive for
 06 increased performance has seen this
 07 abandoned, close quote.

08 Did I read that correctly?

09 A. Yes.

10 Q. Now, first of all, do you agree
 11 that drilling subsalt wells and the Macondo
 12 kind of well are different kettles of fish,
 13 as he puts it?

14 A. To some extent, yes.

15 Q. And do you agree that the
 16 practice of using -- I'm sorry, the practice
 17 of flow check sands in exploration wells was
 18 abandoned because of the drive for increased
 19 performance?

20 A. I don't -- I don't know what
 21 Stuart's referring to there.

22 Q. All right. That's outside of
 23 your area?

24 A. I just don't know exactly what
 25 he's referring to. I know what flow checking
 00151:01 sands means, but I don't re- -- I don't know
 02 what Stuart's referring to abandoning it.

03 Q. All right. Do you know whether
 04 it was abandoned or not abandoned?

05 A. No, I -- I don't.

06 Q. All right. Then I'm going to go
 07 on. Quote, Likewise, drilling like a bat out
 08 of hell in these PP narrow window wells is
 09 perhaps not wise, especially considering the
 10 drilling is a relatively low percentage of
 11 the total time in these wells. Drilling so
 12 fast, we have to stop and circulate for ECD
 13 really doesn't make any sense, close quote.

14 Did I read that correctly?

15 A. Yes.

16 Q. Do you agree with that?

17 A. Again, I -- I don't know exactly
 18 what Stuart is -- is referring to in that --
 19 in those comments.

20 Q. Do you agree that the drilling
 21 team on the Deepwater Horizon was drilling
 22 like a bat out of hell?

Page 151:24 to 152:03

00151:24 A. I couldn't comment on those --
 25 on that -- that statement.

00152:01 Q. (BY MR. DEGRAVELLES) One way or
 02 the other?

03 A. No, I -- I -- I don't know.

Page 152:25 to 153:09

00152:25 Q. All right. If you could turn to
00153:01 tab 120, please. And is this an e-mail from
02 Mr. Bodek to a number of people, including
03 you, dated March 18th, 2010?
04 A. Yes.
05 Q. Now, I had earlier asked you
06 whether there had been any -- any
07 improvements suggested or implemented, and I
08 thought your answer was no. Looking at this
09 e-mail, do -- is that still your answer?

Page 153:11 to 153:18

00153:11 A. My answer is that the items that
12 we highlighted after discussion of the kick
13 event were not out of the realm of typical
14 pressure detection techniques.
15 Q. (BY MR. DEGRAVELLES) And so
16 your answer is still that there were no
17 improvements suggested or made after the
18 March 12 letter or e-mail?

Page 153:20 to 153:25

00153:20 A. I think just drawing attention
21 to focusing on the data as -- in and of
22 itself is -- is good, but the techniques
23 we're talking about aren't substantially
24 different than -- than what we use in other
25 hole sections or other drilling.

Page 154:05 to 154:08

00154:05 Do you still -- is it still your testimony
06 that following this March 12th e-mail from
07 Mr. Bellow there that there were no new
08 improvements suggested or made?

Page 154:10 to 155:24

00154:10 A. Again, I think the pressure
11 detection techniques that we're using after
12 the kick events are good, they're sound; and
13 I really don't know if they're an improvement
14 over what we were doing before or not.
15 Q. (BY MR. DEGRAVELLES) There were
16 specific, quote, lessons learned attached to
17 the e-mail, correct?
18 A. Yes, I -- I believe so.

19 Q. This is Exhibit 1323, which has
20 already been introduced, which is the -- the
21 e-mail and the lessons learned. And if you
22 would, it begins -- the's exhibits
23 BP_HZN_2179MDL00040392 and goes to 396.
24 And if you would, turn to 395
25 and the third lesson learned. I'll just read
00155:01 it, quote, The application of some
02 traditional exploration drilling practices
03 needs to be considered in wells with narrow
04 drilling margins. Drilling techniques such
05 as drilling at reduced ROP, only have one
06 connection in the hole at one time,
07 simulating connections, performing flow
08 checks when a sand interval is cut, and
09 circulating to manage ECD should be employed,
10 close quote.
11 Did I read that correctly?
12 A. Yes.
13 Q. What does ROP mean?
14 A. The rate of penetration.
15 Q. And so in one -- in layman's
16 language what he is suggesting or the lessons
17 learned is suggesting is to slow down the
18 drilling process, correct?
19 A. I believe that's -- that's what
20 he's -- he's suggesting.
21 Q. And do you believe that that is
22 specifically made to try to correct what I
23 believe Mr. Lacy said was drilling like a bat
24 out of hell?

Page 156:02 to 157:02

00156:02 A. I don't know. I think what he's
03 suggesting is that giving us more time to
04 analysis the data would be good.
05 Q. (BY MR. DEGRAVELLES) And why is
06 that good? Why from your perspective as a
07 pore pressure analyst, why is it important to
08 have time to evaluate the data?
09 A. We are constantly trying to
10 evaluate whether or not our forecasts for the
11 section that we're drilling in is still
12 supported by the data, and it takes some time
13 to develop the models for the hole section to
14 look at the logs and determine whether there
15 are other factors that might influence the
16 data quality. And in particular as we're
17 approaching the TD of a particular hole
18 section where pore pressure is getting close
19 to the maximum that we could safely raise the
20 mud weight to balance out, that we might have
21 to take additional time to evaluate exactly
22 what the pore pressure conditions are.

23 Q. All right. And -- and is
24 another way of saying what you just said,
25 what you want to do in a well is not to get
00157:01 to a place where you out-drill the
02 indicators?

Page 157:04 to 159:03

00157:04 A. Yeah, I wouldn't object to that.

05 Q. (BY MR. DEGRAVELLES) And so if
06 you're out-drilling the indicators, that
07 would keep you from being able to analyze the
08 data, give it back to the drilling team in
09 time for it to do any good, correct?

10 A. Well, what -- what I would say
11 is that we need adequate time to interpret
12 the data for pore pressure, and I don't know
13 what ROP is the magic number to give us that
14 time. And -- and there are certainly no
15 guarantee even with reduced ROP that -- that
16 we would eliminate kicks. There is
17 considerable uncertainty in pressure
18 detection. And given that sands and shales
19 here are possibly at different pressures, the
20 pressure detection that we're making for
21 shale pressure does not necessarily tell us
22 about the sands that we might cut.

23 Q. But if you're drilling ahead of
24 the indicators, that keeps you from being
25 able to offer important information to the
00158:01 drilling team in time for it -- the drilling
02 team to respond, correct?

03 A. Yeah, pressure detection
04 indicators from sonic and resistivity are
05 giving us very slow, long wavelength
06 indications of variations in pore pressure,
07 and you actually do need to look at bigger
08 chunks of data to really evaluate those
09 trends. So in general, we want to drill at a
10 pace and collect that data at a pace that
11 allows us to adequately interpret it.

12 Q. And offer advice based on that
13 interpretation, correct?

14 A. Yes.

15 Q. Okay. And then in Page 395 he
16 says, I would like to propose the following
17 for the remainder of the Macondo well. And
18 if you would then go to Page 396, item 3,
19 quote, Rate of penetration is such that all
20 the aforementioned indicators can be
21 adequately evaluated in realtime, close
22 quote.

23 Is that just another way of
24 saying what we just said?

25 A. Yeah, that's summarizing the

00159:01 discussion that we want to take sufficient
02 time to evaluate the data so that we can make
03 informed drilling decisions.

Page 160:07 to 160:16

00160:07 Q. (BY MR. DEGRAVELLES) Okay. If
08 you could, Mr. Albertin, go to tab 123. And
09 it's a -- not a -- an e-mail that was sent to
10 you, but it is an e-mail from Kate Paine to
11 Bobby Bodek, dated March 19th. It's
12 Exhibit 1326. And I'm just going to ask you
13 some questions about some of the things that
14 Ms. Paine wrote to Mr. Bodek, so if you want
15 to take a second to look at it.
16 A. Okay.

Page 160:18 to 161:22

00160:18 Q. Okay. With respect to
19 Ms. Paine, was she well-regarded,
20 well-respected within the geoscience group?
21 A. I've worked with -- with her in
22 the past, and I thought she was competent in
23 pressure detection.
24 Q. All right. In -- in her e-mail,
25 she says in the first couple sentences,
00161:01 quote, What is the normalized gas equation,
02 question mark? I'm unable to perform that
03 service until I know how you do it, close
04 quote.
05 What is a normalized gas
06 equation?
07 A. I also don't know the equation,
08 but I think the general concept is that
09 you're trying to correct the gas readings
10 that you're acquiring while drilling for
11 differences in hole size and other drilling
12 parameters.
13 Q. All right. Quote, The high gas
14 we had at 12035, once it was controlled, the
15 decision was made to drill ahead. Everyone
16 was aware of the gas, but we decided to drill
17 ahead to stay as close to the prog, hyphen,
18 casing points as possible. The, quote, prize
19 was to skip the contingency liner, close
20 quote.
21 Can you tell me what she's
22 talking about right there?

Page 161:24 to 163:14

00161:24 A. I think -- okay. The -- the

25 first part of that -- the rest of that
 00162:01 paragraph, the high gas statement was
 02 regarding highdrill gas that we have
 03 encountered in drilling at those depths. I
 04 don't recall what -- what we did to mitigate
 05 the gas, whether it was just circulating it
 06 out.

07 The second statement, "everyone
 08 was aware of the gas, but decided to drill
 09 ahead to stay as close to the program casing
 10 points as possible," I think, is just
 11 referring to that we're -- we're not viewing
 12 the gas at this point as a indicator of
 13 conditions requiring an update to the -- the
 14 casing seat depth program.

15 Q. (BY MR. DEGRAVELLES) All right.

16 A. And regarding the last comment
 17 there on the --

18 Q. Yeah, the prize.

19 A. -- the prize to skip the
 20 contingency liner. The contingency liner is
 21 in the program in the event that the pore
 22 pressure fracture gradient dictates that
 23 we -- we need another liner. But I think
 24 the -- my understanding is that at this
 25 point, we weren't feeling like we would
 00163:01 require that contingency liner.

02 Q. All right. She goes on, "After
 03 deciding to drill ahead, we encountered the
 04 losses. We were aware of the upper limit of
 05 the ECD and exceeded it because we didn't
 06 believe the MWD lot values."

07 First of all, did I read that
 08 correctly?

09 A. You -- you did read it
 10 correctly.

11 Q. All right. Now, as I understand
 12 what she's saying is the ECD was exceeded
 13 even though normally that's not something
 14 that you would do, correct?

Page 163:16 to 163:20

00163:16 A. I think ECD fluctuates with
 17 drilling, with cuttings load. So I think
 18 we're -- we're trying to keep a monitor on
 19 the circu- -- equivalent circulating density
 20 to keep it below a threshold value.

Page 163:24 to 164:02

00163:24 Q. The question is, normally you
 25 would not want to exceed the ECD limit,
 00164:01 right?

02 A. Normally --

Page 164:04 to 165:02

00164:04 A. (Continuing) Okay. Normally we
05 try to keep the ECDs beneath what we think
06 the fracture gradient of the -- the weakest
07 formation in the open hole is.
08 Q. (BY MR. DEGRAVELLES) You don't
09 want a fracture and you don't want losses,
10 correct?
11 A. That's correct.
12 Q. Okay. But she says that they
13 exceeded them, anyway, because they didn't
14 believe the MWD lot values. I know what lot
15 is. What's "MWD"?
16 A. Measurement while drilling.
17 Q. And do you know why she didn't
18 or they didn't believe the MWD lot values?
19 A. I -- I don't know what she's
20 referring to in this particular statement.
21 Q. Quote, I'm not sure if it was
22 lack of communication or awareness as much as
23 a, quote, we can get away with this, quote,
24 attitude.
25 Do you know what she's talking
00165:01 about with the "we can get away with this"
02 attitude?

Page 165:04 to 166:02

00165:04 A. I -- I don't know what she's
05 referring to.
06 Q. (BY MR. DEGRAVELLES) All right.
07 Then if you would, go down to about
08 two-thirds of the way down with the sentence
09 beginning, "Prior to the kick"...
10 Do you see that?
11 A. I do.
12 Q. Quote, Prior to the kick, it was
13 an active decision on the part of the
14 drilling team to drill with a high ROP and
15 let the cuttings take up the midweight rather
16 than drill at a moderate rate and raise the
17 MW.
18 Do you see that?
19 A. Yes.
20 Q. Now, ROP, again, is rate of
21 penetration, which is the speed at which
22 you're drilling, correct?
23 A. That's correct.
24 Q. All right. Is this consistent
25 with the comment made earlier by, I believe,
00166:01 Mr. Lacy that they were drilling like a bat

02 out of hell?

Page 166:04 to 166:16

00166:04 A. I actually -- I don't know
 05 exactly what she's referring to in this -- in
 06 this comment.
 07 Q. (BY MR. DEGRAVELLES) All right.
 08 In the last paragraph beginning with, "I'm
 09 sorry."
 10 Quote, I'm sorry to push back on
 11 the lessons learned. I know you're got to
 12 get something out there to make it look like
 13 we don't do this again, close quote.
 14 Was it your impression that the
 15 lessons learned were basically to make it
 16 look like this wasn't going to happen again?

Page 166:18 to 167:06

00166:18 A. That was not my impression of
 19 the -- the analysis of the -- the kick and
 20 the pressure detection that went into it.
 21 Q. (BY MR. DEGRAVELLES) Quote, But
 22 without obvious indicators and with a real
 23 push to make hole and skip the contingency
 24 liner, I don't see us really learning.
 25 Do you agree that despite the
 00167:01 fact that there were, quote, lessons learned
 02 being circulated, that nobody was really
 03 learning them?
 04 A. I -- this is an opinion that
 05 she's stating and -- and I don't necessarily
 06 agree with it.

Page 168:17 to 169:10

00168:17 Q. And this is going to be
 18 Exhibit 3715, a series of e-mails beginning
 19 with you to Bodek and others, dated March
 20 23rd, 2010. Do you recognize that series of
 21 e-mails?
 22 A. Yes, I do.
 23 Q. All right. In -- in the bottom
 24 part, the -- the initial e-mail is from you
 25 regarding, "Yumuri LOT @ M66 way above
 00169:01 overburden," and the response which Mr. Hafle
 02 gives -- and I'll be frank with you, which
 03 I'm sure is no surprise, I have not a clue
 04 what you're talking about in the mail.
 05 But I did -- I did see that he
 06 responded, "Classic," with three exclamation
 07 points.

08 What was classic about what you
09 said about the Yumuri lot @ M66 way above
10 overburden?

Page 169:12 to 170:05

00169:12 A. I'd -- I'd have to speculate as
13 to exactly what he meant by that -- that
14 humorous comment. What -- what we're
15 discussing here is the leak off test value
16 itself, and I'm referring to a -- an offset
17 well where we also observed that there was a
18 leak off test value reported. We didn't have
19 the data for it, but a reported value that
20 was above overburden, also.
21 Q. (BY MR. DEGRAVELLES) What does
22 that mean?
23 A. That means that the formation
24 strength that was determined through the leak
25 off test procedure was found to be above the
00170:01 total vertical stress of the -- the formation
02 and fluids above that depth.
03 Q. So that's good?
04 A. It -- it shows that the
05 formation is incredibly strong.

Page 170:13 to 172:07

00170:13 Q. What were you saying there?
14 A. The -- the -- the value that we
15 got from this leak off test being above
16 overburden led to considerable --
17 Q. I'm sorry.
18 A. -- considerable speculation
19 about what the nature -- what was leading to
20 the strong formation.
21 Q. If you would go to tab 137.
22 This has already been introduced as
23 Exhibit 1340 from Kate Paine to -- actually,
24 from Robert Bodek first to Kate Paine and her
25 reply, dated March 18, 2010. And I know
00171:01 that -- that you were not in this e-mail
02 string, but I'm going to read some sentences,
03 then ask for your comments.
04 First paragraph in her e-mail
05 to -- to Bodek, quote, I don't know about the
06 deeper kickoff point. Theoretically, we
07 could, but that's still a lot of open hole
08 with cavings to fall in throughout the
09 section. Additionally, that may compromise
10 the integrity from MMS's point of view,
11 sealing off the kick.
12 Do you know what she's talking
13 about there?

14 A. I believe that the general topic
15 is at what point we want to sidetrack from
16 the original hole after getting stuck in
17 drilling the 13-and-5/8-inch.

18 Q. All right. And then she says,
19 quote, Other than that, Mrs. Lincoln, how did
20 you enjoy the play? Things are going fine.
21 The first night is always tough. The mood
22 is, quote, please God, let -- let's get this
23 well behind us, close quote.

24 Do you know what she's talking
25 about there?

00172:01 A. I would -- I don't know what
02 she's talking about.

03 Q. Was there within the drilling
04 team the feeling that the team just wanted to
05 get through this, with all the problems that
06 the well had had, they just wanted to get
07 through this thing?

Page 172:09 to 172:17

00172:09 A. I don't know if the drilling
10 team had that feeling. We had problems with
11 the well that we were working through, but...

12 Q. (BY MR. DEGRAVELLES) Did you
13 have that feeling?

14 A. No, I wanted to complete the
15 well without any more issues, but I -- I
16 didn't have the feeling that I wanted to just
17 get through it.

Page 173:12 to 174:05

00173:12 Q. (BY MR. DEGRAVELLES) Okay. If
13 you could go to tab 130 -- this is 137.
14 Let's go to -- I'm going to try to speed
15 things up.

16 Let me ask you to go back to
17 tab 112, which is the -- the summary sheet of
18 the lost returns and the kicks done as a part
19 of the National Commission investigation.

20 And do you remember there --
21 we've been through the March 5th -- 3rd
22 through 5th, 2010, lost returns. Do you
23 remember there being lost returns at
24 March 21st, 2010?

25 A. I don't remember that loss event
00174:01 specifically.

02 Q. All right. But are you in a --
03 in a position, and I know there are lots of
04 documents, but are you in a position to -- to
05 say that this is incorrect?

Page 174:07 to 175:15

00174:07 A. Yeah, I couldn't say if it's
08 correct or incorrect without referring to the
09 drilling reports for those -- those days.
10 Q. (BY MR. DEGRAVELLES) All right.
11 Do you see on the right-hand side,
12 March 25th, 2010, A ballooning event at
13 15,113.
14 Do you remember that?
15 A. I -- I do recall that.
16 Q. All right. Tell us what you
17 remember about that.
18 A. I -- I believe that was in the
19 final hole section, the event that's being
20 described here, and the ballooning event was
21 an observation that we were losing a little
22 bit of fluid while pumps were on while we
23 were drilling and getting a little bit of
24 that fluid back or most of that fluid back
25 when we'd turn the pumps off.
00175:01 Q. All right. And what is that an
02 indication of, that there is a fracture in
03 the formation?
04 A. It could be interpreted as signs
05 that you are getting close to the fracture
06 gradient of the weakest formation exposed at
07 that point.
08 Q. Okay. And if you would go,
09 then, to tab 54.
10 A. Ballooning is not what I would
11 consider a loss event. You're trying to
12 understand that the well is -- is -- you're
13 losing a little bit with pumps on, but you're
14 getting the fluid back. So it's not the same
15 as a large-scale loss event.

Page 175:21 to 178:12

00175:21 Q. Okay. This is going to be 3717
22 from Robert Bodek to you, dated March 29.
23 A. What -- what section? I'm
24 sorry.
25 Q. I'm sorry, tab 54.
00176:01 A. Okay.
02 Q. All right. And I'm going to
03 read the first sentence.
04 Quote, If we really believe that
05 sand PP at 17,200 could be as high as 14.4
06 ppg, then we need to start having some
07 serious discussions about pulling the plug
08 early.
09 What does that mean?
10 A. What -- what Bobby is referring

11 to here is a pressure estimate that I had
 12 made, given the current pressure build rates
 13 that we're observing at the -- at the depths
 14 that we currently are, what the pressure
 15 might be ahead of the bit at 17,200 feet.
 16 And just given that pressure projection, we
 17 should consider what the -- the TD for the
 18 hole section should be.

19 Q. All right. And when he says
 20 "pulling the plug," he means what?

21 A. The -- I interpret that to mean
 22 that -- what the TD of that hole section
 23 should be.

24 Q. All right. And the last
 25 sentence, quote, We're taking a wait-and-see
 00177:01 approach, but we can't cover a 14.4 sand pp
 02 at TD should a sand show up at 17,200ish.
 03 What's he talking about there?

04 A. Based on projected pressures and
 05 what a high side pressure might be, he's
 06 referring to the pressure being perhaps too
 07 high to -- to -- to handle relative to the
 08 strength of the formation that's exposed.

09 Q. All right. And then on April
 10 the 3rd, we have another event; do we not?
 11 If you would go to tab 141, please.

12 And would you agree that we have
 13 losses which are noted and then also some
 14 indication of ballooning?

15 A. Yeah, I interpret this to
 16 primarily indicate that we were in a -- a
 17 ballooning situation. Again, I make the
 18 distinction between formal losses and then
 19 trying to understand if -- if we're having
 20 losses, with ballooning you're getting the
 21 drilling fluid back.

22 Q. All right. And that, for the
 23 record, is Exhibit 1344.

24 Go, if you would, to tab 60,
 25 which we will mark as 3718, from Gord Bennett
 00178:01 to you, dated April 3rd. Is this basically
 02 saying the same thing?

03 A. Yeah, I believe it's referring
 04 to the same ballooning event. Yeah, similar
 05 depths, so it's referring to the same
 06 ballooning.

07 Q. All right. And then if you
 08 would, go to tab 61, which is dated the same
 09 day, we'll mark as 3719, from Mr. LeBleu to
 10 Hafle, Walz, Morel, and others suggesting "a
 11 resistivity mad pass to identify where the
 12 fracture is."

00178:15 A. A mad pass is referring to
16 repeated measurements of the resistivity
17 at -- across depth intervals to see whether
18 or not the resistivity is changing as you
19 continue to drill.
20 Q. (BY MR. DEGRAVELLES) And that
21 tells you whether you have a fracture in the
22 location and the size of the fracture?
23 A. That's the interpretation, that
24 if the -- the resistivity is changing, that
25 you're -- you're losing drilling fluid,
00179:01 synthetic drilling fluid into the formation,
02 it changes the resistivity.
03 Q. All right, then. With respect
04 to losses, again, National Commission reports
05 April 4 to 7 losses at 18,260 feet. Do you
06 recall that?
07 A. I do recall the losses near
08 bottom.
09 Q. All right. Tell me what you
10 recall about that.
11 A. As we drilled into the sandstone
12 reservoir section, we experienced losses
13 because the fracture gradient of those low
14 pressured sands was lower than expected.
15 Q. All right. If you would, turn
16 to 67, tab 67, which we will mark as 3720.
17 Does this also indicate that there are
18 losses?
19 A. Yes, in -- in Gord's note, there
20 is a -- a statement about total lost returns.
21 Q. All right. And then on the next
22 tab, 68, which we will mark as 3721, does
23 that indicate that the total losses are
24 1159 barrels?
25 A. That -- that does say
00180:01 1159 barrels, yes.
02 Q. And then in the bottom, the --
03 the initial e-mail that starts that string is
04 from you to Randall Sant, in which he says --
05 in which you say, you might want -- Brian
06 Morel mentioned you might want the latest
07 surprising data from Macondo, see attached
08 PPFG plot.
09 What was -- if you can recall,
10 what was that surprising data?
11 A. We had a pressure forecast that
12 had pressures in the reservoir section much
13 higher than what we actually observed. So
14 the -- the pressures came in lower, and that
15 surprised us because we had indications prior
16 in previous hole sections that the pressure
17 gradients were higher. So the -- the actual
18 reservoir pressure being lower was a
19 surprise.

20 Q. All right. And then if you go
 21 to 70, which we will mark as Exhibit 3722,
 22 dated April 5th, 2010, from Sant to you.
 23 And in the second sentence, he
 24 says, quote, What are the chances we
 25 encounter something like this again, paren,
 00181:01 although I can just about expect anything
 02 from this well now?
 03 Did I read that correctly?
 04 A. Yes.
 05 Q. Is this another expression of
 06 the fact that this well continued to give you
 07 guys a lot of trouble?

Page 181:09 to 181:22

00181:09 A. What Randall is referring to
 10 here is, again, the -- the surprising low
 11 pressure of the reservoir section, and he's
 12 asking whether or not it could be depleted;
 13 that is, pressure drawn down by production
 14 from neighboring wells, or whether it's
 15 regressed, which I interpret to mean by the
 16 geologic scenario is the pressure lower than
 17 we expected.
 18 Q. (BY MR. DEGRAVELLES) But when
 19 he's saying, "although I can just about
 20 expect anything from this well now," is
 21 indicating that it was giving a lot of
 22 problems, correct?

Page 182:02 to 182:11

00182:02 A. Yeah, the -- the reservoir
 03 pressure was -- was surprisingly low.
 04 Q. If you would go to 73, tab 73,
 05 which we will mark as 3723, from Stuart Lacy
 06 to you and others, indicates, does it not,
 07 that on April the 9th, two days later, you
 08 had yet another loss?
 09 A. Yes, there were signs of slow
 10 losses, two and a half to three and a half
 11 barrels per hour.

Page 183:25 to 184:14

00183:25 Q. Okay. All right. If you would,
 00184:01 go to tab 101, which is previously marked and
 02 introduced as Exhibit 1241 from Bodek to
 03 Michael Beirne, Hafle, and Ritchie, dated
 04 April 13, 2010. I know you're not on this,
 05 so if you wouldn't mind taking a look at
 06 this --

07 A. Okay.
08 Q. -- because I'm going to ask you
09 a question about some of the language at the
10 bottom of Mr. Bodek's letter.
11 A. Okay.
12 Q. All right. Have you seen this
13 one before?
14 A. No, I haven't.

Page 184:21 to 185:16

00184:21 Q. All right. And towards the
22 bottom third -- or bottom fourth, I should
23 say, it begins, "We had already experienced
24 static losses with a 14.5 ppg ESD,"
25 exclamation point.
00185:01 What's he talking about there?
02 A. I believe he's referring to
03 losses in the bottom hole section at the
04 reservoir level.
05 Q. "It appeared as if we had
06 minimal, if any, drilling margin."
07 What does he mean there?
08 A. I think he's referring to the
09 difference between the static density at
10 which we were experiencing losses and what we
11 had measured with the Geotech tool for the
12 shallower sand in the open hole formation.
13 Q. All right. And so, in other
14 words, there is -- when he says, "there's
15 minimal, if any, drilling margin," we're
16 talking about, what, the differ- --

Page 185:18 to 186:12

00185:18 Q. (BY MR. DEGRAVELLES) "Drilling
19 margin" meaning what in this context?
20 A. I believe what Bobby's referring
21 to here is, again, the difference between the
22 loss pressure, the static density, which we
23 experienced losses in the pressure that we
24 measured in that sand.
25 Q. And then the final three
00186:01 sentences -- four sentences, I guess, quote,
02 Drilling ahead any further would
03 unnecessarily jeopardize the wellbore.
04 Having a 14.15 ppg exposed sand and taking
05 losses in a 12.6 ppg reservoir in the same
06 hole section had forced our hand. We had
07 simply run out of drilling margin. At this
08 point it became a well integrity and safety
09 issue. TD was called at 18,000 --
10 18,360 feet.
11 Did I read that correctly?

12 A. Yes.

Page 186:22 to 188:01

00186:22 Q. And -- and with respect
23 to the -- the data that he's talking about,
24 is that data that -- in terms of pore
25 pressure and grad- -- and fracture gradients
00187:01 and so on, that is data that would have been
02 coming from you?
03 A. It's -- the pore pressure
04 measurement would have come from a Geotech
05 pressure measurement that was acquired during
06 drilling of the -- the well -- I mean, I
07 would have tracked that information in
08 my while drilling pressure forecast and could
09 have provided it for evaluation of where to
10 stop or whether to continue drilling, but
11 the -- the data that I'm tracking is coming
12 from the -- the rig measurements.
13 Q. Okay. So really they're two
14 sources of information?
15 A. I take the rig measurements,
16 incorporate them into the while drilling
17 forecast, and then any discussions about the
18 pressure data would come from that updated
19 forecast.
20 Q. Okay. But -- but the data is
21 coming from the tool on the rig is what
22 you're saying?
23 A. That's correct, yes.
24 Q. Okay. And do you agree that it
25 was, in fact, a well integrity and safety
00188:01 issue?

Page 188:03 to 188:21

00188:03 A. Yeah, I -- I don't know if that
04 was the case.
05 Q. (BY MR. DEGRAVELLES) You have
06 no opinion about that?
07 A. I -- I don't have an opinion.
08 I -- you know, we could look at the pore
09 pressure and fracture gradient at that point
10 and decide whether or not to continue
11 drilling or not, but I wouldn't have an
12 opinion on whether it's a -- a safety issue.
13 Q. All right. And -- but that's
14 out of your area of expertise?
15 A. I -- you know, the pore pressure
16 and fracture gradient does factor into the
17 decisions about drilling and -- and the
18 considerations about margins certainly factor
19 into decisions about drilling, but I don't

20 make the decisions about what decision to
21 take based on the -- the observed margin.

Page 189:05 to 189:22

00189:05 Q. And the reason you have no
06 opinion is because this is out of your area
07 of expertise? Or why is the reason you have
08 no opinion?
09 A. I mean, safety issue is a -- I
10 guess the -- the term that I really don't
11 have an opinion on. We understood to -- what
12 the conditions were that we had in the open
13 hole, what the pore pressure and fracture
14 gradient was, and we're -- we're trying to
15 decide what the best course of action is.
16 So I think safety is -- is
17 always a integral component of the
18 decision-making, and the pore pressure and
19 fracture gradient forms the decisions. But I
20 don't have a strong opinion about whether or
21 not this particular setting was a safety
22 issue.

Page 193:08 to 194:15

00193:08 Q. All right. If it was a phase of
09 the operation that you were involved in,
10 let's just say before they quit drilling,
11 were you a five-day-a-weeker or
12 seven-day-a-weeker or how did that work?
13 A. As the same point of
14 accountability for pressure detection,
15 whenever there would be an issue that re- --
16 that required me to look at data or evaluate
17 an interpretation, I would get a call from
18 Bobby, regardless of the hour or the day.
19 Q. Well, were you able to -- to
20 remote in from yourhouse with your computer
21 insofar as the data is concerned?
22 A. I could access Insite and Well
23 Space.
24 Q. From the house?
25 A. Yes.
00194:01 Q. All right. If you would turn to
02 102, tab 102, which has previously been
03 marked as Exhibit 126. And just -- I know
04 you're not a recipient of any of these
05 e-mails -- or these two e-mails, I should
06 say, so I'll ask you to please look at it.
07 A. Okay.
08 Q. All right. Have you seen this
09 before?
10 A. No.

11 Q. Have you seen reference to this
12 e-mail in either the National Commission or
13 the Bly Report?
14 A. I -- I don't recall seeing this
15 referenced.

Page 194:22 to 195:13

00194:22 Q. And in Morel's April 14th, 2010,
23 e-mail to Miller and Hafle, last sentence
24 says, quote, Sorry for the late notice. This
25 has been a nightmare well, which has everyone
00195:01 all over the place, close quote.
02 Do you agree with that?
03 A. I -- I don't agree with that.
04 Q. And when Mr. Hafle, who was the
05 other drilling engineer, at the top in
06 response says, "This has been a crazy well,
07 for sure," I take it you disagree with that?
08 A. We had issues with the well, I
09 would agree to that, but I don't agree with
10 Mark's phrasing there.
11 Q. And one of the issues you had
12 was that you could expect just about anything
13 from that well, correct?

Page 195:16 to 195:19

00195:16 A. We had two kicks and two major
17 loss events, which were more NPT events than
18 we were accustomed to for our deepwater
19 wells.

Page 196:01 to 196:04

00196:01 Q. (BY MR. DEGRAVELLES) So you
02 would agree, maybe not nightmare crazy, but
03 you would agree this was a problem well,
04 correct?

Page 196:06 to 196:09

00196:06 A. I would agree that we had
07 problems on this well, but I wouldn't
08 characterize it as a problem well or a
09 nightmare well.

Page 196:18 to 197:19

00196:18 Q. (BY MR. DEGRAVELLES) Well, let
19 me just put it in less pejorative terms.
20 Would you agree that part of the reasons that

21 you were having problems was that they were
 22 drilling at such a rate that you weren't
 23 keep -- you couldn't keep up -- the
 24 indicators couldn't keep up with the
 25 drilling?

00197:01 A. After that -- the second kick we
 02 took at 13,5/8s, it was identified that
 03 slowing down toward the base of hole sections
 04 might give us more chance to adequately
 05 analyze the data. But, again, I -- I don't
 06 agree with the statement "drilling like a bat
 07 out of hell."

08 Q. I understand. And I think you
 09 earlier told me that while you thought there
 10 might have been some changes after that March
 11 8 kick, you couldn't tell me whether they
 12 slowed up, they slowed down, or what,
 13 correct?

14 A. Right, we -- we didn't have many
 15 issues with the remaining hole sections, so
 16 it's difficult to say whether or not the--
 17 the heightened awareness regarding pressure
 18 detection was a factor in that -- that
 19 improved performance.

Page 199:03 to 199:11

00199:03 well, let me ask you this: With respect to
 04 any aspect of your work, have there been any
 05 changes in the policies, procedures,
 06 protocols, way of you doing business since
 07 April 20th of 2010?

08 A. There have been no changes made
 09 to the -- the -- the governing documents for
 10 pressure forecasting, pressure detection to
 11 this date.

Page 199:15 to 200:20

00199:15 Q. But have there been any changes
 16 of any kind in the way you do business since
 17 the time of this accident?

18 A. Well, certainly the -- the
 19 accident for me personally has just
 20 reaffirmed the need for detailed pore
 21 pressure fracture gradient prediction or
 22 predrill and diligent pressure detection.
 23 Not to say that the events at the end had
 24 necessarily anything to do with the drilling
 25 of the well, but I -- I certainly take away
 00200:01 from the events of drilling Macondo that pore
 02 pressure and fracture gradient prediction is
 03 critically important and pressure detection
 04 is also critically important.

05 Q. And why -- why do you take that
06 away from the Macondo event?

07 A. Not necessarily from the -- the
08 blowout at the end, but from the events
09 during drilling of the well, which I have
10 control somewhat over through my -- my role
11 in being pressure prediction and pressure
12 protection SPA, I think kicks and loss events
13 are something that are relevant to the work
14 that I do.

15 And when we have events, the
16 number of events that we did at Macondo, it
17 just reaffirms the -- the need for de- -- for
18 good work up front to have a robust plan in
19 place and for diligent pressure detection
20 work.

Page 203:19 to 206:07

00203:19 Q. Okay, well that a start. I want
20 to go back to something you testified about
21 earlier. You were primarily responsible for
22 the predrill projection for the Macondo well;
23 is that correct?

24 A. The predrill pressure and
25 fracture gradient forecast.

00204:01 Q. Okay, great. And over the
02 course of the drilling process you were
03 updating that regularly; is that correct?

04 A. That's correct.

05 Q. And those updates, they were
06 used to make decisions about drilling
07 decisions; is that correct?

08 A. They would be input for drilling
09 decision.

10 Q. So the updated -- the updated
11 pore pressure, fracture gradient projections
12 would be used when making decisions about
13 casing depths?

14 A. Yes.

15 Q. Mud weight decisions?

16 A. Yes.

17 Q. Would it be used when
18 interpreting fracture gradient results? Or,
19 excuse me, pressure integrity test results?

20 A. I would say that the pressure
21 integrity results are used by me to, I guess,
22 make a decision on how our models for
23 fracture gradient are performing and whether
24 or not they need to be changed.

25 Q. Fair enough. When you -- you
00205:01 said -- you testified earlier that you
02 attended daily morning meetings, perhaps not
03 daily, but regularly attended morning
04 meetings when drilling decisions were

05 discussed; is that correct?
06 A. That's correct.
07 Q. Were there discussions about the
08 available drilling margin generally in those
09 daily meetings?
10 A. Not specifically. We would talk
11 in term -- in general about pore pressure and
12 fracture gradients. So I don't recall
13 specific cases we were talking about a
14 margin, but I would present our current
15 thinking on what the pore pressure was and if
16 it required a projection at a certain depth
17 beyond where we were.
18 Q. And I -- would it also be
19 correct that you would have discussions about
20 the mud weight that was being used and the
21 difference between that mud weight and the
22 anticipated fracture gradient in that
23 interval?
24 A. I think if not explicitly
25 talking about it, it would have been easy to
00206:01 imply things about the -- the margin.
02 Q. Sure, because if you're focused
03 on the pore pressure --
04 A. Right.
05 Q. -- obviously that's going to
06 impact the mud weight, correct?
07 A. That's correct, yes.

Page 206:16 to 207:02

00206:16 Q. But your pressure forecasts were
17 discussed in that meeting, correct?
18 A. Yes.
19 Q. If you would, turn to tab 1 in
20 your binder, please, and this has been
21 previously marked as Exhibit 1558. It is MMS
22 regulation 30 CFR 250.427. Have you ever
23 seen this regulation before, sir? You can
24 take -- take a second to go ahead and look at
25 it.
00207:01 A. I've never seen this -- this
02 document.

Page 207:05 to 207:09

00207:05 Q. Yes, tab 1. Have you ever heard
06 this regulation discussed?
07 A. Yes.
08 Q. Are you familiar with the
09 requirements of this regulation?

Page 207:11 to 208:03

00207:11 A. From -- from what I'm reading,
12 it agrees with my general knowledge about why
13 to conduct leak off tests or pressure
14 integrity tests and -- and the requirement of
15 drilling new form- -- formation, what footage
16 to drill.

17 Q. (BY MR. HAUSER) Okay. That --
18 that's a good place to start. Let's start --
19 the -- in the first paragraph or the top
20 section, I think it's the third line, it
21 says, you must conduct each pressure
22 integrity test after drilling at least 10
23 feet, but no more than 50 feet of new hole
24 below the casing shoe. Is that standard
25 practice, in your opinion?

00208:01 A. In my opinion, yes.
02 Q. Can you explain why the
03 requirement for 10, no more than 50 feet?

Page 208:05 to 208:10

00208:05 A. I'd speculate as to why the
06 requirement if not more than 50 feet. Since
07 you have an established integrity of the
08 shoe, you don't want to drill too far into
09 unknown conditions without having first
10 assured yourself that you have integrity.

Page 208:12 to 208:16

00208:12 it be fair to say that since you're primarily
13 concerned with the strength of the shoe and
14 formation at that juncture, it makes sense to
15 test the fracture gradient at that point
16 within 10 to 50 --

Page 208:18 to 209:02

00208:18 A. I think my understanding the
19 objectives of the leak off tests are that
20 we're trying to assess that we have integrity
21 of the cement around the shoe, and we're also
22 trying to establish what the formation
23 strength is in that new formation that we've
24 drilled. You don't want to drill too far
25 because you're drilling into unknown
00209:01 conditions prior to having established that
02 integrity.

Page 209:07 to 209:17

00209:07 Q. (BY MR. HAUSER) What if you

08 drilled short?
09 A. You may end up drilling in hole
10 that you could have originally drilled in in
11 the prior hole section that might have cement
12 in it. You're just not testing new
13 formation.
14 Q. Would you be able to get
15 meaningful data to interpret the formation
16 strength if you drilled, say, 5 feet into
17 the -- below the shoe?

Page 209:19 to 210:15

00209:19 A. It's possible you could, but I
20 think, you know, the chances are better if
21 you expose more -- more formation.
22 Q. (BY MR. HAUSER) In your
23 experience is the -- the part of the form- --
24 the point of the formation that's immediately
25 below the preceding casing shoe, is that
00210:01 generally considered to be the weakest part
02 of that interval?
03 A. Very generally, I think fracture
04 gradient, all other things being equal, but
05 that is if lithology doesn't change and pore
06 pressure doesn't regress, that it would be
07 the -- generally the weakest part of the open
08 hole.
09 Q. Do you often see pressure
10 integrity results that are above the
11 predicted overburden gradient at that
12 location?
13 A. It is not common for formation
14 integrity tests or leak off tests to give
15 values that are above overburden.

Page 210:18 to 211:03

00210:18 Would -- would you say it would
19 be prudent to retest if that occurs?
20 A. If you thought for some reason
21 that it was not a valid test, you might re-
22 perform the test, but if you thought it was a
23 valid test, the fact that you've shown a
24 formation strength that's higher than
25 overburden, it wouldn't be a -- a flag to
00211:01 tell you you had to repeat the test.
02 Q. But it would be unusual,
03 correct?

Page 211:05 to 211:10

00211:05 A. It would be unusual.

06 Q. (BY MR. HAUSER) Would it be --
07 would a test that a -- excuse me. Would a
08 pressure variant test that is greater
09 overburden be likely or unlikely to be
10 reliable?

Page 211:12 to 211:14

00211:12 A. I don't think that the -- the
13 value of the test is -- is related to the
14 reliability of the test.

Page 212:11 to 213:01

00212:11 Q. (BY MR. HAUSER) But you
12 would -- in ordinary circumstances you would
13 be retesting it? You would be more likely to
14 retest if a lower score?

15 A. Not -- not in every
16 circumstance. I mean, if you found that for
17 whatever reason, for example, it showed signs
18 of having leak -- a leak somewhere, either in
19 the surface equipment or through a channel in
20 cement, you would mitigate that issue and
21 then retest to see if you now did achieve the
22 objectives of the test.

23 Q. What you what if you had a -- if
24 you had a pressure integrity test that was
25 higher than your expected result, is that an
00213:01 unusual result?

Page 213:03 to 215:06

00213:03 A. It's not unusual to get leak off
04 tests or pressure integrity tests that are
05 higher than the expected value.

06 Q. (BY MR. HAUSER) If you got a
07 pressure integrity test that was higher than
08 the expected value, under what circumstances
09 would you perform a retest?

10 A. Only if you thought for whatever
11 reason that you hadn't established integrity
12 at the shoe or you felt that you didn't test
13 the new formation.

14 Q. What sort of indicators would be
15 present that would give that impression?

16 A. Regarding integrity or whether
17 you had a leak, you would look at the shape,
18 I would look at the shape of the pressure
19 decay curve after you stop pumping to see
20 whether or not you had signs of -- of
21 pressure decay that were above and beyond
22 what you would expect if you had integrity,

23 and you can also look then at -- at the shape
 24 of the buildup pressure curve to give you
 25 some indications about whether the test is
 00214:01 valid.

02 Q. And very generally, how would
 03 you describe those shapes in a typical test?

04 A. For a typical leak off test,
 05 after testing the casing to determine whether
 06 you have integrity at the casing and you
 07 drill out to a new formation, you would pump
 08 at a constant rate and monitor the pressure
 09 buildup and you look at the shape of the
 10 curve and you're expecting a linear buildup
 11 curve that's semi-parallel to the casing
 12 pressure buildup curve and you would look for
 13 signs where the pressure buildup started
 14 changing slow. So an indication that you're
 15 increasing volume in the open formation by
 16 initiating fracturing.

17 Q. So it would be the point at
 18 which the line deviates from the linearity,
 19 that's when you would know --

20 A. That would be one element of the
 21 test that -- that might provide useful
 22 information about the state of stress in the
 23 subsurface. You would continue pumping at
 24 that point until you achieved a maximum
 25 pressure test and I think our convention is
 00215:01 that we would continue pumping until we saw
 02 at least one repeat value that was equal to
 03 the highest pressure or slightly lower than
 04 the previous pressure and at that point we'd
 05 turn pumps off and monitor the backside
 06 pressure decay.

Page 215:13 to 215:19

00215:13 Q. But if I -- so if I understand
 14 you correctly, the point is you continue to
 15 increase -- pump and continue to increase the
 16 pressure until the point where it breaks and
 17 then -- and a little beyond that point; is
 18 that correct?

19 A. You --

Page 215:22 to 216:09

00215:22 A. (Continuing) Okay. You keep
 23 pumping until you see signs clearly of the
 24 pressure having peaked.

25 Q. (BY MR. HAUSER) Okay.

00216:01 A. And then you stop pumping.

02 Q. And at that point mud weight --
 03 mud is going into the formation?

04 A. That -- that's the assumption --
05 Q. Assumption.
06 A. -- under perfect conditions
07 where you don't have fluid leaking off
08 anywhere else, that mud is going into the
09 formation.

Page 217:04 to 217:25

00217:04 previously entered. It's Exhibit 1552, and
05 I'm the actually interested in the third page
06 of that document.
07 A. Okay.
08 Q. I'm specifically going to ask
09 about the -- the graph that's on the second
10 half of that page. Taking a look at this --
11 at this figure, can you tell us what type of
12 pressure integrity test this is?
13 A. I think it's an example of -- of
14 what a typical leak off test might look like.
15 I don't know if it's based on -- in this case
16 on -- on ac- -- on the actually data from any
17 of our integrity tests.
18 Q. And on this chart there are
19 several different points on the graph that
20 are specifically identified, one is the leak
21 off value, one is the maximum pressure value,
22 with a specific point in between.
23 In performing the integrity test
24 formation figures what number on this graph
25 are you reporting?

Page 218:02 to 218:10

00218:02 A. It's my understanding that
03 the -- the pressure that's reported is the
04 maximum pressure of the test.
05 Q. (BY MR. HAUSER) The max --
06 would that be the maximum fracture point?
07 A. I wouldn't use that word to
08 describe that point, but that is the point I
09 think we would pick as the value that would
10 be reported.

Page 218:18 to 219:22

00218:18 Q. (BY MR. HAUSER) Let's turn to
19 tab 3, please, if you would. Actually,
20 before we look at that document let me ask
21 you just sort of generally, would you agree
22 that one of the major reasons -- one of the
23 reasons it's important to have an accurate
24 pressure integrity test is to know the point

25 at which the formation is likely to fracture?
 00219:01 A. In my opinion, the results of
 02 the leak off test, if it is a valid leak off
 03 test, gives you a measurement of a small body
 04 of rock immediately below the shoe, and it
 05 may or may not be representative strength for
 06 any of the remaining part of the hole section
 07 that you're about to drill.
 08 Q. What would you say is the
 09 concern about fracturing the formation?
 10 Why -- strike that.
 11 Why would a driller want to
 12 avoid fracturing the formation?
 13 A. Losses are -- are difficult
 14 to -- to mitigate. Takes time to -- to -- in
 15 the well control loss event to get the well
 16 to a static state.
 17 Q. And when you say "loss event"
 18 you mean a loss of drilling mud?
 19 A. That's correct.
 20 Q. So the concern is that if you
 21 fracture the formation, you run the risk of
 22 losing drilling mud?

Page 219:24 to 220:16

00219:24 Q. (BY MR. HAUSER) Correct?
 25 A. That would be the first symptom
 00220:01 of a loss event.
 02 Q. If the loss was severe enough,
 03 would it -- would it decrease hydrostatic
 04 pressure in the wellbore?
 05 A. I assume that if -- if the loss
 06 was occurring at a rate that's faster than
 07 the amount of -- of mud that you could fill
 08 the -- the well with, that you would lose
 09 hydrostatic pressure.
 10 Q. Well, there is a finite amount
 11 of mud on the rig, correct?
 12 A. I believe that's the case, yes.
 13 Q. So if you have a massive
 14 fracture and the rate of loss was greater
 15 than the weight you could fill it in, you
 16 could lose hydrostatic pressure?

Page 220:18 to 220:18

00220:18 A. Seems reasonable.

Page 220:20 to 221:02

00220:20 A. I don't know enough about rig
 21 operations and how much mud they have and

22 what mitigation procedures they have when
 23 they're incurring total losses.
 24 Q. Generally speaking, when you're
 25 having -- if you're having trouble
 00221:01 maintaining hydrostatic pressure, you invite
 02 a kick?

Page 221:04 to 221:12

00221:04 A. It depends on the scenario. If
 05 you had a sand exposed in the open hole at
 06 the time at which you're experiencing a loss
 07 and the hydrostatic pressure dropped below
 08 the formation pressure, you may have a -- a
 09 flow.
 10 Q. (BY MR. HAUSER) Would that also
 11 be true if the pressure dropped below a pore
 12 pressure that was in a shale formation?

Page 221:14 to 221:19

00221:14 A. Shales are too impermeable to
 15 flow at a rate that's detectible for the time
 16 frames that we would have the hole open.
 17 Q. (BY MR. HAUSER) Okay. Let's
 18 look at -- let's turn our attention to tab
 19 No. 3, and this is Exhibit 1561. Will you

Page 222:03 to 222:05

00222:03 Q. Let me ask you, did you -- did
 04 you prepare this document?
 05 A. No.

Page 222:13 to 224:06

00222:13 Q. Do you know who prepared these
 14 document -- this event description?
 15 A. I don't know.
 16 Q. Do you recall reviewing it?
 17 A. No.
 18 Q. Prior to today?
 19 A. No.
 20 Q. I direct your attention to the
 21 second, I call it the second topics, the
 22 current event status. Do you see that about
 23 a third of the way down the page?
 24 A. Yes.
 25 Q. First line reads after eight
 00223:01 attempts of achieving a satisfactory leak off
 02 test the 8-and-a-half-by-22-inch hole was
 03 drilled ahead with less than desirable
 04 drilling margin.

05 Were you involved in the
06 decision-making process to conduct eight leak
07 off tests?

08 A. No. I would have provided data
09 about what we were expecting, and so relative
10 to the expected value I think that led us
11 to -- to repeat the test, making sure that we
12 were actually eliminating variables that were
13 leading us to an erroneous test or no-good
14 test.

15 Q. In your experience is eight an
16 unusually high number of leak off tests to
17 perform in one location?

18 A. In my experience eight is a lot
19 of attempts.

20 Q. It's a lot. When performing
21 these are they performing them at the same
22 interval or are they -- are they performing
23 them at the same depth interval?

24 A. I believe these were performed
25 at about the same depth interval. I don't
00224:01 recall drilling any new formation, but I
02 may -- may not recall that correctly.

03 Q. If you perform multiple pressure
04 integrity tests at the same depth, do you run
05 the risk of damaging the formation?

06 A. In my opinion --

Page 224:08 to 224:24

00224:08 A. (Continuing) -- no, not
09 necessarily.

10 Q. (BY MR. HAUSER) Turn to tab 4
11 just really quickly. This is Exhibit 1319,
12 and I'm actually going to ask you about --
13 it's a string of e-mails. I'm going to ask
14 you about the e-mail that's in the middle.
15 It's from you to Kate Paine with a cc to
16 Robert Bodek and Ms. Skripnikova and
17 Mr. Wagner.

18 A. Okay.

19 Q. There is a line that's -- it's
20 the third sentence of your e-mail. It say,
21 We intend to use with a -- excuse me, let me
22 start over.

23 A. Yeah, I have a little typo
24 there. Sorry.

Page 225:03 to 225:20

00225:03 Q. We intend to use a with stress
04 cage mix in the cement slurry to try to, one,
05 have -- patch any channel that might exist
06 and, two, strengthen any exposed sand that

07 we -- we have damaged with our testing. My
 08 question relates to that second bullet point,
 09 strengthen any exposed sand we have damaged
 10 with our testing.

11 Do you believe that performing
 12 eight leak off tests at this location may
 13 have damaged the sands?

14 A. The damage, what I'm refer to
 15 here is having -- we may have propagated a
 16 fracture in the sand. But -- but by damage I
 17 don't mean that we are reducing the strength
 18 of the sand on subsequent tests.

19 Q. It's not irreparable damage?

20 A. Not irreparable.

Page 226:10 to 226:15

00226:10 Q. (BY MR. HAUSER) And that first
 11 line, it says that after the eight attempts
 12 the hole was drilled ahead with a less than
 13 desirable drilling margin. What is your
 14 understanding of the term "less than
 15 desirable drilling margin"?

Page 226:17 to 226:22

00226:17 A. What I interpret that to mean is
 18 that we ultimately accepted a lower leak off
 19 test value because we felt we were in sands
 20 that are weaker. So we drilled ahead with a
 21 lower leak off test value than we were hoping
 22 for if we were in the shale.

Page 227:08 to 227:10

00227:08 Q. What would you describe the
 09 minimum window would be to be able to drill
 10 ahead safely?

Page 227:12 to 227:13

00227:12 Q. (BY MR. HAUSER) To drill ahead
 13 at all?

Page 227:15 to 228:23

00227:15 A. I don't know to drill ahead at
 16 all, but typically we try and keep windows of
 17 5/10s to 3/10s, in my experience, the -- the
 18 minimum window before we start talking about
 19 TDing a hole section.

20 Q. (BY MR. HAUSER) Let's go ahead

21 and look at tab 6 now. And what we have here
 22 actually is two versions of the same
 23 document. The first version is the
 24 Bates-stamped version. It's a PowerPoint
 25 presentation. It's a little bit small. So
 00228:01 for your convenience the native file is
 02 behind it. I sure this is the exact same
 03 document. If it looks funny, let me know.
 04 A. Can I actually amend something
 05 in my previous answer?
 06 Q. Sure.
 07 A. When I talk about drilling
 08 window I'm talking about is maximum pore
 09 pressure in a hole section relative the
 10 fracture gradient of the weakest formation.
 11 It may or may not be the same definition
 12 that's used in that document.
 13 Q. Fair enough. But your mud
 14 weight will always be higher than your
 15 maximum pore pressure, correct?
 16 A. That's correct.
 17 Q. Because you don't want to drill
 18 in underbalanced?
 19 A. That's right.
 20 Q. So drilling window is also -- it
 21 could also be described accurately as the
 22 difference between the mud weight and the
 23 fracture gradient, correct?

Page 229:01 to 229:06

00229:01 A. Yeah, I'm trying -- trying to
 02 clarify, that when I'm looking at the hole
 03 section as a whole I'm looking at what I
 04 think the weakest rock that's exposed, not
 05 necessarily what we got at the -- at the shoe
 06 for the leak off value.

Page 229:09 to 229:11

00229:09 A. So it's a little bit -- a little
 10 bit different definition perhaps than what
 11 was referred to in that document.

Page 231:20 to 232:24

00231:20 Q. Let's look at tab 5, if you
 21 would please. And we're going to mark, this
 22 Exhibit 3726 this is BP-HZN-2179MDL00365710.
 23 This e-mail is an E -- it's from Mark Hafle
 24 to you. He says, Marty, not really any
 25 buildup with the current MW/ESD in hole,
 00232:01 Mark. And it attaches -- it appears to be

02 the buildup for the first six pressure
03 integrity tests. Can you tell by looking at
04 this attachment which pressure integrity test
05 that we looked at on tab 6 was a valid test?
06 A. I can't from this table, either,
07 because in my estimation there's -- there's
08 part of the data missing from these tests,
09 and that's the pumps-off data.
10 Q. That's the -- the curve that
11 should tail off?
12 A. The very end, yeah.
13 Q. Let's look at one more document
14 on this topic, which is tab 4. Again, this
15 is Exhibit 1319. This is an e-mail from Kate
16 Paine to you. It says, thanks, Marty, I'll
17 admit I feel a lot more comfortable with the
18 latest LOT even though it took forever. At
19 least the trend looks right if you squeeze it
20 down to a manageable scale then throw a
21 healthy filter on the data. Pesky
22 responsibility.
23 What is Kate Paine telling you
24 about the lot results in this e-mail?

Page 233:01 to 233:18

00233:01 A. What I read from this e-mail or
02 interpret from this e-mail is that she's
03 comfortable with the -- the latest leak off
04 test, but I'm not sure exactly which leak off
05 test she's referring to there, whether it's
06 the eighth or the -- or the prior one. I
07 don't believe it was the last one we ran,
08 given the previous e-mail here.
09 Q. (BY MR. HAUSER) What about the
10 previous e-mail makes you believe it was not
11 the eighth test?
12 A. Just the -- the discussion that
13 we intend to squeeze the shoe, so that
14 implies that we're going to apply more cement
15 and then retest.
16 Q. So are you conveying that
17 there's going to be some remedial actions
18 taken after the eighth LOT test?

Page 233:20 to 234:18

00233:20 A. No, what I'm conveying in
21 this -- my e-mail to Kate is that we -- we're
22 looking at the -- the leak off test that we
23 had acquired to that point in time, and in
24 interpreting that collective data that the
25 group had -- had determined that the cement
00234:01 squeeze was a mitigation procedure that we

02 felt might give us a better leak off test
03 result.
04 Q. (BY MR. HAUSER) Do you know if
05 another leak off test was performed after
06 these steps were taken?
07 A. I believe there was another leak
08 off test done after the cement squeeze.
09 Q. Would that be a ninth test?
10 A. No. Again, I'd have to go back
11 and look at the -- the actual sequence of
12 leak off test, but I believe there were eight
13 run and --
14 Q. One of the eight.
15 A. I think the last one was
16 performed after the cement squeeze. What I'm
17 saying is I don't know if there were two run
18 after the cement squeeze or just one.

Page 234:24 to 237:10

00234:24 Q. (BY MR. HAUSER) Can a cement
25 squeeze result in a higher lot?
00235:01 A. If the underlying reason for
02 getting a pore test, that is, one that would
03 show there was some pressure decay that's
04 above and beyond acceptable levels, then that
05 implies that there might be a channel through
06 cement through which the drilling fluid is
07 leaking. So the cement squeeze might plug up
08 that channel and give you integrity at the
09 shoe and prevent the pressure from decaying
10 as rapidly.
11 Q. Turn to tab 9 in your binder,
12 please. This document has been previously
13 entered as Exhibit 1334. Did you prepare
14 these daily pore pressure fracture gradient
15 reports?
16 A. No.
17 Q. Did you have any input into
18 them?
19 A. No.
20 Q. Did you review them?
21 A. Yes, I would have looked at
22 them.
23 Q. Just the -- this is one of the
24 data points -- excuse me. Is this one of the
25 sources of data that you used to update your
00236:01 pore pressure prediction?
02 A. Yeah, from these reports and
03 talking with Kate, I would get a feeling for
04 what her interpretations were for the pore
05 pressure.
06 Q. When you were reviewing these
07 reports what specifically were you reviewing
08 them for?

09 A. Really just to try and
10 understand what Kate's thinking was on the
11 pore pressure and how it related to my
12 current thinking on pore pressure and whether
13 or not we needed to update the forecast.

14 Q. Based on the data that's
15 included in this report what is the drilling
16 margin identified on that was present on
17 October 25th, 2009?

18 A. I'm not sure I could tell you
19 what the margin was. I could tell you what
20 according to the ESD was and the -- and
21 the -- the leak off test value, what that
22 difference is.

23 Q. What's that difference?

24 A. It's, like, if the last LOT
25 value of 10.37 pounds per gallon and the ESD
00237:01 min value, I would say that it's probably
02 around .3 pound -- pounds per gallon.

03 Q. Less than .5; is that correct?

04 A. If these numbers are adequate
05 representations, I would say that the leak
06 off test and ESD difference is less than .5.

07 Q. Did you have an understanding as
08 to whether BP would require a waiver or
09 departure from MMS in order to drill ahead
10 under these conditions?

Page 237:12 to 237:13

00237:12 A. No, I -- I don't know what the
13 regulations are.

Page 238:01 to 238:11

00238:01 Q. I'll suggest to you that the
02 seventh leak off test is the test that BP
03 relied on when drilling this interval?

04 A. I don't know that for certain.

05 Q. Do you think they'd be reporting
06 a different number in the pore pressure
07 fracture gradient report if it wasn't?

08 A. I don't know what number was
09 reported or from which test that -- that
10 number was derived. It's not in my job
11 description to issue that -- that number.

Page 238:18 to 239:02

00238:18 Q. Let's look at tab 10. This is
19 another pore pressure fracture gradient
20 report for three days later. It's on
21 October 9th -- excuse me, October 28th, 2009.

22 And in the additional observations section of
23 the report it says, "Updated lot value to
24 10.46 for reporting purposes."
25 Do you have any understanding
00239:01 about what the phrase for reporting purposes
02 mean?

Page 239:04 to 239:05

00239:04 A. No, I -- I don't know what that
05 refers to.

Page 239:18 to 240:07

00239:18 Q. (BY MR. HAUSER) What is the
19 drilling margin that's identified in this
20 report?
21 A. Not entirely clear. I think the
22 last time I answered it was not clear. For
23 me the drilling margin, I would be more
24 comfortable looking at the a pore pressure
25 fracture gradient to give that answer, which
00240:01 I don't feel very comfortable making a
02 comment about the drilling margin based on
03 this daily PPFG drilling report.
04 Q. Well, you testified earlier that
05 the drilling margin is the difference between
06 the pore pressure and the fracture gradient,
07 correct?

Page 240:09 to 241:10

00240:09 A. My definition for pore pressure,
10 what I'm interested in from a subsurface pore
11 pressure fracture gradient perspective is
12 what I think the maximum pore pressure is in
13 the open hole section and what I think the
14 weakest formation exposed in the hole section
15 is, and that's not necessarily the same
16 definition as -- as you might be using for --
17 for drilling margin.
18 Q. (BY MR. HAUSER) What does this
19 report say that the maximum pore pressure in
20 the open hole was on 10 -- on October 28th,
21 2009?
22 A. Kate's interpretation is
23 10.2 pounds per gallon.
24 Q. And where do you think she got
25 that data?
00241:01 A. It's based on an assessment of
02 the realtime log information that she had to
03 this date.
04 Q. Would that be a downhill -- a

05 downhole measurement, a realtime measurement?
 06 A. I can't tell from this report
 07 whether that is a downhole or a surface
 08 number.
 09 Q. Would it be based upon data that
 10 was obtained while drilling?

Page 241:12 to 242:14

00241:12 A. I assume that it was based on
 13 her interpretation of data that was acquired
 14 while drilling.
 15 Q. (BY MR. HAUSER) When you say
 16 interpretation of -- or you say "her
 17 interpretation of data acquired while
 18 drilling," what interpretation is there to be
 19 done?
 20 A. Well, we're collecting
 21 resistivity in this hole section, and there
 22 is a transform that allows us to go from
 23 resistivity to pore pressure and that
 24 transform is an empirical relationship that
 25 has many intervals. So there are many
 00242:01 opportunities to change the transform. And
 02 so the interpretation involved is trying to
 03 get the transform calibrated so that it's
 04 giving us values that we think are reasonable
 05 relative to other drilling indicators that --
 06 that you might have, such as gas or if you
 07 had taken a kick, for example, you could
 08 calibrate to that as well.
 09 Q. So if Kate -- if Kate's
 10 interpretation was correct and the pore
 11 pressure was 10.2, the fracture gradient was
 12 10.46, which was updated for drilling
 13 purposes, what's the drilling margin between
 14 those two numbers?

Page 242:16 to 244:19

00242:16 A. Again, I don't know if -- if the
 17 numbers are -- are calculated with equivalent
 18 datums, whether one is downhole or surface.
 19 Again, I'd have to look at a pore pressure
 20 fracture gradient plot where everything was
 21 plotted on equal terms to -- to give you an
 22 accurate answer.
 23 Q. (BY MR. HAUSER) Let's look at
 24 tab 7. This document has not been entered,
 25 has it? So we're going to mark it 3727, and
 00243:01 it's BP_HZN_2179MDL02747482. The top e-mail
 02 is an e-mail from Scherie Douglas to
 03 [REDACTED] Do you have any idea
 04 who [REDACTED], is?

05 A. No.
 06 Q. Do you know who Lynard is?
 07 Well, strike that.
 08 At the bottom of this e-mail --
 09 the bottom of the e-mail -- second e-mail
 10 is -- appears to be an e-mail from L. Carter
 11 to Scherie Douglas, and it says, thanks, L.
 12 Carter, Workover Engineering, MMS New Orleans
 13 District. Is that -- have you ever heard of
 14 Lynard Carter?
 15 A. No.
 16 Q. The top e-mail appears to be an
 17 e-mail from Scherie to Lynard Carter
 18 informing -- excuse me -- strike that.
 19 The e-mail at the bottom of that
 20 page from L. Carter to Scherie Douglas says,
 21 "Scherie, pursuant to the e-mail below and
 22 our conversation, BP request to change the
 23 mud weight to 10 ppg is approved."
 24 Do you understand this to be a
 25 response to a request for a variance?
 00244:01 A. I really don't. I haven't seen
 02 these e-mails before. I'm not sure exactly
 03 what the -- what the content of these --
 04 these e-mails is.
 05 Q. Well, if we go one page
 06 behind -- and we probably should have start
 07 there had in the first place.
 08 A. Okay.
 09 Q. The first e-mail in the string,
 10 it says, Lynard, per our conversation this
 11 morning, we are requesting approval to drill
 12 the remainder of the current hole section
 13 with a 10 ppg mud weight. It says the lot at
 14 the 22" shoe is 10.38. The current mud
 15 weight is 9.7.
 16 Do you have an understanding as
 17 to why Scherie Carter -- excuse me, Scherie
 18 Douglas is requesting approval to drill with
 19 a 10.0 mud weight?

Page 244:21 to 244:25

00244:21 A. I'm not even sure exactly what
 22 is leading her to -- to send this e-mail.
 23 And, yeah, I just really don't know exactly
 24 what -- what -- what's leading to this
 25 e-mail.

Page 245:04 to 245:07

00245:04 Would BP have been able to drill
 05 with a 10.0 -- excuse me, sorry, would BP
 06 have been permitted to drill with a 10.0 mud

07 weight without approval by MMS?

Page 245:09 to 246:02

00245:09 A. I don't know what the exact
10 regulations are. It's not my responsibility.
11 Q. (BY MR. HAUSER) Let's go back
12 to the first -- the first e-mail in this
13 string at the very top, which is the last
14 chronologically. It says, the max lot is
15 10.25 pounds per gallon.
16 Do you know where that number
17 comes from?
18 A. No, I don't.
19 Q. Do you recall any pressure
20 integrity tests conducted of the 22-inch shoe
21 that yielded a 10.25 result?
22 A. I don't recall.
23 Q. It says, the max mud weight,
24 surface mud weight we will drill with is
25 9.95 pounds per gallon.
00246:01 Do you recall whether BP drilled
02 with weight above 9.95 in that interval?

Page 246:04 to 246:16

00246:04 A. Again, I'd have to go back and
05 look at the -- the realtime data to see what
06 mud weight we were using. I don't recall.
07 Q. (BY MR. HAUSER) Let's look at
08 tab 10, if you would, please.
09 A. Tab 10?
10 Q. Yes. The preceding e-mail,
11 which is dated October 25th, Ms. Douglas says
12 that the max surface mud weight that BP will
13 drill with is 9.95 in requesting the
14 variance. On this pore pressure fracture
15 gradient report it says surface mud weight is
16 10.1. 10.1 is above 9.95; is it not?

Page 246:18 to 246:24

00246:18 A. What Kate has in her e-mail is
19 an interpretation of -- of pore pressure.
20 Repeat your question.
21 Q. (BY MR. HAUSER) Sure certainly.
22 The pore pressure fracture gradient report
23 with the surface mud weight of 10.1. That's
24 a hard number, right?

Page 247:01 to 247:11

00247:01 Q. (BY MR. HAUSER) There's no

02 interpretation involved with calculating mud
03 weight at the surface?
04 A. Except that it's relative to
05 what -- what time you're talking about. So I
06 don't know if this surface mud weight she's
07 quoting occurred before or after a mud weight
08 or whether it's -- you know, what the -- what
09 the chronology is.
10 Q. Well, this says they drilled --
11 drilled with 10.1 ppg mud, correct?

Page 247:13 to 247:21

00247:13 Q. (BY MR. HAUSER) It's in the
14 additional observations portion.
15 A. I see the comment that Kate's
16 making, drill with 10.1 pound per gallon mud.
17 Q. So can you reconcile the fact
18 that this report reports that BP drilled with
19 10.1 pound per gallon mud, but the statement
20 in Douglas' e-mail to MMS said the maximum
21 mud weight would be 9.95?

Page 247:23 to 248:05

00247:23 A. I don't know where those numbers
24 came from, so I can't -- I can't give you a
25 good answer for that. I -- I don't know.
00248:01 Q. (BY MR. HAUSER) Well, if the
02 max surface lot at this interval was 10.25,
03 as set forth in Scherie Douglas' e-mail and
04 BP drilled with a 10.1 mud weight, what was
05 the drilling margin at that time?

Page 248:07 to 249:05

00248:07 A. The margin as I define it is the
08 difference between the pore pressure and
09 the -- the weakest formation. So, again, to
10 give you an accurate answer what I think the
11 margin is at that time, I would look at a
12 pore pressure fracture gradient forecast to
13 give you that answer and not numbers that are
14 on Kate's PPFG daily report.
15 Q. (BY MR. HAUSER) Do you have any
16 reasonable to the numbers on Kate's PPFG
17 report are inaccurate?
18 A. I would have to go back to the
19 drilling reports and my own forecast to -- to
20 really verify the numbers.
21 Q. Was she a competent employee?
22 Or she was a contractor. Did you find her
23 work to be competent?

24 A. Yes.
25 Q. Did she have a habit of
00249:01 interpreting data in an unreasonable way?
02 A. Not in my opinion.
03 Q. Do you have any reason to
04 suspect that these numbers aren't if not
05 absolutely accurate very close to accurate?

Page 249:08 to 249:20

00249:08 A. Again, I -- I really can't
09 comment on how accurate the numbers are
10 without going back and looking the at the
11 data.
12 Q. (BY MR. HAUSER) Sure. Well,
13 hypothetically, then, if in fact the data
14 would support the pore pressure would
15 result -- hypothetically -- strike that.
16 Hypothetically if the cuves
17 would support a max pore pressure in the open
18 hole at 10.2 pounds per gallon and a lot of
19 10.12 -- excuse me, 10.25, what is the
20 drilling margin at that point?

Page 249:22 to 250:09

00249:22 A. Yeah, hypothetically, let's see
23 if I got your numbers right. Repeat your --
24 your number.
25 Q. (BY MR. HAUSER) Certainly.
00250:01 Hypothetically let's assume that their
02 numbers in this pore pressure fracture
03 gradient report are accurate and that the max
04 pore pressure at this interval at the open
05 hole was 10.2 pounds per gallon and that also
06 accurate is the statement in Scherie Douglas'
07 e-mail that the lot at this shoe was 10.25.
08 If that's all true, what is the available
09 drilling margin at that time?

Page 250:11 to 250:15

00250:11 A. Yeah, I mean, it's -- it's a
12 hypothetical case. I'm not sure there's any
13 value in talking about hypothetical cases.
14 Q. (BY MR. HAUSER) I just want an
15 answer.

Page 250:17 to 251:06

00250:17 A. I can't give you a specific
18 answer to that.
19 Q. (BY MR. HAUSER) What's the

20 different between 2.25 and to 10.2?
 21 A. Well, I can do the math, but I
 22 not sure its --
 23 Q. What's the difference?
 24 A. I don't know that's relevant to
 25 our discussion about margin.
 00251:01 Q. Sir, just answer the question.
 02 Give me the number, please.
 03 A. I can't answer that question.
 04 Q. You can't answer what the
 05 difference is mathematically between 10.25
 06 and 10.2?

Page 251:08 to 251:12

00251:08 A. If you're asking me what is the
 09 mathematical question. What is the
 10 difference between 10.25 and 10.2?
 11 Q. (BY MR. HAUSER) Yes.
 12 A. I think that's .05.

Page 251:23 to 253:13

00251:23 Q. (BY MR. HAUSER) So under
 24 certain circumstances it would be appropriate
 25 to drill a limited distance with little to no
 00252:01 margin?
 02 A. I think you're always drilling
 03 with uncertainty about what the pore pressure
 04 will be doing. So you have a -- a margin
 05 that's a -- a changing number, and as soon as
 06 the pore pressure gets up to a point where
 07 you no longer feel you have adequate room to
 08 drill, that you would discuss what the
 09 appropriate depth to -- to stop drilling
 10 would be.
 11 Q. If you would, please, switch
 12 to -- flip to tab 12, which we're going to
 13 mark as Exhibit 3728. I'm sorry. And the
 14 Bates number is BP_HZN_2179MDL02393264. This
 15 is an e-mail from you to Galina Skripnikova
 16 with a cc to Pinky Vinson on Friday,
 17 October 30th. At the very bottom it says --
 18 last paragraph, it says, "In the end" -- this
 19 is the final sentence of the last paragraph.
 20 "In the end the team decided to take a
 21 calculated risk that we could drill through
 22 the kick interval without losing the
 23 wellbore."
 24 Were you involved in that
 25 decision?
 00253:01 A. I provided pore pressure and
 02 fracture gradient information that -- that
 03 was factored in in making that decision. I

04 did not make that decision.
05 Q. When you say the team decided to
06 calculate a risk, who is the team?
07 A. I would be referring to the --
08 the drilling team.
09 Q. And who are the individuals on
10 the drilling team specifically?
11 A. I don't recall the entire
12 drilling team, but drilling engineers Mark
13 Hafle, Brian Morel.

Page 253:19 to 253:25

00253:19 Q. (BY MR. HAUSER) Let me restate
20 that. Do you recall specifically who the
21 authorized decision to take the calculated
22 risk discussed in your e-mail?
23 A. No, I don't.
24 Q. Generally speaking, who would be
25 in a position to make that sort of decision?

Page 254:02 to 254:13

00254:02 A. I think ultimately it would
03 be -- I'm not sure exactly who has the
04 ultimate authority to make that decision.
05 Someone on the drilling team I assume at a
06 level above the drilling engineer, but I
07 really don't know.
08 Q. (BY MR. HAUSER) And who
09 would -- you said someone above Mr. Hafle and
10 Morel?
11 A. Yeah, I would assume so.
12 Q. And who would that individual
13 be; do you know?

Page 254:15 to 254:21

00254:15 A. On this well it would be John
16 Guide and on the Marianas, George Gray, I
17 believe.
18 Q. (BY MR. HAUSER) Do you know why
19 the team made the decision to take a
20 calculated risk and drill through the kick
21 interval?

Page 254:23 to 254:25

00254:23 A. I don't recall the exact
24 circumstances, but I believe it was to try
25 and get the kick interval behind casing.

Page 255:07 to 255:11

00255:07 Q. (BY MR. HAUSER) This is a
08 document that's been previously entered as
09 Exhibit 1337. This is the document that I'd
10 like to focus your attention on, Page 10.
11 A. Okay.

Page 255:16 to 256:16

00255:16 Q. The bottom right-hand corner of
17 the slide, it says drilling operations from
18 10/21/09 through 10/28/09. You were at the
19 bottom of -- that would be the 18-inch casing
20 interval; would it not?
21 A. Yes, I believe this document was
22 reviewing the 18-inch hole section.
23 Q. And it also says on this same
24 page 18 SG section, correct?
25 A. Correct.
00256:01 Q. So this relates to the 18-inch
02 hole section?
03 A. Yes, I believe so.
04 Q. If you'd turn to Page 10,
05 please. The slide say, "The team was faced
06 with the decision on whether to drill ahead
07 past the interval that caused the well
08 control event."
09 The next line says, stop and set
10 casing at current depth. Risk, likely to
11 poor leak off test at the 18-inch shoe, bring
12 into play the 11-and-three-quarter-inch
13 contingency liner.
14 Why is bringing into the play
15 the 11-and-three-quarter-inch contingency
16 liner considered a risk?

Page 256:18 to 256:20

00256:18 A. I'm not sure entirely what the
19 risks would be in running a -- a contingency
20 liner. I'm not a drilling engineer.

Page 257:13 to 257:20

00257:13 Q. (BY MR. HAUSER) The second
14 option it sets forth below is drill ahead
15 100 feet in order to set 18-inch casing shoe,
16 below problematic sand interval. Risk,
17 potentially uncontrolled well control event.
18 Why does drilling ahead a
19 hundred feet raise the risk here of an
20 uncontrollable well event?

Page 257:22 to 258:02

00257:22 A. With drilling additional footage
23 there is the potential of drilling into a --
24 a -- another sand that might be slightly
25 higher pressure.
00258:01 Q. (BY MR. HAUSER) What's the risk
02 of doing that?

Page 258:04 to 258:08

00258:04 A. If you drill into a higher
05 pressure sand and you don't have formation
06 strength in the open hole to control the mud
07 weight that you're using, you could be faced
08 with a well control issue.

Page 258:15 to 259:03

00258:15 Q. (BY MR. HAUSER) By drilling
16 another hundred feet, they were running the
17 risk of encountering pressures that they
18 couldn't compensate for with heavier mud
19 weight due to the weakness of the formation?
20 A. It was a scenario that we were
21 discussing.
22 Q. Now, the reward -- one of the
23 rewards listed for this option is to get back
24 on track regarding planning casing setting
25 depths. Strike that.
00259:01 The reward is to get back on
02 track regarding planned casing setting
03 depths. Why is that a reward?

Page 259:05 to 259:06

00259:05 A. Well, that's one of the rewards
06 that we have listed in that comment.

Page 261:14 to 261:16

00261:14 Q. (BY MR. HAUSER) Generally
15 speaking, is there a risk associated with the
16 decision to stop an interval short?

Page 261:18 to 264:01

00261:18 A. Not -- I think the -- the
19 decision to stop an interval short would be
20 based on our -- our understanding of the pore
21 pressure and fracture gradient and -- and

22 what we want to have behind pipe.
23 Q. (BY MR. HAUSER) When you say
24 your understanding of pore pressure fracture
25 gradient, what do you mean?
00262:01 A. I mean, our interpretation of
02 what the highest pore pressure is in the
03 weakest formation in the open hole.
04 Q. And what conditions would you
05 stop short?
06 A. If the pore pressure was higher
07 than anticipated or the -- the fracture
08 strength of the open hole was lower than
09 anticipated.
10 Q. When there was little to no
11 window?
12 A. When there was less window than
13 you anticipated, either due to higher pore
14 pressure or lower fracture gradient.
15 Q. If you could flip back very
16 quickly to tab 10. This, again, is the pore
17 pressure fracture gradient report that was
18 marked as Exhibit 1335. And you said that in
19 your role as the -- the SPA for pore pressure
20 detection, you reviewed these regularly,
21 correct?
22 A. I would read them regularly.
23 Q. When you reviewed them, did you
24 look at the data supporting these documents?
25 A. I would look at the -- the
00263:01 realtime log information supporting the
02 documents to see if I had the same pressure
03 interpretation as Kate.
04 Q. Did your interpretation ever
05 differ from Kate's?
06 A. Occasionally.
07 Q. Did you notify her of those
08 differences?
09 A. If we had a -- a difference of
10 opinion, we would discuss the models we were
11 using and our -- our -- discuss our positions
12 and why we were thinking a certain way on
13 pressure.
14 Q. Were you Kate's superior on this
15 well?
16 A. I don't consider myself her
17 superior on this well.
18 Q. Does she report to you?
19 A. No.
20 Q. Did Kate -- did you ever ask
21 Kate to update in what you felt was an
22 inaccuracy in one of these pore pressure
23 fracture gradient reports?
24 A. I don't recall an instance where
25 I would have asked her to revise a PPFG
00264:01 report. Was that -- was that the question

Page 264:05 to 264:19

00264:05 Q. In the event that you did
06 disagree with one of her interpretations that
07 was reflected in one of these reports, where
08 would that disagreement be memorialized?
09 A. I mean, the -- in my opinion,
10 the ultimate interpretation or the -- the --
11 the interpretation of pore pressure is what I
12 can -- I have in my spreadsheet for the well
13 drilling pressure forecast. So that's the
14 official forecast, if you will.
15 Kate's interpretation of that
16 pore pressure would factor into the changes I
17 make, but whatever is represented on that
18 pore pressure fracture gradient plot that I
19 maintain would be the official forecast.

Page 265:08 to 267:20

00265:08 Q. What about your final
09 projection, would that reflect all of the
10 differences?
11 A. My final -- post well pore
12 pressure forecast or afterward, we're done --
13 Q. Let's -- let's talk about
14 immediately before the incident.
15 A. It would reflect all of the data
16 that we had collected up -- up to that point,
17 yes, and -- and after wireline logging, there
18 would be no additional data that we would
19 collect that would be relevant to my update
20 of the forecast.
21 Q. Let's move to tab 13. This has
22 been marked as Exhibit 1336. Mr. Albertin,
23 have you ever seen this document before?
24 A. I don't recall this specific
25 document. I don't -- I don't think I've seen
00266:01 it. I just don't recall.
02 Q. As a general rule, did you
03 review any of the applications for permits to
04 drill submitted to MMS by BP?
05 A. No.
06 Q. Tab 2, please. This is a new
07 exhibit we've marked as Exhibit No. 3729.
08 The Bates number is BP-HZN-2179MDL00466398.
09 This is an e-mail from you to Mr. Hafle and
10 Beverly Walz on Tuesday, April 27th.
11 It says, Team, just plotted up
12 the PP-FG data in the R by C -- is that --
13 I'm sorry.
14 A. RxC.
15 Q. -- RxC APD to QC against the
16 forecast. Everything is close except the LOT

17 value at the 16 -- the 16-inch shoe. In the
18 APD, we have the formation test of 13.6 ppg.
19 This is related to one of the
20 relief -- relief wells, correct?
21 A. That's correct.
22 Q. And you're providing -- are you
23 providing information to incorporate into
24 the -- one of the applications for permit to
25 drill that relief well?
00267:01 A. Yes, I'm providing pore pressure
02 and fracture gradient infor- -- information
03 for it.
04 Q. And are you reviewing
05 information that's included in that APD?
06 A. Yes.
07 Q. So you -- you did review APDs
08 related to relief wells?
09 A. For the relief wells, yes, but
10 it's not a -- a standard thing that I would
11 do for typical wells.
12 Q. Why did you do it for the relief
13 wells but not for the Macondo well?
14 A. It was a extraordinary
15 circumstance. We wanted to make sure that --
16 that everything in the -- in the permit and
17 the plan, everything in the forecast was as
18 good as we could get it to make sure that
19 those wells could get to their targets
20 without any issues.

Page 267:24 to 268:18

00267:24 Q. (BY MR. HAUSER) Was there a
25 concern there would be issues with the relief
00268:01 wells?
02 A. Well, I think there was in
03 general a tremendous amount of pressure to --
04 to assure that those wells would successfully
05 reach their objectives. So I think that --
06 that's the environment in which we were
07 operating. We couldn't afford to have issues
08 on those wells because we really needed to
09 get to intercept depth.
10 Q. And how did your participation
11 in -- in the application for permit to drill
12 process help achieve that result?
13 A. I provided the pore pressure and
14 fracture gradient information that was in
15 the -- in the APD and the pore pressure
16 fracture gradient forecast that underpinned
17 the -- the basis of the design for the relief
18 well.

Page 269:05 to 269:08

00269:05 Q. (BY MR. HAUSER) Did you
06 experience any well control events in
07 drilling the -- the relief wells?
08 A. Not to my knowledge.

Page 269:16 to 270:09

00269:16 Q. Flip back to tab 13. I want to
17 direct your attention to Page 6 of this
18 document.
19 And in the box labeled interval
20 No. 2 can you identify for us, please, what
21 the fracture gradient for the 22-inch casing
22 shoe is?
23 A. In -- under the general
24 information box for Interval No. 2, there is
25 a fracture gradient mud weight equivalent
00270:01 listed at 11.1 pounds per gallon.
02 Q. And what does the -- what does
03 the formation test information convey on the
04 bottom right-hand corner?
05 A. I believe it portrays the -- the
06 maximum pressure and mud weight equivalent
07 for a leak off or FIT test.
08 Q. And that's also 11.1, correct?
09 A. That -- yes.

Page 271:08 to 271:13

00271:08 Q. But my question, regardless of
09 what well this relates to, is when you have a
10 figure for the fracture gradient that is
11 equal to the figure for the formation test,
12 does that indicate that a LOT was performed
13 at that casing shoe?

Page 271:15 to 272:22

00271:15 A. I -- I assume from this -- this
16 document that there -- there was a leak off
17 test performed.
18 Q. (BY MR. HAUSER) If a FIT was
19 performed, would you expect the formation
20 test to be lower, equal to, or higher than
21 the fracture gradient?
22 A. In general, if we perform an
23 FIT, I would expect that value to be lower
24 than the actual fracture gradient of the
25 formation.
00272:01 Q. And is that because when you
02 perform an FIT, you don't take the well all
03 the way to the leak off pressure?
04 A. That's -- that's correct.

05 Q. Do you have any idea the genesis
06 of this 11.1 number?

07 A. Beyond -- just assuming that
08 it's based on a leak off test that we
09 acquired there, no.

10 Q. Could we look back, please, at
11 tab No. 10?

12 A. Okay.

13 Q. Can you keep your -- I'm sorry.
14 Go ahead and keep your finger on -- on this
15 page, but let's look quickly at tab No. 10,
16 specifically -- and this is the pore pressure
17 fracture gradient report that reports a last
18 LOT of 10.46 ppg.

19 Can you explain the discrepancy
20 between that figure and the 11.1 that's
21 included in the APD that was submitted to
22 MMS?

Page 273:02 to 274:08

00273:02 A. Okay. So under tab 10, you --
03 you're referring to which -- which number
04 specifically?

05 Q. (BY MR. HAUSER) In the --
06 halfway down the document on the right-hand
07 side, there is a last LOT figure.

08 A. Okay.

09 Q. It says 7,952 feet total
10 vertical depth, 10.466, correct?

11 A. 10.46. Is that --

12 Q. Yeah. I'm sorry, you're right,
13 I apologize. 10.46.

14 A. Yes.

15 Q. And in the "Additional
16 Observations," it says, "Updated LOT value to
17 10.46 ppg for reporting purposes," correct?

18 A. Yes, I -- I'm reading that.

19 Q. And this is dated October 28th,
20 2009, correct?

21 A. Yes.

22 Q. And then when we flip back to
23 tab 13, looking at the application for
24 "relies" new well, that was submitted on
25 10/29/2009, correct?

00274:01 A. Okay.

02 Q. And the information applicable
03 to this casing shoe is 11.1 fracture
04 gradient, correct?

05 A. Under "General Information," I
06 see -- see 11.1 listed there, yes.

07 Q. And my question is, why -- why
08 the disparity between the two documents?

Page 274:10 to 274:11

00274:10 A. I don't know why -- why there is
11 a disparity.

Page 274:16 to 275:10

00274:16 This is Exhibit 3730, and the
17 Bates range is BP-HZN-2179MDL00269732. And I
18 direct your attention to the e-mail at the
19 bottom of this page from Mr. Morel to you --
20 to you, dated January 7, 2010.
21 It says, Marty, did you ever
22 update the Macondo PPFG chart to reflect the
23 lower fracture gradient score at the 22-inch
24 shoe?
25 Do you understand what he is
00275:01 referring to -- what is he -- excuse me.
02 Strike that.
03 What is he referring to as the
04 Macondo PPFG chart?
05 A. This is the -- the pore pressure
06 fracture gradient forecast that I'm
07 maintaining and updating while drilling.
08 Q. Do you know if that document was
09 ever used to submit or complete applications
10 for permit to drill?

Page 275:12 to 275:14

00275:12 A. I believe the -- the predrill
13 forecast was used as -- as one of the inputs
14 to the permit or to drill.

Page 275:21 to 275:25

00275:21 Q. (BY MR. HAUSER) Let me -- let
22 me clarify. When I say "drilling permit
23 applications" I mean applications for permit
24 to drill, revised applications, bypass
25 applications, permit to drill.

Page 276:02 to 277:03

00276:02 A. I don't know specific -- yeah, I
03 don't know specifically what's in those
04 documents, so I -- I don't really know.
05 Q. (BY MR. HAUSER) He -- he's
06 asking you if you ever updated the chart.
07 Did you?
08 A. At this point, I believe I had
09 updated the pore pressure fracture gradient
10 forecast from -- from the predrill.

11 Q. Do you recall what number you
12 inputted for that figure?

13 A. For the 22-inch, our
14 interpretation was that we had a sand exposed
15 at the shoe, and I think the -- the number
16 that I had posted in the chart was pretty
17 close to what I had for the calibrated sand
18 fracture gradient model.

19 The -- the numbers that the team
20 provides to me for the leak off test data
21 are -- they're -- they're points that I put
22 on the chart, but it's -- the fracture
23 gradient models that I use don't necessarily
24 go exactly through those points because
25 they're trying to interpret what the leak off
00277:01 test numbers mean in terms of downhole
02 stress. So they don't -- there is not a
03 one-to-one relationship, necessarily.

Page 277:11 to 282:02

00277:11 Q. (BY MR. HAUSER) Let's move to
12 that, tab 17, please. This document was
13 actually entered by the Plaintiffs' Steering
14 Committee earlier today, I believe, as
15 Exhibit 3710.

16 A. Okay.

17 Q. And it's Bates numbered
18 BP-HZN-2179MDL00008047.

19 A. Okay.

20 Q. Actually, my first question to
21 you relates to the attachment to this
22 exhibit, which is behind there. Should be a
23 blue blank page there.

24 A. Okay.

25 Q. Can you tell us what this
00278:01 document is?

02 A. This is the leak off test
03 workbook that's filled out on the rig by the
04 company man.

05 Q. Do you know who is responsible
06 for generating these?

07 A. I believe the data is recorded
08 by the company man on the rig. The tool
09 itself -- are you asking who -- who built the
10 tool itself or who populates the data on the
11 tool?

12 Q. Who populates the data on the
13 tool?

14 A. I believe it's the -- the
15 company man on the -- on the rig.

16 Q. As the single point of
17 accountability for pore pressure -- pore
18 pressure prediction, did you review these
19 regularly?

20 A. I would look at the curves and
21 try and interpret what they mean for downhole
22 stresses.
23 Q. Do you recall reviewing this
24 particular spreadsheet?
25 A. I don't recall specifically
00279:01 looking at this 16-inch FIT.
02 Q. This is -- this is an FIT?
03 A. I may have -- I may have looked
04 at this. Yeah, I would -- I would call this
05 a formation integrity test, not a -- not a
06 leak off test.
07 Q. Okay. So this was an FIT that
08 was performed at the 16-inch shoe; is that
09 correct?
10 A. Yes.
11 Q. Is this graph typical of an FIT
12 test?
13 A. In my opinion, yes.
14 Q. And I believe you testified
15 earlier that you would expect in the typical
16 FIT graph to see a drop-off in -- after
17 you've shut in the test; is that correct?
18 A. For a test which had good
19 integrity, you'd see a nominal drop in
20 pressure after shut-in.
21 Q. And is that what we're seeing
22 here on this graph on -- on the right-most
23 line that is sort of purplish?
24 A. Right, that brownish maroon.
25 Q. Yeah.
00280:01 A. It -- yeah, that -- that looks
02 like a reasonable pressure decline after
03 shut-in.
04 Q. So you would expect to see this
05 be- -- this type of behavior on a formation
06 integrity test that had good integrity?
07 A. In my opinion, it looks like
08 a -- a reasonable test, yes.
09 Q. The blue line on this -- this
10 graph is the -- the casing test; is that
11 correct?
12 A. That's -- a -- a part of the
13 casing test. There would also be a -- for
14 the casing test, they post shut-in pressure
15 decline curve. This is just the buildup
16 curve.
17 Q. This is the buildup curve?
18 A. Right.
19 Q. And similarly, the -- the bright
20 red line is the buildup curve on the
21 formation, correct?
22 A. For the FIT, yes.
23 Q. For the FIT?
24 A. Yes.

25 Q. Would you expect -- the slopes
00281:01 appear to be slightly different; do you
02 agree?
03 A. Yes, they are slightly
04 different.
05 Q. Is that -- would you expect that
06 result?
07 A. The difference on this plot is
08 not a flag that tells me that the test is --
09 necessarily needs some analysis. I think
10 those -- those are close enough that I think
11 it looks okay.
12 Q. What would be a flag on this
13 chart that would suggest to you that more
14 analysis would be needed if the test was
15 improper?
16 A. Well, if -- if I saw the rest of
17 the -- the casing test and saw that the --
18 the pressure was holding constant after
19 shut-in, that would give me confi- --
20 confidence in the casing integrity. And then
21 once that's established, I would say that
22 that -- the first thing I would look at would
23 be the pressure decay after shut-in. It
24 looks like it's a reasonable decline curve.
25 And the -- the pressure buildup is fairly
00282:01 linear, so that looks like a reasonable
02 buildup curve.

Page 282:10 to 282:19

00282:10 What -- what do you interpret
11 the operative fracture gradient to be for the
12 13-and-a-half casing interval?
13 A. In this case, being an FIT, I'm
14 not sure that it tells me a lot about the
15 fracture gradient of the formation at the
16 shoe.
17 Q. When you were making mud weight
18 decisions, what figure would you use to -- to
19 establish your ceiling weight?

Page 282:22 to 283:24

00282:22 A. From this test, I would use it
23 as a -- a rough guide for what a minimum
24 fracture gradient might be, but models that I
25 would use for a fracture gradient, I would
00283:01 expect to be at a -- at a higher value than
02 where the FIT would plot on the PPF plot.
03 Q. (BY MR. HAUSER) And what --
04 what would that minimum value be?
05 A. I'd have to look at the -- the
06 pore pressure plot to -- to give you an exact

07 answer.
08 Q. There's not enough information
09 on this to -- to say what the minimum
10 fracture gradient was for this interval?
11 A. I would say based on this plot
12 that the fracture gradient of whatever -- of
13 the formation that we're testing here is --
14 is higher than the maximum pressure on -- on
15 the red curve and the equivalent mud weight
16 as shown in this purple -- purple box is to
17 the left.
18 Q. Is that 12.55 pounds per gallon?
19 A. Yeah, I believe 12.55 represents
20 the peak pressure on the red curve in --
21 expressed in terms of mud weight equivalent
22 surface.
23 Q. Is that the number that would be
24 the minimum fracture gradient?

Page 284:01 to 284:19

00284:01 A. May or may not be the minimum
02 fracture gradient. Really would depend on
03 the calibration of the fracture gradient
04 models. The -- the minimum fracture gradient
05 for shale at that point are -- I need -- I
06 need to ask for a little clarification.
07 Q. (BY MR. HAUSER) Sure,
08 absolutely.
09 A. The minimum fracture gradient
10 in -- in pressure forecasting would be the
11 fracture gradient you'd expect for the
12 minimum pore pressure that you're
13 anticipating for that -- that hole section.
14 So that's -- I don't know if
15 that's what you're talking about. We have a
16 low side pressure casing and a fracture
17 gradient calculations based on low side
18 pressure. I don't think that's what you're
19 asking about, but I want --

Page 285:12 to 286:03

00285:12 Q. (BY MR. HAUSER) Let's move to
13 tab 18. I think this is another new exhibit.
14 It's going to be No. 3731, and that's Bates
15 No. BP-HZN-2179MDL00002077.
16 The e-mail on the very top is
17 from Mr. Hafle to you on March 6th, and it
18 says, We are considering an FIT, and not
19 breaking -- and not breaking anything else
20 down, like the marl in the rat hole, which
21 will commit us to the contingency liner.
22 Does this mean you're

23 considering not taking the test all the way
24 to leak off?
25 A. That's how I interpret that --
00286:01 that e-mail, that considering doing an FIT
02 means you would not take the pressure up
03 until you saw clear signs of -- of breakdown.

Page 286:12 to 287:03

00286:12 Q. (BY MR. HAUSER) Generally
13 speaking, are there advantages to performing
14 an FIT in certain circumstances?
15 A. In my opinion, FITs don't
16 establish the definitive formation strength.
17 So from -- for my work, an FIT is useful than
18 doing a leak off test.
19 Q. Do you have an understanding
20 about when the drilling engineers would
21 prefer an FIT to a LOT?
22 A. I think, in general, you would
23 consider doing an FIT if you were concerned
24 about taking the pressures up and then having
25 losses at the shoe or --
00287:01 Q. Is that --
02 A. -- or in the rathole that --
03 that you have exposed.

Page 287:08 to 287:10

00287:08 You would perform an FIT if you
09 were concerned about having losses; is that
10 what you said?

Page 287:12 to 287:23

00287:12 A. I think if you were concerned
13 about hole conditions or concerned about
14 raising the pressure in the FIT so that you
15 would -- you would somehow damage the
16 formation, I think you might consider doing
17 an FIT.
18 Q. (BY MR. HAUSER) Do you believe
19 they were concerned about hole conditions at
20 this location?
21 A. At the -- after running a
22 16-inch hole section, yeah, I believe that
23 there was some concern about hole conditions.

Page 288:16 to 288:18

00288:16 Q. (BY MR. HAUSER) Let's look at
17 tab 19. This is another new exhibit. It's
18 number 3732.

Page 288:23 to 289:04

00288:23 Q. (BY MR. HAUSER) And this Bates
24 No. BP-HZN-2179MDL00286863.
25 Mr. Albertin, I notice you're
00289:01 not on this e-mail, so if you would like to
02 take a second to familiarize yourself with
03 the document, that's fine.
04 A. Okay.

Page 289:06 to 289:15

00289:06 Q. The second sentence of this
07 e-mail says, However, our FIT is 12.55 ppg
08 and our total -- our TD MW will be 12.1 ppg,
09 which falls just short of the point -- .5 --
10 excuse me, 0.5 ppg margin.
11 Are we talking about the 16-inch
12 casing interval here -- excuse me, the
13 16-inch casing shoe and the 13-and-5/8 casing
14 interval?
15 A. Yes.

Page 290:21 to 291:20

00290:21 Q. (BY MR. HAUSER) Tab 20, please,
22 and this is Exhibit 1339. This is the
23 application for bypass that was submitted on
24 March 15th, 2010. Do you recall reviewing
25 this document?
00291:01 A. I don't recall -- recall
02 specifically reviewing this application.
03 Q. Do you recall contributing any
04 information to this document?
05 A. I assume that I contributed pore
06 pressure and fracture gradient information.
07 Q. Let's turn to Page 6, if you
08 would, please. I'd like to direct your
09 attention to interval No. 4. And which
10 in- -- which interval is that in the well?
11 A. It says, casing size, 16-inch.
12 Q. What's the fracture gradient
13 identified for that well -- excuse me, for
14 that interval?
15 A. So reading the number in that
16 Interval No. 4, 13 pounds per gallon.
17 Q. And the formation test
18 identified at the 16-inch shoe?
19 A. It says the same value,
20 13 pounds per gallon.

Page 292:02 to 292:12

00292:02 Q. (BY MR. HAUSER) Do you know if
03 BP ever performed a pressure integrity test
04 at the 16-inch shoe that yielded a 13.0
05 result?
06 A. I don't feel if it yielded
07 that -- that result. My recollection is that
08 we did perform an FIT at the 16-inch shoe.
09 Q. That's the one we saw that was
10 12.55?
11 A. I believe it was the -- the one
12 that --

Page 292:21 to 292:24

00292:21 Q. (BY MR. HAUSER) Tab 17.
22 A. 17, okay. Okay. So the
23 FIT here is 12.55 pounds per gallon on -- on
24 this test.

Page 293:06 to 293:17

00293:06 Q. (BY MR. HAUSER) Let's move on
07 to tab 21. Do you recognize this document?
08 A. Daily geological report.
09 Q. Oh, I'm -- I'm sorry, this is
10 actually a collection of daily geological
11 reports.
12 A. Okay.
13 Q. It's been entered previously as
14 Exhibit 1332. I'd like to direct your
15 attention to March 19th, which hopefully is
16 about five pages in.
17 A. Okay.

Page 294:11 to 295:01

00294:11 Q. (BY MR. HAUSER) The -- in the
12 upper box, there is a casing shoe for the
13 6 -- there is lines -- casing shoe of 16-inch
14 casing, FIT equals 12.55. Do you see that?
15 A. Sorry, I'm still looking for it.
16 Q. Sure.
17 A. Right, okay.
18 Q. Okay. And then in the box, it
19 says activity in the last 24 hours. Third
20 sentence says, "Start increasing well weight
21 to 12.3 ppg while drilling ahead."
22 Do you see that?
23 A. Yes.
24 Q. Do you understand that BP used
25 12.3 mud weight while drilling ahead at this
00295:01 time?

Page 295:03 to 296:25

00295:03 A. I see that -- that's stated in
04 the geological report.
05 Q. (BY MR. HAUSER) What's the
06 margin between 12.33 and 12.55? Excuse me.
07 What's the margin between
08 12.3 ppg and 12.55 ppg?
09 A. Well, the -- the difference
10 is .25, but, again, my -- the way I -- I -- I
11 calculate margin for my purposes is not
12 necessarily based on numbers in this
13 geological report.
14 Q. Let's look at tab 22, please.
15 This is Exhibit 2654, and I'm going to read
16 the Bates number, just in case. The Bates
17 number is BP-HZN-MBI00114042. This is dated
18 March 23rd, 2009.
19 It says, The LOT brock -- broke
20 over at 18 -- excuse me, 1480 psi, which is
21 above the overburden if 14.5 ppg causing
22 uncertainty about its use on this as a
23 formation tool.
24 Do you agree that a LOT that is
25 above the -- the -- above the overburden has
00296:01 limited usefulness as a formation evaluation
02 tool?
03 A. I'm not sure exactly what is
04 meant by "formation evaluation tool." What I
05 would say about leak-offs above overburden is
06 that we -- we don't understand exactly the
07 mechanism that leads to -- to rocks that are
08 stronger than overburden.
09 Q. Is it unusual to get a leak off
10 above overburden?
11 A. In my opinion, it is rather
12 unusual.
13 Q. I'd actually like to direct
14 everyone's attention to tab No. 52 in the PSC
15 binder. Okay.
16 The second e-mail on this
17 document in the bottom is an e-mail from you
18 to Randall Sant and Mark noting the leak off
19 is well above the overburden at the last
20 shoe.
21 And then it says, 13-and-5-inch
22 shoe at 13,145 feet, total vertical depth,
23 kelly , with only 5 -- 5, dot, dot, dot, with
24 only 5 feet of rathole. Drill to 13160 feet
25 and perform LOT.

Page 297:08 to 297:14

00297:08 Q. (BY MR. HAUSER) Do you know if

09 the -- the subsequent formation integrity
10 test was performed with only 5 feet of
11 rathole?
12 A. I -- I assume that it was
13 performed after drilling 10 feet -- at least
14 10 feet of new formation.

Page 297:21 to 298:13

00297:21 Q. (BY MR. HAUSER) On the second
22 page of this document, it's the same e-mail,
23 farther down it says, "We are discussing an
24 open hole LOT."
25 What is that open hole LOT?
00298:01 A. I would define an open hole leak
02 off test would be after drilling more than
03 the 10 to 50 feet after you've drilled some
04 additional hole, that you would determine the
05 formation strength in that newer, greater
06 open hole length.
07 Q. It says, "There is much
08 opposition to this."
09 Who opposed?
10 A. Drilling engineering team, I
11 would say, would -- is who I was referring to
12 there. I don't remember specifically who was
13 opposed to it.

Page 298:18 to 299:23

00298:18 Q. (BY MR. HAUSER) Performing
19 the -- performing the open hole LOT. You
20 said there was much opposition -- strike
21 that.
22 It says, "We have been
23 discussing an open hole LOT with much
24 opposition."
25 What was your -- what was your
00299:01 recommendation with regard to whether an open
02 hole LOT should have been performed?
03 A. My idea for performing an open
04 hole leak off test was to try and address
05 this -- finding an explanation for whether or
06 not the formation strength that we had
07 observed at the shoe was something that was
08 persisting for the -- the entire hole length
09 or whether it was something that was more
10 local to the -- the formation at the shoe.
11 Q. Let's turn back to the previous
12 page. Line -- towards the bottom, the
13 third-to-last line on the -- on the page,
14 says, it says, option, when not a valid LOT,
15 someone perform another casing test.
16 Did you believe this was a valid

17 LOT?
18 A. I posed it as an option because
19 a -- I wanted us to at least discuss that
20 possibility, did we -- did we drill open
21 10 feet of new formation.
22 Q. Was a second LOT performed at
23 the shoe?

Page 299:25 to 300:11

00299:25 A. I -- I don't think so. I don't
00300:01 recall, but I'm pretty sure we did not repeat
02 or do an open hole leak off test.
03 Q. (BY MR. HAUSER) Do you recall
04 why the decision was made not to perform a
05 second LOT at this shoe?
06 A. No, I -- I don't recall why the
07 decision was made not to perform an open hole
08 leak off test.
09 Q. Do you understand why the people
10 were opposed -- the drilling engineers were
11 opposed to performing a second leak off test?

Page 300:13 to 300:20

00300:13 A. I'd -- I'd speculate that there
14 is a risk of uncovering a weak formation,
15 non-shale, and that would be the primary
16 reason for not doing an open hole leak off
17 test.
18 Q. (BY MR. HAUSER) So the concern
19 was well stability?
20 A. Just a -- a --

Page 300:22 to 300:25

00300:22 A. (Continuing) It would be my
23 opinion that one thing you might worry about
24 would be that you would be testing a silt or
25 a sand that has much lower strength.

Page 302:02 to 302:08

00302:02 Q. (BY MR. HAUSER) Tab -- tab 22.
03 What would you say is the -- the drilling
04 margin identified in this daily pore pressure
05 fracture gradient report?
06 A. I -- I would be hesitant to --
07 to quote a drilling margin from -- from these
08 numbers. Again, I -- I would look at --

Page 303:21 to 304:08

00303:21 Q. This report identifies that the
22 last FIT at this shoe was 14.60 ppg. And
23 then down in the "Additional Observation," it
24 writes -- it says, "LOT brokeover at 1480
25 psi, which was above the overburden of 14.5
00304:01 ppg, causing uncertainty about its usefulness
02 as a formation evaluation tool.
03 A. Okay.
04 Q. "Maximum ECD of 13.7 based on
05 the possible sand frac at the 13250 sand."
06 Based on the information in this
07 report, how would you characterize the
08 drilling margin at this time?

Page 304:10 to 304:13

00304:10 A. As -- as on previous reports, I
11 would hesitate to make an interpretation
12 about the drilling margin based on the quotes
13 of these numbers.

Page 304:19 to 304:24

00304:19 A. So with a FIT of 14.6 pounds per
20 gallon, I guess I don't see anything
21 immediately from -- from reading over it here
22 quickly that that would be a flag of -- that
23 would say to have a discussion about stopping
24 drilling.

Page 305:13 to 305:15

00305:13 Q. If that's -- if that's accurate,
14 would a mud weight of 14.1 be likely to cause
15 fractures at this interval?

Page 305:17 to 305:20

00305:17 A. It -- it -- it would depend on
18 whether or not your stress cage additives
19 would be strengthening the sands to the point
20 where you could drill with that mud weight.

Page 305:24 to 306:03

00305:24 Q. This report reflects a certain
25 degree of uncertainty about the usefulness of
00306:01 the LOT of 14.5 or the FIT of 14.6. Is it
02 safe to drill ahead without a LOT in which
03 you're certain?

Page 306:05 to 306:13

00306:05 A. You know, based on the
06 interpretation of that test, if you had
07 achieved the objectives of the -- the FIT,
08 that is, you've -- you've proven that you've
09 got integrity of the shoe, and you've
10 convinced yourself that you've tested the new
11 formation and it was very strong, I -- I
12 don't see a reason why you wouldn't drill
13 ahead with that -- that leak off test result.

Page 306:19 to 308:08

00306:19 A. I'm not sure exactly what's
20 referred to as formation evaluation tool, but
21 in -- in my opinion, regarding stresses in
22 the subsurface, the interpretation of the --
23 the leak off test or FIT and how it relates
24 to the -- the stresses for the entire open
25 hole section is always subject to some
00307:01 uncertainty.

02 Q. (BY MR. HAUSER) Let's move on
03 to tab 25. This is an e-mail from you to
04 Brian Morel, among others. It's
05 Exhibit 1343. Do you recall drafting this
06 e-mail?

07 A. Yes, I do recall this e-mail.

08 Q. You say, Team, either the rock
09 or the casing and cement are very strong. I
10 think it's -- I think it's safe to say that
11 this test is not indicative of the true
12 fracture strength of the average shale that
13 we're about to drill, which I expect is much
14 lower than this FIT suggests.

15 What interval are you talking
16 about here?

17 A. This was the -- the FIT taken at
18 the 9-and-7/8-inch casing shoe.

19 Q. So this would be at the -- so
20 this would be the 9 -- okay, at the 9-and-7/8
21 casing shoe. So this would be the fracture
22 gradient that was -- for the -- operable for
23 the 7-inch casing interval?

24 A. That's correct, the -- the final
25 hole section.

00308:01 Q. Do you know if a second LOT or
02 FIT was ever performed at this interval, for
03 this interval?

04 A. I don't believe there was a
05 second FIT or leak off test.

06 Q. Do you know -- do you know why
07 they said it was made not to perform a second
08 integrity test?

Page 308:10 to 308:13

00308:10 A. I believe it was because we had
11 demonstrated integrity at the shoe and
12 demonstrated that the -- the formation was --
13 was strong.

Page 308:18 to 309:23

00308:18 Q. (BY MR. HAUSER) Pardon me, let
19 me start it over.
20 The result of this pressure
21 integrity test was 16.0. You believe that
22 was a valid result for that -- for that
23 location?

24 A. Yeah, I believe the results of
25 this FIT were a -- a valid -- it was a valid
00309:01 test.

02 Q. Let's look very quickly at
03 tab 28, specifically -- and this is
04 Exhibit 1571.

05 A. Okay.

06 Q. Specifically the attachment to
07 this e-mail. Now, you testified earlier that
08 one of the things you look at to determine
09 whether a test is valid is whether the
10 shut-in pressure tapers off -- or the
11 pressure tapers off after shut-in, correct?

12 A. That's correct.

13 Q. Does it do so on this test?

14 A. Does -- does not appear to,
15 based on the way the data is entered on this
16 spreadsheet.

17 Q. And this is -- this is the FIT
18 that yielded the 16.0 fracture gradient
19 figure; is it not?

20 A. I believe so, yes.

21 Q. Is there anything in this curve
22 that rules out the possibility that cement or
23 casing factored into the result?

Page 309:25 to 310:24

00309:25 A. I guess the answer is I don't --
00310:01 I don't see anything in this test -- repeat
02 the question again, make sure I answer
03 correct.

04 Q. (BY MR. HAUSER) Let me ask it
05 another way.

06 What about this test indicates
07 to you that it's a valid result?

08 A. Good linear buildup and a -- no
09 pressure decline after the -- after stopping

10 pumping.
11 Q. But after shut-in, there's no
12 tapering off, correct?
13 A. No, that -- that's correct.
14 Q. Would you agree that the slope
15 of the casing test and the formation test are
16 more similar than you typically observe in a
17 FIT?
18 A. They are -- they are very
19 similar. I'm not sure if they are -- if it's
20 abnormally similar.
21 Q. I may have asked you this
22 already, but do you understand why the
23 decision was made not to perform a second
24 test at this interval?

Page 311:01 to 311:22

00311:01 A. I believe the -- the reasoning
02 was that we had demonstrated integrity of the
03 shoe and then demonstrated that the formation
04 appeared to be very strong. So it achieved
05 the objectives of the test.
06 Q. (BY MR. HAUSER) There was no
07 concern about weak formation at this -- in
08 this interval?
09 A. There were certainly a
10 interpretation that we -- we would be
11 encountering sands in the bottom hole
12 section, and the sands are always interpreted
13 to be weaker than the shales.
14 Q. Now, you testified that you
15 believe that the 16.0 was valid, but your
16 e-mail on -- behind tab 25 says, "I think
17 it's safe to say this test is not indicative
18 of the true fracture strength of the average
19 shale that we are about to drill."
20 In your opinion, what was the
21 true fracture strength of the average shale
22 that you were about to drill?

Page 312:03 to 313:23

00312:03 A. So the -- the -- the e-mail
04 is -- is regarding the -- the high value of
05 this -- this FIT, and I'm posing possible
06 explanations for why the value is so high.
07 And the reason that I make the statement that
08 I don't think it's indicative of the -- the
09 average shale strength for the rest of the
10 hole section is that I just don't understand
11 the mechanism that leads to a -- an FIT value
12 at the shoe that's higher than overburden.
13 So from a practical standpoint,

14 me trying to understand substantive stresses,
 15 I fall back on a -- a model for the shale
 16 strength that is lower than the -- the FIT
 17 value at this depth.
 18 Q. (BY MR. HAUSER) And that's
 19 memorialized in the last -- is that
 20 memorialized in the last sentence of this
 21 e-mail, which is, At any rate, we are
 22 probably all on the same page here. We
 23 should manage drilling this last hole section
 24 with the expectation that the shales will
 25 fail at about the predicted value less than
 00313:01 the overburden, which is about 15.5 pounds
 02 per gallon at the shoe?
 03 A. Yes, that -- the -- that was my
 04 intent in writing that sentence, is that
 05 we -- we should expect a more reasonable
 06 shale fracture gradient based on models and
 07 not expect all the shales to be as strong
 08 as -- as that shale locally at the shoe here.
 09 Q. And what factors led you to
 10 conclude that the 16.0 was valid?
 11 A. There was none -- there were
 12 none of the, I guess, standard issues that we
 13 would look at in a -- in a leak off test or
 14 FIT that would be a flag that it was a
 15 invalid test; namely, a very steep pressure
 16 decline. On the -- on the other hand, this
 17 is a very solid pressure after the pumps are
 18 shut in.
 19 Q. Okay.
 20 A. And with open hole exposed, just
 21 because the value is higher than overburden,
 22 we may not understand the mechanism, but that
 23 doesn't dismiss it as a valid test.

Page 314:06 to 314:12

00314:06 Q. (BY MR. HAUSER) Tab No. 26,
 07 which we're going to mark as Exhibit 3734,
 08 and that is base No. BP-HZN-2179MDL00247809.
 09 The full -- first full e-mail at
 10 the bottom of this page from Brian Morel to
 11 Tim Burns and Mark Hafle -- first, who is Tim
 12 Burns?

Page 314:24 to 315:09

00314:24 Q. It says, We did a second case --
 25 test on the casing to 1500 which isn't on the
 00315:01 report, as we are not expecting to get
 02 anywhere near close to 16.0 ppg with the lot,
 03 we decided not to test any higher than 1500
 04 psi. So when pressure did get that high on

05 the lot we opted to shut down without going
06 to leak off because we wouldn't know if it
07 was casing or formation.
08 Can you explain why BP decided
09 not to test above 1500 psi?

Page 315:11 to 315:22

00315:11 A. I -- I'm not a drilling
12 engineer, but I -- I believe the -- the
13 reasoning is that if you -- you've tested
14 your casing to a certain pressure value, that
15 you don't want to exceed that in the leak off
16 test because if you did see a leak off, you
17 wouldn't know whether it was the casing that
18 had failed or if you actually had initiated a
19 fracture in the open hole.
20 Q. (BY MR. HAUSER) Is that why
21 they didn't take the second LOT to 16.0?
22 A. I assume so.

Page 315:24 to 316:07

00315:24 A. (Continuing) Well, it was --
25 actually, let me -- let me revise that. I
00316:01 think what -- what Brian is -- is referring
02 to here is that doing a second case -- second
03 test on the casing, so not a second leak off
04 test, but there were two casing tests.
05 Q. (BY MR. HAUSER) Fair enough.
06 A. And then one subsequent leak off
07 test.

Page 317:01 to 317:12

00317:01 A. In my opinion, if the formation
02 is stronger than the casing, that I think
03 you've demonstrated you have extremely
04 competent rock.
05 Q. (BY MR. HAUSER) And you believe
06 the -- the formation was stronger than the
07 casing at that depth?
08 A. I believe it was a valid test.
09 I don't necessarily understand the -- again,
10 the mechanism for generating such strong rock
11 at that depth, but I believe it was a valid
12 test.

Page 318:01 to 319:18

00318:01 Q. Very quickly, I want to direct
02 your attention to tab 33, if you would,
03 please. This is an e-mail from you to Kurt

04 Mix -- excuse me, Kurth, dated Saturday,
 05 April 24th. It says post well Macondo
 06 fracture gradient. And it says see
 07 attachments behind it. MC252 Macondo PPFG.
 08 Is this the final pore pressure fracture
 09 gradient prediction that you compiled over
 10 the course of the Macondo well?
 11 A. Yes.
 12 Q. And these numbers are expressed
 13 in total vertical depth and psi; is that
 14 correct?
 15 A. That's correct.
 16 Q. And so if we converted these
 17 psi figures into pounds per gallon, would we
 18 know what you believed the fracture gradient
 19 to be at each corresponding depth?
 20 A. Yes, you --
 21 Q. I suppose the same also true
 22 that they -- these are the fracture
 23 gradients, just expressed in psi?
 24 A. That's correct, this was my
 25 interpretation of what the com- -- what
 00319:01 composite means in sand and shale fracture
 02 gradients for the -- for the well.
 03 Q. And this would be taking into
 04 account all the data that was obtained over
 05 the course of the drilling?
 06 A. Right.
 07 Q. And just to clarify when you say
 08 it's a composite figure taking into account
 09 sand and shale, is that merely a
 10 function of taking an average of the two
 11 figures, or is there a mathematical equation?
 12 A. No, what I mean by that is for
 13 specific sands that we actually cut with the
 14 drill bit in the Macondo well I would use an
 15 estimate for the fracture gradient in that
 16 interval. For shale intervals I would use
 17 the appropriate rock strength model for that
 18 interval.

Page 319:23 to 321:05

00319:23 MR. HAUSER: Okay. So this would be
 24 3735, and it's Bates
 25 No. BP_HZN_2179MDL00442953.
 00320:01 Q. (BY MR. HAUSER) Now we're going
 02 to move to tab 30. I believe you were asked
 03 questions about this document before. I'm
 04 looking at the e-mail from Mr. Bodek to
 05 Michael Beirne with a cc to Brian Richie and
 06 Mark Hafle. I'll try to direct your
 07 attention to a specific part of this e-mail
 08 because it's long and it's one paragraph, but
 09 it's about two-thirds of the way down, the

10 sentence that begins with, The sand that we
 11 took in the initial Geotap pressure was in --
 12 in, was measured at 14.15 ppg.

13 Do you see that sentence?

14 A. Yes, I do.

15 Q. Okay. Then it continues on, the
 16 last minimum surface weight we could use to
 17 cover the pore pressure in this sand was
 18 14.0. This would give us approximately
 19 14.2 ppg over the formation sand. If we
 20 drill ahead with 14.0 surface mud weight
 21 14.2 ESD our surface density would be
 22 approximately 14.4 to 14.5. We had already
 23 experienced static losses with the
 24 14.5 pps -- ppg ESD.

25 Did I read that correctly?

00321:01 A. Yes.

02 Q. What does -- what does loss at
 03 14.5 ESD tell you about the formation
 04 strength in this interval?

05 A. That at --

Page 321:07 to 322:01

00321:07 A. (Continuing) I believe if you
 08 were experiencing losses at a static identity
 09 of 14.5 pounds per gallon, that you could
 10 infer that the -- the weakest formation in
 11 the open hole section, you don't know exactly
 12 where, but somewhere in that open hole
 13 formation there would be a rock that's weaker
 14 than 14.5 pounds per gallon equivalent.

15 Q. (BY MR. HAUSER) Would it be
 16 fair to say that the 16.0 pressure test we
 17 looked at earlier did not reflect the true
 18 strength of the weakest point in this
 19 interval?

20 A. That's -- I think that's an
 21 accurate statement.

22 Q. Mr. Bodek continues on, "It
 23 appears that we had minimal, if any, drilling
 24 margin."

25 Would you agree with that
 00322:01 statement?

Page 322:03 to 322:15

00322:03 A. My -- my definition of drilling
 04 margin would be the highest pore pressure and
 05 the weakest formation. So I'm just trying to
 06 look specifically at the static density value
 07 that he is quoting here --

08 Q. (BY MR. HAUSER) Sure.

09 A. Versus what we know about the

10 pore pressure. Again, by my definition, if
11 we're losing at 14.5 pounds per gallon and we
12 have a sand exposed that we have a pressure
13 measurement of 14.15 pounds per gallon, we
14 still have -- we're in between that pore
15 pressure and fracture gradient.

Page 322:17 to 322:19

00322:17 A. For those two numbers that I
18 quoted, approximately 4 tenths of a pound per
19 gallon.

Page 322:25 to 323:05

00322:25 Q. And very slowly and cautiously
00323:01 drill the requisite 100 feet of additional
02 formation.
03 Do you have an understanding
04 about why the decision was made to drill the
05 final 100 feet?

Page 323:07 to 323:11

00323:07 A. I don't recall all of the
08 details about that decision. My recollection
09 is that it had to do with giving us
10 sufficient hole to adequately log the bottom
11 hole section.

Page 330:07 to 330:23

00330:07 Q. (BY MR. DAVIS) On a regular
08 basis where were the people who were
09 monitoring realtime data? Before you answer,
10 there was somewhat -- one could do that at
11 the rig site, right?
12 A. Correct.
13 Q. There was the room with the
14 screens?
15 A. Yeah, I haven't been on the rig,
16 so I assume there were screens there with
17 realtime information.
18 Q. Was there a permanent site off
19 the rig where people were monitoring realtime
20 data?
21 A. We did not have a realtime
22 operation center. We had an operations room
23 with realtime displays.

Page 332:02 to 332:05

00332:02 Q. Mr. Albertin, knowing everything
03 that you know now, is there anything that you
04 wish the Tiger team had done differently with
05 respect to the Macondo well?

Page 332:07 to 332:12

00332:07 A. I think based on the events, the
08 kicks and losses during drilling of the
09 Macondo well, during the drilling phase of it
10 I think it just points to the need for a
11 continued effort on good predrill forecasting
12 and diligent pressure detection work.

Page 334:05 to 334:10

00334:05 Q. And you mentioned you consider
06 the question with respect to you personally.
07 Is there anything that you personally then --
08 that you -- that you wish you personally had
09 done differently, with respect to the Macondo
10 well?

Page 334:12 to 335:01

00334:12 A. I think the -- the events that
13 we experienced, the kicks and the losses --
14 not the blowout -- the kicks and losses that
15 we had with drilling, I had a role in playing
16 through my efforts in pressure forecasting,
17 pressure detection served as, I think, first
18 and foremost, a reminder about the importance
19 of the work, accurate -- as accurate as
20 possible pre -- predrill forecasting work and
21 pressure detection work.
22 My -- my specific take-away from
23 Macondo, I think would really be centered
24 around the use of realtime gas information
25 and I think a more -- a better way of
00335:01 displaying time data.

Page 336:05 to 336:20

00336:05 Q. (BY MR. DAVIS) With hindsight
06 do you wish the rate of penetration had been
07 slower at that time?
08 A. I think it's a subject of
09 ongoing debate about how to handle hole
10 sections when approaching TDM, what
11 appropriate ROPs would be. I think it's --
12 it'll always be a hole section by hole
13 section discussion that we have.
14 Q. Do you personally have an

15 opinion on that point as you sit here today?
16 A. I have an opinion on it.
17 Q. And what is that opinion?
18 A. My opinion is to collect data at
19 a rate and allow enough time for analysis to
20 occur.

Page 337:21 to 338:08

00337:21 Q. And just to clarify or just to
22 confirm what I understand was your testimony
23 was earlier today, you're not aware of any
24 affirmative steps BP took to deliberately
25 slow the rate of penetration in order to
00338:01 allow for additional pore pressure fracture
02 gradient analysis; is that correct?
03 A. We didn't have many issues with
04 the remaining hole sections. So it's
05 difficult to say in drilling those hole
06 sections whether we had the opportunity to
07 employ the -- the things we were discussing
08 after the 13-and-5/8-inch kick.

Page 338:16 to 339:02

00338:16 A. Yeah, I don't -- I don't recall
17 a specific setting where -- where we had the
18 discussion, hey, we need to reduce our ROP to
19 analyze the data.
20 Q. (BY MR. POTE) Okay. And I
21 wasn't really asking you, though, about a
22 setting where you had the discussion. Would
23 there have been the opportunity based upon
24 drilling activities that occurred after
25 March 8th for reduced rate of penetration in
00339:01 order to conduct additional timely analysis
02 of Tiger team type issues?

Page 339:04 to 339:06

00339:04 A. I felt that we had adequate time
05 for pressure detection in the subsequent hole
06 sections.