

Transcript of the Testimony of  
**The Joint United States Coast  
Guard/Bureau of Ocean Energy  
Management Investigation**

Date taken: April 6, 2011  
AM Session

USCG/BOEM Board of Investigation (Re: Deepwater  
Horizon)

***\*\*Note\*\****

All **electronic deposition & exhibit files**  
are available at **[www.psrdocs.com](http://www.psrdocs.com)**.

Please call or e-mail [reporters@psrdocs.com](mailto:reporters@psrdocs.com) if you need a  
**Username and Password.**

**Professional Shorthand Reporters, Inc.**

Phone: 504-529-5255

Fax: 504-529-5257

Email: [reporters@psrdocs.com](mailto:reporters@psrdocs.com)

Internet: [www.psrdocs.com](http://www.psrdocs.com)

USCG/BOEM BOARD OF INVESTIGATION  
INTO THE MARINE CASUALTY, EXPLOSION, FIRE,  
POLLUTION AND SINKING  
OF MOBILE OFFSHORE DRILLING UNIT  
DEEPWATER HORIZON, WITH LOSS OF LIFE  
IN THE GULF OF MEXICO, 21-22 APRIL 2010

WEDNESDAY - APRIL 6, 2011

AM SESSION

\* \* \* \* \*

The Transcript of the Joint United States Coast Guard/Bureau of Ocean Energy Management Investigation of the above entitled cause before James T. Bradle, a certified court reporter authorized to administer oaths of witnesses pursuant to Section 961.1 of Title 13 of the Louisiana Revised Statute of 1950, as amended, reported at the Holiday Inn Metairie New Orleans Airport, 2261 North Causeway Boulevard, Metairie, Louisiana, on Wednesday, April 6, 2011, beginning at 8:00 a.m.

1 APPEARANCES :

2

MEMBERS OF THE BOARD :

3

4 CAPTAIN HUNG M. NGUYEN  
CO-CHAIR UNITED STATES COAST GUARD

5

6 DAVID DYKES  
CO-CHAIR, MINERALS MANAGEMENT  
7 SERVICE/BOEMRE

8 HON. JUDGE WAYNE R. ANDERSEN  
U.S. DISTRICT JUDGE (RET.)

9

10 CAPT. MARK R. HIGGINS  
UNITED STATES COAST GUARD

11 JASON MATHEWS  
MINERALS MANAGEMENT SERVICE/BOEMRE

12

13 JOHN McCARROLL  
MINERALS MANAGEMENT SERVICE/BOEMRE

14

15 LCDR. ROBERT BUTTS, COURT RECORDER  
UNITED STATES COAST GUARD

16

17

18 REPORTED BY :

19 JAMES T. BRADLE  
CERTIFIED COURT REPORTER

20

21

22

23

24

25

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

\* \* \*

EXAMINATION INDEX

WITNESS - MICHAEL TODD FRY

(with counsel David Baay, Esq.)

\* \* \*

Page

EXAMINATION BY MR. MATHEWS .....7  
EXAMINATION BY MR. McCARROLL .....69  
EXAMINATION BY CAPT. HIGGINS .....70  
EXAMINATION BY MR. McCARROLL .....88  
EXAMINATION BY MR. JONES .....90  
EXAMINATION BY MR. GODFREY .....92  
EXAMINATION BY MR. BOWMAN .....102  
EXAMINATION BY MR. FANNING .....118  
EXAMINATION BY MR. SCHONEKAS .....123  
EXAMINATION BY MR. BAAY .....135  
EXAMINATION BY MR. DYKES .....142  
EXAMINATION BY CAPT. HIGGINS .....143  
EXAMINATION BY CAPT. NGUYEN .....150

1           CAPTAIN NGUYEN:

2                   The hearing is now reconvened.

3           HON. JUDGE ANDERSEN:

4                   Do you want to go straight to the  
5 witness?

6                   Before the first witness  
7 testifies, yesterday the question was raised  
8 regarding submitting briefs to the Joint  
9 Investigation Team.

10                   As indicated in the introductory  
11 comments before each hearing that Captain  
12 Nguyen has read, should any person have or  
13 believe he or she has information not  
14 brought forward, but which might be of  
15 direct significance, that person is urged to  
16 bring that information to the attention of  
17 the Board.

18                   Please note that the Joint  
19 Investigation Team's final report is due  
20 27 July and any submissions would need to be  
21 well in advance of that date to be  
22 considered.

23                   If anyone has information they  
24 would like to submit specifically about  
25 matters under BOEMRE jurisdiction, for

1 example, well control or DNV's BOP report,  
2 please do so before May 1st, 2011. If you  
3 are submitting a brief, please limit that  
4 brief to 25 pages. Any information or brief  
5 submitted would be considered part of the  
6 record and subject to FOIA.

7 And at the meeting of attorneys  
8 this morning, when I read that statement, as  
9 well, it was asked whether or not after  
10 briefs are submitted, other attorneys and  
11 the public would have access to those briefs  
12 quickly, so that they would know what others  
13 said. We will address that issue later on.  
14 I want to talk with Lieutenant Bray and  
15 Ms. Murphy about that.

16 So thank you for your patience  
17 with our trying to figure out what to do on  
18 that issue.

19 Counsel, are you ready?

20 MR. BAAY:

21 Ready.

22 HON. JUDGE ANDERSEN:

23 Could you please state your name  
24 for the record and please introduce your  
25 client to the Board?

1 MR. BAAY:

2 David Baay, last name is spelled  
3 B-A-A-Y, here with Mike Fry.

4 HON. JUDGE ANDERSEN:

5 Mr. Fry, thank you for being here.

6 This is a federally convened Board and the  
7 testimony you're about to give will be  
8 subject to penalties of perjury, so you have  
9 to tell the truth. Do you understand that?

10 Okay. Could you please raise your right  
11 hand and I will administer the oath.

12 \* \* \* \*

13 MICHAEL TODD FRY,

14 after having been first duly sworn by the  
15 Honorable Judge Andersen, did testify as  
16 follows:

17 HON. JUDGE ANDERSEN:

18 Thank you very much. If anybody  
19 asks you a question you can't understand or  
20 needs to be clarified, just let us know. If  
21 you ever need a break or something, let us  
22 know that as well.

23 THE WITNESS:

24 Okay.

25 HON. JUDGE ANDERSEN:

1                   So thanks very much.

2                   Board questions?

3           EXAMINATION BY MR. MATHEWS:

4           Q       Good morning, Mr. Fry. Can you  
5           please state your full name and spell your  
6           last for the record?

7           A       Michael Todd Fry, F-R-Y.

8           Q       Thank you, sir. And by whom are  
9           you employed, Mr. Fry?

10          A       Transocean.

11          Q       And what position do you hold with  
12          them?

13          A       I am the manager of the Major  
14          Spares and Equipment Exchange Program.

15          Q       And how long have you held that  
16          position?

17          A       Three months.

18          Q       Have you had any other experience  
19          within Transocean?

20          A       Yes.

21          Q       And what positions were those,  
22          sir?

23          A       I was the subject matter expert  
24          subsea superintendent, I was the subsea  
25          superintendent in North American field

1 support, and I was also a senior subsea  
2 supervisor on the drilling rigs themselves.

3 Q Okay. Specifically, to the subsea  
4 superintendent, when you said "North  
5 American field support," is that Gulf of  
6 Mexico solely?

7 A Yes.

8 Q And that's over the entire  
9 Transocean fleet in the Gulf of Mexico?

10 A In the Gulf of Mexico, yes.

11 Q And what rigs were you actually in  
12 the role of senior subsea supervisor?

13 A I was the senior subsea on the  
14 DEEPWATER MILLENNIUM and DEEPWATER FRONTIER.

15 Q Were you ever a subsea supervisor  
16 or subsea engineer prior to that?

17 A I was a subsea supervisor and  
18 subsea trainee on the DEEPWATER PATHFINDER.

19 Q And just going back through that,  
20 from that position up to subsea  
21 superintendent, can you give me a time frame  
22 of how long you were in each one of those  
23 roles?

24 A Sure. I was a subsea trainee for  
25 approximately eight months. I was a night

1 subsea for two years. The two senior subsea  
2 roles, I was a senior subsea on the  
3 DEEPWATER MILLENNIUM for two years and a  
4 senior subsea on the DEEPWATER FRONTIER for  
5 two years and two months.

6 Q And the subsea superintendent?

7 A I was subsea superintendent, North  
8 American field support for approximately  
9 four years. Subject matter expert at the  
10 corporate technical field support for  
11 approximately eight months.

12 Q And what was your role in that  
13 capacity, sir?

14 A As the SME for technical field  
15 support, our global technical field support  
16 was broken up into regions. I was a member  
17 of the subject matter expert investigation  
18 team. So our role -- my role would be if  
19 rigs had questions, technical field support  
20 issues that couldn't be handled at the local  
21 level, it would be passed up to me at the  
22 global level.

23 Q And you were in this position when  
24 the incident occurred?

25 A No, I was at North American field

1 support when it happened.

2 Q Okay. And what is your  
3 educational background, sir?

4 A 12 years of high school. I have a  
5 high school diploma.

6 Q Did you ever have any well control  
7 training while you were at Transocean?

8 A Yes.

9 Q And when was the last time you had  
10 that?

11 A When I was on the DEEPWATER  
12 FRONTIER, so it would have been  
13 approximately 2005, 2006.

14 Q And was that provided by  
15 Transocean or was that an IADC WellCAP  
16 course or what type of course was it?

17 A It was an IADC international well  
18 control.

19 Q Specifically, to your recollection  
20 at that course, do you know if there was any  
21 training provided to you or the other  
22 participants on how to react to a well  
23 control event once the flow is on the rig?

24 A Once it's on the rig?

25 Q Yes, past the BOP stack.

1           A     No, I don't recall that.

2           Q     In that well control training,  
3 what was the premise of the most important  
4 component of well control that they taught  
5 you?

6           A     Identifying the kick.

7           Q     So you would agree that kick  
8 detection is probably the largest, most  
9 important piece to actually responding to a  
10 kick?

11          A     I would say it's the starting  
12 point of, you know, prevention, yes.

13          Q     Do you recall if there was any  
14 training as to bleeding off on your drill  
15 pipe during a kick as being an adequate well  
16 control response?

17          A     I mean, for me, it was five, six  
18 years ago. I don't recall.

19          Q     That's fair. No problem. Were  
20 you ever made aware of an incident that took  
21 place on the DEEPWATER HORIZON on March 8th  
22 with respect to a loss of well control?

23          A     Which year?

24          Q     2010. Right prior to the  
25 April 20th incident.

1           A     I recall hearing something passing  
2     in the hallways, but nothing was brought to  
3     my attention on it.

4           Q     Did you have any responsibilities  
5     directly to the DEEPWATER HORIZON or to the  
6     BOP stack when you were the subsea  
7     superintendent?

8           A     Not responsibilities. I was just  
9     a technical resource if needed.

10          Q     And that technical resource was  
11     provided to the people at the DEEPWATER  
12     HORIZON or was it a resource provided to the  
13     people in Houston?

14          A     Both.

15          Q     And I believe you then went into  
16     the subject matter expert investigation  
17     position?

18          A     Correct.

19          Q     Did you have any role in any type  
20     of internal Transocean investigation  
21     regarding the failure of the BOP stack?

22          A     No.

23          Q     Do you know who is, within  
24     Transocean, who's responsible for the  
25     investigation of the failure of the BOP

1 stack?

2 A There's an investigation team that  
3 has many members on it.

4 Q Is there one particular person  
5 related to the subsea department that you  
6 were in which was responsible for that team,  
7 dedicated to that team?

8 A The investigation subject matter  
9 expert team is separate from the DEEPWATER  
10 HORIZON investigation team. None of the  
11 members of that team went into the  
12 investigation team for the HORIZON. But for  
13 subsea, it would be Geoff Boughton.

14 Q Do you know how many rigs that  
15 they had in the Gulf of Mexico, that  
16 Transocean had in the Gulf of Mexico on  
17 April 20th, approximately?

18 A I would say approximately 14  
19 maybe.

20 Q And do you know how many they have  
21 currently?

22 A I don't. I would say  
23 approximately 12, if I had to guess.

24 Q Were you aware of any  
25 post-incident -- When I say "post-incident,"

1 I'm referring to the DEEPWATER HORIZON  
2 incident. Were you aware of any MMS  
3 inspections on board the Transocean rigs in  
4 the Gulf of Mexico?

5 A Not to my knowledge. I mean, I  
6 don't know.

7 Q Okay. Were you ever made aware of  
8 any type of BOP inspections in the position  
9 that you were in at the time of the incident  
10 conducted by the MMS?

11 A No, not a BOP inspection, no.

12 Q Since the incident, are you aware  
13 of any type of implementations that  
14 Transocean has either made to their  
15 procedures, their maintenance philosophy or  
16 equipment in respect to the failure of the  
17 BOP at the DEEPWATER HORIZON?

18 A Not in regards to the failure of  
19 the BOP, no.

20 Q Are you aware if there's any type  
21 of protection on any of the rigs, not only  
22 the DEEPWATER HORIZON, but any of the  
23 Transocean fleets that protects the MUX  
24 lines?

25 A Explain what you mean by

1 "protection." I mean, they're armor-coated  
2 and have a protective sheathing around them,  
3 but as far as "protection," what do you  
4 mean?

5 Q Well, most of them run through the  
6 moon pool down to the stack, and we're  
7 trying to determine if there was any type of  
8 exterior not associated with the MUX line  
9 itself, but some type of explosion-proof  
10 walls or some type of protection device that  
11 would not allow it to be severed if there  
12 was an explosion within that vicinity?

13 A No, there's nothing like that.

14 Q I want to move on to the BOP stack  
15 on the DEEPWATER HORIZON. Who do you think  
16 is the most knowledgeable person on the rig  
17 itself on the actual functions and  
18 maintenance of the BOP?

19 A It would be the senior subsea.

20 Q Okay. And the function, would the  
21 driller be knowledgeable as well?

22 A Yes. I mean, to be able to  
23 function the BOP, you have to have well  
24 control training. So you have to be trained  
25 in not only well control, but an

1 understanding of the BOP itself.

2 Q Okay. Would the master of the  
3 vessel be knowledgeable of the BOP stack and  
4 its maintenance?

5 A I would say the functionality of  
6 it, yes, but not the maintenance of it. I  
7 wouldn't expect the captain to know how to  
8 maintain the BOP.

9 Q I think you answered the senior  
10 subsea supervisor was the most  
11 knowledgeable. What are some of the  
12 prerequisites to get that position on the  
13 rig?

14 A To move up from night subsea to  
15 senior subsea, you have to have, I say,  
16 proven yourself. You have to demonstrate  
17 your ability to not only take the senior's  
18 role, but you have to have your training,  
19 major tests to be completed, your OJT has to  
20 be completed, you have to have  
21 recommendations from your supervisors, not  
22 only from the senior subsea, but also from  
23 the offshore installation managers. Asset  
24 management in town also has to give the  
25 approval for you to be promoted.

1 Q And when you were on the FRONTIER  
2 and the MILLENNIUM, what type of stacks did  
3 they have on those rigs?

4 A They were Cameron BOPs with  
5 Shaffer controls.

6 Q On both rigs?

7 A Both rigs are identical.

8 Q Okay. And how did you become  
9 familiar specifically to those stacks? Were  
10 you trained by Cameron or were you trained  
11 by Transocean? How were the personnel  
12 trained?

13 A Both through on-the-job  
14 training -- More through on-the-job training  
15 and actual reading of the documentation. So  
16 reading, you know, everything from  
17 engineering bulletins to the rig book.

18 I mean, my background prior to  
19 getting into the oil industry was nuclear  
20 submarines, so having that background, it  
21 was very easy for me to pick up on what  
22 needed to be done.

23 Q And when you were a subsea  
24 superintendent, you had multiple stacks  
25 outside of Cameron, I would imagine, in the

1 Transocean fleet; is that correct?

2 A We have multiple stacks, but the  
3 rigs that I was responsible for had Cameron  
4 BOPs on them.

5 Q And which ones were you  
6 responsible for? Excuse me for  
7 interrupting. But what rigs were you solely  
8 responsible for?

9 A At which time?

10 Q As subsea superintendent.

11 A Prior to -- When I first came into  
12 North American field support, I had the  
13 DEEPWATER HORIZON, the DEEPWATER NAUTILUS  
14 and the DEEPWATER MILLENNIUM, and I also had  
15 the AMIRANTE.

16 Around February, 2010, we had a  
17 reorganization of technical field support,  
18 at which time Billy Stringfellow and myself  
19 split the rigs in the Gulf of Mexico. I  
20 took the Cameron rigs, he took the Hydril  
21 rigs, and we just kind of shared the  
22 responsibility between both of them.

23 Q Okay. And as your role now  
24 with -- I guess it's manager of Major Spares  
25 and Equipment Exchange Program?

1           A     Correct.

2           Q     Are you responsible for other  
3 OEM-provided equipment outside of Cameron?

4           A     The group that I manage is  
5 responsible for all capital assets, not only  
6 well control equipment, but top drives and  
7 thrusters and mud pumps, so it's all capital  
8 assets. So, yes, we deal with multiple  
9 OEMs.

10          Q     Okay. And in respect to well  
11 control training and Cameron, were you ever  
12 provided training on EDS?

13          A     We were provided training. It's  
14 on-the-rig training through our OJT and  
15 through Transocean on-board training.

16          Q     And as your role as a senior  
17 subsea supervisor, what was your specific  
18 responsibilities in an EDS situation?

19          A     It depended on the incident at  
20 hand. I mean, if we were going into -- For  
21 example, if we had a blackout and we were  
22 going into different watch circles, which  
23 means that the rig is actually starting to  
24 move off location, different criteria  
25 mandated different events to happen.

1           If we went into a red circle, for  
2     example, it was an automatic EDS. But if we  
3     had incidents, the senior subsea was to go  
4     to the rig floor and stand by for the next  
5     operation, which possibly would be EDSing.

6           Q     And who else had responsibilities  
7     outside the subsea supervisor?

8           A     It would be the -- I mean, there's  
9     a lot of different responsibilities.

10          Q     I actually have a document in  
11     front of you, if you want to look at it and  
12     refer to it. It's Bates BP-HZN-MBI0010235,  
13     and it's the emergency disconnect procedure  
14     for a well control event. Is that what you  
15     have in front of you, sir?

16          A     Yes.

17          Q     Can you just name some of the  
18     people that are identified as having  
19     responsibilities in there?

20          A     Under which event?

21          Q     I think they're both the same, so  
22     you can do a yellow alert.

23          A     Under the yellow alert, there  
24     would be the driller, the drill crew, the  
25     assistant driller and the subsea engineer.

1           Q     So in accordance with your own  
2     emergency disconnect procedures, there's no  
3     authority or responsibilities of the master;  
4     is that correct?

5           A     Well, this event is laid out for  
6     the drill crew. I'm sure the marine  
7     department has their own kind of plan for  
8     what needs to be done for what happens on  
9     the bridge.

10          Q     But according to -- Who is the  
11     person, the first line of defense in  
12     activating the EDS?

13          A     It would be either the driller or  
14     the senior subsea, whoever is at that point.

15          Q     Okay. And according to the  
16     procedures that you have in your Emergency  
17     Response Manual, it's addressed to the drill  
18     crew and the subsea engineers, correct?

19          A     Correct.

20          Q     Okay. And just from my  
21     experience, looking at this document, would  
22     you determine -- If a subsea engineer  
23     activated the EDS, would he need authority  
24     or permission from the master of the vessel?

25          A     For -- Not for -- If we go into a

1 red watch circle, it's an immediate EDS.  
2 There is no -- There is no wavering between  
3 the requirement. I mean, if we go into red,  
4 for example, and let's say the thrusters  
5 come back on line, there's not a "Hold on  
6 for a minute. We're going to start moving  
7 back." You get into red, you EDS. There's  
8 no question about it.

9 Q Okay. Thank you. And within the  
10 training that you received, I know you said  
11 you received a lot of on-the-job training,  
12 you looked at the manuals, you looked at  
13 some of the stuff that Cameron had provided,  
14 engineering bulletins and product  
15 advisories.

16 Were you ever provided training  
17 specifically to the maintenance of the BOP  
18 stack?

19 A There is no -- During that time  
20 period, there is no courses on maintenance  
21 of blowout prevention equipment, so, no, I  
22 did not.

23 Q Does Transocean have something  
24 specific that they provide to their subsea  
25 engineers, like a manual of when they're

1 supposed to do certain maintenance?

2 A I mean, the rig maintenance  
3 systems, either EMPAC or RMS, would dictate  
4 when different tasks were to be completed.

5 Part of the training and education  
6 program of a subsea trainee moving up  
7 through the ranks is to be mentored by the  
8 senior people on board the rig. But again,  
9 there's not -- Not until recently has there  
10 been a formal disassemble and inspection  
11 type of maintenance type course that's  
12 offered to the industry.

13 Q And who provides that course that  
14 you're speaking about now?

15 A The different OEMs have started  
16 offering these courses as well as, you know,  
17 WEST Engineering offers a course, Hydril,  
18 Cameron, NOV Shaffer. And this is also  
19 pre-incident. It's not a course that came  
20 post-incident. But it's just kind of  
21 changing the mind set of the industry as far  
22 as training.

23 Q Are you aware if the personnel  
24 that Transocean has at the subsea engineer  
25 level actually go to this course now or was

1 it something that you never had available to  
2 you when you were in the subsea engineer  
3 position?

4 A It's in the training matrix.

5 Q Okay.

6 A There have been a lot of changes  
7 recently pre-incident into your required  
8 training due to the fact that we want to get  
9 our guys on the rigs trained more into the  
10 control systems than just how to operate or  
11 how to, you know, open a bonnet and change  
12 ram packers.

13 Q I'm going to move on to the actual  
14 shearing capability of the blowout  
15 preventers. Are you aware if Transocean  
16 determined if their blind shear ram actually  
17 had the capability to shear drill pipe that  
18 was across the stack on the DEEPWATER  
19 HORIZON?

20 A To my knowledge, that was done.

21 Q Okay. I have a document in front  
22 of me, and I'm not real clear with it, and  
23 it's Bates -- I don't actually have the  
24 Bates stamp. It's not on this document.  
25 The Bates stamp is not on the document, but

1 I have the number here. It's a Transocean  
2 document ending in 38805, and it's an Excel  
3 spreadsheet, and it's entitled "Cameron  
4 18-3/4 15M TL BOP." Is that the document  
5 you have?

6 A Correct.

7 Q Can you please explain to me what  
8 I'm looking at here, sir?

9 A Yes. Basically, what this is is a  
10 shear calculation. It's shear calculations  
11 based on the different parameters of the  
12 pipes.

13 Cameron has an Engineering  
14 Bulletin, I believe it's EB-702, which is  
15 how you actually go about figuring out the  
16 shear calculations of drill pipe.

17 What this is is just the  
18 calculation based on different tubulars that  
19 would be used on the rig. Items that are in  
20 green are within the operating parameters.  
21 Items in red are listed to be outside the  
22 recommended shear force of the operating  
23 system.

24 Q So am I to assume just from this  
25 document, it's a calculation, not an actual

1 field test?

2 A No, these are calculations.

3 Q Okay. And you referenced  
4 Engineering Bulletin 702D, and Cameron  
5 actually put out a product advisory around  
6 the end of -- mid 2007, and I have the  
7 document in front of you.

8 It should be the next one in the  
9 pile, Bates stamped CAMCG0003252, which is  
10 the last page of the document, because  
11 that's the product advisory that came out in  
12 June of 2007, which states that "Drill pipe  
13 specifications allow for a large potential  
14 variance in mechanical and dimensional  
15 properties. Consequently, there is a large  
16 variance in the shear force requirement for  
17 given drill pipe specifications. The  
18 variance in the material strength, ductility  
19 and thickness have a significant impact on  
20 the required shear force, and this bulletin  
21 has been updated to address the issue."

22 And it's the Engineering Bulletin  
23 702D, if you can flip the page, was issued  
24 on January 21st, 2008; is that correct, sir?

25 A Correct.

1           Q     Okay. Can you go back to the  
2 document that we had with the spreadsheet?  
3 There's a time stamp on the bottom, and I  
4 don't know who the individual -- what the  
5 initials "HTB" is. Do you know who that  
6 individual is within Transocean, by chance?

7           A     No, I do not.

8           Q     And it says, "The above  
9 information is relative to the Transocean  
10 DEEPWATER HORIZON," and it's stamped  
11 "6-17-2005."

12                     Do you know if Transocean actually  
13 went back in and revisited the calculations  
14 in respect to the product advisory and  
15 Engineering Bulletin 702D that was published  
16 in 2008?

17           A     To my knowledge, what happens is  
18 if there's a change in the tubulars that are  
19 going to be run, the client will give us the  
20 list, and then the calculations are rerun  
21 well per well sometimes.

22                     So not speculating on this  
23 document, but I would guess that this was a  
24 document that was at one time created for  
25 the tubulars that were going to be used, but

1 as we move forward, we ran individual  
2 calculations based on the well plans that  
3 were to be used, and we would reference  
4 those calculations a lot of times if we had  
5 questions with Cameron engineering.

6 Q Do you know if Transocean ever did  
7 perform a field test on the ability of the  
8 blind shear rams to shear drill pipe prior  
9 to splashing it in the Gulf of Mexico?

10 A For the HORIZON?

11 Q Yes, sir.

12 A I wasn't in field support. I  
13 don't know.

14 Q Do you know if it's something that  
15 they do on their other rigs in the Gulf of  
16 Mexico that are newly installed? Because I  
17 assume like the DD-I or DD-II were probably  
18 around when you started being in a subsea  
19 superintendent position.

20 Do you know if there was any type  
21 of field test at that time, where Transocean  
22 actually functioned the blind shear rams and  
23 sheared drill pipe prior to splash?

24 A That is a test that is fairly  
25 common. For example, with a Cameron Super

1 Shear, for example, if we run a shear test  
2 on, say, the DEEPWATER MILLENNIUM and it's  
3 on a piece of -- a set piece of tubulars, we  
4 know that that piece of equipment will shear  
5 it.

6 The concern a lot of times is that  
7 when you do do a shear test, there's damage  
8 that's going to be done to either the ram  
9 blocks or the cavity during that time  
10 period, so I would say a lot of times this  
11 is done pre-commissioning of the BOP.

12 But as far as for other rigs, I  
13 mean, if there are questions about the  
14 calculations, we will engage Cameron and  
15 actually pay for shear tests to be done in  
16 their facility with their engineering  
17 department.

18 Q Okay. In looking at that  
19 spreadsheet again, I know it's under static  
20 condition, has Transocean ever looked at  
21 prior to this incident any type of  
22 calculations or pressures required to shear  
23 and seal a drill pipe that's either  
24 off-centered or during a well control event?

25 A Not to my knowledge.

1           Q     And I'm going to preface my next  
2 line of questions. We had the DNV  
3 individuals here yesterday discussing the  
4 findings, the forensics at Michoud and in  
5 Ohio, and the testimony they discussed was  
6 maintenance was possibly not a cause into  
7 the blind shear ram failure.

8                     But I have a lot of questions  
9 about the Transocean maintenance philosophy,  
10 and not to say it was the cause in the blind  
11 shear ram failure, but we want to have a  
12 better understanding of what actually takes  
13 place in the Gulf of Mexico.

14                    Are you actually familiar with any  
15 type of scheduling of maintenance that was  
16 going to occur on the DEEPWATER HORIZON in  
17 respect to the BOP stack in either the major  
18 overhaul of bonnets or cavities that were  
19 going to take place in 2011?

20           A     Yes.

21           Q     Okay. I have a document in front  
22 of you, and it's the subsea items for 2011,  
23 and I know this document is a draft, it was  
24 presented by Transocean counsel, and it's  
25 Bates stamped TRN-USCG\_MMS-00096390. And

1 can you please tell me with some of the  
2 items, why these were being addressed in  
3 2011?

4 A You had six bonnets, you had  
5 replacement of the Super Shears, Cameron HC  
6 connector, replacing the lower annular with  
7 a rebuilt annular, replacing all the control  
8 hoses, the diverter, the diverter FlexJoint,  
9 paint and blast the BOP stack, the P-frames,  
10 changing out of anodes, replacing shuttle  
11 valves, and replace or rebuild riser spider  
12 and gimbal.

13 Q Okay. And this list was provided  
14 by counsel, but does this list in your  
15 opinion reflect that Transocean was actively  
16 addressing their BOP issues?

17 A Yes.

18 Q And are you familiar with the  
19 subsea maintenance philosophy, sir?

20 A Yes.

21 Q As a matter of fact, are you one  
22 of the authors of the document?

23 A Yes.

24 Q Who else worked with you on this  
25 document from North America?

1           A       From North America, it was Mike  
2       Rogers, Geoff Boughton, Brad Roger, Craig  
3       McCormick, and that was it for North  
4       America.

5           Q       Okay. That's all I need for that.

6                   Now, I know when you were subsea  
7       superintendent, you were only responsible  
8       for the Cameron stacks, and does this  
9       philosophy address all stacks, regardless of  
10      OEM?

11          A       This document is for all of our  
12      rigs worldwide.

13          Q       Now, since no OEM stack is  
14      similar, can you please explain to me how  
15      your condition-based maintenance system ties  
16      in all different OEM stacks into one  
17      philosophy?

18                   I know it's a tough, deep  
19      question, but I'm trying to figure out how  
20      you have multiple OEMs with different types  
21      of components and how it's tied into one  
22      condition-based maintenance system?

23          A       Sure. Even though there's  
24      multiple OEMs, an annular is an annular.  
25      One is made by Hydril, one is made by

1 Shaffer and one is made by Cameron, but the  
2 maintenance and general context is the same  
3 for each.

4 A BOP body, regardless of the OEM,  
5 for the most part has the same components.  
6 So the philosophy document covering the  
7 planning and preparation of between-well  
8 plans, these plans are very similar  
9 regardless of the equipment.

10 Q Okay. Now, when you developed  
11 this document, does it incorporate all of  
12 the OEMs' scheduled or required maintenance  
13 plans or is this solely developed in respect  
14 to, I guess, Transocean's findings and  
15 experience with those components?

16 A The maintenance tasks themselves  
17 are created looking at the recommendations  
18 of the OEMs. This document as it pertains  
19 to the planning of between-well maintenance  
20 is just discussing the maintenance tasks  
21 themselves. It doesn't dive into the  
22 creation of it.

23 I hope that answers your question.

24 Q It does. It helps me. It  
25 explains more than -- I didn't know if you

1 actually tied different OEMs into different  
2 philosophies or not.

3 A No. It's one philosophy for the  
4 entire fleet.

5 Q Now, can you explain to me what  
6 the 365, 1085 and 1825-day preventative  
7 maintenance tasks are?

8 A Yes. I mean, in kind of general  
9 terms, we have multiple, different  
10 maintenance tasks, but once we start getting  
11 outside of your event base, your rig move  
12 tasks, a 365 PM normally is you open and  
13 inspect the equipment and you do a full  
14 operator test on the control system for that  
15 component. The -- I apologize.

16 Q 1085.

17 A Yes, the 1085 and the 1825 get  
18 into more detail. For example, a 1085 for  
19 an annular might be a complete strip-down  
20 and inspection, resealing it, and then you  
21 perform the operator test again.

22 1825-day tasks start to deal with  
23 the major inspections and surveys, all of  
24 which, when you have a 365, a 1085, all of  
25 those are kind of combined as those dates

1 match up.

2           So on a 365-day task, you will do  
3 the rig move tasks as well as the 365. When  
4 you get to 1085, you will have -- It just  
5 keeps kind of combining as you go along.

6           Q     Okay.

7           A     And this is part of our, you know,  
8 continual inspection that we do on the  
9 equipment.

10          Q     I want you to refer to Page 8 of  
11 11, and I think it's item No. 10, and that  
12 actually discusses the 1825-day major  
13 overhaul; is that correct, sir?

14          A     Correct.

15          Q     In the second sentence of the  
16 second paragraph, not the boxed area, but  
17 the first paragraph below there, the second  
18 sentence says, "While 1825-day overhauls are  
19 driven by regulatory requirements in some  
20 locations, this is not mandatory  
21 fleet-wide."

22                   What regulatory requirements are  
23 required and what locations require those?

24          A     As far as the mandatory overhaul?

25          Q     Yes.

1           A     The Norwegian sector, for example,  
2     has a NORSOK regulation, which mandates  
3     every five years your BOPs shall be  
4     completely overhauled and it shall be  
5     recertified, for example. That's an example  
6     of where it's mandatory.

7           Q     Is that the only one, to your  
8     knowledge, where it is mandatory?

9           A     Anywhere where "DNV Drill (N)" is  
10    required. It's also in the Canadian  
11    sectors, Norway. I believe the North Sea as  
12    well.

13          Q     Okay. And specifically, for the  
14    Gulf of Mexico and this philosophy, does the  
15    1825-day major overhaul take into  
16    consideration API RP 53?

17          A     RP 53, Transocean did not view  
18    that as a mandatory requirement.

19          Q     And then if you look at the third  
20    paragraph, two below there, it starts with  
21    "Field support shall be responsible and held  
22    accountable for arranging and overseeing all  
23    major overhauls conducted at third party  
24    facilities."

25                   Who is the "field support"?

1           A     That would be people like myself,  
2     Billy Stringfellow, the regional field  
3     support groups for that area.

4           Q     To your knowledge, on the  
5     DEEPWATER HORIZON, did all of the BOP  
6     subcomponents meet Transocean's own  
7     philosophy of having this 1825-day major  
8     overhaul?

9           A     The BOP equipment, based on our  
10    1825-day preventative maintenance tasks,  
11    were in line with our standard and the  
12    subsea maintenance philosophy.

13          Q     So all of the components on the  
14    stack had -- Maybe I misunderstood your  
15    answer. Are you telling me that the  
16    1825-day major overhaul is not mandatory?

17          A     You would have to -- You would  
18    have to read the language of the 1825-day  
19    overhaul procedure to understand it.

20                    Kind of paraphrasing, the 1825-day  
21    PM, when it comes up, is based on the  
22    condition-based inspections that have been  
23    done over the five-year period for that  
24    piece of equipment.

25                    If it's found to not require

1 overhaul, the equipment is moved forward.  
2 It continues to be in service based on those  
3 inspections.

4 If there's nothing wrong with the  
5 equipment based on inspections by the OEM,  
6 it's not mandated to shop the equipment  
7 based on our preventative maintenance  
8 procedures.

9 Q Okay. Our records from the BOEM,  
10 we went and pulled when the actual DEEPWATER  
11 HORIZON started operations in the Gulf of  
12 Mexico, and it was on or around August 24th,  
13 2001, in Mississippi Canyon 476.

14 1825 days after that puts me  
15 somewhere in the same time frame, around  
16 2006, and we're now, when the incident  
17 occurred, April 20th, 2010, you're now  
18 another four years, which is probably  
19 another 1600, 1700 days.

20 Are you testifying to that the  
21 condition-based maintenance that Transocean  
22 had in place allowed some components of the  
23 BOP stack to almost go 10 years past the  
24 18 -- well, not 10 years past, but 10 years  
25 in service and not have a major overhaul?

1           A       We systematically test and inspect  
2   our equipment.  The majority of the  
3   components on the DEEPWATER HORIZON's BOP  
4   has been disassembled and inspected.

5                   Based on the interim field  
6   inspections done by the OEM, if the  
7   component is not found to be outside of its  
8   operating tolerances, that piece of  
9   equipment stays in service.  So based on the  
10  recommendations of the OEM, we keep the  
11  equipment in service.

12                  Cameron's periodic inspection  
13  document, EB-902, under the  
14  "recertification" category states that  
15  equipment not meeting specifications should  
16  be shopped for remanufacture or repair.

17                  We found over the years that  
18  equipment in service, if under normal  
19  operating conditions, the wear limits on  
20  them, they don't change, so there's not a  
21  reason to send it to the shop for a major  
22  overhaul if there's nothing wrong with it.  
23  There's no requirement for it.

24                Q       And how do you know what the  
25  operating tolerances are?

1           A     That's why we bring the OEM out  
2     and have them do the inspections.

3           Q     So Cameron actually comes out?

4           A     Correct. And that's part of the  
5     yearly field inspections that we have done.

6           Q     And they do that to each  
7     subcomponent of the stack?

8           A     The major components to the BOP,  
9     they will come out and visually inspect.

10           Now, other subassembly components,  
11     it's their preference to have the equipment  
12     sent to the shop just because of the  
13     timeline it takes to have these things  
14     overhauled.

15           It's easier to send something to  
16     the shop than it is to disassemble it on the  
17     rig and spend days and days trying to get  
18     the inspector to witness or to inspect it,  
19     then they got to send it in to engineering  
20     for review, then it comes back. It's faster  
21     just to change the component out.

22           Q     To your knowledge, does  
23     Transocean -- And I know in your role, this  
24     is probably what you're now doing  
25     day-to-day, but does Transocean have access

1 to a rotating inventory of BOP components?

2 A There is a rotating inventory, so  
3 I would say "yes."

4 Q And do you know why -- I mean, I  
5 know your testimony is that the  
6 condition-based maintenance on the DEEPWATER  
7 HORIZON stack was you had your yearly  
8 inspections where you checked it, visually  
9 inspect it, but do you know why Transocean  
10 allowed the components to be four years  
11 after the five-year major overhaul  
12 requirement, their own philosophy, if they  
13 had a rotating inventory, why they would not  
14 switch out one component at a time to try to  
15 bring it in and break it apart and do the  
16 overhaul at the beach?

17 MR. FANNING:

18 Jason, can I ask you --

19 MR. MATHEWS:

20 Yes, sir.

21 MR. FANNING:

22 Some of these questions are  
23 getting long-winded.

24 MR. MATHEWS:

25 Yes, they are. I'm sorry.

1 MR. FANNING:

2 My mind is not that great. I  
3 can't remember the beginning of the  
4 question.

5 MR. MATHEWS:

6 I'm sorry. I'm not an eloquent  
7 lawyer like you, Mr. Fanning.

8 MR. FANNING:

9 Believe me. I'm learning. I'm  
10 learning from you. The witness may  
11 understand, but I don't. I'm trying to make  
12 notes.

13 MR. MATHEWS:

14 Okay.

15 EXAMINATION BY MR. MATHEWS:

16 Q If you have a rotating inventory,  
17 why would Transocean not pull the component  
18 off from the major overhaul when it was  
19 required to get the major overhaul? Why  
20 would they not switch out one component at a  
21 time to not have a four-year lay-over on a  
22 major overhaul requirement in their own  
23 philosophy?

24 A If there's nothing wrong with the  
25 component, there's not a reason to shop it.

1 Q Okay. And then -- I'm sorry.

2 A And that's in the philosophy  
3 document.

4 Q Okay. Do you know how much a ram  
5 block actually costs?

6 A A ram block?

7 Q Approximately, yes, sir.

8 A Not off the top of my head.

9 Q Okay. Do you know if Transocean  
10 actually has serial numbers to track their  
11 components?

12 A The serial numbers are entered  
13 into the RMS system. The problem is when a  
14 component goes through a major overhaul,  
15 that number changes, and that's for the  
16 majority of the OEMs. So even if we had an  
17 original serial number, it goes to the shop,  
18 it's going to come out with a different  
19 serial number.

20 Q Okay. How does Transocean manage  
21 the tracking of their condition-based  
22 maintenance system if they don't have a  
23 serial number system, per se, that tells  
24 them when something is due?

25 A Well, I would like to say that in

1 our maintenance system -- I know it's been  
2 kind of coined as "condition-based  
3 maintenance." The condition-based  
4 monitoring or condition-based maintenance,  
5 it's just -- it's a big part of our  
6 maintenance system, but it's not -- Our  
7 maintenance system is not condition-based  
8 maintenance.

9           So the components are identified  
10 by the location of the component, so your  
11 upper annular, regardless of what its serial  
12 number is, it's your upper annular. So if  
13 you change out your upper annular, we know  
14 that the upper annular was last changed out  
15 on date "X." So having that serial number  
16 at the end of the day is not really all that  
17 much value to us.

18           Q     Okay. And that's where I'm going  
19 with my next question. We have the "as  
20 delivered" document from Cameron with the  
21 serial numbers that were sold to Transocean  
22 and we have the serial numbers as they were  
23 presented to us from DNV at Michoud.

24           A     Okay.

25           Q     And the original ram bodies that

1 were delivered to Transocean, the serial  
2 numbers were not the same serial numbers  
3 that we had on the DEEPWATER HORIZON stack  
4 forensics operation at Michoud.

5 How could BOEM determine when  
6 those ram bodies were actually put into  
7 place on that DEEPWATER HORIZON stack?

8 A Now, you're saying the ram bodies  
9 themselves are different?

10 Q The blocks. I'm sorry. The  
11 blocks.

12 A Ram blocks are constantly changed  
13 out, depending on the configuration of the  
14 BOP for that upcoming well, so it's very  
15 common that the other ram blocks that might  
16 have originally been on the stack were on  
17 the wall at the time of the incident,  
18 because the rigs keep spare ram blocks a lot  
19 of times for different configurations.

20 So I know the HORIZON, for  
21 example, had I want to say two or three sets  
22 of ram blocks that they had as spares, so  
23 it's a good possibility that the ones that  
24 were in the BOP at original delivery could  
25 possibly be on a wall or somewhere else.

1 It's very common to change ram blocks out.

2 Q And that's the confusion we have.  
3 We're trying to determine when the 1825-day  
4 major overhaul time starts. How can BOEM  
5 determine when Transocean actually put those  
6 blocks into place?

7 A Ram blocks, recertification of ram  
8 blocks -- I mean, a ram block that gets  
9 inspected gets inspected for damage. It  
10 gets a hardness check. It gets a  
11 non-destructive testing inspection done on  
12 it.

13 If there's no damage to it, again,  
14 there's no requirement for a mandatory  
15 recertification of it. Normally, to kind of  
16 expand on your question, the start date is  
17 from the date of the COC.

18 Q And what is "COC"?

19 A Certificate of Conformity or  
20 Certificate of Compliance.

21 Q Who is that issued by?

22 A It's issued by the OEM.

23 Q I would like you to refer to  
24 Page 10 of 11, Appendix A, the  
25 pre-deployment sign-off sheet. Can you

1 please explain to me the purpose of this  
2 sheet?

3 A Part of the subsea maintenance  
4 philosophy, the reasoning behind it was the  
5 planning and organization of between-well  
6 maintenance.

7 The pre-deployment sign-off sheet  
8 was at the completion of the well, prior to  
9 the BOP being run to the wellhead. This was  
10 what we called a pre-deployment conference  
11 call that was done with technical field  
12 support, the rig and the rig management to  
13 go over the work that was done on the BOP  
14 during that between-wells period.

15 The sign-off sheet is -- The  
16 reason for the sign-off sheet was to  
17 document that not only, A, everybody is in  
18 agreeance that what needed to be done to the  
19 BOP was completed, but that there were no  
20 abnormalities or no requirements for  
21 exemptions. It was just bringing everybody  
22 together prior to running the BOP to, you  
23 know, just make sure everybody was on board  
24 with what was getting ready to happen.

25 What would be done is after the

1 pre-deployment conference call, the rig  
2 management, you know, the people who are  
3 listed on the sheet would sign off on it,  
4 and then that would be submitted to the rig  
5 manager in town, and then the  
6 superintendents would also sign off on it.

7 Q Okay. So there is a record of  
8 this document for the January rig move to  
9 Mississippi Canyon 252?

10 A I believe there is, yes. The  
11 pre-deployment call was a part of our job  
12 requirement. I mean, we did this not only  
13 for rig management, for the subseas to be  
14 able to, you know, express any concerns that  
15 they had, so there -- Well, there would have  
16 been a copy of this.

17 Q Did you actually participate in  
18 the pre-deployment call before it moved on  
19 location in Mississippi Canyon 252?

20 A I don't recall at the moment.

21 Q And now I would like to refer to  
22 Appendix B, the next page of the document.  
23 Can you please explain what this form is,  
24 sir?

25 A Yes. This is a component

1 condition evaluation form. When the subsea  
2 maintenance philosophy was originally  
3 created, the thought process behind this  
4 form was to establish mean time between  
5 failures and documenting problems that we  
6 were having with equipment that we had  
7 failures with.

8           This document wasn't really  
9 utilized, because what we ended up doing was  
10 the major OEMs have forms, like discrepancy  
11 forms, that when you send in a piece of  
12 equipment -- Cameron, for example, uses  
13 what's called an FPR form, I believe it's  
14 field performance report, and what you do is  
15 you fill out all the information on the  
16 incident that took place, you know, "bonnet  
17 failure," for example, what was going on at  
18 that time, and then you would submit that  
19 with that piece of equipment, and then it's  
20 a tracking document.

21           When this form was created, the  
22 thought was to have the guys on the rig do  
23 it. We felt later on it was best to just  
24 have the equipment sent back to the OEM and  
25 let them do a formal investigation of any

1 failures and to have them submit the  
2 inspection reports back to us.

3 Q And those reports, is that what  
4 Transocean used to develop their philosophy  
5 or their condition-based maintenance  
6 program?

7 A We use the lessons learned out of  
8 those type of reports as well as any changes  
9 that we would make to our maintenance  
10 system.

11 Q And those forms, once the OEM has  
12 it, is it submitted back to Transocean in  
13 some type of report format or a form?

14 A It's a report format.

15 Q And are those still available  
16 within Transocean for the DEEPWATER HORIZON  
17 stack?

18 A If there were any that were  
19 created, it would be with the rig or with  
20 Cameron. If they have FPR numbers for the  
21 HORIZON, they should be able to pull those  
22 up.

23 Q Are you familiar with the DAR  
24 consolidation report, D-A-R, daily activity  
25 report?

1           A     Yes.

2           Q     Can you please explain what that  
3     is, sir?  It was submitted to us by  
4     Transocean.  It starts in about April of  
5     2002 and goes through the incident.

6           A     The daily activity report is what  
7     I would consider a high-level report that  
8     goes in to management in the town, so they  
9     can see what was done for the different  
10    departments on the rigs.  It's just a quick  
11    overview of what type of work was completed.

12          Q     Is somebody responsible for  
13    reviewing that?

14          A     I wouldn't say "responsible."  
15    It's something that rig management does as  
16    part of their daily activities.  I mean, lot  
17    of times the rig managers -- I'm not  
18    speaking for them -- would, you know, be  
19    able to get up in the morning, read their  
20    activity report before they called out to  
21    the rig and had an understanding of what  
22    went on the night before.  But it's just  
23    kind of like a high-level logbook at the end  
24    of the day.

25          Q     Okay.  My question is, how does

1 Transocean ensure that their philosophy,  
2 their subsea maintenance philosophy is being  
3 followed?

4 A That's through the maintenance  
5 that's done in the RMS system.

6 Q And it's not through the DAR  
7 consolidation?

8 A No. Again, the daily activity  
9 report would say something like, you know,  
10 "replace upper annular." However, the RMS  
11 system and the notes would be more detailed  
12 on the actual work that was completed.

13 So I personally wouldn't look at  
14 the daily activity report as kind of  
15 anything that tied into our subsea  
16 maintenance philosophy.

17 Q The testimony before the Board to  
18 date is Transocean has been very consistent  
19 about their condition-based maintenance  
20 exceeding the OEM requirements, and I have a  
21 few questions about Engineering Bulletin  
22 902D. I think you mentioned it earlier in  
23 your testimony. And I have the document in  
24 front of you, and the Bates number is  
25 CAMCG0003345.

1                   Do you have that document in front  
2 of you, sir?

3           A     I do.

4           Q     And specifically, if you look at  
5 Page 3 of the document, the recertification,  
6 three to five-year typical per API RP 53  
7 17.10.3 and 18.10.3. 18.10, this is the  
8 subsea stack.

9                   There are some special procedures  
10 that are identified in the table,  
11 SP 1060-01-0304 through 09 and -16; is that  
12 correct, sir?

13          A     That's correct.

14          Q     Have you or anyone from Transocean  
15 ever reviewed the special procedures that  
16 Cameron has referenced in this document?

17          A     No. I have requested to review  
18 the document. However, it's an internal  
19 Cameron document.

20                   I will say recently I have  
21 reviewed, I believe it's 1060-03, but  
22 there's nothing -- it's not -- it doesn't --  
23 It's more of a guideline for Cameron on what  
24 needs to be done for a first class overhaul.  
25 There's nothing as far as specifications or

1 any of that type of stuff in it.

2 Q I believe it's specifically --

3 It's not detailed procedures?

4 A Correct.

5 Q It's actually kind of a bulletin

6 list of what to do inhouse?

7 A Correct.

8 Q My question is, how does

9 Transocean, if API RP 53 was required to be

10 followed, how would Transocean even know

11 that their condition-based maintenance

12 program met or exceeded the procedures that

13 are defined in these documents?

14 A These documents are for level of

15 repairs, so if we were to shop something,

16 for example, that we wanted to go back to

17 working class condition, we would say, you

18 know, "do it as per" -- "we're requesting

19 that this be returned back to working class

20 condition." Cameron would reference this SP

21 as their guidelines.

22 Q Okay.

23 A There's nothing with Transocean

24 that would come out of that document. We

25 tell the OEM what we want done to a piece of

1 equipment. If we're going to -- What I mean  
2 by that is if we're going to submit  
3 something, we say, "We want this returned to  
4 first class," and it's the OEM that takes  
5 care of that.

6 Q Okay. Earlier, I just wanted to  
7 make sure, when it goes back to first class,  
8 it gets a new serial number?

9 A If it goes through the shop for  
10 overhaul, it comes out with a new serial  
11 number.

12 Q A Cameron serial number?

13 A Yes, it's a new issued serial  
14 number.

15 Q Okay. Have you ever reviewed any  
16 of the documents associated with the WEST  
17 audit performed in 2005, the BP marine audit  
18 that was conducted in September, 2009, or  
19 the MODU spec audit that was conducted in  
20 April of 2010?

21 A I have reviewed them post-incident  
22 in preparation for today.

23 Q Okay. Were you aware that in  
24 three of those audits that I just  
25 referenced, which occurred over a four and a

1 half year time period, that they made  
2 findings that some components of the BOP  
3 stack were outside of the major overhaul or  
4 recertification criteria?

5 A I do recall that, but there's no  
6 mandate for recertification in any  
7 documentation.

8 Q Well, my question is, first, do  
9 you agree with that assessment?

10 A That the BOP was outside of its  
11 recertification?

12 Q Yes, sir.

13 A No, I do not.

14 Q Do you know a Mr. Jerry Levine?

15 A No, I do not.

16 Q Specifically, to these audits, do  
17 you know if anyone within Transocean when  
18 these findings are presented to them -- Are  
19 you ever brought this information about the  
20 BOP stack's components being outside of  
21 recertification or major inspection?

22 A Of those three documents that you  
23 referenced, the only one that I had working  
24 knowledge of prior to was the BP audit, and  
25 that was only with the subsea components.

1           Q     Okay. I'm going to move into the  
2 BP audit, because I have a direct question  
3 about that and you may be able to shed some  
4 light on this.

5                     And I have a document in front of  
6 you. It's maybe like the next, second one  
7 after that. And it's originally Bates  
8 stamped, the e-mail that's associated with  
9 it is Transocean-USCG\_MMS-00052024. And I  
10 recognize that your name is not associated  
11 with this e-mail; is that correct, sir?

12           A     That is correct.

13           Q     Okay. And there's some attachment  
14 that I have stapled to it beginning with  
15 Bates No. TRN-USCG\_MMS-00052060. Do you  
16 have that in front of you, sir?

17           A     Yes.

18           Q     Okay. Is this the spreadsheet or  
19 what you were familiar with with the BP  
20 audit, where it says that the test, "middle  
21 and upper pipe ram BOP bonnets are original.  
22 They have not been subject to OEM inspection  
23 and recertification in accordance with API  
24 and OEM requirements. Transocean proposed a  
25 change-out plan commencing in 2010 for

1 completion in 2011"?

2 MR. BAAY:

3 Did you ask him if he's familiar  
4 with it?

5 MR. MATHEWS:

6 Yes, sir. He said he was familiar  
7 with the BP audit, and I'm trying to --

8 THE WITNESS:

9 I'm familiar with these, the items  
10 that are listed. It didn't come to me in  
11 this format, though.

12 EXAMINATION BY MR. MATHEWS:

13 Q Okay. Did the asset manager,  
14 whoever it may be -- Who discussed this  
15 audit with you?

16 A The senior subsea on the rig.

17 Q And who was that?

18 A Owen McWhorter.

19 Q Owen McWhorter. Okay. And he  
20 actually challenged this finding; is that  
21 correct, sir?

22 A I don't know if he challenged it.

23 Q Okay. If you refer to the last  
24 page of the hand-out that I gave you ending  
25 in Bates No. TRN-USCG\_MMS-00052062, I know

1 you just answered that you weren't aware if  
2 Owen McWhorter challenged it, but on this  
3 spreadsheet, it says, "Challenged overhaul  
4 on condition basis. Subsea engineer will  
5 get clarification from the company  
6 standard"; is that correct?

7 A That's correct.

8 Q "Transocean counsel informed me  
9 that" -- I believe it's highlighted in blue  
10 on your page -- "that this was the response  
11 from the subsea department: That all pipe  
12 ram bonnets are tested on rig moves to 3,000  
13 psi, the tested middle and upper rams will  
14 be changed out during 2011 SPS."

15 Is that information that you  
16 relayed back to Owen McWhorter or someone on  
17 the rig?

18 A I don't recall making that exact  
19 comment.

20 Q And my question is, just from your  
21 experience as a subsea engineer, subsea  
22 superintendent, I'm kind of at a loss how  
23 all pipe ram bonnets are tested on rig moves  
24 to 3,000 psi ties back into a validation or  
25 support that Transocean was in compliance

1 with this audit finding of being outside the  
2 three to five-year recertification.

3 Do you know if this is something  
4 in the condition-based maintenance program,  
5 that all pipe ram bonnets are tested on rig  
6 moves to 3,000 psi?

7 A If I can comment on two things.

8 Q Sure. Go ahead.

9 A One, on the front, on the 2060,  
10 which I believe is Page 2, the  
11 recertification -- recertification is not  
12 referenced as part of API RP 53 18.10.3.

13 So for a component to be on the  
14 BOP and not be, quote/unquote,  
15 "recertified," the maintenance procedures  
16 with these three bonnets, senior subseas  
17 like Billy Stringfellow and Mark Hay,  
18 disassembling a bonnet and resealing it on  
19 the rig is very common.

20 Those bonnets could have been  
21 disassembled a dozen times over that time  
22 period and found to have nothing wrong with  
23 them.

24 So to find a component like a  
25 bonnet that doesn't show a COC for being

1       overhauled is not surprising.

2                       But moving forward, our  
3       condition-based maintenance, as I mentioned  
4       before, I mean, we systematically test these  
5       components every rig move. We use  
6       predictive maintenance, which is very common  
7       throughout the industry, signature tests,  
8       operator tests.

9                       These type of tests allow us to,  
10      figuratively speaking, look inside the  
11      component to establish if there's any wear  
12      based on the operator test. A low pressure  
13      test, where the seals aren't being engaged  
14      as much as they would be in a high pressure  
15      test, lets us know if there's any damage  
16      internally.

17                      Signature testing, which is  
18      something that Cameron also recommends  
19      doing, allows us to see if there's any  
20      internal damage based on the amount of  
21      pressure it takes for the component to move  
22      in and out.

23                      So our condition-based maintenance  
24      plan would address these issues. And if  
25      something is found, the reason for a

1 high-pressure operator test is to qualify  
2 that piece of equipment during a rig move.

3 The reason, where it says that the  
4 plan is proposed to change out commencing  
5 2011, was because the rig was going out of  
6 service and that was an opportunity for us  
7 to exchange these pieces of equipment and,  
8 you know, kind of start with new, fresh  
9 dates moving forward.

10 But again, I would like to just  
11 comment that there's a lot of reference of  
12 API recertification. There's no  
13 documentation from the CFR to the API that  
14 details recertification as a requirement.

15 Q Okay. I'm not going to argue with  
16 you on that, that statement, but if your  
17 lawyer wants to look at it later, we did  
18 provide him with some OCS documents, where  
19 they referenced to "shall" and RPs, but  
20 we're not going to get into a legal  
21 discussion with you about that today.

22 Thanks for the answer, though.

23 A I hope that answers your question.

24 Q Specifically, to other surveys,  
25 like ABS, are you familiar with ABS drilling

1 package surveys, sir?

2 A I'm familiar with what they look  
3 for, yes. I have never been part of an ABS  
4 survey, though.

5 Q And, to your knowledge, do you  
6 know when Transocean stopped performing  
7 those surveys on the DEEPWATER HORIZON?

8 A I believe it was -- and I'm  
9 just -- From conversations that I have  
10 heard, I believe it was after the first  
11 five-year, where the renewal process would  
12 have been done. I believe that's when the  
13 class was dropped.

14 Q And I have the ABS drilling  
15 package certification document in front of  
16 you. It's not Bates stamped. It's a  
17 publicly available document. And it's  
18 Section 4, Scope of Drilling System  
19 Certification, and I believe there's a tab  
20 to a certain page in there. It's Page 51.  
21 Is that in front of you, sir?

22 A Yes, it is.

23 Q And there's a specific section  
24 called "Well Control," where they actually  
25 have equipment, the blowout preventer, and

1 there's probably about 10 to 15 components  
2 that ABS inspected and surveyed when they  
3 did their survey of the drilling package; is  
4 that correct, sir?

5 A That's correct.

6 Q And they actually issue a  
7 Certificate of Conformance, too, where they  
8 actually go back and look at the OEM  
9 certificates on each component. Do you know  
10 if the ABS drilling package survey was  
11 stopped or not continued due to the BOP  
12 recertification or major overhaul issue?

13 A Not to my knowledge, sir.

14 Q Do you know if ABS has returned or  
15 performed any other drilling package surveys  
16 with Transocean since the DEEPWATER HORIZON  
17 incident?

18 A In regards to NTL-05?

19 Q Yes.

20 A I believe that both -- And, again,  
21 I wasn't part of North American field  
22 support.

23 Q I understand.

24 A But I believe both DNV and ABS  
25 have been involved in the recertification,

1 reverification process.

2 Q And that was mandated by the  
3 federal government?

4 A Correct.

5 Q The next thing I wanted to talk to  
6 you about was the Management of Change  
7 process within Transocean, and I have a  
8 document in front of you Bates stamped  
9 TRN-USCG\_MMS-00041973. And if you could  
10 take it out, because I basically want to  
11 talk to you about the second page of the  
12 document, sir.

13 Are you familiar with this  
14 document?

15 A I'm familiar with the --

16 Q The form itself, not the document?

17 A The form itself, yes.

18 Q Whenever there's a Management of  
19 Change or anything that's related, this form  
20 has to be completed?

21 A If it falls under the criteria for  
22 the form, yes.

23 Q Can you go to the Section J of the  
24 document, please, sir. And that section is  
25 entitled the "Close-Out," correct?

1           A     Correct.

2           Q     And the second item on that is  
3 drawings revised; is that correct?

4           A     That is correct.

5           Q     And there's actually a requirement  
6 for a signature, a name and a date, correct?

7           A     Correct.

8           Q     Do you know if Transocean, if they  
9 performed any type of investigation as to  
10 why the drawings that they had in the  
11 response mode were not currently updated to  
12 the red line drawings that they brought in  
13 after the fact?

14          A     No, I'm not aware of any.

15          Q     Do you know if the updated  
16 drawings are actually sent to Transocean at  
17 the beach or are they only kept on the rig?

18          A     The final drawings, once it's  
19 completed, are supposed to be sent back to  
20 the office and filed away into the document  
21 library.

22          Q     And back to the subsea maintenance  
23 philosophy. I forgot to discuss something  
24 with you earlier that I wanted to talk to  
25 you about.

1                   In Section 8 of this document  
2   entitled "Function Testing," it reads that  
3   "prior to deployment, the BOP shall be fully  
4   function tested," and "fully" is underlined.  
5   "The results shall be recorded in electronic  
6   format." What does that mean? What are you  
7   functioning?

8           A     You're functioning the blowout  
9   preventer. The definition, where it says  
10  "the BOP shall be fully functioned," is what  
11  we're requiring the rigs to do is do a  
12  complete top-to-bottom function test of the  
13  components.

14                   What we found prior to the subsea  
15  maintenance philosophy is that rigs would  
16  function, for example, the rams, the  
17  annulars, the fail-safe valves, your normal  
18  components that you would function subsea.

19                   What the "fully function tested"  
20  means is everything from swapping pods,  
21  increasing and decreasing regulators, every  
22  button on the BOP, a complete top-to-bottom  
23  function test.

24           Q     Okay. Do you perform any type of  
25  function test on the secondary systems, such

1 as your AMF?

2 A The Autoshear EDS system was  
3 tested or is -- prior -- During this  
4 pre-incident, the EDS and the Autoshear is  
5 part of the testing process.

6 Q Okay. And now you actually test  
7 the deadman as well?

8 A Correct.

9 Q And that's required by the federal  
10 government as well?

11 A Correct.

12 Q Specific to the deadman for the  
13 DEEPWATER HORIZON, it only closed the blind  
14 shear ram; is that correct?

15 A Correct.

16 Q Is that something that's  
17 consistent among the Transocean fleet, or do  
18 some deadman/AMF systems actually activate  
19 the blind shear ram and the casing shear  
20 ram?

21 A To my knowledge, it is consistent.

22 MR. MATHEWS:

23 Thank you, sir. I have no further  
24 questions.

25 HON. JUDGE ANDERSEN:

1                   Let's take about a 10-minute  
2 break. Thank you.

3                   CAPT. NGUYEN:

4                   We will reconvene at 9:25.

5 (Whereupon, a break was taken.)

6 (Discussion off the record.)

7                   HON. JUDGE ANDERSEN:

8                   Okay. Any other Board questions?

9 EXAMINATION BY MR. McCARROLL:

10                  Q     I just have one quick follow-up  
11 question.

12                   Do you take into account infant  
13 mortality as far as mechanical equipment in  
14 your philosophy? And can you explain infant  
15 mortality as related to mechanical  
16 equipment?

17                  A     Infant mortality is when -- It's a  
18 maintenance term. When you start performing  
19 too much maintenance, disassembly and  
20 overhaul of equipment, it's actually found  
21 that you can cause equipment to fail sooner  
22 than it would have failed if you just left  
23 it alone.

24                   And what I mean by that is you  
25 take a perfectly good working bonnet, for

1 example, and if every year you just  
2 disassemble it, odds are you're going to end  
3 up cutting the seal, causing some type of  
4 damage when you put it back together. So  
5 that is considered as part of the  
6 maintenance, but that, again, is why we do  
7 the predictive testing that we do instead of  
8 just a complete disassembly.

9 MR. McCARROLL:

10 Thank you.

11 EXAMINATION BY CAPT. HIGGINS:

12 Q Good morning, Mr. Fry.

13 My understanding of your testimony  
14 is that RP 53 is a recommended practice,  
15 that it's not a mandatory practice; is that  
16 correct?

17 A That is correct.

18 Q Are you familiar with  
19 30 CFR 250.446?

20 A Yes, I am.

21 Q Where it says that "You must  
22 maintain your BOP system to ensure that the  
23 equipment functions properly. BOP  
24 maintenance must meet or exceed the  
25 provisions of Sections 17.10 and 18.10,

1 Inspections; Sections 17.11 and 18.11,  
2 Maintenance; and Sections 17.12 and 18.12,  
3 Quality Management, described in API RP 53,  
4 Recommended Practices for Blowout Prevention  
5 Equipment Systems for Drilling Wells  
6 (incorporated by reference as specified in  
7 250.198)"?

8 A Yes, I'm familiar with that.

9 Q So that does not make RP 53  
10 mandatory?

11 MR. BAAY:

12 I would object on the basis that  
13 you're asking for a legal conclusion. If he  
14 wants to ask his opinion about Transocean's  
15 BOP maintenance and how it's impacted by  
16 that, that's something different, but he's  
17 not here to offer legal conclusions.

18 HON. JUDGE ANDERSEN:

19 Okay. Well, I will sustain the  
20 objection in the sense that your answer is  
21 not meant to be the legally correct answer,  
22 whatever that is.

23 But the Board does need to know  
24 what your understanding of your procedures  
25 and requirements are. So your

1 understanding, if you have one, would be  
2 helpful, but we're not asking you or your  
3 counsel to legally verify that whoever might  
4 have to decide that thinks that's the  
5 legally correct answer.

6 So now that we have talked this  
7 amount of time, so that you understand the  
8 question, perhaps Captain Higgins can reread  
9 it or break it down. But we're just asking  
10 for your understanding of the regulation.

11 EXAMINATION BY CAPT. HIGGINS:

12 Q My question was, your  
13 understanding is that that does not make it  
14 a requirement; is that correct?

15 A I personally don't have an opinion  
16 on it or a view of it, but Transocean does  
17 not view RP 53 to be a requirement. It's a  
18 recommended practice.

19 Q So for my understanding, are you  
20 speaking for Transocean's position there or  
21 are you speaking for your position, sir?

22 A I am speaking for Transocean.  
23 CFR 30 references API. API references BOEM.  
24 So Transocean's position is that RP 53 is a  
25 recommended practice.

1 Q So Transocean's position is that  
2 RP 53 is not incorporated by reference?

3 MR. BAAY:

4 It's a different question.

5 EXAMINATION BY CAPT. HIGGINS:

6 Q So RP 53 is just a recommended  
7 practice? It's not required?

8 A Correct.

9 Q Are you familiar with Mr. Billy  
10 Stringfellow?

11 A Yes.

12 Q Are you familiar that he testified  
13 before this hearing?

14 A I'm sorry. Yes.

15 Q Have you reviewed his testimony?

16 A I have watched it. I haven't  
17 reviewed the transcripts from it.

18 Q On Page 348 of his testimony, the  
19 question was -- it's discussing the same,  
20 and his answer was, "If you look at this  
21 regulation, I would say it's probably out of  
22 compliance with the regulation."

23 Do you agree or disagree with that  
24 testimony?

25 MR. SCHONEKAS:

1 I'm going to object. He's asking  
2 the witness to comment upon another witness'  
3 testimony. This is not a proper  
4 examination.

5 MR. HYMEL:

6 And I'm going to further object on  
7 the grounds that that testimony says  
8 "probably." It's not an affirmative  
9 statement. It's just a suggestion or the  
10 opinion of Mr. Stringfellow, and I think  
11 it's inappropriate to ask this witness to  
12 comment on the opinion or the commentary of  
13 another witness.

14 HON. JUDGE ANDERSEN:

15 Well, part of the Board's charge  
16 is to evaluate and understand the  
17 understandings of the people who, in effect,  
18 have to -- relax for a second -- oversee and  
19 maintain this sort of equipment.

20 So we have asked that witnesses  
21 not guess or speculate. We know that nobody  
22 is a mind reader. But if the people who  
23 earn a living and oversee these important,  
24 let's say, maintenance issues have an  
25 opinion, we want to know what that opinion

1 is.

2 MR. HYMEL:

3 And, Judge --

4 HON. JUDGE ANDERSEN:

5 And --

6 MR. HYMEL:

7 I'm sorry. I apologize.

8 HON. JUDGE ANDERSEN:

9 You don't need to apologize. So  
10 if you thought about this and you have an  
11 opinion with respect to what he said, that  
12 would be important for us to know. If you  
13 don't have an opinion, then that's your  
14 answer to the question.

15 MR. BAAY:

16 Your Honor, I think the problem  
17 with the question is that Captain Higgins  
18 didn't read the question that  
19 Mr. Stringfellow was responding to. He just  
20 asked him if he agreed with his answer.

21 HON. JUDGE ANDERSEN:

22 Well, if it would help to clarify  
23 the question, Captain Higgins, if you could  
24 read the question or summarize the question  
25 he was responding to, that would be helpful.

1                   Then if you have a response that  
2   lets us know what your understanding is,  
3   that's great. But you don't have to sit  
4   here in front of us and make something up on  
5   the spot. If you don't know or have no  
6   opinion, that's fine.

7                   MR. DYKES:

8                   Judge, if I could say something  
9   right here. This is one reason that Jason  
10   Mathews made the comment that we would not  
11   get into that discussion, because that is  
12   outside the scope of what Mr. Fry is here to  
13   talk about.

14                  This has been an ongoing  
15   discussion with BOEM, within BOEM, both the  
16   main and interior, with all of the operators  
17   on the OCS. So this is a question that's  
18   far beyond Transocean or BP.

19                  HON. JUDGE ANDERSEN:

20                  You mean whether or not the  
21   regulation is --

22                  MR. DYKES:

23                  How they interpret those  
24   regulations.

25                  HON. JUDGE ANDERSEN:

1                   The extent to which that's  
2   mandatory?

3                   MR. DYKES:

4                   Correct.

5                   CAPT. HIGGINS:

6                   The reason that it's important is  
7   what is the understanding of the people that  
8   were engaged in the maintenance?  
9   Mr. Stringfellow has offered one opinion. I  
10   simply asked if this witness concurs with  
11   that or not?

12                  MR. HYMEL:

13                  And, Judge, my point is that, just  
14   like Captain Higgins said, we're interested  
15   in what the people understand, and this is  
16   exactly what you said. We have testimony of  
17   Mr. Stringfellow. You have what he  
18   understands. You have testimony from  
19   Mr. Fry. You have what he understands. And  
20   Mr. Fry has told you what Transocean's  
21   position is.

22                  Now what Captain Higgins wants to  
23   do is put Mr. Fry in the uncomfortable  
24   position of having to testify whether his  
25   co-worker, he agreed or not with his

1 co-worker, and that's not fair to him and  
2 that's not what we're here for.

3 We're here to gather evidence, and  
4 we have gathered the evidence. You know  
5 what Mr. Stringfellow's opinion is, and  
6 Mr. Fry just told you what his opinion is,  
7 and I think it's inappropriate to go any  
8 further, and I agree with Mr. Dykes on that  
9 issue.

10 HON. JUDGE ANDERSEN:

11 Okay. You know, obviously, one of  
12 the goals of the Board will be to make  
13 recommendations with respect to future  
14 regulations that might exist, and we all  
15 know that even though we in the legal  
16 profession live in a world of ambiguity, for  
17 people in the world who have to do actual  
18 operations, less ambiguity is better.

19 And sometimes understanding that  
20 people who work closely together have  
21 different understandings can be helpful to  
22 us in recommending regulations that might be  
23 less ambiguous.

24 So there is a value sometimes in  
25 understanding that a regulation that exists

1 might be confusing or subject to different  
2 interpretation.

3 MR. HYMEL:

4 And, Judge, we have their  
5 understandings. What you're now asking for  
6 is the ambiguities and have them argue among  
7 themselves, and that's not fair to them.  
8 We're talking about a legal interpretation  
9 here.

10 It's okay to ask me and have me  
11 argue with another lawyer about that, but I  
12 think it's unfair to have two men who work  
13 in this industry and they don't do this for  
14 a living to argue about or complain about or  
15 talk about what their interpretation of a  
16 law is.

17 HON. JUDGE ANDERSEN:

18 Okay. Well, you have a point.

19 Okay.

20 Is there a question that you would  
21 like to ask, Captain?

22 CAPT. HIGGINS:

23 I asked, simply, if his opinion  
24 was different than that expressed by  
25 Mr. Stringfellow?

1 THE WITNESS:

2 Yes, my opinion is different.

3 EXAMINATION BY CAPT. HIGGINS:

4 Q Thank you very much.

5 My understanding is that you  
6 participated in writing the subsea  
7 maintenance philosophy, which states, "We  
8 will never take shortcuts. We will never  
9 cut corners. We will never sacrifice  
10 anything in pursuit of expediency. You have  
11 management's support to take the time to do  
12 it right the first time"; is that correct?

13 A That is a quote from our CEO.

14 Q Mr. Newman?

15 A Correct. That's not something  
16 that I wrote.

17 Q So that is his opinion of the  
18 maintenance philosophy?

19 A That is his, yes.

20 Q Do you concur with that quote?

21 A I agree with Mr. Newman's comment.

22 Q Turning to the DEEPWATER HORIZON  
23 assessment of 01 to 12 April, 2010, and this  
24 is Transocean-USCG\_MMS-00041136, where it  
25 indicates that the last date of

1 certification for the upper annular was  
2 2000, well beyond the -- Do you have that  
3 document?

4 MR. BAAY:

5 I'm not sure what you're looking  
6 at.

7 CAPT. HIGGINS:

8 It's the assessment that was  
9 provided. The Bates number is 00 -- It's in  
10 the stack of documents provided by  
11 Mr. Mathews. This is the DEEPWATER HORIZON  
12 assessment of 01 to 12 April, 2010.

13 MR. MATHEWS:

14 I never had any questions about  
15 it. It's probably still in the sleeve.

16 HON. JUDGE ANDERSEN:

17 What's the Bates number again, the  
18 last four digits?

19 CAPT. HIGGINS:

20 The last four digits, 1136.

21 HON. JUDGE ANDERSEN:

22 This one here (indicating). Here,  
23 if you would like to use this copy, you're  
24 welcome to (handing).

25 EXAMINATION BY CAPT. HIGGINS:

1           Q     About the fifth line down, "The  
2     last certification of the upper annular was  
3     13 December, 2000.  It's beyond the  
4     five-year inspection and recertification  
5     requirement."

6                     And the next, about six lines all  
7     identify that the last date of certification  
8     was December, 2000, well beyond the  
9     five-year inspection recertification  
10    requirements for these parts.

11                    And my question, sir, is how that  
12    is consistent with the philosophy that "we  
13    will not cut corners" and that this is  
14    proper maintenance?

15           A     This inspection report is actually  
16    wrong.  The audit findings were incorrect.

17           Q     Would you explain how they're  
18    incorrect?

19           A     Sure.  The upper and the lower  
20    annular, according to the -- I believe it  
21    was the WEST inspection from 2005,  
22    documented that the upper and lower annular  
23    were changed out during that time period, so  
24    that would have changed it out -- It was  
25    actually done during that inspection time of

1 2005, and there were other components on  
2 this list that were found to be changed out  
3 during frequencies other than what was  
4 listed on this audit.

5 Q Is there a document that indicates  
6 the correction of the items listed on this  
7 audit?

8 A To my knowledge, there was a  
9 review done on that, but it's not something  
10 that I have.

11 Q A number of issues have been  
12 raised and conclusions have been based on  
13 this audit. So if there's a document that  
14 indicates that the audit is, in fact,  
15 inaccurate, that would be very helpful to  
16 the Board.

17 Do you know if Cameron concurs  
18 with your evaluation of the maintenance of  
19 the BOP; yes or no?

20 MR. BAAY:

21 What section? That's awfully  
22 broad.

23 EXAMINATION BY CAPT. HIGGINS:

24 Q Cameron is the original -- is the  
25 manufacturer and they have a specified

1 maintenance program. Does your  
2 condition-based maintenance program meet  
3 their requirements?

4 A Cameron's recommendation for  
5 recertification, based on EB-902D,  
6 references both that the customer-specific  
7 preventative maintenance program can  
8 establish the time period, but  
9 recertification should be done on any  
10 components found not to be within  
11 specification.

12 Again, this is why we ask to have  
13 Cameron come out to the rigs to do the  
14 interim field inspections, to establish, you  
15 know, deterioration trends and where.

16 So, to my knowledge, it's not  
17 something that Cameron has come and done an  
18 audit of Transocean's maintenance  
19 procedures. Cameron, Hydril, Shaffer are  
20 the original equipment manufacturers. They  
21 make recommendations based on the equipment.

22 However, the equipment owners are  
23 the ones who actually operate the equipment.  
24 So if we find something that's not within  
25 specification, then we will send it in and

1 get it overhauled.

2 Q My understanding is that you don't  
3 actually have their specifications; is that  
4 correct?

5 A Cameron does not give us the  
6 tolerances and specifications for each piece  
7 of equipment.

8 Q So -- Excuse me.

9 A Sorry. If an inspection is done,  
10 for example, on the ram cavities, Cameron  
11 will come out, based on our request to come  
12 out to the rig, they will take the  
13 dimensions, they send that information back  
14 to or they will take it back to Cameron  
15 engineering, who will then review the  
16 measurements and information taken by the  
17 inspector, and then they will issue us a  
18 report. But, no, we do not have Cameron's  
19 specifications sitting on the shelves.

20 Q So there's no way that the  
21 Transocean personnel on the rig can compare  
22 to the Cameron specifications, because  
23 they're not provided by Cameron; is that  
24 correct?

25 A We have recommended maintenance

1 procedures that have come out of Cameron  
2 documentation that we can do a field  
3 inspection to identify the tolerances in a  
4 BOP cavity, but the actual specifications,  
5 no.

6 Q The emergency disconnect  
7 procedures that were discussed -- this is  
8 BP-HZN-MBI, and the last five are 10235 --  
9 don't indicate any action with regard to the  
10 bridge personnel's role or the OIM's role.  
11 Is there a separate document that links this  
12 to their responsibilities?

13 A To my knowledge, yes. Under the  
14 note, it says, "all designated rig  
15 technicians." The action items for -- You  
16 have to understand that -- And what I mean  
17 by that is when we're in a red alert or a  
18 yellow alert, the marine department, the  
19 guys on the bridge have their own steps that  
20 they have to take to get their rig back on  
21 location, as well does the guys in the  
22 engine room.

23 This outline is for the drill  
24 crew, designating what steps the drill crew  
25 as well as the subsea have to take.

1           But if you looked at a rig manual,  
2   for example, for yellow alerts or red  
3   alerts, there's going to be different steps  
4   taken by different people.

5           So the marine department doesn't  
6   just sit up on the bridge, you know, waiting  
7   for something to happen. They're doing what  
8   they need to do as well as the engine room  
9   and the rig floor.

10          Q     So there would be a separate  
11   document that would outline their  
12   responsibilities. My understanding with  
13   regard to Chris Pleasant's role, he was a  
14   subsea engineer; is that correct?

15          A     He was a subsea supervisor, that's  
16   correct.

17          Q     And he testified he activated the  
18   EDS. Would he need approval from anyone  
19   else to take that action?

20          A     No.

21          Q     So he would not need any type of  
22   direction from either the OIM or the master  
23   before making a decision to EDS?

24          A     No. I mean, the decision to take  
25   actions during emergency situations is kind

1 of like what we do in the military and/or in  
2 the Coast Guard. I mean, there's levels of  
3 authority that's designated by the senior  
4 people on board the rig.

5 For example, on a submarine, if we  
6 have flooding in the engine room, we don't  
7 wait for the captain to tell us to emergency  
8 blow. We emergency blow immediately.

9 And in an emergency disconnect  
10 situation, we're not going to wait for the  
11 OIM or the captain to wake up and get up to  
12 the bridge to take the actions that need to  
13 be taken to try to rectify the situation.

14 CAPT. HIGGINS:

15 Thank you very much, sir.

16 HON. JUDGE ANDERSEN:

17 Any other Board questions?

18 EXAMINATION BY MR. McCARROLL:

19 Q Yes. Can I just follow up with  
20 maybe a clarification question?

21 Why do they have a BOP operating  
22 panel on the bridge? Can you just explain  
23 that maybe briefly, the location?

24 A The different locations for the  
25 operating panels are in case something

1 happens on the rig floor, for example, it  
2 can be functioned from the bridge and vice  
3 versa.

4 MR. McCARROLL:

5 That's where I was going. Thank  
6 you.

7 HON. JUDGE ANDERSEN:

8 Any other Board questions?  
9 Marshall Islands?

10 MR. LINSIN:

11 Thank you, Your Honor.

12 My name is Gregory Linsin on  
13 behalf of Marshall Islands, the flag state  
14 for the rig.

15 I don't have specific questions  
16 for Mr. Fry, but I did just want to thank  
17 the Board for its questions and Mr. Fry for  
18 his responses. These are important topics  
19 and this exchange has been very helpful to  
20 us in understanding, helping to understand  
21 these issues.

22 Thank you very much.

23 HON. JUDGE ANDERSEN:

24 Thank you.

25 Before the Parties In Interest ask

1 questions, Counsel, do you have any  
2 questions?

3 MR. BAAY:

4 We will reserve our time.

5 HON. JUDGE ANDERSEN:

6 Okay. Cameron? Mr. Jones?

7 EXAMINATION BY MR. JONES:

8 Q Good morning, Mr. Fry.

9 A Good morning, sir.

10 Q Very briefly, you talked about  
11 Transocean doing yearly inspections of the  
12 BOP on the rig. Do you recall that  
13 testimony?

14 A Yes, sir.

15 Q And I just want to be clear,  
16 because it was a little unclear from your  
17 testimony, but you're not saying, are you,  
18 that Cameron came out to the DEEPWATER  
19 HORIZON on a yearly basis to perform  
20 inspections of all the tolerances in the  
21 BOP?

22 A Cameron would come out to the  
23 DEEPWATER HORIZON if requested. It's not a  
24 requirement -- It's not a requirement for  
25 Cameron to come out. They come out if we

1 request them to.

2 Q And if they were requested to come  
3 out, that would be reflected in the  
4 maintenance records that Transocean has,  
5 correct?

6 A Correct.

7 MR. JONES:

8 That's all I have. Thank you,  
9 sir.

10 HON. JUDGE ANDERSEN:

11 Transocean, I apologize. Normally  
12 when we have had a witness who worked for a  
13 company, we have given the company the first  
14 chance to ask questions, and I failed to do  
15 that. Sorry.

16 But do you have any questions?

17 MR. HYMEL:

18 No questions, Judge.

19 HON. JUDGE ANDERSEN:

20 Okay.

21 BP?

22 MR. GODFREY:

23 Can I proceed, Your Honor?

24 HON. JUDGE ANDERSEN:

25 Sure. Thank you.

1 EXAMINATION BY MR. GODFREY:

2 Q Good morning, Mr. Fry.

3 A Good morning, sir.

4 Q I would like to start with the BP  
5 audit from September of 2009. Were you made  
6 aware of that audit after it was turned over  
7 to Transocean at some point during 2009?

8 A Yes, sir.

9 Q And were you made aware that BP  
10 raised questions about whether or not the  
11 BOP was in certification and in compliance  
12 with API RP 53?

13 A The question had come up about,  
14 yes, the recertification of the blowout  
15 prevention equipment, yes.

16 Q And was it Mr. McWhorter who made  
17 you aware that BP was raising questions  
18 about whether or not the BOP was in  
19 compliance with the API requirements?

20 A Yes, sir.

21 Q And did you tell Mr. McWhorter in  
22 2010 or early 2011 that in your view, that  
23 the API requirements with respect to the BOP  
24 on board the DEEPWATER HORIZON had been met,  
25 that it was in compliance, that is the BOP

1 was in compliance?

2 A I'm sorry. What was your question  
3 again?

4 Q Sure. I will make it simpler.  
5 And if you don't understand a question, just  
6 wave me off and I will try again. It's my  
7 fault. It's like landing an aircraft on an  
8 aircraft carrier. Just wave me off. Okay.

9 Did you tell Mr. McWhorter that,  
10 notwithstanding the BP concern about whether  
11 or not the DEEPWATER HORIZON's BOP was in  
12 compliance with API RP 53, that in your view  
13 the BOP on board the DEEPWATER HORIZON was  
14 in compliance with the API requirements?

15 A The position of technical field  
16 support, when I say we don't have a view, I  
17 follow the directives from the company.

18 RP 53, reading RP 53, Section  
19 18.10.3 is about disassembly and inspection.  
20 Our maintenance procedures have us  
21 disassemble and inspect the equipment.

22 So in regards to disassembly and  
23 inspection, our position is that RP 53 is  
24 not mandatory. So I don't recall saying in  
25 2010 or '11 that -- I just don't recall

1 saying that.

2 Q Do you recall any discussions with  
3 Mr. McWhorter at all in which you expressed  
4 an opinion or a view to him that  
5 notwithstanding the BP audit of 2009, that  
6 the BOP for the DEEPWATER HORIZON was in  
7 compliance with the API requirements?

8 A I did have conversations with  
9 Mr. McWhorter regarding the Transocean  
10 maintenance philosophy and procedures  
11 regarding the BOP.

12 Compliance, when I say  
13 "compliance," again, RP 53 recommends  
14 disassembly and inspection. Our equipment  
15 gets disassembled and inspected. So, I  
16 mean, reading the contents of RP 53,  
17 Section 18.10.3, our maintenance follows  
18 those recommendations.

19 Q Did Transocean tell BP after it  
20 received the BP audit that notwithstanding  
21 the questions raised in the BP audit about  
22 the DEEPWATER HORIZON's BOP, that as far as  
23 Transocean was concerned, the API  
24 requirements had been met and satisfied with  
25 respect to the BOP?

1 MR. FANNING:

2 Judge, I have an objection to the  
3 form of the question, asking this witness to  
4 speak for everyone at Transocean. I don't  
5 know how he could know. The question was  
6 "did Transocean tell BP."

7 HON. JUDGE ANDERSEN:

8 Okay. Well, if either you  
9 communicated to BP or someone else on behalf  
10 of Transocean communicated to BP, then you  
11 can answer that question.

12 So with that limitation, did you  
13 communicate or do you know if anyone at  
14 Transocean communicated to BP that the BOP  
15 was in compliance?

16 THE WITNESS:

17 I personally did not communicate  
18 with BP, nor do I know -- The communications  
19 normally between Transocean and their  
20 clients are done by rig management. It's  
21 not something that technical field support  
22 engages in, so I don't know if those  
23 conversations were had.

24 EXAMINATION BY MR. GODFREY:

25 Q Do you recall telling

1 Mr. McWhorter verbally or in an e-mail that  
2 Transocean's position with respect to the BP  
3 audit was that Transocean was in compliance  
4 with API RP 53?

5 MR. BAAY:

6 Let me make an objection to the  
7 question.

8 HON. JUDGE ANDERSEN:

9 This is the last time. We have  
10 sort of come at it five ways. But I think  
11 Mr. Godfrey is entitled to a clarification.  
12 You don't need to change an answer because  
13 the question is asked more than once, but I  
14 think this is a direct question.

15 If you have an answer to it, give  
16 us your answer, and then after this one, we  
17 will move on.

18 THE WITNESS:

19 As I mentioned, I believe, yes,  
20 that I have had conversations with  
21 Mr. McWhorter regarding this topic. Again,  
22 the actual parts of the conversation, I  
23 don't recall. I spoke to the rig in my  
24 position on a daily basis sometimes.

25 EXAMINATION BY MR. GODFREY:

1           Q     Fair enough. One final question.  
2     Not what you told Mr. McWhorter. Did you  
3     reach an opinion after having been alerted  
4     to the BP audit question about the BOP on  
5     board the DEEPWATER HORIZON that, in your  
6     opinion, the BOP on board the DEEPWATER  
7     HORIZON in January of 2010 was in compliance  
8     with API RP 53?

9           A     Again, I apologize. Can you  
10    repeat the question?

11          Q     Sure. The bottom line, after you  
12    learned about the BP audit, did you  
13    conclude, notwithstanding the question that  
14    BP raised about the BOP, that, in fact, in  
15    your view, in your opinion, in your  
16    position, that the BOP for the DEEPWATER  
17    HORIZON was in compliance with API RP 53?

18          A     My view on the BOP is, as I had  
19    mentioned, RP 53 is not viewed as a  
20    mandatory requirement. The basis for my  
21    decisions were based on the information  
22    given to me by the company. Our position is  
23    that RP 53 is a recommended practice.

24          Q     All right. Were you aware of any  
25    problems that you thought needed addressing,

1 any maintenance problems, any functional  
2 problems, any other problems with the BOP  
3 for the DEEPWATER HORIZON in January,  
4 February or March or April of the year 2010?

5 A In regards to --

6 Q Any problems at all with the BOP?

7 A I was aware that -- I was aware of  
8 two issues when the BOP was subsea.

9 Q What were those two issues?

10 A I believe it was the test rams had  
11 had a small -- I will call it a tick on the  
12 flowmeter in the open position and a  
13 periodic tick on the upper annular.

14 Q Is it fair to say, though, that as  
15 far as you were concerned, that those two  
16 issues about which you were aware with  
17 respect to the BOP in the first four months  
18 of 2010 did not pose a safety or a  
19 functionality or a failure to operate risk  
20 with respect to the BOP as far as you were  
21 concerned?

22 A Yes. The test rams were in the  
23 open position. And again, the upper annular  
24 is function tested every week and pressure  
25 tested every week, so there was no

1 functionality issues with that component.

2 And just to kind of elaborate

3 briefly on that, my decisions from technical

4 field support when it comes to the

5 criticality of functions on the BOP, we have

6 two annulars. According to CFR 30, we're

7 required to have one. So for us to have an

8 issue with a component, if we have a back-up

9 component and we still meet regulations,

10 then that is part of our analysis of whether

11 or not the BOP stays on the bottom or not.

12 Q The bottom line, as far as you

13 knew, the BOP for the DEEPWATER HORIZON was

14 perfectly functionable and should have

15 functioned fine on April 20, 2010; is that

16 fair to say?

17 A Yes.

18 Q Okay. Let's change topics. The

19 document, Subsea Maintenance Philosophy

20 document that has "400" on it, do you have

21 that before you, sir?

22 A Yes, sir.

23 Q Okay. This is a corporate-wide

24 Transocean document?

25 A Yes, sir, it is.

1           Q     It's endorsed by the CEO of  
2     Transocean, the ultimate parent company, is  
3     that my understanding -- is that your  
4     understanding?

5           A     Mr. Newman was the COO at that  
6     time, yes.

7           Q     Of the ultimate parent for the  
8     Transocean entities, right?

9           A     Yes, sir.

10          Q     Does this document, this Subsea  
11     Maintenance Philosophy apply to all  
12     Transocean rigs throughout the world?

13          A     Yes.

14          Q     I want to follow up on something  
15     Mr. Jones asked you.

16                     Do you know whether or not Cameron  
17     did any inspections of the BOP for the  
18     DEEPWATER HORIZON at any point in the year  
19     prior to this casualty?

20          A     I would have to -- I personally  
21     don't have that information. It would be  
22     something that would have to be checked out  
23     with the investigation team that has all the  
24     records.

25          Q     Fair enough. Was Cameron

1 regularly asked to inspect the BOP for the  
2 DEEPWATER HORIZON on a yearly or annual  
3 basis or some other periodic basis?

4 A When the interim field inspection,  
5 365 PM would come up, we would make requests  
6 to have them come out if needed, as well as  
7 if there was any other issues that we had  
8 with, you know, control systems or anything  
9 else like that.

10 Q Well, you weren't suggesting in  
11 your original testimony to Mr. Mathews that  
12 Cameron had, in fact, inspected and approved  
13 the BOP sometime in the year prior to the  
14 casualty in this matter, were you?

15 A When I say inspected or approved,  
16 if Cameron came out and did dimensional  
17 checks, those checks are based on whether  
18 it's in Cameron's criteria. Approving of a  
19 complete BOP system is not what's part of  
20 that inspection. It's just that cavity  
21 itself, those cavities to be found within  
22 acceptable tolerances.

23 Q And whether Cameron came out or  
24 not would be shown by the records that you  
25 referred to earlier?

1           A     It would be in the records, yes.

2           Q     Okay. Final question. Did anyone  
3     ever tell you or did you ever hear anyone  
4     suggesting to you before perhaps today or  
5     recently, but post-casualty certainly, that  
6     the BOP was not capable of shearing an  
7     off-centered drill pipe? Did you ever hear  
8     that before?

9           A     No, I haven't.

10          MR. GODFREY:

11                 Okay. Thank you. No further  
12     questions, sir. I appreciate your time.

13          THE WITNESS:

14                 Thank you.

15          HON. JUDGE ANDERSEN:

16                 Thank you.

17                 Halliburton?

18     EXAMINATION BY MR. BOWMAN:

19           Q     Good morning.

20           A     How are you, sir?

21           Q     My name is Bruce Bowman and I  
22     represent Halliburton.

23                 Let me follow up on what you just  
24     said. You talked about various tests being  
25     run on the BOP, right?

1           A     I'm sorry. I didn't hear you.

2           Q     You mentioned that tests were run  
3 on the BOP periodically, correct?

4           A     Preventative maintenance tasks,  
5 yes.

6           Q     And was one of the tasks -- How  
7 would you know that the blind shear rams  
8 would work?

9           A     What do you mean by a definition  
10 of "work"? I mean, their function --

11          Q     Let's just start over. Did you  
12 run any kind of tests on the blind shear  
13 rams?

14          A     Well, the shear rams are function  
15 and pressure tested on deck on every well,  
16 so if that's -- And I apologize. If that's  
17 your definition of "working," yes, they are  
18 pressure tested and function tested.

19          Q     And how do you actually do that?

20          A     The BOP is installed on a test  
21 stump. What you will do is you will fill  
22 the BOP up with water, you will close the  
23 blind shear rams, and then you will pressure  
24 up underneath the ram to the required test  
25 pressure.

1           You will do a low pressure test  
2   and a high pressure test based -- I mean,  
3   during the testing, it's on a chart  
4   recorder, so it's charting the actual test  
5   itself. Once you hold a straight line based  
6   on the requirements set forth in the  
7   regulations, then you bleed the test off and  
8   you move on to your next test.

9           Q    And how often do you do that,  
10   let's say, in the two years before the  
11   event?

12          A    It would be done every time the  
13   BOP was on deck. Blind shear rams are also  
14   tested on the bottom as well.

15          Q    I'm more interested on the bottom.  
16   Would you test it to see if they actually  
17   cut pipe?

18          A    No. A subsea shear test is not  
19   something that's done during normal  
20   operations.

21          Q    Was this BOP ever tested to see if  
22   it would actually cut pipe?

23          A    I don't know prior to my time in  
24   technical field support in the beginning. I  
25   don't know if those tests were ever done.

1           Q     Okay. From your time forward, no  
2 test like that was ever done; is that  
3 accurate?

4           A     Not on a rig offshore as part of  
5 normal operations, no.

6           Q     Okay. And am I right in  
7 understanding that only the blind shear rams  
8 were designed to actually cut drill pipe?

9           A     No, there's different sets of  
10 shear rams, so when you reference the blind  
11 shear rams -- I mean, we have casing shear  
12 rams, we have tandem shear rams. So for  
13 that BOP, there were two sets of shearing  
14 rams on the rig.

15          Q     Okay. Maybe I read wrong. I  
16 thought that the casing shear was not  
17 designed to actually shear drill pipe, but  
18 does it shear drill pipe, also?

19          A     The casing shear ram?

20          Q     Yes, sir.

21          A     Yes.

22          Q     Okay. So it will actually cut  
23 through the drill pipe?

24          A     Correct.

25          Q     Were any tests done on the casing

1 shear rams to see if they would actually cut  
2 through the drill pipe that would be used on  
3 this particular well?

4 A Again, no, not for that well.

5 Q Okay. So what were you relying on  
6 to then assume that the shears would  
7 actually occur? Since you didn't actually  
8 test it on drill pipe, you had to have some  
9 belief that if an emergency arose, that the  
10 shears would actually cut through the pipe.  
11 Upon what were you relying to make that  
12 assumption?

13 A The shear calculations are done  
14 for the individual pipes that are to be used  
15 on a well program. Shearing is based on  
16 those calculations and also on historical  
17 data from previous shear tests that were  
18 done either on rigs or at an on-shore shear  
19 test. That data is used.

20 Now, when it comes to the Macondo  
21 well, to my knowledge, the pipe for the  
22 Macondo well did not change, and again, it's  
23 not something that's sent in to technical  
24 field support unless we're requested to  
25 review it. So it would be based off from

1 the shear calculation chart that was  
2 referenced earlier by Mr. Mathews.

3 Q All right. And was that prepared  
4 by Cameron, by TO, or who?

5 A That actual spreadsheet was  
6 created by Transocean Engineering based on  
7 the calculation from EB-702.

8 Q Okay. Now, does that calculation  
9 take into account whether the drill pipe is  
10 centered or if it's to one side?

11 A Not to my knowledge. It's just a  
12 shear calculation.

13 Q So does that shear calculation  
14 assume that it will shear the pipe no matter  
15 where it's located?

16 A I will be honest with you. I  
17 never worked for Cameron, so how they came  
18 up with the calculation for them, I can't  
19 speak for them.

20 Q Okay. Maybe I missed something.  
21 I thought the TO engineers performed  
22 calculations. You're saying they performed  
23 calculations based on something Cameron has  
24 already performed?

25 A No, there's a calculation based on

1 a set of -- There's a calculation based on  
2 the shear calculation document. Our  
3 engineers take those parameters, enter them  
4 into a spreadsheet, and that gives us the  
5 basis for whether or not a certain rig with  
6 a certain operating system, certain set of  
7 bonnets can shear the pipe that it's going  
8 to need for that well.

9 Q Okay. And so that's where you  
10 said you don't know if Cameron takes into  
11 account the location of the drill pipe in  
12 its calculations?

13 A No. I mean, the calculations for  
14 that spreadsheet was done by our  
15 engineering, but where the pipe is actually  
16 located at, no.

17 Q Do you know if anyone takes that  
18 into account, whether it be TO, whether it  
19 be Cameron?

20 A No.

21 Q Okay. Does that seem like  
22 something that would make sense to take into  
23 account?

24 A I don't have an opinion on that,  
25 to be honest.

1           Q     Well, do you have an opinion if  
2     you have a well control event and you have  
3     hydrocarbons coming up at a very strong  
4     pressure, it might tilt the drill pipe one  
5     way or the other?

6           A     Again, I'm not a design engineer.

7           Q     Right. Well, you said you had  
8     some well control training.

9           A     Yeah, but I'm not an engineer  
10    based on, you know, what a high flow of  
11    hydrocarbons would do to a certain size  
12    drill pipe.

13          Q     Okay. By the way -- no one has  
14    asked you -- have you read this report that  
15    was done about what happened as far as the  
16    BOP, the one that was done by DNV?

17          A     No, I did not.

18          Q     There is some indication in here  
19    that the maximum pressure for the shearing  
20    of the BSR is 4,000 psi. Okay?

21          A     Where?

22          Q     I'm sorry. I'm reading out of  
23    this report. First of all, do you know what  
24    the maximum shearing pressure of the BSR was  
25    on the HORIZON?

1           A     Off the top of my head, I do not.  
2     It would be whatever the shear circuit was  
3     set at.

4           Q     Okay. I think it says in here  
5     4,000. All right. And obviously, it's  
6     going to be whatever it is. But my question  
7     is, who picked that?

8           A     It would be -- It would not be  
9     something from technical field support. It  
10    would be something from before my time. I  
11    don't know who sets the regulator based on.

12          Q     Okay. Well, let me ask it  
13    differently. Transocean bought this BOP  
14    from Cameron; is that right?

15          A     Correct.

16          Q     Okay. And in connection with  
17    buying it, someone, I'm assuming, must have  
18    decided or known what the shear pressure  
19    was. Do you know if that's true or not?

20          MR. HYMEL:

21                 Judge, let me just enter an  
22    objection. I don't know if he's referring  
23    to the pressure to be applied to the rams or  
24    the shear pressure that is applied to the  
25    drill pipe.

1                   And, Bruce, if you know the  
2 difference between that, why don't you ask  
3 him a specific question.

4                   MR. BOWMAN:

5                   So far he hasn't had a problem  
6 with it.

7 EXAMINATION BY MR. BOWMAN:

8                   Q     Let me ask it this way. When  
9 someone is buying a BOP, who is it that  
10 tries to decide what pressure you want to  
11 actually shear? All right? If you know.  
12 Do you know?

13                  A     I don't know who establishes that.

14                  Q     Okay. Well, that's fine if you  
15 don't know.

16                         Have you been in your position  
17 when any BOPs have been bought by  
18 Transocean?

19                  A     No, I haven't.

20                  Q     Now, there has previously in some  
21 hearings been some testimony on  
22 modifications done on this BOP. Do you know  
23 if any modifications were done on this BOP  
24 after its initial purchase in maybe 2000,  
25 whenever it was purchased?

1           A     Just from -- I know that  
2     modifications were done just based on post  
3     incident, so, yes.

4           Q     Okay. Now, do you know if those  
5     modifications were known to have been done  
6     by Cameron? Or put it like this. Not that  
7     Cameron did it, but did Cameron know about  
8     the modifications?

9           A     I wasn't in field support during  
10    that time, so I couldn't answer.

11          Q     So you don't know one way or the  
12    other?

13          A     (Shakes head negatively).

14          MR. FANNING:

15                 We will stipulate if they did,  
16    they would know about them.

17    EXAMINATION BY MR. BOWMAN:

18          Q     I am real unclear on what Cameron  
19    would inspect during these annular  
20    inspections that you talked about. Do you  
21    know if Cameron ever came out to the rig for  
22    any of the inspections from the year 2007  
23    through April 20th of 2010?

24          A     Had Cameron gone out to the rig?

25          Q     In connection with any of the

1 inspections being done on the BOP.

2 A Yes.

3 Q Okay. And how do you know that?

4 A From not only being the individual  
5 who requested having field service personnel  
6 go out to the rig, but I also know from just  
7 conversations with the members of the rig.

8 Q Okay. And since you said, I  
9 think, that you requested them to go out,  
10 what did you request them to go out to do?

11 MR. BAAY:

12 When?

13 EXAMINATION BY MR. BOWMAN:

14 Q At any time.

15 A When we requested a Cameron  
16 inspector to come to the rig, they would  
17 perform the inspections based on our  
18 request. Requests -- and I say that in a  
19 general term -- normally being to come out  
20 and inspect the ram cavities for dimensional  
21 clearances.

22 Q Okay.

23 A So there's not a check sheet that  
24 says, "We're going to bring Cameron out to  
25 the rig and they're going to do the

1 following 20 items."

2 It will be based on what we have  
3 in our preventative maintenance system  
4 that's come up for inspection. It could be  
5 "we're going to disassemble an annular and  
6 we would like you to come out and take a  
7 look at it." But it's all based on our  
8 request is what they inspect. I mean, I  
9 hope that answers your question.

10 Q It's getting there, but I'm kind  
11 of confused on how many times they would  
12 come out, because you said they would come  
13 out if requested. And then in questioning  
14 by Cameron lawyers, you're not saying they  
15 came out there every time, so I'm just  
16 trying to figure out how we establish how  
17 many times Cameron came out and what they  
18 did?

19 A I don't have that list. It would  
20 be something that -- I personally don't have  
21 that list or that number.

22 Q I appreciate that. Is there such  
23 a list?

24 A I believe so.

25 Q Okay. And would that list show

1 not only that they came out, but what was  
2 inspected when they came out?

3 A Yes.

4 Q I think it's obvious, but why  
5 would you ask Cameron to come out?

6 A We ask for this BOP, for example,  
7 to have Cameron come out for many reasons,  
8 one being that they're the original  
9 equipment manufacturer. The other being  
10 that they have the tolerances in  
11 engineering.

12 Part of our maintenance procedure  
13 required us to engage the OEM for his  
14 inspections. Cameron being the OEM, we  
15 would have them come out, so we could  
16 document as part of our predictive  
17 maintenance program that the OEM has come  
18 out for inspections.

19 Because we can have our guys do  
20 inspections using aluminum ram blocks and  
21 feeler gauges. However, to have the OEM,  
22 OEM-qualified inspectors come out to the  
23 rig, it took -- A lot of things go on during  
24 a rig move and the senior subsea is pulled  
25 in a lot of different directions. To have

1 the OEM come out and be dedicated to doing  
2 that inspection allows the senior subsea to  
3 focus on something else. So not only is it  
4 from a quality standpoint, but it's also for  
5 the documentation for our predictive  
6 maintenance program.

7 Q Okay. During any of the times  
8 that you're personally familiar with, did  
9 Cameron ever raise any question about the  
10 type of maintenance that TO was doing on the  
11 BOP?

12 A Not to my knowledge.

13 Q You may have answered this  
14 earlier, but how often was the EDS tested?

15 A Every time the BOP was on deck.

16 Q Well, okay. From April 20th going  
17 backwards, when was the last time it was  
18 tested before April 20th of 2010?

19 A It would have been -- The EDS  
20 system would have been tested on the  
21 between-well maintenance for the upcoming  
22 Macondo well.

23 So when the BOP is on deck -- And  
24 when I say "on deck," it's actually up on  
25 the rig -- EDS testing is part of our

1 between-well maintenance program. So the  
2 EDS test should be conducted every time that  
3 BOP was on deck. So it would have to go  
4 back to logs of when the BOP was on deck for  
5 when that was done.

6 Q Do you know when that was? Do you  
7 have a memory of that?

8 A Not off the top of my head, I  
9 don't.

10 MR. BOWMAN:

11 Thank you.

12 THE WITNESS:

13 Thank you, sir.

14 HON. JUDGE ANDERSEN:

15 Thank you very much.

16 Anadarko and MOEX?

17 MS. POLK:

18 No questions.

19 HON. JUDGE ANDERSEN:

20 Douglas Brown?

21 COUNSEL REPRESENTING MR. BROWN:

22 No questions.

23 HON. JUDGE ANDERSEN:

24 Michael Williams?

25 Pat O'Bryan?

1 COUNSEL REPRESENTING MR. O'BRYAN:

2 No questions.

3 HON. JUDGE ANDERSEN:

4 Robert Kaluza?

5 COUNSEL REPRESENTING MR. KALUZA:

6 No questions.

7 HON. JUDGE ANDERSEN:

8 Jimmy Harrell?

9 MR. FANNING:

10 I have a couple of very eloquent  
11 questions, Judge.

12 HON. JUDGE ANDERSEN:

13 Based on those notes that you're  
14 not bringing up with you.

15 MR. FANNING:

16 Oh, I forgot my notes. Excuse me.

17 HON. JUDGE ANDERSEN:

18 There you go. Lawyers have to  
19 bring our yellow pads, right?

20 EXAMINATION BY MR. FANNING:

21 Q Ready, Mr. Fry?

22 A I'm sorry.

23 Q That's okay. If you have to look  
24 at something, go ahead.

25 Okay. Good morning. I'm Pat

1 Fanning. I represent Jimmy Harrell.

2 A How are you, sir?

3 Q And surely, you know Jimmy, don't  
4 you?

5 A I do very well.

6 Q Good. Okay. You worked with him  
7 for a long time over at Transocean?

8 A I have as well as during my trips  
9 to the HORIZON while I was in field support.

10 Q Am I correct in my recollection --  
11 I don't expect you to know exact dates, but  
12 I seem to remember back when Jimmy testified  
13 in May, that he said he had been on the  
14 HORIZON since January 22nd, 2004. Is that  
15 about right?

16 A I believe so, yes.

17 Q Okay. And you knew of Jimmy's  
18 work as the OIM on the rig --

19 A Yes.

20 Q -- since 2004?

21 A Well, since I came into technical  
22 field support in 2006, yes.

23 Q Oh, okay. Good. And what do you  
24 know about Jimmy's attitude toward  
25 maintenance of not just the BOP, but all the

1 different components of the rig? Do you  
2 have a familiarity with that?

3 A I knew Jimmy was very diligent and  
4 thorough about making sure from a BOP  
5 standpoint, which is how I dealt with him,  
6 that the BOP was, you know, ready to go  
7 every time before it went into the water.  
8 Yes, he was very thorough and on top of his  
9 business.

10 Q You would agree certainly that the  
11 people who were out there on the rig, as  
12 Mr. Dykes has stated previously, who are  
13 sitting on top of that Roman candle have a  
14 vested interest in making sure that they  
15 have a fully operational BOP down below  
16 them; wouldn't you agree with that?

17 A Yes.

18 Q Okay. And was Jimmy's conduct on  
19 the rig with regard to maintenance of the  
20 BOP in conformity with that position, in  
21 other words, he was worried about making  
22 sure he had a safe BOP?

23 A Yes.

24 Q Okay. Did Jimmy ever talk to you  
25 about any maintenance issues on the BOP?

1           A     No, not regarding maintenance  
2     issues, no.

3           Q     All right. Has Jimmy ever called  
4     you to talk to you about the BOP and  
5     anything that needed to be done with it on  
6     the rig?

7           A     Yes. I actually was called one  
8     night from the rig and from Jimmy  
9     regarding -- they were trying to get their  
10    annular to retest and they were trying to  
11    troubleshoot it and they couldn't figure out  
12    what was wrong with it. Jimmy called me  
13    about 1:00 in the morning and asked if I  
14    would come out to the rig to assist with the  
15    troubleshooting, which I did.

16          Q     Was his call like, "Mike, when you  
17    get a chance, would you come on out here and  
18    take a look at this" or was it more urgent  
19    than that?

20          A     No, I mean, it was definitely  
21    urgent. I mean, even though we have two  
22    annulars on the rig, on the blowout  
23    preventer, we needed to make sure that  
24    everything was ready to go. And during that  
25    time, the annular was overhauled, leaked,

1 disassembled, put back together, leaked,  
2 disassembled, and Jimmy at that point  
3 requested a senior member of technical field  
4 support to come out and assist, which I did.

5 Q Just in order to test it to make  
6 sure it was functioning properly?

7 A To assist in the inspection of the  
8 components as well as to assist in putting  
9 it back together and retesting it.

10 Q So you got a call at 1:00 in the  
11 morning. When did you go to the rig?

12 A Immediately. I got in the car and  
13 drove to Amelia to catch the first  
14 helicopter out.

15 Q Amelia. Tell us where Amelia is  
16 and where you came from at 1:00 in the  
17 morning.

18 A I came from Katy, Texas, which to  
19 Amelia is about a six-hour drive, five and a  
20 half hour drive.

21 Q Is that some indication for us of  
22 how serious Jimmy was and you were about  
23 making sure that this BOP was always in good  
24 condition and working properly?

25 A Yes, very much so.

1           Q     Okay. Do you know Jimmy well  
2     enough to know what he would have done if he  
3     had thought that there was an issue  
4     regarding safety and the safety of the BOP  
5     on the rig?

6           A     Yes, I mean, Jimmy would have shut  
7     it down if there was an issue with it, an  
8     example being he called me at 1:00 in the  
9     morning and having me come out to the rig.  
10    If it wasn't something he was concerned  
11    with, they would have just kept going about  
12    what they were doing. So I fully believe  
13    that he would have shut it down.

14           MR. FANNING:

15                    Thank you. That's all the  
16    questions I have.

17           HON. JUDGE ANDERSEN:

18                    Thank you very much.

19                    Curt Kuchta?

20           MR. SCHONEKAS:

21                    Just a few, Judge.

22    EXAMINATION BY MR. SCHONEKAS:

23           Q     Good morning, Mr. Fry. My name is  
24    Kyle Schonekas and I represent Captain  
25    Kuchta.

1                   Sir, I want to ask you with  
2   respect to the maintenance of equipment, is  
3   there any division within Transocean as to  
4   the types of equipment?

5           A     When you say "division" --

6           Q     Meaning is there a section that  
7   handles drilling type equipment and another  
8   section that handles marine equipment?

9           A     Yes, it's broken down by the  
10   departments.

11          Q     And is that, in fact, a dichotomy  
12   that exists within Transocean?

13          A     Yes.

14          Q     All right, sir. With respect to  
15   the blowout preventer, would you tell the  
16   panel in what group that falls, whether it's  
17   marine or -- what's the other description  
18   that you had?

19          A     It would be the maintenance  
20   department. The subsea department works for  
21   the maintenance supervisor.

22          Q     Does the captain of the DEEPWATER  
23   HORIZON have any responsibility with respect  
24   to the maintenance of that type of  
25   equipment, sir?

1           A     No. The maintenance supervisor  
2 reports to the asset manager on shore.

3           Q     All right, sir. Now, with respect  
4 to some questions that were asked by  
5 Mr. Mathews and it had to do with the event  
6 of a well control situation; do you recall  
7 that?

8           A     I do.

9           Q     And, in fact, he directed your  
10 attention to a series of documents under the  
11 Emergency Response Manual concerning  
12 emergency disconnect procedure; do you  
13 recall that?

14          A     I do.

15          Q     And it delineates the  
16 responsibility of the driller, the drill  
17 crew, the assistant driller and the subsea  
18 engineer, correct?

19          A     Correct.

20          Q     And there is not, in fact, any  
21 mention of the captain within that section;  
22 is that right?

23          A     Correct.

24          Q     And the reason being, sir, is that  
25 that is a technical area that would fall

1 within the discipline of these people; is  
2 that correct?

3 A Correct. That relates to the EDS  
4 procedures for the drill crew.

5 Q Now, you did indicate, though,  
6 that it wouldn't mean that the captain had  
7 no responsibilities in the event of a well  
8 control situation, though; is that correct?

9 A Correct.

10 Q And, in fact, his  
11 responsibilities, as you have described  
12 them, would be essentially to make sure that  
13 the well would remain on site or be prepared  
14 to position it in the event of some  
15 emergency, correct?

16 A Correct. The marine department  
17 has a course of actions that need to be  
18 taken as part of various events, but, yes.

19 Q And that awareness in terms of  
20 being ready to do those things would result  
21 when the people in the drilling activity  
22 would alert the bridge that "we're in a well  
23 control situation"; is that correct?

24 A Correct. The people on the bridge  
25 do not monitor the well as part of their

1 normal activities.

2 Q And that's the way it's handled on  
3 most rigs; is that right, sir?

4 A I would say that's on all rigs.

5 Q And so for the captain to be aware  
6 that someone may have to activate the EDS  
7 system, there would have to be a call or  
8 advice from someone on the rig floor that  
9 "we're in this situation," correct?

10 A There are alarms that indicate the  
11 different stages of, you know, red and  
12 yellow alert. There's lights and alarms  
13 that go off. But, yes, there's a chain of  
14 sequences that happen, but, yes, someone  
15 would have to alert the captain that this  
16 has happened.

17 Q All right, sir. Now I want to  
18 direct you to some questions that  
19 Mr. Godfrey asked you concerning the BP  
20 audit. Do you recall those?

21 A I do.

22 Q And particularly, sir, I'm  
23 referring to the page that he referred you  
24 to, and this is Bates stamped  
25 BP-HZN-IIT0008890. It's Page 20 of the

1 audit, if that helps at all.

2 A I apologize. Are you looking for  
3 the full audit or just the ones that --

4 Q I'm referring to Section 1.2 and  
5 1.2.1.

6 A Okay.

7 Q All right. Now, my understanding  
8 is that this audit is commissioned by BP,  
9 correct?

10 A That is my understanding, correct.

11 Q And this surveyor essentially  
12 makes a report to BP to make certain that  
13 the equipment that they're being provided by  
14 Transocean is of sufficient quality and  
15 safety to do the job, correct?

16 A That would be my understanding,  
17 correct.

18 Q And, in fact, if BP had an issue  
19 with anything, they had an absolute right to  
20 reject that equipment; did they not, sir?

21 MR. GODFREY:

22 Objection as to lack of  
23 foundation.

24 EXAMINATION BY MR. SCHONEKAS:

25 Q Sir, do you have any understanding

1 as to whether or not BP had any rights if  
2 they were dissatisfied with the quality,  
3 condition or safety of the equipment being  
4 provided by Transocean?

5 A I personally do not.

6 Q All right, sir. In fact, in  
7 resolving issues concerning the condition of  
8 equipment, BP on occasion would consult with  
9 you all and ask you what are you going to do  
10 about whatever piece of equipment, correct?

11 A They would consult the rig crew as  
12 well as the management in town, yes.

13 Q And it's your understanding, is it  
14 not, sir, that if they were dissatisfied  
15 with your interpretation or the company's  
16 interpretation of API 53, they had a right  
17 to do something about that; did they not?

18 MR. GODFREY:

19 Objection. Lack of foundation.  
20 Asked and answered.

21 HON. JUDGE ANDERSEN:

22 Okay. It was way back at the  
23 beginning of the questioning, but he asked  
24 whether or not you had an understanding.  
25 You're not expected to understand the

1 complexities of, let's say, the lease  
2 agreement between BP and Transocean, but  
3 obviously you're familiar with how it plays  
4 out in these audits.

5 So do you have an understanding as  
6 to what, if anything, BP can do if it's  
7 dissatisfied with the answers that you give  
8 them to a point in an audit?

9 THE WITNESS:

10 No, I don't have any knowledge of  
11 what happens.

12 EXAMINATION BY MR. SCHONEKAS:

13 Q Sir, were you ever provided a copy  
14 of this audit?

15 A I was not provided the full audit.  
16 I was given just the items that dealt with  
17 subsea.

18 Q All right. And you would agree  
19 with me that the item on Page 20, 1.2 and  
20 1.2.1 relate to that sort of equipment,  
21 correct?

22 A Correct.

23 Q All right. Let's take a look at  
24 1.2.1. It says, "Drilling and well control.  
25 Observation. The tests, middle and upper

1 pipe ram BOP bonnets are original. They  
2 have not been subject to OEM inspection and  
3 recertification in accordance with API and  
4 OEM recommendations." Correct? That's what  
5 it says?

6 A That's what it says, correct.

7 Q And, in fact, this is an  
8 observation that's being --

9 MR. GODFREY:

10 Objection as to the switch-out of  
11 the word "recommendations" for the word  
12 "requirements."

13 MR. SCHONEKAS:

14 I'm sorry. "Requirements." I  
15 misspoke. Thank you, Mr. Godfrey.

16 MR. GODFREY:

17 You're welcome.

18 EXAMINATION BY MR. SCHONEKAS:

19 Q All right, sir. Now, with respect  
20 to that observation by BP's auditor, it goes  
21 on and it states, "Transocean proposed" --  
22 and it says "proposed" -- "a change-out plan  
23 commencing in 2010 for completion in 2011."

24 All right, sir. With respect to  
25 that response to BP's auditor's observation,

1 do you know whether or not BP said, "That's  
2 insufficient. I don't want you to do  
3 anything until you have done that overhaul"?

4 MR. GODFREY:

5 Objection. Lack of foundation.

6 EXAMINATION BY MR. SCHONEKAS:

7 Q Do you know?

8 MR. GODFREY:

9 Asked and answered.

10 HON. JUDGE ANDERSEN:

11 Well, he was previously asked  
12 about if he understood what, if any, rights  
13 BP had with respect to the audit, and now  
14 he's asking whether or not there was any  
15 response by BP to this?

16 MR. SCHONEKAS:

17 That's correct, Judge.

18 MR. GODFREY:

19 Excuse me, Your Honor. The reason  
20 I said "objection, asked and answered," I  
21 asked specifically the witness about  
22 communications between Transocean and BP  
23 with respect to this, and he said he didn't  
24 know. That's why I'm objecting, "asked and  
25 answered."

1 MR. SCHONEKAS:

2 No, my question was different,  
3 Judge. My question had to do with --

4 HON. JUDGE ANDERSEN:

5 Okay. Why don't you state your  
6 question again.

7 MR. SCHONEKAS:

8 I will restate it.

9 HON. JUDGE ANDERSEN:

10 Even if it's redundant, there's  
11 been enough time in between and there might  
12 be other questions that you would have to  
13 ask. So even if it's redundant, you can ask  
14 the question that Mr. Godfrey previously  
15 asked. We don't want to be overly  
16 redundant, but it's been awhile.

17 MR. SCHONEKAS:

18 I will be mildly redundant.

19 HON. JUDGE ANDERSEN:

20 Okay. Singularly redundant. It's  
21 okay.

22 EXAMINATION BY MR. SCHONEKAS:

23 Q All right, sir. Let me ask you  
24 this. Are you aware, sir, when a customer  
25 such as BP terminates the use of your

1 drilling rigs?

2 A I'm not aware of --

3 Q Of that ever happening?

4 A I'm not aware of that happening or  
5 what happens when it happens.

6 Q All right, sir. Are you aware of  
7 any instance where as a result of BP's  
8 auditors saying "You haven't recertified  
9 this," that this said, "We're not going to  
10 drill using that BOP"?

11 A No, I'm not aware of --

12 Q That ever happening?

13 A I'm not aware of that ever  
14 happening.

15 MR. SCHONEKAS:

16 Thank you, sir. That's all I  
17 have.

18 HON. JUDGE ANDERSEN:

19 Thank you very much.

20 Steve Bertone?

21 COUNSEL REPRESENTING MR. BERTONE:

22 No questions.

23 HON. JUDGE ANDERSEN:

24 M-I Swaco?

25 COUNSEL REPRESENTING M-I SWACO:

1                   No questions.

2                   HON. JUDGE ANDERSEN:

3                   Dril-Quip?

4                   Weatherford?

5                   COUNSEL REPRESENTING WEATHERFORD:

6                   No questions.

7                   HON. JUDGE ANDERSEN:

8                   Counsel, do you have any

9 questions?

10                  MR. BAAY:

11                  Yes, I do have a few questions.

12                  HON. JUDGE ANDERSEN:

13                  Okay.

14                  EXAMINATION BY MR. BAAY:

15                  Q     Mr. Fry, just a few points of

16 clarification.

17                  You alluded to your background,

18 the fact that you served in some type of

19 military service; is that right?

20                  A     That's correct.

21                  Q     What branch did you serve in?

22                  A     I spent 10 years in the Navy.

23                  Q     And what did you do during that

24 time?

25                  A     I was a torpedoman on nuclear

1 submarines. I worked with torpedoes and  
2 cruise missiles and weapons delivery  
3 systems.

4 Q Would you say that you had to be  
5 disciplined in that position?

6 A Extremely disciplined.

7 Q Do you think that position suited  
8 you or prepared you well for a career as a  
9 subsea engineer?

10 A Yes, I do, as well as my  
11 background as a quality assurance inspector  
12 and QA supervisor on submarines.

13 Q Okay. Are you aware that Cameron  
14 makes a statement or offers a commentary on  
15 API RP 53 in EB-902D?

16 A I am.

17 Q And if you look at that document  
18 that you have before you and if you flip to  
19 the second to last page, is that statement  
20 in the Engineering Bulletin?

21 A Yes, it is.

22 Q All right. Would you just read  
23 that second paragraph from the top as to  
24 what they say about RP 53?

25 A "API RP 53 is not considered to be

1 an industry standard, but is a recommended  
2 practice. As such, it is intended to be a  
3 guideline providing advice for operation and  
4 maintenance of well control and drilling  
5 equipment.

6 Q Okay. And throughout the  
7 paragraph -- Finish the whole paragraph.

8 A Sorry. "As such, it is not  
9 possible to certify that any maintenance or  
10 inspection of any equipment can be in  
11 compliance with API RP 53."

12 Q And the last sentence, please?

13 A "Recertification and/or  
14 remanufacture of well control equipment can  
15 be implemented in accordance with the  
16 relevant section or annex of API 6A or API  
17 16A or the manufacturer's written policy  
18 and/or procedures."

19 Q Okay. Would you say that that  
20 position statement articulated by Cameron in  
21 this Engineering Bulletin is consistent with  
22 Transocean's view of API RP 53?

23 A Yes.

24 Q Okay. Is it consistent with the  
25 industry's view of API RP 53 that you know

1 in your experience?

2 A In my experience, with  
3 communications with people in my same  
4 position with other companies, I would say  
5 "yes."

6 Q You made the comment earlier that  
7 condition-based maintenance is part of  
8 Transocean's maintenance program; it's not  
9 the total program? Did I hear that right?

10 A That's correct. It's a large  
11 part, but that is not the system that we  
12 use.

13 Q Explain for me briefly what these  
14 other parts are in addition to  
15 condition-based monitoring that Transocean  
16 performs.

17 A We have various tasks. I mean, we  
18 have what would be considered as  
19 preventative maintenance, which is, you  
20 know, greasing and minor adjustments of  
21 equipment.

22 We have predictive maintenance,  
23 which gets more into operator tests,  
24 signature tests, nondestructive tests,  
25 function tests.

1                   So condition-based maintenance,  
2    condition-based monitoring is -- Predictive  
3    maintenance and condition-based maintenance  
4    are kind of one and the same when it comes  
5    to the actual steps that are done.

6           Q     Okay.  And these steps, as I  
7    understand, are organized through the RMS  
8    system?

9           A     That is correct.

10          Q     And prior to RMS, what was the  
11   system?

12          A     We had the EMPAC system.

13          Q     Do you know if DNV inspected the  
14   RMS system and offered commentary on  
15   approving it one way or the other?

16          A     Yes, DNV had done a review of the  
17   RMS system and actually issued a certificate  
18   of approval for its use.

19          Q     Do you know when that certificate  
20   was issued?

21          A     I believe sometime in 2009.

22          Q     Okay.  And as I understand it, the  
23   RMS system provides the rig crew and subsea  
24   engineers on the crew with their daily tasks  
25   to upkeep the BOP maintenance?

1           A     Correct.

2           Q     You received some questions about  
3     Cameron's work on the rig, and I think as  
4     you explained, Cameron would come often at  
5     your suggestion; is that right?

6           A     When Cameron would come out to the  
7     rig, it was solely based on our request.  
8     There's not -- You know, Cameron doesn't  
9     call up and say, "Hey, we want to come out  
10    and inspect your rig." It's based on our  
11    request to Cameron.

12          Q     Are you aware that when Cameron  
13    does in most instances come to the rig, they  
14    produce a field service order?

15          A     Yes, I am.

16          Q     Describe what typically is placed  
17    in these field service orders.

18          A     The document is kind of a timeline  
19    of the work that's done by the Cameron  
20    inspectors or the service hands that come  
21    out to the rig.

22                 As I mentioned, it's basically a  
23    time log, you know, "departed for the rig,"  
24    "arrived on the rig," "this is the work that  
25    was done." But it's an overview of the work

1 that has been completed.

2 Q And what other type of documents  
3 in your experience does Cameron produce or  
4 create or issue associated with their work  
5 on a Transocean rig?

6 A If a rig is requested to have a  
7 field service inspection done, we will  
8 receive a field service report. If  
9 there's -- The only other documentation we  
10 really receive is the inspection reports  
11 from those inspections, so it would be  
12 separate from their activity report. You  
13 would actually get the certification or the  
14 inspection document based on the findings of  
15 the inspection.

16 Q If Cameron overhauls a piece of  
17 equipment to first class or working class  
18 condition, do they typically issue to  
19 Transocean a Certificate of Conformance?

20 A For equipment that's overhauled in  
21 a Cameron facility back to a standard, yes,  
22 a COC will be issued for it.

23 Q And you have Certificates of  
24 Conformance and Compliance; is that your  
25 understanding?

1           A       Correct.

2           MR. BAAY:

3                   All right, Mr. Fry. Those are all  
4 my questions. Thanks for your time.

5           THE WITNESS:

6                   Thank you.

7           HON. JUDGE ANDERSEN:

8                   Thank you.

9                   Does Transocean have any  
10 questions?

11          MR. HYMEL:

12                   No, thank you, Judge.

13          HON. JUDGE ANDERSEN:

14                   Any additional questions from the  
15 Board?

16          MR. DYKES:

17                   I've got a couple.

18          EXAMINATION BY MR. DYKES:

19           Q       Mr. Fry, when did you first see  
20 the BP audit for 2009 or parts of it anyway?

21           A       The subsea parts were e-mailed to  
22 me after the reviews started taking place.

23                   I don't recall the exact date of it.

24                   Sometime --

25           Q       Approximately. October?

1           A     Yes, I would say -- I believe so.  
2     I don't have the exact date.

3           Q     I was just looking for a ballpark.  
4     Based on what you know and can recall, was  
5     the rig ever shut down either by Transocean  
6     or by BP until those discrepancies or issues  
7     with respect to the BOP stack resolved?

8           A     No, not to my knowledge.

9           MR. DYKES:

10                  Thank you.

11           HON. JUDGE ANDERSEN:

12                  Any other Board questions?

13                  Captain?

14           EXAMINATION BY CAPT. HIGGINS:

15           Q     Just really quickly, sir. Is the  
16     captain responsible for the safety of  
17     everyone on board?

18           MR. SCHONEKAS:

19                  Objection. Beyond the scope.

20           HON. JUDGE ANDERSEN:

21                  If he doesn't know, that would be  
22     an answer that I'm sure that Captain Higgins  
23     would be interested in knowing as well.

24           MR. SCHONEKAS:

25                  Also, beyond the area of expertise

1 of the witness.

2 HON. JUDGE ANDERSEN:

3 Overruled.

4 If you know the answer to the  
5 question, you can give the answer. If you  
6 don't know, that would be fine as well.  
7 Whatever the truth is.

8 THE WITNESS:

9 In an emergency situation, the  
10 captain is the person in charge.

11 EXAMINATION BY CAPT. HIGGINS:

12 Q My question, sir, is he  
13 responsible for the safety of everyone on  
14 board?

15 MR. FANNING:

16 Can we get a time? When? The  
17 witness seems to distinguish. That's why I  
18 asked that.

19 THE WITNESS:

20 I apologize. Can you --

21 EXAMINATION BY CAPT. HIGGINS:

22 Q If the captain is aware of an  
23 unsafe condition that would jeopardize the  
24 safety of the people on board, does he have  
25 any responsibilities to those people on

1 board?

2 MR. SCHONEKAS:

3 It calls for a legal conclusion.

4 HON. JUDGE ANDERSEN:

5 We mean from an operational  
6 standpoint.

7 THE WITNESS:

8 No, we're all responsible for each  
9 other's safety.

10 EXAMINATION BY CAPT. HIGGINS:

11 Q If the captain is aware of an  
12 unsafe condition on a blowout preventer,  
13 does he have any obligation to report it or  
14 take particular action?

15 MR. SCHONEKAS:

16 Objection. It assumes facts not  
17 in evidence.

18 HON. JUDGE ANDERSEN:

19 Correct. And the Board is --

20 MR. SCHONEKAS:

21 And this is not an expert, Judge.

22 HON. JUDGE ANDERSEN:

23 Well, fine. He spent a lot of  
24 time out on rigs. He is an expert in terms  
25 of blowout preventers. And I'm going to

1 guess that various elements of the Board are  
2 going to make prospective recommendations,  
3 and the understanding of somebody who has  
4 had his extensive experience could have an  
5 impact on what they might recommend.

6 But once again, the witness  
7 doesn't have to make anything up.

8 So Captain Higgins' question is if  
9 the captain of the ship is aware of a safety  
10 issue with respect to a blowout preventer,  
11 are you aware of any authority that he has  
12 to take action based on that?

13 THE WITNESS:

14 I'm not aware of any requirements  
15 for that. I mean -- Yeah. I mean, I have  
16 been on shore for almost six years, so I  
17 don't know what the requirements are for  
18 reporting for various positions on the rigs.

19 EXAMINATION BY CAPT. HIGGINS:

20 Q With regard to DNV's certification  
21 of the RMS system, we may have that  
22 document, but I'm not aware of it. Are you  
23 aware of the particulars of that document  
24 and what that certification incorporated?

25 A I have seen it. I'm not aware of

1 the details of it. I know that they did  
2 a -- And this is just from my reading it on  
3 the wall. I guess it's more of an approval  
4 of the system to be used as a computerized  
5 maintenance management system, but I don't  
6 have the knowledge of what all went into  
7 that.

8 Q Is it your understanding that  
9 certification indicated that that system was  
10 accurate?

11 A Accurate to what?

12 Q If the RMS system indicated that a  
13 large number of maintenance items were  
14 outstanding, would that be an accurate  
15 indication?

16 A My understanding from just my own  
17 interpretation of what it would be is that  
18 it's not looking at the maintenance tasks.  
19 DNV, to my knowledge, did not audit the  
20 maintenance procedures. It was the use of  
21 RMS as an approved maintenance system.

22 Q So my understanding of your  
23 testimony is that it's an approved system,  
24 but you're not aware of how accurate it was  
25 with regard to pending items; is that

1 correct?

2 A Again, I don't have the details of  
3 it. My understanding -- And again, I'm only  
4 reading a certificate on a wall that says  
5 that, you know, it has been reviewed as an  
6 approved maintenance management system.

7 It's more my interpretation would be of a  
8 delivery vehicle being approved for the use  
9 of maintenance. It's not a review of the  
10 maintenance tasks to say whether or not, you  
11 know, this is an applicable procedure or  
12 not. That's my understanding of it.

13 Q Yes, sir. And my questions are  
14 really based on the fact that we had earlier  
15 testimony of thousands of hours of overdue  
16 maintenance that were indicated by the RMS  
17 system, and I'm trying to determine whether  
18 or not based on this certification of this  
19 system that that evaluation was accurate or  
20 not. And my understanding is you're not  
21 sure?

22 A My understanding, to answer your  
23 point about the overdue maintenance, when  
24 the two systems were merged together, EMPAC  
25 and RMS, the due dates -- When the two

1 systems merged together, the due dates were  
2 not -- they were not lining up with each  
3 other. So when the system was first  
4 activated, a large portion of maintenance  
5 items were automatically set to be overdue.  
6 Again, this is just my understanding of what  
7 happened.

8 It's not unusual for a subsea BOP  
9 well control equipment to have overdue  
10 maintenance. Because the BOP is on bottom,  
11 it could be on bottom for six, eight, 10, 12  
12 months. That calculation of when the next  
13 PM is due is constantly coming up every day.

14 But for the large number of  
15 overdue maintenance, my understanding is  
16 once the two systems were merged together,  
17 that until all the information was correctly  
18 updated, that's what threw the overdue  
19 maintenance numbers out of -- I don't want  
20 to say out of whack, but to the extreme  
21 level that they were at.

22 CAPT. HIGGINS:

23 Thank you.

24 HON. JUDGE ANDERSEN:

25 Any other Board questions?

1           CAPT. NGUYEN:

2                   Yes, I have a few questions.

3           EXAMINATION BY CAPT. NGUYEN:

4           Q       The blowout preventer I understand  
5           is an equipment that belonged to the vessel;  
6           is that correct, sir?

7           A       That's correct.

8           Q       All right. Do you know if the  
9           DEEPWATER HORIZON had a safety management  
10          system?

11          A       I believe all of our rigs do.

12          Q       Okay. Do you know whether the  
13          DEEPWATER HORIZON safety management system  
14          covered the blowout preventer?

15          A       I will be honest with you,  
16          Captain. I'm not an ISM specialist. I  
17          don't know what's covered and what's not  
18          covered under that.

19          Q       We're not talking about ISM here.

20          A       Safety management?

21          Q       Yes, sir. The safety management  
22          system of the vessel, does it cover the  
23          blowout preventer?

24          A       Again, I don't know.

25          Q       Okay. Now, who's responsible for

1 the -- If the safety management system  
2 covered the blowout preventer, who's  
3 responsible for ensuring the effectiveness  
4 of the vessel safety management system?

5 MR. BAAY:

6 Your Honor, that's a little  
7 misleading. He just said that he doesn't  
8 know whether it's covered or not, so to ask  
9 him a follow-up as to who's responsible for  
10 that is misleading.

11 MR. SCHONEKAS:

12 I join in that objection.

13 HON. JUDGE ANDERSEN:

14 Okay. If you don't have an  
15 opinion, then "I don't know" is a perfectly  
16 honest answer. If you have an opinion or an  
17 understanding, why don't you let us know  
18 what it is.

19 THE WITNESS:

20 I don't have an understanding or  
21 an opinion on the safety management in any  
22 aspect.

23 EXAMINATION BY CAPT. NGUYEN:

24 Q Okay. Now, you served on, I  
25 believe, three Transocean rigs before; is

1 that correct?

2 A Correct.

3 Q Did they all have safety  
4 management systems, sir?

5 A Yes, I believe so.

6 Q Okay. And who was responsible for  
7 ensuring the effectiveness of the safety  
8 management systems for those vessels?

9 MR. SCHONEKAS:

10 Objection. Calls for a legal  
11 opinion.

12 MR. BAAY:

13 Are you asking for each specific  
14 rig?

15 EXAMINATION BY CAPT. NGUYEN:

16 Q I mean, each one of them have a  
17 safety management system. Who on the rig is  
18 responsible for ensuring the effectiveness  
19 of the safety management system?

20 HON. JUDGE ANDERSEN:

21 And we're talking operational, not  
22 legal, and whether or not you have an  
23 understanding.

24 MR. SCHONEKAS:

25 Can we have a time frame, too,

1 Judge?

2 HON. JUDGE ANDERSEN:

3 When he was on each one of the  
4 three rigs.

5 And if that changed from time to  
6 time and that was your understanding, you  
7 can let us know that.

8 THE WITNESS:

9 I don't recall at this point. I  
10 mean, it has been six years since I have  
11 been on a rig, actually working on the rigs.

12 EXAMINATION BY CAPT. NGUYEN:

13 Q Now, you say that Cameron would  
14 come out as requested by Transocean; is that  
15 correct, sir?

16 A We would make the request through  
17 Cameron, correct.

18 Q And I believe it was Mr. Bowman  
19 that questioned that, to your knowledge,  
20 that Cameron never raised any concerns about  
21 the condition of the BOP; is that correct,  
22 sir?

23 A Not to my knowledge. I mean, we  
24 didn't request Cameron to come out to do an  
25 audit. They just came out to do an

1 inspection.

2 Q So Cameron was out there and they  
3 did not raise any concerns. Would you agree  
4 that Cameron had full awareness of the  
5 condition of the BOP and they endorsed its  
6 continued use?

7 MR. JONES:

8 Object to the form of that  
9 question. Lack of foundation.

10 HON. JUDGE ANDERSEN:

11 Once again, we go back to if you  
12 know enough to develop an opinion, you can  
13 express your opinion. If you haven't  
14 developed an opinion, you don't have to make  
15 one up while you're sitting there.

16 THE WITNESS:

17 I would say in regards to that  
18 question, again, Cameron does not come out  
19 to the rig to audit the maintenance system  
20 or the dates of when something was  
21 overhauled. We request them to come out to  
22 a rig for a specific task. I would not in  
23 any way expect Cameron to know the history  
24 of that piece of equipment.

25 EXAMINATION BY CAPT. NGUYEN:

1 Q Not just the history, but the  
2 condition of the blowout preventer?

3 MR. JONES:

4 The same objection.

5 HON. JUDGE ANDERSEN:

6 Overruled. You can complete your  
7 answer.

8 THE WITNESS:

9 I wouldn't expect them to know the  
10 condition of every piece of equipment on the  
11 rig.

12 EXAMINATION BY CAPT. NGUYEN:

13 Q Now, Mr. Godfrey asked you  
14 questions regarding the audit that was  
15 conducted by BP in September of 2009. Do  
16 you recall that, sir?

17 A I do.

18 Q Okay. Now, if BP had a question  
19 about the status of a BOP, why did they use  
20 the DEEPWATER HORIZON for the Macondo  
21 project?

22 A I wasn't part of any of those  
23 conversations with rig management and BP. I  
24 don't know.

25 Q Now, after the Macondo project,

1 was the DEEPWATER HORIZON scheduled to go to  
2 another well, sir?

3 A Was it scheduled to go to another  
4 well?

5 Q Yes, sir.

6 A I don't have that information.

7 Q Yes, sir. My understanding is  
8 that it was supposed to go to the Nile  
9 project after the Macondo. If BP used the  
10 DEEPWATER HORIZON for the Macondo, and then  
11 next would be the Nile, would it fair to say  
12 that BP shared the same understanding of the  
13 requirements for RP 53 as Transocean, sir?

14 MR. BAAY:

15 Your Honor, I object to calling  
16 for speculation as to what BP thought and  
17 their interpretation.

18 HON. JUDGE ANDERSEN:

19 If BP gave you their  
20 interpretation or told you about their  
21 interpretation, you can answer, but you  
22 don't need to speculate on what their  
23 understandings are.

24 EXAMINATION BY CAPT. NGUYEN:

25 Q It's not just what they told you,

1 but their own action, that using it for  
2 Macondo and for the Nile, is that an  
3 endorsement of your understanding of RP 53?

4 MR. GODFREY:

5 Objection. Lack of foundation.

6 HON. JUDGE ANDERSEN:

7 You don't have to guess or  
8 speculate. If you don't know, "I don't  
9 know" is an honest answer.

10 THE WITNESS:

11 I don't know.

12 CAPT. NGUYEN:

13 All right. Thank you, sir.

14 HON. JUDGE ANDERSEN:

15 Any other Board questions?

16 Mr. Fry, is there anything you  
17 would like to add that you haven't had a  
18 chance to discuss with us?

19 THE WITNESS:

20 No, I'm all set.

21 HON. JUDGE ANDERSEN:

22 The Board would like to thank you  
23 for coming to testify today, and thank you  
24 also for your service for the country in the  
25 United States Navy. Thank you very much.

1 MR. BOWMAN:

2 Your Honor, before we break, maybe  
3 to save some time, does the Board actually  
4 have records of these visits by Cameron to  
5 the HORIZON? And if so, if you could make  
6 it available to us, it may be helpful and  
7 speed up things in the next two days.

8 MR. MATHEWS:

9 Yes, sir, Mr. Bowman, we do have  
10 them, and I will try to get with Mr. Bray to  
11 upload them to the Homeport.

12 MR. BOWMAN:

13 Thank you.

14 CAPT. NGUYEN:

15 Thank you, Mr. Fry, for your  
16 appearance today. You are dismissed, sir.

17 We will reconvene at 0800  
18 tomorrow.

19 \* \* \* \*

20

21

22

23

24

25

1

2

## REPORTER'S CERTIFICATE

3

4

I, James T. Bradle, Certified Court

5

Reporter, do hereby certify that the

6

foregoing proceedings were reported by me in

7

shorthand and transcribed under my personal

8

direction and supervision, and is a true and

9

correct transcript, to the best of my

10

ability and understanding;

11

That I am not of counsel, not related

12

to counsel or parties hereto, and not in any

13

way interested in the outcome of this

14

matter.

15

16

17

18

19

---

JAMES T. BRADLE, CCR

20

21

22

23

24

25

<p style="text-align: center;"><b>A</b></p> <p><b>ability</b> 16:17 28:7 159:10</p> <p><b>able</b> 15:22 48:14 50:21 51:19 57:3</p> <p><b>abnormalities</b> 47:20</p> <p><b>ABS</b> 62:25,25 63:3,14 64:2 64:10,14,24</p> <p><b>absolute</b> 128:19</p> <p><b>acceptable</b> 101:22</p> <p><b>access</b> 5:11 40:25</p> <p><b>account</b> 69:12 107:9 108:11 108:18,23</p> <p><b>accountable</b> 36:22</p> <p><b>accurate</b> 105:3 147:10,11,14 147:24 148:19</p> <p><b>action</b> 86:9,15 87:19 145:14 146:12 157:1</p> <p><b>actions</b> 87:25 88:12 126:17</p> <p><b>activate</b> 68:18 127:6</p> <p><b>activated</b> 21:23 87:17 149:4</p> <p><b>activating</b> 21:12</p> <p><b>actively</b> 31:15</p> <p><b>activities</b> 51:16 127:1</p> <p><b>activity</b> 50:24 51:6,20 52:8 52:14 126:21 141:12</p> <p><b>actual</b> 15:17 17:15 24:13 25:25 38:10 52:12 78:17 86:4 96:22 104:4 107:5</p>	<p>139:5</p> <p><b>add</b> 157:17</p> <p><b>addition</b> 138:14</p> <p><b>additional</b> 142:14</p> <p><b>address</b> 5:13 26:21 32:9 61:24</p> <p><b>addressed</b> 21:17 31:2</p> <p><b>addressing</b> 31:16 97:25</p> <p><b>adequate</b> 11:15</p> <p><b>adjustments</b> 138:20</p> <p><b>administer</b> 1:18 6:11</p> <p><b>advance</b> 4:21</p> <p><b>advice</b> 127:8 137:3</p> <p><b>advisories</b> 22:15</p> <p><b>advisory</b> 26:5,11 27:14</p> <p><b>affirmative</b> 74:8</p> <p><b>ago</b> 11:18</p> <p><b>agree</b> 11:7 56:9 73:23 78:8 80:21 120:10 120:16 130:18 154:3</p> <p><b>agreeance</b> 47:18</p> <p><b>agreed</b> 75:20 77:25</p> <p><b>agreement</b> 130:2</p> <p><b>ahead</b> 60:8 118:24</p> <p><b>aircraft</b> 93:7,8</p> <p><b>Airport</b> 1:22</p> <p><b>alarms</b> 127:10 127:12</p> <p><b>alert</b> 20:22,23 86:17,18 126:22 127:12 127:15</p> <p><b>alerted</b> 97:3</p> <p><b>alerts</b> 87:2,3</p> <p><b>allow</b> 15:11</p>	<p>26:13 61:9</p> <p><b>allowed</b> 38:22 41:10</p> <p><b>allows</b> 61:19 116:2</p> <p><b>alluded</b> 135:17</p> <p><b>aluminum</b> 115:20</p> <p><b>ambiguities</b> 79:6</p> <p><b>ambiguity</b> 78:16 78:18</p> <p><b>ambiguous</b> 78:23</p> <p><b>Amelia</b> 122:13 122:15,15,19</p> <p><b>amended</b> 1:20</p> <p><b>America</b> 31:25 32:1,4</p> <p><b>American</b> 7:25 8:5 9:8,25 18:12 64:21</p> <p><b>AMF</b> 68:1</p> <p><b>AMIRANTE</b> 18:15</p> <p><b>amount</b> 61:20 72:7</p> <p><b>Anadarko</b> 117:16</p> <p><b>analysis</b> 99:10</p> <p><b>Andersen</b> 2:8 4:3 5:22 6:4,15 6:17,25 68:25 69:7 71:18 74:14 75:4,8 75:21 76:19,25 78:10 79:17 81:16,21 88:16 89:7,23 90:5 91:10,19,24 95:7 96:8 102:15 117:14 117:19,23 118:3,7,12,17 123:17 129:21 132:10 133:4,9 133:19 134:18 134:23 135:2,7</p>	<p>135:12 142:7 142:13 143:11 143:20 144:2 145:4,18,22 149:24 151:13 152:20 153:2 154:10 155:5 156:18 157:6 157:14,21</p> <p><b>and/or</b> 88:1 137:13,18</p> <p><b>annex</b> 137:16</p> <p><b>annual</b> 101:2</p> <p><b>annular</b> 31:6,7 32:24,24 34:19 44:11,12,13,14 52:10 81:1 82:2,20,22 98:13,23 112:19 114:5 121:10,25</p> <p><b>annulars</b> 67:17 99:6 121:22</p> <p><b>anodes</b> 31:10</p> <p><b>answer</b> 37:15 62:22 71:20,21 72:5 73:20 75:14,20 95:11 96:12,15,16 112:10 143:22 144:4,5 148:22 151:16 155:7 156:21 157:9</p> <p><b>answered</b> 16:9 59:1 116:13 129:20 132:9 132:20,25</p> <p><b>answers</b> 33:23 62:23 114:9 130:7</p> <p><b>anybody</b> 6:18</p> <p><b>anyway</b> 142:20</p> <p><b>apart</b> 41:15</p> <p><b>API</b> 36:16 53:6 54:9 57:23 60:12 62:12,13 71:3 72:23,23</p>	<p>92:12,19,23 93:12,14 94:7 94:23 96:4 97:8,17 129:16 131:3 136:15 136:25 137:11 137:16,16,22 137:25</p> <p><b>apologize</b> 34:15 75:7,9 91:11 97:9 103:16 128:2 144:20</p> <p><b>appearance</b> 158:16</p> <p><b>APPEARANC...</b> 2:1</p> <p><b>Appendix</b> 46:24 48:22</p> <p><b>applicable</b> 148:11</p> <p><b>applied</b> 110:23 110:24</p> <p><b>apply</b> 100:11</p> <p><b>appreciate</b> 102:12 114:22</p> <p><b>approval</b> 16:25 87:18 139:18 147:3</p> <p><b>approved</b> 101:12,15 147:21,23 148:6,8</p> <p><b>approving</b> 101:18 139:15</p> <p><b>approximately</b> 8:25 9:8,11 10:13 13:17,18 13:23 43:7 142:25</p> <p><b>April</b> 1:6,9,24 11:25 13:17 38:17 51:4 55:20 80:23 81:12 98:4 99:15 112:23 116:16,18</p> <p><b>area</b> 35:16 37:3</p>
--	--	---	--	---

<p>125:25 143:25  <b>argue</b> 62:15 79:6                  79:11,14  <b>armor-coated</b>                  15:1  <b>arose</b> 106:9  <b>arranging</b> 36:22  <b>arrived</b> 140:24  <b>articulated</b>                  137:20  <b>asked</b> 5:9 74:20                  75:20 77:10                  79:23 96:13                  100:15 101:1                  109:14 121:13                  125:4 127:19                  129:20,23                  132:9,11,20,21                  132:24 133:15                  144:18 155:13  <b>asking</b> 71:13                  72:2,9 74:1                  79:5 95:3                  132:14 152:13  <b>asks</b> 6:19  <b>aspect</b> 151:22  <b>assessment</b> 56:9                  80:23 81:8,12  <b>asset</b> 16:23                  58:13 125:2  <b>assets</b> 19:5,8  <b>assist</b> 121:14                  122:4,7,8  <b>assistant</b> 20:25                  125:17  <b>associated</b> 15:8                  55:16 57:8,10                  141:4  <b>assume</b> 25:24                  28:17 106:6                  107:14  <b>assumes</b> 145:16  <b>assuming</b> 110:17  <b>assumption</b>                  106:12  <b>assurance</b>                  136:11</p>	<p><b>attachment</b>                  57:13  <b>attention</b> 4:16                  12:3 125:10  <b>attitude</b> 119:24  <b>attorneys</b> 5:7,10  <b>audit</b> 55:17,17                  55:19 56:24                  57:2,20 58:7                  58:15 60:1                  82:16 83:4,7                  83:13,14 84:18                  92:5,6 94:5,20                  94:21 96:3                  97:4,12 127:20                  128:1,3,8                  130:8,14,15                  132:13 142:20                  147:19 153:25                  154:19 155:14  <b>auditor</b> 131:20  <b>auditors</b> 134:8  <b>auditor's</b> 131:25  <b>audits</b> 55:24                  56:16 130:4  <b>August</b> 38:12  <b>authority</b> 21:3                  21:23 88:3                  146:11  <b>authorized</b> 1:17  <b>authors</b> 31:22  <b>automatic</b> 20:2  <b>automatically</b>                  149:5  <b>Autoshear</b> 68:2                  68:4  <b>available</b> 24:1                  50:15 63:17                  158:6  <b>aware</b> 11:20                  13:24 14:2,7                  14:12,20 23:23                  24:15 55:23                  59:1 66:14                  92:6,9,17                  97:24 98:7,7                  98:16 127:5</p>	<p>133:24 134:2,4                  134:6,11,13                  136:13 140:12                  144:22 145:11                  146:9,11,14,22                  146:23,25                  147:24  <b>awareness</b>                  126:19 154:4  <b>awfully</b> 83:21  <b>awhile</b> 133:16  <b>a.m</b> 1:25</p> <hr/> <p style="text-align: center;"><b>B</b></p> <hr/> <p><b>B</b> 48:22  <b>Baay</b> 3:5,12 5:20                  6:1,2 58:2                  71:11 73:3                  75:15 81:4                  83:20 90:3                  96:5 113:11                  135:10,14                  142:2 151:5                  152:12 156:14  <b>back</b> 8:19 22:5,7                  27:1,13 40:20                  49:24 50:2,12                  54:16,19 55:7                  59:16,24 64:8                  66:19,22 70:4                  85:13,14 86:20                  117:4 119:12                  122:1,9 129:22                  141:21 154:11  <b>background</b>                  10:3 17:18,20                  135:17 136:11  <b>backwards</b>                  116:17  <b>back-up</b> 99:8  <b>ballpark</b> 143:3  <b>base</b> 34:11  <b>based</b> 25:11,18                  28:2 37:9,21                  38:2,5,7 39:5,9                  61:12,20 83:12                  84:5,21 85:11</p>	<p>97:21 101:17                  104:2,5 106:15                  106:25 107:6                  107:23,25                  108:1 109:10                  110:11 112:2                  113:17 114:2,7                  118:13 140:7                  140:10 141:14                  143:4 146:12                  148:14,18  <b>basically</b> 25:9                  65:10 140:22  <b>basis</b> 59:4 71:12                  90:19 96:24                  97:20 101:3,3                  108:5  <b>Bates</b> 20:12                  24:23,24,25                  26:9 30:25                  52:24 57:7,15                  58:25 63:16                  65:8 81:9,17                  127:24  <b>beach</b> 41:16                  66:17  <b>beginning</b> 1:24                  42:3 57:14                  104:24 129:23  <b>behalf</b> 89:13                  95:9  <b>belief</b> 106:9  <b>believe</b> 4:13                  12:15 25:14                  36:11 42:9                  48:10 49:13                  53:21 54:2                  59:9 60:10                  63:8,10,12,19                  64:20,24 82:20                  96:19 98:10                  114:24 119:16                  123:12 139:21                  143:1 150:11                  151:25 152:5                  153:18  <b>belonged</b> 150:5</p>	<p><b>Bertone</b> 134:20                  134:21  <b>best</b> 49:23 159:9  <b>better</b> 30:12                  78:18  <b>between-well</b>                  33:7,19 47:5                  116:21 117:1  <b>between-wells</b>                  47:14  <b>beyond</b> 76:18                  81:2 82:3,8                  143:19,25  <b>big</b> 44:5  <b>Billy</b> 18:18 37:2                  60:17 73:9  <b>blackout</b> 19:21  <b>blast</b> 31:9  <b>bleed</b> 104:7  <b>bleeding</b> 11:14  <b>blind</b> 24:16 28:8                  28:22 30:7,10                  68:13,19 103:7                  103:12,23                  104:13 105:7                  105:10  <b>block</b> 43:5,6                  46:8  <b>blocks</b> 29:9                  45:10,11,12,15                  45:18,22 46:1                  46:6,7,8                  115:20  <b>blow</b> 88:8,8  <b>blowout</b> 22:21                  24:14 63:25                  67:8 71:4                  92:14 121:22                  124:15 145:12                  145:25 146:10                  150:4,14,23                  151:2 155:2  <b>blue</b> 59:9  <b>board</b> 1:1 2:2                  4:17 5:25 6:6                  7:2 14:3 23:8                  47:23 52:17</p>
--	---	---	---	---

69:8 71:23 78:12 83:16 88:4,17 89:8 89:17 92:24 93:13 97:5,6 142:15 143:12 143:17 144:14 144:24 145:1 145:19 146:1 149:25 157:15 157:22 158:3 <b>Board's</b> 74:15 <b>bodies</b> 44:25 45:6,8 <b>body</b> 33:4 <b>BOEM</b> 38:9 45:5 46:4 72:23 76:15,15 <b>BOEMRE</b> 4:25 <b>bonnet</b> 24:11 49:16 60:18,25 69:25 <b>bonnets</b> 30:18 31:4 57:21 59:12,23 60:5 60:16,20 108:7 131:1 <b>book</b> 17:17 <b>BOP</b> 5:1 10:25 12:6,21,25 14:8,11,17,19 15:14,18,23 16:1,3,8 22:17 25:4 29:11 30:17 31:9,16 33:4 37:5,9 38:23 39:3 40:8 41:1 45:14,24 47:9 47:13,19,22 56:2,10,20 57:21 60:14 64:11 67:3,10 67:22 70:22,23 71:15 83:19 86:4 88:21 90:12,21 92:11	92:18,23,25 93:11,13 94:6 94:11,22,25 95:14 97:4,6 97:14,16,18 98:2,6,8,17,20 99:5,11,13 100:17 101:1 101:13,19 102:6,25 103:3 103:20,22 104:13,21 105:13 109:16 110:13 111:9 111:22,23 113:1 115:6 116:11,15,23 117:3,4 119:25 120:4,6,15,20 120:22,25 121:4 122:23 123:4 131:1 134:10 139:25 143:7 149:8,10 153:21 154:5 155:19 <b>BOPs</b> 17:4 18:4 36:3 111:17 <b>bottom</b> 27:3 97:11 99:11,12 104:14,15 149:10,11 <b>bought</b> 110:13 111:17 <b>Boughton</b> 13:13 32:2 <b>Boulevard</b> 1:23 <b>Bowman</b> 3:11 102:18,21 111:4,7 112:17 113:13 117:10 153:18 158:1,9 158:12 <b>boxed</b> 35:16 <b>BP</b> 55:17 56:24 57:2,19 58:7 76:18 91:21	92:4,9,17 93:10 94:5,19 94:20,21 95:6 95:9,10,14,18 96:2 97:4,12 97:14 127:19 128:8,12,18 129:1,8 130:2 130:6 132:1,13 132:15,22 133:25 142:20 143:6 155:15 155:18,23 156:9,12,16,19 <b>BP's</b> 131:20,25 134:7 <b>BP-HZN-IIT0...</b> 127:25 <b>BP-HZN-MBI</b> 86:8 <b>BP-HZN-MBI...</b> 20:12 <b>Brad</b> 32:2 <b>Bradle</b> 1:16 2:19 159:4,19 <b>branch</b> 135:21 <b>Bray</b> 5:14 158:10 <b>break</b> 6:21 41:15 69:2,5 72:9 158:2 <b>bridge</b> 21:9 86:10,19 87:6 88:12,22 89:2 126:22,24 <b>brief</b> 5:3,4,4 <b>briefly</b> 88:23 90:10 99:3 138:13 <b>briefs</b> 4:8 5:10 5:11 <b>bring</b> 4:16 40:1 41:15 113:24 118:19 <b>bringing</b> 47:21 118:14 <b>broad</b> 83:22	<b>broken</b> 9:16 124:9 <b>brought</b> 4:14 12:2 56:19 66:12 <b>Brown</b> 117:20 117:21 <b>Bruce</b> 102:21 111:1 <b>BSR</b> 109:20,24 <b>bulletin</b> 25:14 26:4,20,22 27:15 52:21 54:5 136:20 137:21 <b>bulletins</b> 17:17 22:14 <b>business</b> 120:9 <b>button</b> 67:22 <b>BUTTS</b> 2:15 <b>buying</b> 110:17 111:9 <b>B-A-A-Y</b> 6:3 <hr/> <b>C</b> <hr/> <b>calculation</b> 25:10,18,25 107:1,7,8,12 107:13,18,25 108:1,2 149:12 <b>calculations</b> 25:10,16 26:2 27:13,20 28:2 28:4 29:14,22 106:13,16 107:22,23 108:12,13 <b>call</b> 47:11 48:1 48:11,18 98:11 121:16 122:10 127:7 140:9 <b>called</b> 47:10 49:13 51:20 63:24 121:3,7 121:12 123:8 <b>calling</b> 156:15 <b>calls</b> 145:3	152:10 <b>CAMCG0003...</b> 26:9 <b>CAMCG0003...</b> 52:25 <b>Cameron</b> 17:4 17:10,25 18:3 18:20 19:3,11 22:13 23:18 25:3,13 26:4 28:5,25 29:14 31:5 32:8 33:1 40:3 44:20 49:12 50:20 53:16,19,23 54:20 55:12 61:18 83:17,24 84:13,17,19 85:5,10,14,22 85:23 86:1 90:6,18,22,25 100:16,25 101:12,16,23 107:4,17,23 108:10,19 110:14 112:6,7 112:7,18,21,24 113:15,24 114:14,17 115:5,7,14 116:9 136:13 137:20 140:4,6 140:8,11,12,19 141:3,16,21 153:13,17,20 153:24 154:2,4 154:18,23 158:4 <b>Cameron's</b> 39:12 84:4 85:18 101:18 140:3 <b>Canadian</b> 36:10 <b>candle</b> 120:13 <b>Canyon</b> 38:13 48:9,19 <b>capability</b> 24:14
--	--	--	---	---

24:17 <b>capable</b> 102:6 <b>capacity</b> 9:13 <b>capital</b> 19:5,7 <b>CAPT</b> 2:9 3:9,13 3:14 69:3 70:11 72:11 73:5 77:5 79:22 80:3 81:7,19,25 83:23 88:14 143:14 144:11 144:21 145:10 146:19 149:22 150:1,3 151:23 152:15 153:12 154:25 155:12 156:24 157:12 158:14 <b>captain</b> 2:4 4:1 4:11 16:7 72:8 75:17,23 77:14 77:22 79:21 88:7,11 123:24 124:22 125:21 126:6 127:5,15 143:13,16,22 144:10,22 145:11 146:8,9 150:16 <b>car</b> 122:12 <b>care</b> 55:5 <b>career</b> 136:8 <b>carrier</b> 93:8 <b>case</b> 88:25 <b>casing</b> 68:19 105:11,16,19 105:25 <b>casualty</b> 1:2 100:19 101:14 <b>catch</b> 122:13 <b>category</b> 39:14 <b>cause</b> 1:16 30:6 30:10 69:21 <b>Causeway</b> 1:22 <b>causing</b> 70:3 <b>cavities</b> 30:18	85:10 101:21 113:20 <b>cavity</b> 29:9 86:4 101:20 <b>CCR</b> 159:19 <b>centered</b> 107:10 <b>CEO</b> 80:13 100:1 <b>certain</b> 23:1 63:20 108:5,6 108:6 109:11 128:12 <b>certainly</b> 102:5 120:10 <b>certificate</b> 46:19 46:20 64:7 139:17,19 141:19 148:4 159:2 <b>certificates</b> 64:9 141:23 <b>certification</b> 63:15,19 81:1 82:2,7 92:11 141:13 146:20 146:24 147:9 148:18 <b>certified</b> 1:17 2:19 159:4 <b>certify</b> 137:9 159:5 <b>CFR</b> 62:13 70:19 72:23 99:6 <b>chain</b> 127:13 <b>challenged</b> 58:20,22 59:2 59:3 <b>chance</b> 27:6 91:14 121:17 157:18 <b>change</b> 24:11 27:18 39:20 40:21 44:13 46:1 62:4 65:6 65:19 96:12 99:18 106:22	<b>changed</b> 44:14 45:12 59:14 82:23,24 83:2 153:5 <b>changes</b> 24:6 43:15 50:8 <b>change-out</b> 57:25 131:22 <b>changing</b> 23:21 31:10 <b>charge</b> 74:15 144:10 <b>chart</b> 104:3 107:1 <b>charting</b> 104:4 <b>check</b> 46:10 113:23 <b>checked</b> 41:8 100:22 <b>checks</b> 101:17 101:17 <b>Chris</b> 87:13 <b>circle</b> 20:1 22:1 <b>circles</b> 19:22 <b>circuit</b> 110:2 <b>clarification</b> 59:5 88:20 96:11 135:16 <b>clarified</b> 6:20 <b>clarify</b> 75:22 <b>class</b> 53:24 54:17 54:19 55:4,7 63:13 141:17 141:17 <b>clear</b> 24:22 90:15 <b>clearances</b> 113:21 <b>client</b> 5:25 27:19 <b>clients</b> 95:20 <b>close</b> 103:22 <b>closed</b> 68:13 <b>closely</b> 78:20 <b>Close-Out</b> 65:25 <b>Coast</b> 1:14 2:4 2:10,15 88:2 <b>COC</b> 46:17,18	60:25 141:22 <b>coined</b> 44:2 <b>combined</b> 34:25 <b>combining</b> 35:5 <b>come</b> 22:5 40:9 43:18 54:24 58:10 84:13,17 85:11,11 86:1 90:22,25,25 91:2 92:13 96:10 101:5,6 113:16,19 114:4,6,12,12 115:5,7,15,17 115:22 116:1 121:14,17 122:4 123:9 140:4,6,9,13 140:20 153:14 153:24 154:18 154:21 <b>comes</b> 37:21 40:3,20 55:10 99:4 106:20 139:4 <b>coming</b> 109:3 149:13 157:23 <b>commencing</b> 57:25 62:4 131:23 <b>comment</b> 59:19 60:7 62:11 74:2,12 76:10 80:21 138:6 <b>commentary</b> 74:12 136:14 139:14 <b>comments</b> 4:11 <b>commissioned</b> 128:8 <b>common</b> 28:25 45:15 46:1 60:19 61:6 <b>communicate</b> 95:13,17 <b>communicated</b> 95:9,10,14	<b>communicatio...</b> 95:18 132:22 138:3 <b>companies</b> 138:4 <b>company</b> 59:5 91:13,13 93:17 97:22 100:2 <b>company's</b> 129:15 <b>compare</b> 85:21 <b>complain</b> 79:14 <b>complete</b> 34:19 67:12,22 70:8 101:19 155:6 <b>completed</b> 16:19 16:20 23:4 47:19 51:11 52:12 65:20 66:19 141:1 <b>completely</b> 36:4 <b>completion</b> 47:8 58:1 131:23 <b>complexities</b> 130:1 <b>compliance</b> 46:20 59:25 73:22 92:11,19 92:25 93:1,12 93:14 94:7,12 94:13 95:15 96:3 97:7,17 137:11 141:24 <b>component</b> 11:4 34:15 39:7 40:21 41:14 42:17,20,25 43:14 44:10 48:25 60:13,24 61:11,21 64:9 99:1,8,9 <b>components</b> 32:21 33:5,15 37:13 38:22 39:3 40:8,10 41:1,10 43:11 44:9 56:2,20 56:25 61:5
---	---	---	---	---

64:1 67:13,18 83:1 84:10 120:1 122:8 <b>computerized</b> 147:4 <b>concern</b> 29:6 93:10 <b>concerned</b> 94:23 98:15,21 123:10 <b>concerning</b> 125:11 127:19 129:7 <b>concerns</b> 48:14 153:20 154:3 <b>conclude</b> 97:13 <b>conclusion</b> 71:13 145:3 <b>conclusions</b> 71:17 83:12 <b>concur</b> 80:20 <b>concur</b> 77:10 83:17 <b>condition</b> 29:20 49:1 54:17,20 59:4 122:24 129:3,7 141:18 144:23 145:12 153:21 154:5 155:2,10 <b>conditions</b> 39:19 <b>condition-based</b> 32:15,22 37:22 38:21 41:6 43:21 44:2,3,4 44:7 50:5 52:19 54:11 60:4 61:3,23 84:2 138:7,15 139:1,2,3 <b>conduct</b> 120:18 <b>conducted</b> 14:10 36:23 55:18,19 117:2 155:15 <b>conference</b> 47:10 48:1 <b>configuration</b>	45:13 <b>configurations</b> 45:19 <b>Conformance</b> 64:7 141:19,24 <b>conformity</b> 46:19 120:20 <b>confused</b> 114:11 <b>confusing</b> 79:1 <b>confusion</b> 46:2 <b>connection</b> 110:16 112:25 <b>connector</b> 31:6 <b>Consequently</b> 26:15 <b>consider</b> 51:7 <b>consideration</b> 36:16 <b>considered</b> 4:22 5:5 70:5 136:25 138:18 <b>consistent</b> 52:18 68:17,21 82:12 137:21,24 <b>consolidation</b> 50:24 52:7 <b>constantly</b> 45:12 149:13 <b>consult</b> 129:8,11 <b>contents</b> 94:16 <b>context</b> 33:2 <b>continual</b> 35:8 <b>continued</b> 64:11 154:6 <b>continues</b> 38:2 <b>control</b> 5:1 10:6 10:18,23 11:2 11:4,16,22 15:24,25 19:6 19:11 20:14 24:10 29:24 31:7 34:14 63:24 101:8 109:2,8 125:6 126:8,23 130:24 137:4 137:14 149:9	<b>controls</b> 17:5 <b>convened</b> 6:6 <b>conversation</b> 96:22 <b>conversations</b> 63:9 94:8 95:23 96:20 113:7 155:23 <b>COO</b> 100:5 <b>copy</b> 48:16 81:23 130:13 <b>corners</b> 80:9 82:13 <b>corporate</b> 9:10 <b>corporate-wide</b> 99:23 <b>correct</b> 12:18 18:1 19:1 21:4 21:18,19 25:6 26:24,25 35:13 35:14 40:4 53:12,13 54:4 54:7 57:11,12 58:21 59:6,7 64:4,5 65:4,25 66:1,3,4,6,7 68:8,11,14,15 70:16,17 71:21 72:5,14 73:8 77:4 80:12,15 85:4,24 87:14 87:16 91:5,6 103:3 105:24 110:15 119:10 125:18,19,23 126:2,3,8,9,15 126:16,23,24 127:9 128:9,10 128:15,17 129:10 130:21 130:22 131:4,6 132:17 135:20 138:10 139:9 140:1 142:1 145:19 148:1 150:6,7 152:1 152:2 153:15	153:17,21 159:9 <b>correction</b> 83:6 <b>correctly</b> 149:17 <b>costs</b> 43:5 <b>counsel</b> 3:5 5:19 30:24 31:14 59:8 72:3 90:1 117:21 118:1,5 134:21,25 135:5,8 159:11 159:12 <b>country</b> 157:24 <b>couple</b> 118:10 142:17 <b>course</b> 10:16,16 10:20 23:11,13 23:17,19,25 126:17 <b>courses</b> 22:20 23:16 <b>court</b> 1:17 2:15 2:19 159:4 <b>cover</b> 150:22 <b>covered</b> 150:14 150:17,18 151:2,8 <b>covering</b> 33:6 <b>CO-CHAIR</b> 2:4 2:6 <b>co-worker</b> 77:25 78:1 <b>Craig</b> 32:2 <b>create</b> 141:4 <b>created</b> 27:24 33:17 49:3,21 50:19 107:6 <b>creation</b> 33:22 <b>crew</b> 20:24 21:6 21:18 86:24,24 125:17 126:4 129:11 139:23 139:24 <b>criteria</b> 19:24 56:4 65:21 101:18 <b>criticality</b> 99:5	<b>cruise</b> 136:2 <b>currently</b> 13:21 66:11 <b>Curt</b> 123:19 <b>customer</b> 133:24 <b>customer-spec...</b> 84:6 <b>cut</b> 80:9 82:13 104:17,22 105:8,22 106:1 106:10 <b>cutting</b> 70:3
<b>D</b>				
<b>daily</b> 50:24 51:6 51:16 52:8,14 96:24 139:24 <b>damage</b> 29:7 46:9,13 61:15 61:20 70:4 <b>DAR</b> 50:23 52:6 <b>data</b> 106:17,19 <b>date</b> 4:21 44:15 46:16,17 52:18 66:6 80:25 82:7 142:23 143:2 <b>dates</b> 34:25 62:9 119:11 148:25 149:1 154:20 <b>David</b> 2:6 3:5 6:2 <b>day</b> 44:16 51:24 149:13 <b>days</b> 38:14,19 40:17,17 158:7 <b>day-to-day</b> 40:25 <b>DD-I</b> 28:17 <b>DD-II</b> 28:17 <b>deadman</b> 68:7 68:12 <b>deadman/AMF</b> 68:18 <b>deal</b> 19:8 34:22 <b>dealt</b> 120:5 130:16				

<b>December</b> 82:3 82:8	125:15	<b>device</b> 15:10	69:19 70:8	44:20 47:17
<b>decide</b> 72:4 111:10	<b>delivered</b> 44:20 45:1	<b>dichotomy</b> 124:11	93:19,22 94:14	48:8,22 49:8
<b>decided</b> 110:18	<b>delivery</b> 45:24 136:2 148:8	<b>dictate</b> 23:3	<b>discipline</b> 126:1	49:20 52:23
<b>decision</b> 87:23 87:24	<b>demonstrate</b> 16:16	<b>difference</b> 111:2	<b>disciplined</b> 136:5,6	53:1,5,16,18
<b>decisions</b> 97:21 99:3	<b>departed</b> 140:23	<b>different</b> 19:22 19:24,25 20:9	<b>disconnect</b> 20:13 21:2 86:6 88:9	53:19 54:24
<b>deck</b> 103:15 104:13 116:15	<b>department</b> 13:5 21:7 29:17	23:4,15 25:11	125:12	57:5 63:15,17
116:23,24	59:11 86:18	25:18 32:16,20	<b>discrepancies</b> 143:6	65:8,12,14,16
117:3,4	87:5 124:20,20	34:1,1,9 43:18	<b>discrepancy</b> 49:10	65:24 66:20
<b>decreasing</b> 67:21	126:16	45:9,19 51:9	<b>discuss</b> 66:23 157:18	67:1 81:3 83:5
<b>dedicated</b> 13:7 116:1	<b>departments</b> 51:10 124:10	71:16 73:4	<b>discussed</b> 30:5 58:14 86:7	83:13 86:11
<b>deep</b> 32:18	<b>depended</b> 19:19	78:21 79:1,24	<b>discusses</b> 35:12	87:11 99:19,20
<b>DEEPWATER</b>	<b>depending</b> 45:13	80:2 87:3,4	<b>discussing</b> 30:3 33:20 73:19	99:24 100:10
1:5 8:14,14,18	<b>deployment</b> 67:3	88:24 105:9	<b>discussion</b> 62:21 69:6 76:11,15	108:2 115:16
9:3,4 10:11	<b>Describe</b> 140:16	115:25 120:1	<b>discussions</b> 94:2	136:17 140:18
11:21 12:5,11	<b>described</b> 71:3 126:11	127:11 133:2	<b>dismissed</b> 158:16	141:14 146:22
13:9 14:1,17	<b>description</b> 124:17	<b>differently</b> 110:13	<b>dissatisfied</b> 129:2,14 130:7	146:23
14:22 15:15	<b>design</b> 109:6	<b>digits</b> 81:18,20	<b>discussion</b> 62:21 69:6 76:11,15	<b>documentation</b> 17:15 56:7
18:13,13,14	<b>designated</b> 86:14 88:3	<b>diligent</b> 120:3	<b>discussions</b> 94:2	62:13 86:2
24:18 27:10	<b>designating</b> 86:24	<b>dimensional</b> 26:14 101:16	<b>dismissed</b> 158:16	116:5 141:9
29:2 30:16	<b>designed</b> 105:8 105:17	113:20	<b>distinguished</b> 144:17	<b>documented</b> 82:22
37:5 38:10	<b>designed</b> 105:8 105:17	<b>dimensions</b> 85:13	<b>DISTRICT</b> 2:8	<b>documenting</b> 49:5
39:3 41:6 45:3	<b>detail</b> 34:18	<b>diploma</b> 10:5	<b>dive</b> 33:21	<b>documents</b> 54:13,14 55:16
45:7 50:16	<b>detailed</b> 52:11 54:3	<b>direct</b> 4:15 57:2 96:14 127:18	<b>diverter</b> 31:8,8	56:22 62:18
63:7 64:16	<b>details</b> 62:14 147:1 148:2	<b>directed</b> 125:9	<b>division</b> 124:3,5	81:10 125:10
68:13 80:22	<b>detection</b> 11:8	<b>direction</b> 87:22 159:8	<b>DNV</b> 30:2 36:9 44:23 64:24	141:2
81:11 90:18,23	<b>deterioration</b> 84:15	<b>directions</b> 115:25	109:16 139:13	<b>doing</b> 40:24 49:9
92:24 93:11,13	<b>determine</b> 15:7 21:22 45:5	<b>directives</b> 93:17	139:16 147:19	61:19 87:7
94:6,22 97:5,6	46:3,5 148:17	<b>directly</b> 12:5	<b>DNV's</b> 5:1 146:20	90:11 116:1,10
97:16 98:3	<b>determined</b> 24:16	<b>disagree</b> 73:23	<b>document</b> 20:10 21:21 24:21,24	123:12
99:13 100:18	<b>develop</b> 50:4 154:12	<b>disassemble</b> 23:10 40:16	24:25 25:2,4	<b>Douglas</b> 117:20
101:2 124:22	<b>developed</b> 33:10 33:13 154:14	70:2 93:21	25:25 26:7,10	<b>dozen</b> 60:21
150:9,13		114:5	27:2,23,24	<b>draft</b> 30:23
155:20 156:1		<b>disassembled</b> 39:4 60:21	30:21,23 31:22	<b>drawings</b> 66:3 66:10,12,16,18
156:10		94:15 122:1,2	31:25 32:11	<b>drill</b> 11:14 20:24 21:6,17 24:17
<b>defense</b> 21:11		<b>disassembling</b> 60:18	33:6,11,18	25:16 26:12,17
<b>defined</b> 54:13		<b>disassembly</b>	39:13 43:3	28:8,23 29:23
<b>definitely</b> 121:20				36:9 86:23,24
<b>definition</b> 67:9 103:9,17				102:7 105:8,17
<b>delineates</b>				105:18,23
				106:2,8 107:9
				108:11 109:4

109:12 110:25 125:16 126:4 134:10 <b>driller</b> 15:21 20:24,25 21:13 125:16,17 <b>drilling</b> 1:4 8:2 62:25 63:14,18 64:3,10,15 71:5 124:7 126:21 130:24 134:1 137:4 <b>Dril-Quip</b> 135:3 <b>drive</b> 122:19,20 <b>driven</b> 35:19 <b>drives</b> 19:6 <b>dropped</b> 63:13 <b>drove</b> 122:13 <b>ductility</b> 26:18 <b>due</b> 4:19 24:8 43:24 64:11 148:25 149:1 149:13 <b>duly</b> 6:14 <b>Dykes</b> 2:6 3:13 76:7,22 77:3 78:8 120:12 142:16,18 143:9 <b>D-A-R</b> 50:24	20:2 21:12,23 22:1,7 68:2,4 87:18,23 116:14,19,25 117:2 126:3 127:6 <b>EDSing</b> 20:5 <b>education</b> 23:5 <b>educational</b> 10:3 <b>effect</b> 74:17 <b>effectiveness</b> 151:3 152:7,18 <b>eight</b> 8:25 9:11 149:11 <b>either</b> 14:14 21:13 23:3 29:8,23 30:17 87:22 95:8 106:18 143:5 <b>elaborate</b> 99:2 <b>electronic</b> 67:5 <b>elements</b> 146:1 <b>eloquent</b> 42:6 118:10 <b>emergency</b> 20:13 21:2,16 86:6 87:25 88:7,8,9 106:9 125:11,12 126:15 144:9 <b>EMPAC</b> 23:3 139:12 148:24 <b>employed</b> 7:9 <b>ended</b> 49:9 <b>endorsed</b> 100:1 154:5 <b>endorsement</b> 157:3 <b>Energy</b> 1:14 <b>engage</b> 29:14 115:13 <b>engaged</b> 61:13 77:8 <b>engages</b> 95:22 <b>engine</b> 86:22 87:8 88:6 <b>engineer</b> 8:16	20:25 21:22 23:24 24:2 59:4,21 87:14 109:6,9 125:18 136:9 <b>engineering</b> 17:17 22:14 23:17 25:13 26:4,22 27:15 28:5 29:16 40:19 52:21 85:15 107:6 108:15 115:11 136:20 137:21 <b>engineers</b> 21:18 22:25 107:21 108:3 139:24 <b>ensure</b> 52:1 70:22 <b>ensuring</b> 151:3 152:7,18 <b>enter</b> 108:3 110:21 <b>entered</b> 43:12 <b>entire</b> 8:8 34:4 <b>entities</b> 100:8 <b>entitled</b> 1:16 25:3 65:25 67:2 96:11 <b>equipment</b> 7:14 14:16 18:25 19:3,6 22:21 29:4 33:9 34:13 35:9 37:9,24 38:1,5 38:6 39:2,9,11 39:15,18 40:11 49:6,12,19,24 55:1 62:2,7 63:25 69:13,16 69:20,21 70:23 71:5 74:19 84:20,21,22,23 85:7 92:15 93:21 94:14 115:9 124:2,4 124:7,8,25	128:13,20 129:3,8,10 130:20 137:5 137:10,14 138:21 141:17 141:20 149:9 150:5 154:24 155:10 <b>Esq</b> 3:5 <b>essentially</b> 126:12 128:11 <b>establish</b> 49:4 61:11 84:8,14 114:16 <b>establishes</b> 111:13 <b>evaluate</b> 74:16 <b>evaluation</b> 49:1 83:18 148:19 <b>event</b> 10:23 20:14,20 21:5 29:24 34:11 104:11 109:2 125:5 126:7,14 <b>events</b> 19:25 126:18 <b>everybody</b> 47:17 47:21,23 <b>evidence</b> 78:3,4 145:17 <b>exact</b> 59:18 119:11 142:23 143:2 <b>exactly</b> 77:16 <b>examination</b> 3:2 3:8,8,9,9,10,10 3:11,11,12,12 3:13,13,14 7:3 42:15 58:12 69:9 70:11 72:11 73:5 74:4 80:3 81:25 83:23 88:18 90:7 92:1 95:24 96:25 102:18 111:7 112:17	113:13 118:20 123:22 128:24 130:12 131:18 132:6 133:22 135:14 142:18 143:14 144:11 144:21 145:10 146:19 150:3 151:23 152:15 153:12 154:25 155:12 156:24 <b>example</b> 5:1 19:21 20:2 22:4 28:25 29:1 34:18 36:1,5,5 45:21 49:12,17 54:16 67:16 70:1 85:10 87:2 88:5 89:1 115:6 123:8 <b>exceed</b> 70:24 <b>exceeded</b> 54:12 <b>exceeding</b> 52:20 <b>Excel</b> 25:2 <b>exchange</b> 7:14 18:25 62:7 89:19 <b>Excuse</b> 18:6 85:8 118:16 132:19 <b>exemptions</b> 47:21 <b>exist</b> 78:14 <b>exists</b> 78:25 124:12 <b>expand</b> 46:16 <b>expect</b> 16:7 119:11 154:23 155:9 <b>expected</b> 129:25 <b>expediency</b> 80:10 <b>experience</b> 7:18 21:21 33:15 59:21 138:1,2 141:3 146:4 <b>expert</b> 7:23 9:9
<b>E</b>				
<b>earlier</b> 52:22 55:6 66:24 101:25 107:2 116:14 138:6 148:14 <b>early</b> 92:22 <b>earn</b> 74:23 <b>easier</b> 40:15 <b>easy</b> 17:21 <b>EB-702</b> 25:14 107:7 <b>EB-902</b> 39:13 <b>EB-902D</b> 84:5 136:15 <b>EDS</b> 19:12,18				

9:17 12:16 13:9 145:21,24 <b>expertise</b> 143:25 <b>explain</b> 14:25 25:7 32:14 34:5 47:1 48:23 51:2 69:14 82:17 88:22 138:13 <b>explained</b> 140:4 <b>explains</b> 33:25 <b>explosion</b> 1:2 15:12 <b>explosion-proof</b> 15:9 <b>express</b> 48:14 154:13 <b>expressed</b> 79:24 94:3 <b>extensive</b> 146:4 <b>extent</b> 77:1 <b>exterior</b> 15:8 <b>extreme</b> 149:20 <b>Extremely</b> 136:6 <b>e-mail</b> 57:8,11 96:1 <b>e-mailed</b> 142:21	98:19 <b>failures</b> 49:5,7 50:1 <b>fail-safe</b> 67:17 <b>fair</b> 11:19 78:1 79:7 97:1 98:14 99:16 100:25 156:11 <b>fairly</b> 28:24 <b>fall</b> 125:25 <b>falls</b> 65:21 124:16 <b>familiar</b> 17:9 30:14 31:18 50:23 57:19 58:3,6,9 62:25 63:2 65:13,15 70:18 71:8 73:9,12 116:8 130:3 <b>familiarity</b> 120:2 <b>Fanning</b> 3:11 41:17,21 42:1 42:7,8 95:1 112:14 118:9 118:15,20 119:1 123:14 144:15 <b>far</b> 15:3 23:21 29:12 35:24 53:25 69:13 76:18 94:22 98:15,20 99:12 109:15 111:5 <b>faster</b> 40:20 <b>fault</b> 93:7 <b>February</b> 18:16 98:4 <b>federal</b> 65:3 68:9 <b>federally</b> 6:6 <b>feeler</b> 115:21 <b>felt</b> 49:23 <b>field</b> 7:25 8:5 9:8 9:10,14,15,19 9:25 18:12,17 26:1 28:7,12	28:21 36:21,25 37:2 39:5 40:5 47:11 49:14 64:21 84:14 86:2 93:15 95:21 99:4 101:4 104:24 106:24 110:9 112:9 113:5 119:9,22 122:3 140:14,17 141:7,8 <b>fifth</b> 82:1 <b>figuratively</b> 61:10 <b>figure</b> 5:17 32:19 114:16 121:11 <b>figuring</b> 25:15 <b>filed</b> 66:20 <b>fill</b> 49:15 103:21 <b>final</b> 4:19 66:18 97:1 102:2 <b>find</b> 60:24 84:24 <b>finding</b> 58:20 60:1 <b>findings</b> 30:4 33:14 56:2,18 82:16 141:14 <b>fine</b> 76:6 99:15 111:14 144:6 145:23 <b>Finish</b> 137:7 <b>FIRE</b> 1:2 <b>first</b> 4:6 6:14 18:11 21:11 35:17 53:24 55:4,7 56:8 63:10 80:12 91:13 98:17 109:23 122:13 141:17 142:19 149:3 <b>five</b> 11:17 36:3 86:8 96:10 122:19 <b>five-year</b> 37:23	41:11 53:6 60:2 63:11 82:4,9 <b>flag</b> 89:13 <b>fleet</b> 8:9 18:1 34:4 68:17 <b>fleets</b> 14:23 <b>fleet-wide</b> 35:21 <b>FlexJoint</b> 31:8 <b>flip</b> 26:23 136:18 <b>flooding</b> 88:6 <b>floor</b> 20:4 87:9 89:1 127:8 <b>flow</b> 10:23 109:10 <b>flowmeter</b> 98:12 <b>focus</b> 116:3 <b>FOIA</b> 5:6 <b>follow</b> 88:19 93:17 100:14 102:23 <b>followed</b> 52:3 54:10 <b>following</b> 114:1 <b>follows</b> 6:16 94:17 <b>follow-up</b> 69:10 151:9 <b>force</b> 25:22 26:16,20 <b>foregoing</b> 159:6 <b>forensics</b> 30:4 45:4 <b>forgot</b> 66:23 118:16 <b>form</b> 48:23 49:1 49:4,13,21 50:13 65:16,17 65:19,22 95:3 154:8 <b>formal</b> 23:10 49:25 <b>format</b> 50:13,14 58:11 67:6 <b>forms</b> 49:10,11 50:11 <b>forth</b> 104:6	<b>forward</b> 4:14 28:1 38:1 61:2 62:9 105:1 <b>found</b> 37:25 39:7 39:17 60:22 61:25 67:14 69:20 83:2 84:10 101:21 <b>foundation</b> 128:23 129:19 132:5 154:9 157:5 <b>four</b> 9:9 38:18 41:10 55:25 81:18,20 98:17 <b>four-year</b> 42:21 <b>FPR</b> 49:13 50:20 <b>frame</b> 8:21 38:15 152:25 <b>frequencies</b> 83:3 <b>fresh</b> 62:8 <b>front</b> 20:11,15 24:21 26:7 30:21 52:24 53:1 57:5,16 60:9 63:15,21 65:8 76:4 <b>FRONTIER</b> 8:14 9:4 10:12 17:1 <b>Fry</b> 3:4 6:3,5,13 7:4,7,9 70:12 76:12 77:19,20 77:23 78:6 89:16,17 90:8 92:2 118:21 123:23 135:15 142:3,19 157:16 158:15 <b>full</b> 7:5 34:13 128:3 130:15 154:4 <b>fully</b> 67:3,4,10 67:19 120:15 123:12 <b>function</b> 15:20 15:23 67:2,4
<b>F</b>				
<b>facilities</b> 36:24 <b>facility</b> 29:16 141:21 <b>fact</b> 24:8 31:21 66:13 83:14 97:14 101:12 124:11 125:9 125:20 126:10 128:18 129:6 131:7 135:18 148:14 <b>facts</b> 145:16 <b>fail</b> 69:21 <b>failed</b> 69:22 91:14 <b>failure</b> 12:21,25 14:16,18 30:7 30:11 49:17				

67:12,16,18,19 67:23,25 98:24 103:10,14,18 138:25 <b>functionable</b> 99:14 <b>functional</b> 98:1 <b>functionality</b> 16:5 98:19 99:1 <b>functioned</b> 28:22 67:10 89:2 99:15 <b>functioning</b> 67:7 67:8 122:6 <b>functions</b> 15:17 70:23 99:5 <b>further</b> 68:23 74:6 78:8 102:11 <b>future</b> 78:13 <b>F-R-Y</b> 7:7	38:23 47:13 54:16 60:8 64:8 65:23 78:7 113:6,9 113:10 115:23 117:3 118:18 118:24 120:6 121:24 122:11 127:13 154:11 156:1,3,8 <b>goals</b> 78:12 <b>Godfrey</b> 3:10 91:22 92:1 95:24 96:11,25 102:10 127:19 128:21 129:18 131:9,15,16 132:4,8,18 133:14 155:13 157:4 <b>goes</b> 43:14,17 51:5,8 55:7,9 131:20 <b>going</b> 8:19 19:20 19:22 22:6 24:13 27:19,25 29:8 30:1,16 30:19 43:18 44:18 49:17 55:1,2 57:1 62:5,15,20 70:2 74:1,6 87:3 88:10 89:5 108:7 110:6 113:24 113:25 114:5 116:16 123:11 129:9 134:9 145:25 146:2 <b>good</b> 7:4 45:23 69:25 70:12 90:8,9 92:2,3 102:19 118:25 119:6,23 122:23 123:23 <b>government</b> 65:3 68:10	<b>greasing</b> 138:20 <b>great</b> 42:2 76:3 <b>green</b> 25:20 <b>Gregory</b> 89:12 <b>grounds</b> 74:7 <b>group</b> 19:4 124:16 <b>groups</b> 37:3 <b>Guard</b> 2:4,10,15 88:2 <b>Guard/Bureau</b> 1:14 <b>guess</b> 13:23 18:24 27:23 33:14 74:21 146:1 147:3 157:7 <b>guideline</b> 53:23 137:3 <b>guidelines</b> 54:21 <b>Gulf</b> 1:6 8:5,9,10 13:15,16 14:4 18:19 28:9,15 30:13 36:14 38:11 <b>guys</b> 24:9 49:22 86:19,21 115:19	<b>happening</b> 134:3 134:4,12,14 <b>happens</b> 21:8 27:17 89:1 130:11 134:5,5 <b>hardness</b> 46:10 <b>Harrell</b> 118:8 119:1 <b>Hay</b> 60:17 <b>HC</b> 31:5 <b>head</b> 43:8 110:1 112:13 117:8 <b>hear</b> 102:3,7 103:1 138:9 <b>heard</b> 63:10 <b>hearing</b> 4:2,11 12:1 73:13 <b>hearings</b> 111:21 <b>held</b> 7:15 36:21 <b>helicopter</b> 122:14 <b>help</b> 75:22 <b>helpful</b> 72:2 75:25 78:21 83:15 89:19 158:6 <b>helping</b> 89:20 <b>helps</b> 33:24 128:1 <b>hereto</b> 159:12 <b>Hey</b> 140:9 <b>Higgins</b> 2:9 3:9 3:13 70:11 72:8,11 73:5 75:17,23 77:5 77:14,22 79:22 80:3 81:7,19 81:25 83:23 88:14 143:14 143:22 144:11 144:21 145:10 146:8,19 149:22 <b>high</b> 10:4,5 61:14 104:2 109:10 <b>highlighted</b> 59:9	<b>high-level</b> 51:7 51:23 <b>high-pressure</b> 62:1 <b>historical</b> 106:16 <b>history</b> 154:23 155:1 <b>hold</b> 7:11 22:5 104:5 <b>Holiday</b> 1:21 <b>Homeport</b> 158:11 <b>HON</b> 2:8 4:3 5:22 6:4,17,25 68:25 69:7 71:18 74:14 75:4,8,21 76:19,25 78:10 79:17 81:16,21 88:16 89:7,23 90:5 91:10,19 91:24 95:7 96:8 102:15 117:14,19,23 118:3,7,12,17 123:17 129:21 132:10 133:4,9 133:19 134:18 134:23 135:2,7 135:12 142:7 142:13 143:11 143:20 144:2 145:4,18,22 149:24 151:13 152:20 153:2 154:10 155:5 156:18 157:6 157:14,21 <b>honest</b> 107:16 108:25 150:15 151:16 157:9 <b>Honor</b> 75:16 89:11 91:23 132:19 151:6 156:15 158:2 <b>Honorable</b> 6:15 <b>hope</b> 33:23
<b>G</b>				
<b>gather</b> 78:3 <b>gathered</b> 78:4 <b>gauges</b> 115:21 <b>general</b> 33:2 34:8 113:19 <b>Geoff</b> 13:13 32:2 <b>getting</b> 17:19 34:10 41:23 47:24 114:10 <b>gimbal</b> 31:12 <b>give</b> 6:7 8:21 16:24 27:19 85:5 96:15 130:7 144:5 <b>given</b> 26:17 91:13 97:22 130:16 <b>gives</b> 108:4 <b>global</b> 9:15,22 <b>go</b> 4:4 20:3 21:25 22:3 23:25 25:15 27:1 35:5				
		<b>H</b>		
		<b>half</b> 56:1 122:20 <b>Halliburton</b> 102:17,22 <b>hallways</b> 12:2 <b>hand</b> 6:11 19:20 <b>handing</b> 81:24 <b>handled</b> 9:20 127:2 <b>handles</b> 124:7,8 <b>hands</b> 140:20 <b>hand-out</b> 58:24 <b>happen</b> 19:25 47:24 87:7 127:14 <b>happened</b> 10:1 109:15 127:16 149:7		

62:23 114:9	86:3	147:15	137:10 141:7	<b>interrupting</b>
<b>HORIZON</b> 1:5	<b>Identifying</b> 11:6	<b>individual</b> 27:4	141:10,14,15	18:7
11:21 12:5,12	<b>imagine</b> 17:25	27:6 28:1	154:1	<b>introduce</b> 5:24
13:10,12 14:1	<b>immediate</b> 22:1	106:14 113:4	<b>inspections</b> 14:3	<b>introductory</b>
14:17,22 15:15	<b>immediately</b>	<b>individuals</b> 30:3	14:8 34:23	4:10
18:13 24:19	88:8 122:12	<b>industry</b> 17:19	37:22 38:3,5	<b>inventory</b> 41:1,2
27:10 28:10	<b>impact</b> 26:19	23:12,21 61:7	39:6 40:2,5	41:13 42:16
30:16 37:5	146:5	79:13 137:1	41:8 71:1	<b>investigation</b> 1:1
38:11 41:7	<b>impacted</b> 71:15	<b>industry's</b>	84:14 90:11,20	1:15 4:9,19
45:3,7,20	<b>implementatio...</b>	137:25	100:17 112:20	9:17 12:16,20
50:16,21 63:7	14:13	<b>infant</b> 69:12,14	112:22 113:1	12:25 13:2,8
64:16 68:13	<b>implemented</b>	69:17	113:17 115:14	13:10,12 49:25
80:22 81:11	137:15	<b>information</b>	115:18,20	66:9 100:23
90:19,23 92:24	<b>important</b> 11:3	4:13,16,23 5:4	141:11	<b>involved</b> 64:25
93:13 94:6	11:9 74:23	27:9 49:15	<b>inspector</b> 40:18	<b>Islands</b> 89:9,13
97:5,7,17 98:3	75:12 77:6	56:19 59:15	85:17 113:16	<b>ISM</b> 150:16,19
99:13 100:18	89:18	85:13,16 97:21	136:11	<b>issue</b> 5:13,18
101:2 109:25	<b>inaccurate</b> 83:15	100:21 149:17	<b>inspectors</b>	26:21 64:6,12
119:9,14	<b>inappropriate</b>	156:6	115:22 140:20	78:9 85:17
124:23 150:9	74:11 78:7	<b>informed</b> 59:8	<b>installation</b>	99:8 123:3,7
150:13 155:20	<b>incident</b> 9:24	<b>inhouse</b> 54:6	16:23	128:18 141:4
156:1,10 158:5	11:20,25 14:2	<b>initial</b> 111:24	<b>installed</b> 28:16	141:18 146:10
<b>HORIZON's</b>	14:9,12 19:19	<b>initials</b> 27:5	103:20	<b>issued</b> 26:23
39:3 93:11	29:21 38:16	<b>Inn</b> 1:21	<b>instance</b> 134:7	46:21,22 55:13
94:22	45:17 49:16	<b>inside</b> 61:10	<b>instances</b> 140:13	139:17,20
<b>hoses</b> 31:8	51:5 64:17	<b>inspect</b> 34:13	<b>insufficient</b>	141:22
<b>hour</b> 122:20	112:3	39:1 40:9,18	132:2	<b>issues</b> 9:20 31:16
<b>hours</b> 148:15	<b>incidents</b> 20:3	41:9 93:21	<b>intended</b> 137:2	61:24 74:24
<b>Houston</b> 12:13	<b>incorporate</b>	101:1 112:19	<b>interest</b> 89:25	83:11 89:21
<b>HTB</b> 27:5	33:11	113:20 114:8	120:14	98:8,9,16 99:1
<b>HUNG</b> 2:4	<b>incorporated</b>	140:10	<b>interested</b> 77:14	101:7 120:25
<b>Hydril</b> 18:20	71:6 73:2	<b>inspected</b> 39:4	104:15 143:23	121:2 129:7
23:17 32:25	146:24	46:9,9 64:2	159:13	143:6
84:19	<b>incorrect</b> 82:16	94:15 101:12	<b>interim</b> 39:5	<b>item</b> 35:11 66:2
<b>hydrocarbons</b>	82:18	101:15 115:2	84:14 101:4	130:19
109:3,11	<b>increasing</b> 67:21	139:13	<b>interior</b> 76:16	<b>items</b> 25:19,21
<b>HYMEL</b> 74:5	<b>INDEX</b> 3:2	<b>inspection</b> 14:11	<b>internal</b> 12:20	30:22 31:2
75:2,6 77:12	<b>indicate</b> 86:9	23:10 34:20	53:18 61:20	58:9 83:6
79:3 91:17	126:5 127:10	35:8 39:12	<b>internally</b> 61:16	86:15 114:1
110:20 142:11	<b>indicated</b> 4:10	46:11 50:2	<b>international</b>	130:16 147:13
	147:9,12	56:21 57:22	10:17	147:25 149:5
	148:16	82:4,9,15,21	<b>interpret</b> 76:23	
<b>I</b>	<b>indicates</b> 80:25	82:25 85:9	<b>interpretation</b>	
<b>IADC</b> 10:15,17	83:5,14	86:3 93:19,23	79:2,8,15	<b>J</b>
<b>identical</b> 17:7	<b>indicating</b> 81:22	94:14 101:4,20	129:15,16	<b>J</b> 65:23
<b>identified</b> 20:18	<b>indication</b>	114:4 116:2	147:17 148:7	<b>James</b> 1:16 2:19
44:9 53:10	109:18 122:21	122:7 131:2	156:17,20,21	159:4,19
<b>identify</b> 82:7				<b>January</b> 26:24

48:8 97:7 98:3 119:14 <b>Jason</b> 2:11 41:18 76:9 <b>jeopardize</b> 144:23 <b>Jerry</b> 56:14 <b>Jimmy</b> 118:8 119:1,3,12 120:3,24 121:3 121:8,12 122:2 122:22 123:1,6 <b>Jimmy's</b> 119:17 119:24 120:18 <b>job</b> 48:11 128:15 <b>JOHN</b> 2:13 <b>join</b> 151:12 <b>Joint</b> 1:13 4:8,18 <b>Jones</b> 3:10 90:6 90:7 91:7 100:15 154:7 155:3 <b>Judge</b> 2:8,8 4:3 5:22 6:4,15,17 6:25 68:25 69:7 71:18 74:14 75:3,4,8 75:21 76:8,19 76:25 77:13 78:10 79:4,17 81:16,21 88:16 89:7,23 90:5 91:10,18,19,24 95:2,7 96:8 102:15 110:21 117:14,19,23 118:3,7,11,12 118:17 123:17 123:21 129:21 132:10,17 133:3,4,9,19 134:18,23 135:2,7,12 142:7,12,13 143:11,20 144:2 145:4,18 145:21,22	149:24 151:13 152:20 153:1,2 154:10 155:5 156:18 157:6 157:14,21 <b>July</b> 4:20 <b>June</b> 26:12 <b>jurisdiction</b> 4:25 <hr/> <b>K</b> <hr/> <b>Kaluza</b> 118:4,5 <b>Katy</b> 122:18 <b>keep</b> 39:10 45:18 <b>keeps</b> 35:5 <b>kept</b> 66:17 123:11 <b>kick</b> 11:6,7,10 11:15 <b>kind</b> 18:21 21:7 23:20 34:8,25 35:5 37:20 44:2 46:15 51:23 52:14 54:5 59:22 62:8 87:25 99:2 103:12 114:10 139:4 140:18 <b>knew</b> 99:13 119:17 120:3 <b>know</b> 5:12 6:20 6:22 10:20 11:12 12:23 13:14,20 14:6 16:7 17:16 22:10 23:16 24:11 27:4,5 27:12 28:6,13 28:14,20 29:4 29:19 30:23 32:6,18 33:25 35:7 39:24 40:23 41:4,5,9 43:4,9 44:1,13 45:20 47:23 48:2,14 49:16 51:18 52:9	54:10,18 56:14 56:17 58:22,25 60:3 61:15 62:8 63:6 64:9 64:14 66:8,15 71:23 74:21,25 75:12 76:2,5 78:4,11,15 83:17 84:15 87:6 95:5,5,13 95:18,22 100:16 101:8 103:7 104:23 104:25 108:10 108:17 109:10 109:23 110:11 110:19,22 111:1,11,12,13 111:15,22 112:1,4,7,11 112:16,21 113:3,6 117:6 119:3,11,24 120:6 123:1,2 127:11 132:1,7 132:24 137:25 138:20 139:13 139:19 140:8 140:23 143:4 143:21 144:4,6 146:17 147:1 148:5,11 150:8 150:12,17,24 151:8,15,17 153:7 154:12 154:23 155:9 155:24 157:8,9 157:11 <b>knowing</b> 143:23 <b>knowledge</b> 14:5 24:20 27:17 29:25 36:8 37:4 40:22 56:24 63:5 64:13 68:21 83:8 84:16 86:13 106:21	107:11 116:12 130:10 143:8 147:6,19 153:19,23 <b>knowledgeable</b> 15:16,21 16:3 16:11 <b>known</b> 110:18 112:5 <b>Kuchta</b> 123:19 123:25 <b>Kyle</b> 123:24 <hr/> <b>L</b> <hr/> <b>lack</b> 128:22 129:19 132:5 154:9 157:5 <b>laid</b> 21:5 <b>landing</b> 93:7 <b>language</b> 37:18 <b>large</b> 26:13,15 138:10 147:13 149:4,14 <b>largest</b> 11:8 <b>law</b> 79:16 <b>lawyer</b> 42:7 62:17 79:11 <b>lawyers</b> 114:14 118:18 <b>lay-over</b> 42:21 <b>LCDR</b> 2:15 <b>leaked</b> 121:25 122:1 <b>learned</b> 50:7 97:12 <b>learning</b> 42:9,10 <b>lease</b> 130:1 <b>left</b> 69:22 <b>legal</b> 62:20 71:13 71:17 78:15 79:8 145:3 152:10,22 <b>legally</b> 71:21 72:3,5 <b>lessons</b> 50:7 <b>let's</b> 22:4 69:1 74:24 99:18	103:11 104:10 130:1,23 <b>level</b> 9:21,22 23:25 54:14 149:21 <b>levels</b> 88:2 <b>Levine</b> 56:14 <b>library</b> 66:21 <b>Lieutenant</b> 5:14 <b>LIFE</b> 1:5 <b>light</b> 57:4 <b>lights</b> 127:12 <b>limit</b> 5:3 <b>limitation</b> 95:12 <b>limits</b> 39:19 <b>line</b> 15:8 21:11 22:5 30:2 37:11 66:12 82:1 97:11 99:12 104:5 <b>lines</b> 14:24 82:6 <b>lining</b> 149:2 <b>links</b> 86:11 <b>Linsin</b> 89:10,12 <b>list</b> 27:20 31:13 31:14 54:6 83:2 114:19,21 114:23,25 <b>listed</b> 25:21 48:3 58:10 83:4,6 <b>little</b> 90:16 151:6 <b>live</b> 78:16 <b>living</b> 74:23 79:14 <b>local</b> 9:20 <b>located</b> 107:15 108:16 <b>location</b> 19:24 44:10 48:19 86:21 88:23 108:11 <b>locations</b> 35:20 35:23 88:24 <b>log</b> 140:23 <b>logbook</b> 51:23 <b>logs</b> 117:4 <b>long</b> 7:15 8:22
--	--	--	---	---

<p>119:7  <b>long-winded</b>                  41:23  <b>look</b> 20:11 36:19                  52:13 53:4                  61:10 62:17                  63:2 64:8                  73:20 114:7                  118:23 121:18                  130:23 136:17  <b>looked</b> 22:12,12                  29:20 87:1  <b>looking</b> 21:21                  25:8 29:18                  33:17 81:5                  128:2 143:3                  147:18  <b>loss</b> 1:5 11:22                  59:22  <b>lot</b> 20:9 22:11                  24:6 28:4 29:6                  29:10 30:8                  45:18 51:16                  62:11 115:23                  115:25 145:23  <b>Louisiana</b> 1:19                  1:23  <b>low</b> 61:12 104:1  <b>lower</b> 31:6 82:19                  82:22</p> <hr/> <p style="text-align: center;"><b>M</b></p> <hr/> <p><b>M</b> 2:4  <b>Macondo</b> 106:20                  106:22 116:22                  155:20,25                  156:9,10 157:2  <b>main</b> 76:16  <b>maintain</b> 16:8                  70:22 74:19  <b>maintenance</b>                  14:15 15:18                  16:4,6 22:17                  22:20 23:1,2                  23:11 30:6,9                  30:15 31:19                  32:15,22 33:2</p>	<p>33:12,16,19,20                  34:7,10 37:10                  37:12 38:7,21                  41:6 43:22                  44:1,3,4,6,7,8                  47:3,6 49:2                  50:5,9 52:2,4                  52:16,19 54:11                  60:4,15 61:3,6                  61:23 66:22                  67:15 69:18,19                  70:6,24 71:2                  71:15 74:24                  77:8 80:7,18                  82:14 83:18                  84:1,2,7,18                  85:25 91:4                  93:20 94:10,17                  98:1 99:19                  100:11 103:4                  114:3 115:12                  115:17 116:6                  116:10,21                  117:1 119:25                  120:19,25                  121:1 124:2,19                  124:21,24                  125:1 137:4,9                  138:7,8,19,22                  139:1,3,3,25                  147:5,13,18,20                  147:21 148:6,9                  148:10,16,23                  149:4,10,15,19                  154:19  <b>major</b> 7:13                  16:19 18:24                  30:17 34:23                  35:12 36:15,23                  37:7,16 38:25                  39:21 40:8                  41:11 42:18,19                  42:22 43:14                  46:4 49:10                  56:3,21 64:12  <b>majority</b> 39:2                  43:16</p>	<p><b>making</b> 59:18                  87:23 120:4,14                  120:21 122:23  <b>manage</b> 19:4                  43:20  <b>management</b>                  1:15 2:6,11,13                  16:24 47:12                  48:2,13 51:8                  51:15 65:6,18                  71:3 95:20                  129:12 147:5                  148:6 150:9,13                  150:20,21                  151:1,4,21                  152:4,8,17,19                  155:23  <b>management's</b>                  80:11  <b>manager</b> 7:13                  18:24 48:5                  58:13 125:2  <b>managers</b> 16:23                  51:17  <b>mandate</b> 56:6  <b>mandated</b> 19:25                  38:6 65:2  <b>mandates</b> 36:2  <b>mandatory</b>                  35:20,24 36:6                  36:8,18 37:16                  46:14 70:15                  71:10 77:2                  93:24 97:20  <b>manual</b> 21:17                  22:25 87:1                  125:11  <b>manuals</b> 22:12  <b>manufacturer</b>                  83:25 115:9  <b>manufacturers</b>                  84:20  <b>manufacturer's</b>                  137:17  <b>March</b> 11:21                  98:4  <b>marine</b> 1:2 21:6</p>	<p>55:17 86:18                  87:5 124:8,17                  126:16  <b>Mark</b> 2:9 60:17  <b>Marshall</b> 89:9                  89:13  <b>master</b> 16:2 21:3                  21:24 87:22  <b>match</b> 35:1  <b>material</b> 26:18  <b>Mathews</b> 2:11                  3:8 7:3 41:19                  41:24 42:5,13                  42:15 58:5,12                  68:22 76:10                  81:11,13                  101:11 107:2                  125:5 158:8  <b>matrix</b> 24:4  <b>matter</b> 7:23 9:9                  9:17 12:16                  13:8 31:21                  101:14 107:14                  159:14  <b>matters</b> 4:25  <b>maximum</b>                  109:19,24  <b>McCARROLL</b>                  2:13 3:8,9 69:9                  70:9 88:18                  89:4  <b>McCormick</b>                  32:3  <b>McWhorter</b>                  58:18,19 59:2                  59:16 92:16,21                  93:9 94:3,9                  96:1,21 97:2  <b>mean</b> 11:17 14:5                  14:25 15:1,4                  15:22 17:18                  19:20 20:8                  22:3 23:2                  29:13 34:8                  41:4 46:8                  48:12 49:4                  51:16 55:1</p>	<p>61:4 67:6                  69:24 76:20                  86:16 87:24                  88:2 94:16                  103:9,10 104:2                  105:11 108:13                  114:8 121:20                  121:21 123:6                  126:6 138:17                  145:5 146:15                  146:15 152:16                  153:10,23  <b>Meaning</b> 124:6  <b>means</b> 19:23                  67:20  <b>meant</b> 71:21  <b>measurements</b>                  85:16  <b>mechanical</b>                  26:14 69:13,15  <b>meet</b> 37:6 70:24                  84:2 99:9  <b>meeting</b> 5:7                  39:15  <b>member</b> 9:16                  122:3  <b>members</b> 2:2                  13:3,11 113:7  <b>memory</b> 117:7  <b>men</b> 79:12  <b>mention</b> 125:21  <b>mentioned</b> 52:22                  61:3 96:19                  97:19 103:2                  140:22  <b>mentored</b> 23:7  <b>merged</b> 148:24                  149:1,16  <b>met</b> 54:12 92:24                  94:24  <b>Metairie</b> 1:21,23  <b>Mexico</b> 1:6 8:6,9                  8:10 13:15,16                  14:4 18:19                  28:9,16 30:13                  36:14 38:12  <b>Michael</b> 3:4 6:13</p>
--	---	---	--	---

7:7 117:24	90:8,9 92:2,3	<b>needed</b> 12:9	<b>notes</b> 42:12	106:7
<b>Michoud</b> 30:4	102:19 118:25	17:22 47:18	52:11 118:13	<b>occurred</b> 9:24
44:23 45:4	121:13 122:11	97:25 101:6	118:16	38:17 55:25
<b>mid</b> 26:6	122:17 123:9	121:5,23	<b>notwithstanding</b>	<b>Ocean</b> 1:14
<b>middle</b> 57:20	123:23	<b>needs</b> 6:20 21:8	93:10 94:5,20	<b>OCS</b> 62:18
59:13 130:25	<b>mortality</b> 69:13	53:24	97:13	76:17
<b>Mike</b> 6:3 32:1	69:15,17	<b>negatively</b>	<b>NOV</b> 23:18	<b>October</b> 142:25
121:16	<b>move</b> 15:14	112:13	<b>NTL-05</b> 64:18	<b>odds</b> 70:2
<b>mildly</b> 133:18	16:14 19:24	<b>never</b> 24:1 63:3	<b>nuclear</b> 17:19	<b>OEM</b> 32:10,13
<b>military</b> 88:1	24:13 28:1	80:8,8,9 81:14	135:25	32:16 33:4
135:19	34:11 35:3	107:17 153:20	<b>number</b> 25:1	38:5 39:6,10
<b>MILLENNIUM</b>	48:8 57:1 61:5	<b>new</b> 1:21 55:8,10	43:15,17,19,23	40:1 46:22
8:14 9:3 17:2	61:21 62:2	55:13 62:8	44:12,15 52:24	49:24 50:11
18:14 29:2	96:17 104:8	<b>newly</b> 28:16	55:8,11,12,14	52:20 54:25
<b>mind</b> 23:21 42:2	115:24	<b>Newman</b> 80:14	81:9,17 83:11	55:4 57:22,24
74:22	<b>moved</b> 38:1	100:5	114:21 147:13	64:8 115:13,14
<b>MINERALS</b> 2:6	48:18	<b>Newman's</b> 80:21	149:14	115:17,21
2:11,13	<b>moves</b> 59:12,23	<b>Nguyen</b> 2:4 3:14	<b>numbers</b> 43:10	116:1 131:2,4
<b>minor</b> 138:20	60:6	4:1,12 69:3	43:12 44:21,22	<b>OEMs</b> 19:9
<b>minute</b> 22:6	<b>moving</b> 22:6	150:1,3 151:23	45:2,2 50:20	23:15 32:20,24
<b>misleading</b>	23:6 61:2 62:9	152:15 153:12	149:19	33:12,18 34:1
151:7,10	<b>mud</b> 19:7	154:25 155:12		43:16 49:10
<b>missed</b> 107:20	<b>multiple</b> 17:24	156:24 157:12	<b>O</b>	<b>OEM-provided</b>
<b>missiles</b> 136:2	18:2 19:8	158:14	<b>oath</b> 6:11	19:3
<b>Mississippi</b>	32:20,24 34:9	<b>night</b> 8:25 16:14	<b>oaths</b> 1:18	<b>OEM-qualified</b>
38:13 48:9,19	<b>Murphy</b> 5:15	51:22 121:8	<b>object</b> 71:12	115:22
<b>misspoke</b> 131:15	<b>MUX</b> 14:23 15:8	<b>Nile</b> 156:8,11	74:1,6 154:8	<b>offer</b> 71:17
<b>misunderstood</b>	<b>M-I</b> 134:24,25	157:2	156:15	<b>offered</b> 23:12
37:14		<b>nondestructive</b>	<b>objecting</b> 132:24	77:9 139:14
<b>MMS</b> 14:2,10	<b>N</b>	138:24	<b>objection</b> 71:20	<b>offering</b> 23:16
<b>MOBILE</b> 1:4	<b>N</b> 36:9	<b>non-destructive</b>	95:2 96:6	<b>offers</b> 23:17
<b>mode</b> 66:11	<b>name</b> 5:23 6:2	46:11	110:22 128:22	136:14
<b>modifications</b>	7:5 20:17	<b>normal</b> 39:18	129:19 131:10	<b>office</b> 66:20
111:22,23	57:10 66:6	67:17 104:19	132:5,20	<b>offshore</b> 1:4
112:2,5,8	89:12 102:21	105:5 127:1	143:19 145:16	16:23 105:4
<b>MODU</b> 55:19	123:23	<b>normally</b> 34:12	151:12 152:10	<b>off-centered</b>
<b>MOEX</b> 117:16	<b>NAUTILUS</b>	46:15 91:11	155:4 157:5	29:24 102:7
<b>moment</b> 48:20	18:13	95:19 113:19	<b>obligation</b>	<b>Oh</b> 118:16
<b>monitor</b> 126:25	<b>Navy</b> 135:22	<b>NORSOK</b> 36:2	145:13	119:23
<b>monitoring</b> 44:4	157:25	<b>North</b> 1:22 7:25	<b>observation</b>	<b>Ohio</b> 30:5
138:15 139:2	<b>need</b> 4:20 6:21	8:4 9:7,25	130:25 131:8	<b>oil</b> 17:19
<b>months</b> 7:17	21:23 32:5	18:12 31:25	131:20,25	<b>OIM</b> 87:22
8:25 9:5,11	71:23 75:9	32:1,3 36:11	<b>obvious</b> 115:4	88:11 119:18
98:17 149:12	87:8,18,21	64:21	<b>obviously</b> 78:11	<b>OIM's</b> 86:10
<b>moon</b> 15:6	88:12 96:12	<b>Norway</b> 36:11	110:5 130:3	<b>OJT</b> 16:19 19:14
<b>morning</b> 5:8 7:4	108:8 126:17	<b>Norwegian</b> 36:1	<b>occasion</b> 129:8	<b>okay</b> 6:10,24 8:3
51:19 70:12	156:22	<b>note</b> 4:18 86:14	<b>occur</b> 30:16	10:2 14:7

15:20 16:2 17:8 18:23 19:10 21:15,20 22:9 24:5,21 26:3 27:1 29:18 30:21 31:13 32:5 33:10 35:6 36:13 38:9 42:14 43:1,4,9 43:20 44:18,24 48:7 51:25 54:22 55:6,15 55:23 57:1,13 57:18 58:13,19 58:23 62:15 67:24 68:6 69:8 71:19 78:11 79:10,18 79:19 90:6 91:20 93:8 95:8 99:18,23 102:2,11 105:1 105:6,15,22 106:5 107:8,20 108:9,21 109:13,20 110:4,12,16 111:14 112:4 113:3,8,22 114:25 116:7 116:16 118:23 118:25 119:6 119:17,23 120:18,24 123:1 128:6 129:22 133:5 133:20,21 135:13 136:13 137:6,19,24 139:6,22 150:12,25 151:14,24 152:6 155:18 <b>once</b> 10:23,24 34:10 50:11 66:18 96:13	104:5 146:6 149:16 154:11 <b>ones</b> 18:5 45:23 84:23 128:3 <b>ongoing</b> 76:14 <b>on-board</b> 19:15 <b>on-shore</b> 106:18 <b>on-the-job</b> 17:13 17:14 22:11 <b>on-the-rig</b> 19:14 <b>open</b> 24:11 34:12 98:12,23 <b>operate</b> 24:10 84:23 98:19 <b>operating</b> 25:20 25:22 39:8,19 39:25 88:21,25 108:6 <b>operation</b> 20:5 45:4 137:3 <b>operational</b> 120:15 145:5 152:21 <b>operations</b> 38:11 78:18 104:20 105:5 <b>operator</b> 34:14 34:21 61:8,12 62:1 138:23 <b>operators</b> 76:16 <b>opinion</b> 31:15 71:14 72:15 74:10,12,25,25 75:11,13 76:6 77:9 78:5,6 79:23 80:2,17 94:4 97:3,6,15 108:24 109:1 151:15,16,21 152:11 154:12 154:13,14 <b>opportunity</b> 62:6 <b>order</b> 122:5 140:14 <b>orders</b> 140:17 <b>organization</b>	47:5 <b>organized</b> 139:7 <b>original</b> 43:17 44:25 45:24 57:21 83:24 84:20 101:11 115:8 131:1 <b>originally</b> 45:16 49:2 57:7 <b>Orleans</b> 1:22 <b>other's</b> 145:9 <b>outcome</b> 159:13 <b>outline</b> 86:23 87:11 <b>outside</b> 17:25 19:3 20:7 25:21 34:11 39:7 56:3,10 56:20 60:1 76:12 <b>outstanding</b> 147:14 <b>overdue</b> 148:15 148:23 149:5,9 149:15,18 <b>overhaul</b> 30:18 35:13,24 36:15 37:8,16,19 38:1,25 39:22 41:11,16 42:18 42:19,22 43:14 46:4 53:24 55:10 56:3 59:3 64:12 69:20 132:3 <b>overhauled</b> 36:4 40:14 61:1 85:1 121:25 141:20 154:21 <b>overhauls</b> 35:18 36:23 141:16 <b>overly</b> 133:15 <b>Overruled</b> 144:3 155:6 <b>oversee</b> 74:18,23 <b>overseeing</b> 36:22 <b>overview</b> 51:11	140:25 <b>Owen</b> 58:18,19 59:2,16 <b>owners</b> 84:22 <b>O'Bryan</b> 117:25 118:1 <hr/> <b>P</b> <hr/> <b>package</b> 63:1,15 64:3,10,15 <b>packers</b> 24:12 <b>pads</b> 118:19 <b>page</b> 3:7 26:10 26:23 35:10 46:24 48:22 53:5 58:24 59:10 60:10 63:20,20 65:11 73:18 127:23 127:25 130:19 136:19 <b>pages</b> 5:4 <b>paint</b> 31:9 <b>panel</b> 88:22 124:16 <b>panels</b> 88:25 <b>paragraph</b> 35:16,17 36:20 136:23 137:7,7 <b>parameters</b> 25:11,20 108:3 <b>paraphrasing</b> 37:20 <b>parent</b> 100:2,7 <b>part</b> 5:5 23:5 33:5 35:7 40:4 44:5 47:3 48:11 51:16 60:12 63:3 64:21 68:5 70:5 74:15 99:10 101:19 105:4 115:12 115:16 116:25 126:18,25 138:7,11 155:22	<b>participants</b> 10:22 <b>participate</b> 48:17 <b>participated</b> 80:6 <b>particular</b> 13:4 106:3 145:14 <b>particularly</b> 127:22 <b>particulars</b> 146:23 <b>parties</b> 89:25 159:12 <b>parts</b> 82:10 96:22 138:14 142:20,21 <b>party</b> 36:23 <b>passed</b> 9:21 <b>passing</b> 12:1 <b>Pat</b> 117:25 118:25 <b>PATHFINDER</b> 8:18 <b>patience</b> 5:16 <b>pay</b> 29:15 <b>penalties</b> 6:8 <b>pending</b> 147:25 <b>people</b> 12:11,13 20:18 23:8 37:1 48:2 74:17,22 77:7 77:15 78:17,20 87:4 88:4 120:11 126:1 126:21,24 138:3 144:24 144:25 <b>perfectly</b> 69:25 99:14 151:15 <b>perform</b> 28:7 34:21 67:24 90:19 113:17 <b>performance</b> 49:14 <b>performed</b> 55:17 64:15
--	--	---	--	--

66:9 107:21,22 107:24 <b>performing</b> 63:6 69:18 <b>performs</b> 138:16 <b>period</b> 22:20 29:10 37:23 47:14 56:1 60:22 82:23 84:8 <b>periodic</b> 39:12 98:13 101:3 <b>periodically</b> 103:3 <b>perjury</b> 6:8 <b>permission</b> 21:24 <b>person</b> 4:12,15 13:4 15:16 21:11 144:10 <b>personal</b> 159:7 <b>personally</b> 52:13 72:15 95:17 100:20 114:20 116:8 129:5 <b>personnel</b> 17:11 23:23 85:21 113:5 <b>personnel's</b> 86:10 <b>pertains</b> 33:18 <b>philosophies</b> 34:2 <b>philosophy</b> 14:15 30:9 31:19 32:9,17 33:6 34:3 36:14 37:7,12 41:12 42:23 43:2 47:4 49:2 50:4 52:1,2,16 66:23 67:15 69:14 80:7,18 82:12 94:10 99:19 100:11 <b>pick</b> 17:21 <b>picked</b> 110:7	<b>piece</b> 11:9 29:3,3 29:4 37:24 39:8 49:11,19 54:25 62:2 85:6 129:10 141:16 154:24 155:10 <b>pieces</b> 62:7 <b>pile</b> 26:9 <b>pipe</b> 11:15 24:17 25:16 26:12,17 28:8,23 29:23 57:21 59:11,23 60:5 102:7 104:17,22 105:8,17,18,23 106:2,8,10,21 107:9,14 108:7 108:11,15 109:4,12 110:25 131:1 <b>pipes</b> 25:12 106:14 <b>place</b> 11:21 30:13,19 38:22 45:7 46:6 49:16 142:22 <b>placed</b> 140:16 <b>plan</b> 21:7 57:25 61:24 62:4 131:22 <b>planning</b> 33:7,19 47:5 <b>plans</b> 28:2 33:8 33:8,13 <b>plays</b> 130:3 <b>Pleasant's</b> 87:13 <b>please</b> 4:18 5:2,3 5:23,24 6:10 7:5 25:7 31:1 32:14 47:1 48:23 51:2 65:24 137:12 <b>PM</b> 34:12 37:21 101:5 149:13 <b>Pods</b> 67:20 <b>point</b> 11:12	21:14 77:13 79:18 92:7 100:18 122:2 130:8 148:23 153:9 <b>points</b> 135:15 <b>policy</b> 137:17 <b>POLK</b> 117:17 <b>POLLUTION</b> 1:2 <b>pool</b> 15:6 <b>portion</b> 149:4 <b>pose</b> 98:18 <b>position</b> 7:11,16 8:20 9:23 12:17 14:8 16:12 24:3 28:19 72:20,21 72:24 73:1 77:21,24 93:15 93:23 96:2,24 97:16,22 98:12 98:23 111:16 120:20 126:14 136:5,7 137:20 138:4 <b>positions</b> 7:21 146:18 <b>possibility</b> 45:23 <b>possible</b> 137:9 <b>possibly</b> 20:5 30:6 45:25 <b>post</b> 112:2 <b>post-casualty</b> 102:5 <b>post-incident</b> 13:25,25 23:20 55:21 <b>potential</b> 26:13 <b>practice</b> 70:14 70:15 72:18,25 73:7 97:23 137:2 <b>Practices</b> 71:4 <b>predictive</b> 61:6 70:7 115:16 116:5 138:22	139:2 <b>preface</b> 30:1 <b>preference</b> 40:11 <b>premise</b> 11:3 <b>preparation</b> 33:7 55:22 <b>prepared</b> 107:3 126:13 136:8 <b>prerequisites</b> 16:12 <b>presented</b> 30:24 44:23 56:18 <b>pressure</b> 61:12 61:14,21 98:24 103:15,18,23 103:25 104:1,2 109:4,19,24 110:18,23,24 111:10 <b>pressures</b> 29:22 <b>preventative</b> 34:6 37:10 38:7 84:7 103:4 114:3 138:19 <b>preverter</b> 63:25 67:9 121:23 124:15 145:12 146:10 150:4 150:14,23 151:2 155:2 <b>preventers</b> 24:15 145:25 <b>prevention</b> 11:12 22:21 71:4 92:15 <b>previous</b> 106:17 <b>previously</b> 111:20 120:12 132:11 133:14 <b>pre-commissio...</b> 29:11 <b>pre-deployment</b> 46:25 47:7,10 48:1,11,18 <b>pre-incident</b>	23:19 24:7 68:4 <b>prior</b> 8:16 11:24 17:18 18:11 28:8,23 29:21 47:8,22 56:24 67:3,14 68:3 100:19 101:13 104:23 139:10 <b>probably</b> 11:8 28:17 38:18 40:24 64:1 73:21 74:8 81:15 <b>problem</b> 11:19 43:13 75:16 111:5 <b>problems</b> 49:5 97:25 98:1,2,2 98:6 <b>procedure</b> 20:13 37:19 115:12 125:12 148:11 <b>procedures</b> 14:15 21:2,16 38:8 53:9,15 54:3,12 60:15 71:24 84:19 86:1,7 93:20 94:10 126:4 137:18 147:20 <b>proceed</b> 91:23 <b>proceedings</b> 159:6 <b>process</b> 49:3 63:11 65:1,7 68:5 <b>produce</b> 140:14 141:3 <b>product</b> 22:14 26:5,11 27:14 <b>profession</b> 78:16 <b>program</b> 7:14 18:25 23:6 50:6 54:12 60:4 84:1,2,7 106:15 115:17
---	---	--	--	--

<p>116:6 117:1 138:8,9 <b>project</b> 155:21 155:25 156:9 <b>promoted</b> 16:25 <b>proper</b> 74:3 82:14 <b>properly</b> 70:23 122:6,24 <b>properties</b> 26:15 <b>proposed</b> 57:24 62:4 131:21,22 <b>prospective</b> 146:2 <b>protection</b> 14:21 15:1,3,10 <b>protective</b> 15:2 <b>protects</b> 14:23 <b>proven</b> 16:16 <b>provide</b> 22:24 62:18 <b>provided</b> 10:14 10:21 12:11,12 19:12,13 22:13 22:16 31:13 81:9,10 85:23 128:13 129:4 130:13,15 <b>provides</b> 23:13 139:23 <b>providing</b> 137:3 <b>provisions</b> 70:25 <b>psi</b> 59:13,24 60:6 109:20 <b>public</b> 5:11 <b>publicly</b> 63:17 <b>published</b> 27:15 <b>pull</b> 42:17 50:21 <b>pulled</b> 38:10 115:24 <b>pumps</b> 19:7 <b>purchase</b> 111:24 <b>purchased</b> 111:25 <b>purpose</b> 47:1 <b>pursuant</b> 1:18 <b>pursuit</b> 80:10</p>	<p><b>put</b> 26:5 45:6 46:5 70:4 77:23 112:6 122:1 <b>puts</b> 38:14 <b>putting</b> 122:8 <b>P-frames</b> 31:9</p> <hr/> <p style="text-align: center;"><b>Q</b></p> <hr/> <p><b>QA</b> 136:12 <b>qualify</b> 62:1 <b>quality</b> 71:3 116:4 128:14 129:2 136:11 <b>question</b> 4:7 6:19 22:8 32:19 33:23 42:4 44:19 46:16 51:25 54:8 56:8 57:2 59:20 62:23 69:11 72:8,12 73:4,19 75:14 75:17,18,23,24 75:24 76:17 79:20 82:11 88:20 92:13 93:2,5 95:3,5 95:11 96:7,13 96:14 97:1,4 97:10,13 102:2 110:6 111:3 114:9 116:9 133:2,3,6,14 144:5,12 146:8 154:9,18 155:18 <b>questioned</b> 153:19 <b>questioning</b> 114:13 129:23 <b>questions</b> 7:2 9:19 28:5 29:13 30:2,8 41:22 52:21 68:24 69:8 81:14 88:17</p>	<p>89:8,15,17 90:1,2 91:14 91:16,18 92:10 92:17 94:21 102:12 117:18 117:22 118:2,6 118:11 123:16 125:4 127:18 133:12 134:22 135:1,6,9,11 140:2 142:4,10 142:14 143:12 148:13 149:25 150:2 155:14 157:15 <b>quick</b> 51:10 69:10 <b>quickly</b> 5:12 143:15 <b>quote</b> 80:13,20 <b>quote/unquote</b> 60:14</p> <hr/> <p style="text-align: center;"><b>R</b></p> <hr/> <p><b>R</b> 2:8,9 <b>raise</b> 6:10 116:9 154:3 <b>raised</b> 4:7 83:12 92:10 94:21 97:14 153:20 <b>raising</b> 92:17 <b>ram</b> 24:12,16 29:8 30:7,11 43:4,6 44:25 45:6,8,12,15 45:18,22 46:1 46:7,7,8 57:21 59:12,23 60:5 68:14,19,20 85:10 103:24 105:19 113:20 115:20 131:1 <b>rams</b> 28:8,22 59:13 67:16 98:10,22 103:7 103:13,14,23 104:13 105:7</p>	<p>105:10,11,12 105:12,14 106:1 110:23 <b>ran</b> 28:1 <b>ranks</b> 23:7 <b>reach</b> 97:3 <b>react</b> 10:22 <b>read</b> 4:12 5:8 37:18 51:19 75:18,24 105:15 109:14 136:22 <b>reader</b> 74:22 <b>reading</b> 17:15,16 93:18 94:16 109:22 147:2 148:4 <b>reads</b> 67:2 <b>ready</b> 5:19,21 47:24 118:21 120:6 121:24 126:20 <b>real</b> 24:22 112:18 <b>really</b> 44:16 49:8 141:10 143:15 148:14 <b>reason</b> 39:21 42:25 47:16 61:25 62:3 76:9 77:6 125:24 132:19 <b>reasoning</b> 47:4 <b>reasons</b> 115:7 <b>rebuild</b> 31:11 <b>rebuilt</b> 31:7 <b>recall</b> 11:1,13,18 12:1 48:20 56:5 59:18 90:12 93:24,25 94:2 95:25 96:23 125:6,13 127:20 142:23 143:4 153:9 155:16 <b>receive</b> 141:8,10 <b>received</b> 22:10</p>	<p>22:11 94:20 140:2 <b>recertification</b> 39:14 46:7,15 53:5 56:4,6,11 56:21 57:23 60:2,11,11 62:12,14 64:12 64:25 82:4,9 84:5,9 92:14 131:3 137:13 <b>recertified</b> 36:5 60:15 134:8 <b>recognize</b> 57:10 <b>recollection</b> 10:19 119:10 <b>recommend</b> 146:5 <b>recommendati...</b> 84:4 <b>recommendati...</b> 16:21 33:17 39:10 78:13 84:21 94:18 131:4,11 146:2 <b>recommended</b> 25:22 70:14 71:4 72:18,25 73:6 85:25 97:23 137:1 <b>recommending</b> 78:22 <b>recommends</b> 61:18 94:13 <b>reconvene</b> 69:4 158:17 <b>reconvened</b> 4:2 <b>record</b> 5:6,24 7:6 48:7 69:6 <b>recorded</b> 67:5 <b>recorder</b> 2:15 104:4 <b>records</b> 38:9 91:4 100:24 101:24 102:1 158:4 <b>rectify</b> 88:13</p>
--	---	---	--	--

<b>red</b> 20:1 22:1,3,7 25:21 66:12 86:17 87:2 127:11	99:9 104:7 <b>regulator</b> 110:11 <b>regulators</b> 67:21 <b>regulatory</b> 35:19 35:22	159:2 <b>reporting</b> 146:18 <b>reports</b> 50:2,3,8 125:2 141:10	84:3 92:19,23 93:14 94:7,24 104:6 131:12 131:14 146:14 146:17 156:13	32:7 36:21 51:12,14 143:16 144:13 145:8 150:25 151:3,9 152:6 152:18
<b>redundant</b> 133:10,13,16 133:18,20	<b>reject</b> 128:20 <b>relate</b> 130:20 <b>related</b> 13:5 65:19 69:15 159:11	<b>represent</b> 102:22 119:1 123:24 <b>REPRESENT...</b> 117:21 118:1,5 134:21,25 135:5	<b>requiring</b> 67:11 <b>reread</b> 72:8 <b>rerun</b> 27:20 <b>resealing</b> 34:20 60:18 <b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12	<b>restate</b> 133:8 <b>result</b> 126:20 134:7 <b>results</b> 67:5 <b>RET</b> 2:8 <b>retest</b> 121:10 <b>retesting</b> 122:9 <b>returned</b> 54:19 55:3 64:14
<b>refer</b> 20:12 35:10 46:23 48:21 58:23	<b>relates</b> 126:3 <b>relative</b> 27:9 <b>relax</b> 74:18 <b>relayed</b> 59:16 <b>relevant</b> 137:16 <b>relying</b> 106:5,11 <b>remain</b> 126:13 <b>remanufacture</b> 39:16 137:14	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14	<b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10	<b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>reference</b> 28:3 54:20 62:11 71:6 73:2 105:10	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 31:10 <b>report</b> 4:19 5:1 49:14 50:13,14 50:24,25 51:6 51:7,20 52:9 52:14 82:15 85:18 109:14 109:23 128:12 141:8,12 145:13	<b>request</b> 85:11 91:1 113:10,18 114:8 140:7,11 153:16,24 154:21 <b>requested</b> 53:17 90:23 91:2 106:24 113:5,9 113:15 114:13 122:3 141:6 153:14 <b>requesting</b> 54:18 <b>requests</b> 101:5 113:18 <b>require</b> 35:23 37:25 <b>required</b> 24:7 26:20 29:22 33:12 35:23 36:10 42:19 54:9 68:9 73:7 99:7 103:24 115:13 <b>requirement</b> 22:3 26:16 36:18 39:23 41:12 42:22 46:14 48:12 62:14 66:5 72:14,17 82:5 90:24,24 97:20 <b>requirements</b> 35:19,22 47:20 52:20 57:24 71:25 82:10	<b>reserve</b> 90:4 <b>resolved</b> 143:7 <b>resolving</b> 129:7 <b>resource</b> 12:9,10 12:12 <b>respect</b> 11:22 14:16 19:10 27:14 30:17 33:13 75:11 78:13 92:23 94:25 96:2 98:17,20 124:2 124:14,23 125:3 131:19 131:24 132:13 132:23 143:7 146:10 <b>responding</b> 11:9 75:19,25 <b>response</b> 11:16 21:17 59:10 66:11 76:1 125:11 131:25 132:15 <b>responses</b> 89:18 <b>responsibilities</b> 12:4,8 19:18 20:6,9,19 21:3 86:12 87:12 126:7,11 144:25 <b>responsibility</b> 18:22 124:23 125:16 <b>responsible</b> 12:24 13:6 18:3,6,8 19:2,5	<b>returned</b> 54:19 55:3 64:14 <b>reverification</b> 65:1 <b>review</b> 40:20 53:17 83:9 85:15 106:25 139:16 148:9 <b>reviewed</b> 53:15 53:21 55:15,21 73:15,17 148:5 <b>reviewing</b> 51:13 <b>reviews</b> 142:22 <b>revised</b> 1:20 66:3 <b>revisited</b> 27:13 <b>rig</b> 10:23,24 15:16 16:13 17:17 19:23 20:4 23:2,8 25:19 34:11 35:3 40:17 47:12,12 48:1 48:4,8,13 49:22 50:19 51:15,17,21 58:16 59:12,17 59:23 60:5,19 61:5 62:2,5 66:17 85:12,21 86:14,20 87:1 87:9 88:4 89:1 89:14 90:12 95:20 96:23
<b>referenced</b> 26:3 53:16 55:25 56:23 60:12 62:19 107:2	<b>remember</b> 42:3 119:12 <b>renewal</b> 63:11 <b>reorganization</b> 18:17 <b>repair</b> 39:16 <b>repairs</b> 54:15 <b>repeat</b> 97:10 <b>replace</b> 31:11 52:10 <b>replacement</b> 31:5 <b>replacing</b> 31:6,7 3			

105:4,14 108:5 112:21,24 113:6,7,16,25 115:23,24 116:25 119:18 120:1,11,19 121:6,8,14,22 122:11 123:5,9 127:8 129:11 139:23 140:3,7 140:10,13,21 140:23,24 141:5,6 143:5 152:14,17 153:11 154:19 154:22 155:11 155:23 <b>right</b> 6:10 11:24 76:9 80:12 97:24 100:8 102:25 105:6 107:3 109:7 110:5,14 111:11 118:19 119:15 121:3 124:14 125:3 125:22 127:3 127:17 128:7 128:19 129:6 129:16 130:18 130:23 131:19 131:24 133:23 134:6 135:19 136:22 138:9 140:5 142:3 150:8 157:13 <b>rights</b> 129:1 132:12 <b>rigs</b> 8:2,11 9:19 13:14 14:3,21 17:3,6,7 18:3,7 18:19,20,21 24:9 28:15 29:12 32:12 45:18 51:10 67:11,15 84:13 100:12 106:18	127:3,4 134:1 145:24 146:18 150:11 151:25 153:4,11 <b>riser</b> 31:11 <b>risk</b> 98:19 <b>RMS</b> 23:3 43:13 52:5,10 139:7 139:10,14,17 139:23 146:21 147:12,21 148:16,25 <b>Robert</b> 2:15 118:4 <b>Roger</b> 32:2 <b>Rogers</b> 32:2 <b>role</b> 8:12 9:12,18 9:18 12:19 16:18 18:23 19:16 40:23 86:10,10 87:13 <b>roles</b> 8:23 9:2 <b>Roman</b> 120:13 <b>room</b> 86:22 87:8 88:6 <b>rotating</b> 41:1,2 41:13 42:16 <b>RP</b> 36:16,17 53:6 54:9 60:12 70:14 71:3,9 72:17 72:24 73:2,6 92:12 93:12,18 93:18,23 94:13 94:16 96:4 97:8,17,19,23 136:15,24,25 137:11,22,25 156:13 157:3 <b>RPs</b> 62:19 <b>run</b> 15:5 27:19 29:1 47:9 102:25 103:2 103:12 <b>running</b> 47:22 <hr/> <b>S</b> <hr/>	<b>sacrifice</b> 80:9 <b>safe</b> 120:22 <b>safety</b> 98:18 123:4,4 128:15 129:3 143:16 144:13,24 145:9 146:9 150:9,13,20,21 151:1,4,21 152:3,7,17,19 <b>satisfied</b> 94:24 <b>save</b> 158:3 <b>saying</b> 45:8 90:17 93:24 94:1 107:22 114:14 134:8 <b>says</b> 27:8 35:18 57:20 59:3 62:3 67:9 70:21 74:7 86:14 110:4 113:24 130:24 131:5,6,22 148:4 <b>scheduled</b> 33:12 156:1,3 <b>scheduling</b> 30:15 <b>Schonekas</b> 3:12 73:25 123:20 123:22,24 128:24 130:12 131:13,18 132:6,16 133:1 133:7,17,22 134:15 143:18 143:24 145:2 145:15,20 151:11 152:9 152:24 <b>school</b> 10:4,5 <b>scope</b> 63:18 76:12 143:19 <b>se</b> 43:23 <b>Sea</b> 36:11 <b>seal</b> 29:23 70:3 <b>seals</b> 61:13	<b>second</b> 35:15,16 35:17 57:6 65:11 66:2 74:18 136:19 136:23 <b>secondary</b> 67:25 <b>section</b> 1:19 63:18,23 65:23 65:24 67:1 83:21 93:18 94:17 124:6,8 125:21 128:4 137:16 <b>Sections</b> 70:25 71:1,2 <b>sector</b> 36:1 <b>sectors</b> 36:11 <b>see</b> 51:9 61:19 104:16,21 106:1 142:19 <b>seen</b> 146:25 <b>send</b> 39:21 40:15 40:19 49:11 84:25 85:13 <b>senior</b> 8:1,12,13 9:1,2,4 15:19 16:9,15,22 19:16 20:3 21:14 23:8 58:16 60:16 88:3 115:24 116:2 122:3 <b>senior's</b> 16:17 <b>sense</b> 71:20 108:22 <b>sent</b> 40:12 49:24 66:16,19 106:23 <b>sentence</b> 35:15 35:18 137:12 <b>separate</b> 13:9 86:11 87:10 141:12 <b>September</b> 55:18 92:5 155:15 <b>sequences</b>	127:14 <b>serial</b> 43:10,12 43:17,19,23 44:11,15,21,22 45:1,2 55:8,10 55:12,13 <b>series</b> 125:10 <b>serious</b> 122:22 <b>serve</b> 135:21 <b>served</b> 135:18 151:24 <b>service</b> 38:2,25 39:9,11,18 62:6 113:5 135:19 140:14 140:17,20 141:7,8 157:24 <b>SERVICE/BO...</b> 2:7,11,13 <b>SESSION</b> 1:10 <b>set</b> 23:21 29:3 104:6 108:1,6 110:3 149:5 157:20 <b>sets</b> 45:21 105:9 105:13 110:11 <b>severed</b> 15:11 <b>Shaffer</b> 17:5 23:18 33:1 84:19 <b>Shakes</b> 112:13 <b>shared</b> 18:21 156:12 <b>shear</b> 24:16,17 25:10,10,16,22 26:16,20 28:8 28:8,22 29:1,1 29:4,7,15,22 30:7,11 68:14 68:19,19 103:7 103:12,14,23 104:13,18 105:7,10,11,11 105:12,16,17 105:18,19 106:1,13,17,18 107:1,12,13,14
---	---	---	--	--

108:2,7 110:2 110:18,24 111:11 <b>sheared</b> 28:23 <b>shearing</b> 24:14 102:6 105:13 106:15 109:19 109:24 <b>shears</b> 31:5 106:6,10 <b>sheathing</b> 15:2 <b>shed</b> 57:3 <b>sheet</b> 46:25 47:2 47:7,15,16 48:3 113:23 <b>shelves</b> 85:19 <b>ship</b> 146:9 <b>shop</b> 38:6 39:21 40:12,16 42:25 43:17 54:15 55:9 <b>shopped</b> 39:16 <b>shore</b> 125:2 146:16 <b>shortcuts</b> 80:8 <b>shorthand</b> 159:7 <b>show</b> 60:25 114:25 <b>shown</b> 101:24 <b>shut</b> 123:6,13 143:5 <b>shuttle</b> 31:10 <b>side</b> 107:10 <b>sign</b> 48:3,6 <b>signature</b> 61:7 61:17 66:6 138:24 <b>significance</b> 4:15 <b>significant</b> 26:19 <b>sign-off</b> 46:25 47:7,15,16 <b>similar</b> 32:14 33:8 <b>simpler</b> 93:4 <b>simply</b> 77:10 79:23 <b>Singularly</b>	133:20 <b>SINKING</b> 1:2 <b>sir</b> 7:8,22 9:13 10:3 20:15 25:8 26:24 28:11 31:19 35:13 41:20 43:7 48:24 51:3 53:2,12 56:12 57:11,16 58:6,21 63:1 63:21 64:4,13 65:12,24 68:23 72:21 82:11 88:15 90:9,14 91:9 92:3,8,20 99:21,22,25 100:9 102:12 102:20 105:20 117:13 119:2 124:1,14,25 125:3,24 127:3 127:17,22 128:20,25 129:6,14 130:13 131:19 131:24 133:23 133:24 134:6 134:16 143:15 144:12 148:13 150:6,21 152:4 153:15,22 155:16 156:2,5 156:7,13 157:13 158:9 158:16 <b>sit</b> 76:3 87:6 <b>site</b> 126:13 <b>sitting</b> 85:19 120:13 154:15 <b>situation</b> 19:18 88:10,13 125:6 126:8,23 127:9 144:9 <b>situations</b> 87:25 <b>six</b> 11:17 31:4 82:6 146:16	149:11 153:10 <b>six-hour</b> 122:19 <b>size</b> 109:11 <b>sleeve</b> 81:15 <b>small</b> 98:11 <b>SME</b> 9:14 <b>sold</b> 44:21 <b>solely</b> 8:6 18:7 33:13 140:7 <b>somebody</b> 51:12 146:3 <b>sooner</b> 69:21 <b>sorry</b> 41:25 42:6 43:1 45:10 73:14 75:7 85:9 91:15 93:2 103:1 109:22 118:22 131:14 137:8 <b>sort</b> 74:19 96:10 130:20 <b>SP</b> 53:11 54:20 <b>spare</b> 45:18 <b>spares</b> 7:14 18:24 45:22 <b>speak</b> 95:4 107:19 <b>speaking</b> 23:14 51:18 61:10 72:20,21,22 <b>spec</b> 55:19 <b>special</b> 53:9,15 <b>specialist</b> 150:16 <b>specific</b> 19:17 22:24 63:23 68:12 89:15 111:3 152:13 154:22 <b>specifically</b> 4:24 8:3 10:19 17:9 22:17 36:13 53:4 54:2 56:16 62:24 132:21 <b>specification</b> 84:11,25 <b>specifications</b>	26:13,17 39:15 53:25 85:3,6 85:19,22 86:4 <b>specified</b> 71:6 83:25 <b>speculate</b> 74:21 156:22 157:8 <b>speculating</b> 27:22 <b>speculation</b> 156:16 <b>speed</b> 158:7 <b>spell</b> 7:5 <b>spelled</b> 6:2 <b>spend</b> 40:17 <b>spent</b> 135:22 145:23 <b>spider</b> 31:11 <b>splash</b> 28:23 <b>splashing</b> 28:9 <b>split</b> 18:19 <b>spoke</b> 96:23 <b>spot</b> 76:5 <b>spreadsheet</b> 25:3 27:2 29:19 57:18 59:3 107:5 108:4,14 <b>SPS</b> 59:14 <b>stack</b> 10:25 12:6 12:21 13:1 15:6,14 16:3 22:18 24:18 30:17 31:9 32:13 37:14 38:23 40:7 41:7 45:3,7,16 50:17 53:8 56:3 81:10 143:7 <b>stacks</b> 17:2,9,24 18:2 32:8,9,16 <b>stack's</b> 56:20 <b>stages</b> 127:11 <b>stamp</b> 24:24,25 27:3 <b>stamped</b> 26:9	27:10 30:25 57:8 63:16 65:8 127:24 <b>stand</b> 20:4 <b>standard</b> 37:11 59:6 137:1 141:21 <b>standpoint</b> 116:4 120:5 145:6 <b>stapled</b> 57:14 <b>start</b> 22:6 34:10 34:22 46:16 62:8 69:18 92:4 103:11 <b>started</b> 23:15 28:18 38:11 142:22 <b>starting</b> 11:11 19:23 <b>starts</b> 36:20 46:4 51:4 <b>state</b> 5:23 7:5 89:13 133:5 <b>stated</b> 120:12 <b>statement</b> 5:8 62:16 74:9 136:14,19 137:20 <b>states</b> 1:14 2:4 2:10,15 26:12 39:14 80:7 131:21 157:25 <b>static</b> 29:19 <b>status</b> 155:19 <b>Statute</b> 1:20 <b>stays</b> 39:9 99:11 <b>steps</b> 86:19,24 87:3 139:5,6 <b>Steve</b> 134:20 <b>stipulate</b> 112:15 <b>stopped</b> 63:6 64:11 <b>straight</b> 4:4 104:5 <b>strength</b> 26:18 <b>Stringfellow</b>
---	--	---	---	--

18:18 37:2	28:18 30:22	9:8,10,15,15	127:7 138:11	112:20
60:17 73:10	31:19 32:6	9:19 10:1	139:8,11,12,14	<b>talking</b> 79:8
74:10 75:19	37:12 47:3	18:12,17 28:12	139:17,23	150:19 152:21
77:9,17 79:25	49:1 52:2,15	36:21,25 37:3	146:21 147:4,5	<b>tandem</b> 105:12
<b>Stringfellow's</b>	53:8 56:25	47:12 59:25	147:9,12,21,23	<b>task</b> 35:2 154:22
78:5	58:16 59:4,11	64:22 80:11	148:6,17,19	<b>tasks</b> 23:4 33:16
<b>strip-down</b>	59:21,21 66:22	93:16 95:21	149:3 150:10	33:20 34:7,10
34:19	67:14,18 80:6	99:4 104:24	150:13,22	34:12,22 35:3
<b>strong</b> 109:3	86:25 87:14,15	106:24 110:9	151:1,4 152:17	37:10 103:4,6
<b>stuff</b> 22:13 54:1	98:8 99:19	112:9 119:9,22	152:19 154:19	138:17 139:24
<b>stump</b> 103:21	100:10 104:18	122:4	<b>systematically</b>	147:18 148:10
<b>subassembly</b>	115:24 116:2	<b>supposed</b> 23:1	39:1 61:4	<b>taught</b> 11:4
40:10	124:20 125:17	66:19 156:8	<b>systems</b> 23:3	<b>team</b> 4:9 9:18
<b>subcomponent</b>	130:17 136:9	<b>sure</b> 8:24 21:6	24:10 67:25	13:2,6,7,9,10
40:7	139:23 142:21	32:23 47:23	68:18 71:5	13:11,12
<b>subcomponents</b>	149:8	55:7 60:8 81:5	101:8 136:3	100:23
37:6	<b>subseas</b> 48:13	82:19 91:25	148:24 149:1	<b>Team's</b> 4:19
<b>subject</b> 5:6 6:8	60:16	93:4 97:11	149:16 152:4,8	<b>technical</b> 9:10
7:23 9:9,17	<b>sufficient</b> 128:14	120:4,14,22		9:14,15,19
12:16 13:8	<b>suggesting</b>	121:23 122:6	<b>T</b>	12:9,10 18:17
57:22 79:1	101:10 102:4	122:23 126:12	<b>T</b> 1:16 2:19	47:11 93:15
131:2	<b>suggestion</b> 74:9	143:22 148:21	159:4,19	95:21 99:3
<b>submarine</b> 88:5	140:5	<b>surely</b> 119:3	<b>tab</b> 63:19	104:24 106:23
<b>submarines</b>	<b>suited</b> 136:7	<b>surprising</b> 61:1	<b>table</b> 53:10	110:9 119:21
17:20 136:1,12	<b>summarize</b>	<b>survey</b> 63:4 64:3	<b>take</b> 16:17 30:19	122:3 125:25
<b>submissions</b>	75:24	64:10	36:15 65:10	<b>technicians</b>
4:20	<b>Super</b> 28:25	<b>surveyed</b> 64:2	69:1,12,25	86:15
<b>submit</b> 4:24	31:5	<b>surveyor</b> 128:11	80:8,11 85:12	<b>tell</b> 6:9 31:1
49:18 50:1	<b>superintendent</b>	<b>surveys</b> 34:23	85:14 86:20,25	54:25 88:7
55:2	7:24,25 8:4,21	62:24 63:1,7	87:19,24 88:12	92:21 93:9
<b>submitted</b> 5:5,10	9:6,7 12:7	64:15	107:9 108:3,22	94:19 95:6
48:4 50:12	17:24 18:10	<b>sustain</b> 71:19	114:6 121:18	102:3 122:15
51:3	28:19 32:7	<b>Swaco</b> 134:24,25	130:23 145:14	124:15
<b>submitting</b> 4:8	59:22	<b>swapping</b> 67:20	146:12	<b>telling</b> 37:15
5:3	<b>superintendents</b>	<b>switch</b> 41:14	<b>taken</b> 69:5 85:16	95:25
<b>subsea</b> 7:24,24	48:6	42:20	87:4 88:13	<b>tells</b> 43:23
8:1,3,12,13,15	<b>supervision</b>	<b>switch-out</b>	126:18	<b>term</b> 69:18
8:16,17,18,20	159:8	131:10	<b>takes</b> 30:12	113:19
8:24 9:1,1,2,4	<b>supervisor</b> 8:2	<b>sworn</b> 6:14	40:13 55:4	<b>terminates</b>
9:6,7 12:6 13:5	8:12,15,17	<b>system</b> 25:23	61:21 108:10	133:25
13:13 15:19	16:10 19:17	32:15,22 34:14	108:17	<b>terms</b> 34:9
16:10,14,15,22	20:7 87:15	43:13,22,23	<b>talk</b> 5:14 65:5,11	126:19 145:24
17:23 18:10	124:21 125:1	44:1,6,7 50:10	66:24 76:13	<b>test</b> 26:1 28:7,21
19:17 20:3,7	136:12	52:5,11 63:18	79:15 120:24	28:24 29:1,7
20:25 21:14,18	<b>supervisors</b>	68:2 70:22	121:4	34:14,21 39:1
21:22 22:24	16:21	101:19 108:6	<b>talked</b> 72:6	57:20 61:4,12
23:6,24 24:2	<b>support</b> 8:1,5	114:3 116:20	90:10 102:24	61:13,15 62:1

68:6 98:10,22 103:20,24 104:1,2,4,7,8 104:16,18 105:2 106:8,19 117:2 122:5 <b>tested</b> 59:12,13 59:23 60:5 67:4,19 68:3 98:24,25 103:15,18,18 104:14,21 116:14,18,20 <b>testified</b> 73:12 87:17 119:12 <b>testifies</b> 4:7 <b>testify</b> 6:15 77:24 157:23 <b>testifying</b> 38:20 <b>testimony</b> 6:7 30:5 41:5 52:17,23 70:13 73:15,18,24 74:3,7 77:16 77:18 90:13,17 101:11 111:21 147:23 148:15 <b>testing</b> 46:11 61:17 67:2 68:5 70:7 104:3 116:25 <b>tests</b> 16:19 29:15 61:7,8,9 102:24 103:2 103:12 104:25 105:25 106:17 130:25 138:23 138:24,24,25 <b>Texas</b> 122:18 <b>thank</b> 5:16 6:5 6:18 7:8 22:9 68:23 69:2 70:10 80:4 88:15 89:5,11 89:16,22,24 91:8,25 102:11 102:14,16	117:11,13,15 123:15,18 131:15 134:16 134:19 142:6,8 142:12 143:10 149:23 157:13 157:22,23,25 158:13,15 <b>thanks</b> 7:1 62:22 142:4 <b>thickness</b> 26:19 <b>thing</b> 65:5 <b>things</b> 40:13 60:7 115:23 126:20 158:7 <b>think</b> 15:15 16:9 20:21 35:11 52:22 74:10 75:16 78:7 79:12 96:10,14 110:4 113:9 115:4 136:7 140:3 <b>thinks</b> 72:4 <b>third</b> 36:19,23 <b>thorough</b> 120:4 120:8 <b>thought</b> 49:3,22 75:10 97:25 105:16 107:21 123:3 156:16 <b>thousands</b> 148:15 <b>three</b> 7:17 45:21 53:6 55:24 56:22 60:2,16 151:25 153:4 <b>threw</b> 149:18 <b>thrusters</b> 19:7 22:4 <b>tick</b> 98:11,13 <b>tied</b> 32:21 34:1 52:15 <b>ties</b> 32:15 59:24 <b>tilt</b> 109:4 <b>time</b> 8:21 10:9 14:9 18:9,18	22:19 27:3,24 28:21 29:9 38:15 41:14 42:21 45:17 46:4 49:4,18 56:1 60:21 72:7 80:11,12 82:23,25 84:8 90:4 96:9 100:6 102:12 104:12,23 105:1 110:10 112:10 113:14 114:15 116:15 116:17 117:2 119:7 120:7 121:25 133:11 135:24 140:23 142:4 144:16 145:24 152:25 153:5,6 158:3 <b>timeline</b> 40:13 140:18 <b>times</b> 28:4 29:6 29:10 45:19 51:17 60:21 114:11,17 116:7 <b>Title</b> 1:19 <b>TL</b> 25:4 <b>today</b> 55:22 62:21 102:4 157:23 158:16 <b>Todd</b> 3:4 6:13 7:7 <b>told</b> 77:20 78:6 97:2 156:20,25 <b>tolerances</b> 39:8 39:25 85:6 86:3 90:20 101:22 115:10 <b>tomorrow</b> 158:18 <b>top</b> 19:6 43:8 110:1 117:8 120:8,13 136:23	<b>topic</b> 96:21 <b>topics</b> 89:18 99:18 <b>top-to-bottom</b> 67:12,22 <b>torpedoes</b> 136:1 <b>torpedoman</b> 135:25 <b>total</b> 138:9 <b>tough</b> 32:18 <b>town</b> 16:24 48:5 51:8 129:12 <b>track</b> 43:10 <b>tracking</b> 43:21 49:20 <b>trained</b> 15:24 17:10,10,12 24:9 <b>trainee</b> 8:18,24 23:6 <b>training</b> 10:7,21 11:2,14 15:24 16:18 17:14,14 19:11,12,13,14 19:15 22:10,11 22:16 23:5,22 24:4,8 109:8 <b>transcribed</b> 159:7 <b>transcript</b> 1:13 159:9 <b>transcripts</b> 73:17 <b>Transocean</b> 7:10 7:19 8:9 10:7 10:15 12:20,24 13:16 14:3,14 14:23 17:11 18:1 19:15 22:23 23:24 24:15 25:1 27:6,9,12 28:6 28:21 29:20 30:9,24 31:15 36:17 38:21 40:23,25 41:9 42:17 43:9,20	44:21 45:1 46:5 50:4,12 50:16 51:4 52:1,18 53:14 54:9,10,23 56:17 57:24 59:8,25 63:6 64:16 65:7 66:8,16 68:17 72:16,22 76:18 85:21 90:11 91:4,11 92:7 94:9,19,23 95:4,6,10,14 95:19 96:3 99:24 100:2,8 100:12 107:6 110:13 111:18 119:7 124:3,12 128:14 129:4 130:2 131:21 132:22 138:15 141:5,19 142:9 143:5 151:25 153:14 156:13 <b>Transocean's</b> 33:14 37:6 71:14 72:20,24 73:1 77:20 84:18 96:2 137:22 138:8 <b>Transocean-U...</b> 80:24 <b>Transocean-U...</b> 57:9 <b>trends</b> 84:15 <b>tries</b> 111:10 <b>trips</b> 119:8 <b>TRN-USCG_...</b> 65:9 <b>TRN-USCG_...</b> 57:15 <b>TRN-USCG_...</b> 58:25 <b>TRN-USCG_...</b> 30:25 <b>troubleshoot</b>
--	---	--	--	--

121:11	<b>uncomfortable</b>	<b>upcoming</b> 45:14	<b>vicinity</b> 15:12	112:11 127:2
<b>troubleshooting</b>	77:23	116:21	<b>view</b> 36:17 72:16	129:22 139:15
121:15	<b>underlined</b> 67:4	<b>updated</b> 26:21	72:17 92:22	154:23 159:13
<b>true</b> 110:19	<b>underneath</b>	66:11,15	93:12,16 94:4	<b>WAYNE</b> 2:8
159:8	103:24	149:18	97:15,18	<b>ways</b> 96:10
<b>truth</b> 6:9 144:7	<b>understand</b> 6:9	<b>upkeep</b> 139:25	137:22,25	<b>weapons</b> 136:2
<b>try</b> 41:14 88:13	6:19 37:19	<b>upload</b> 158:11	<b>viewed</b> 97:19	<b>wear</b> 39:19
93:6 158:10	42:11 64:23	<b>upper</b> 44:11,12	<b>visits</b> 158:4	61:11
<b>trying</b> 5:17 15:7	72:7 74:16	44:13,14 52:10	<b>visually</b> 40:9	<b>Weatherford</b>
32:19 40:17	77:15 86:16	57:21 59:13	41:8	135:4,5
42:11 46:3	89:20 93:5	81:1 82:2,19		<b>Wednesday</b> 1:9
58:7 114:16	129:25 139:7	82:22 98:13,23	<hr/> <b>W</b> <hr/>	1:24
121:9,10	139:22 150:4	130:25	<b>wait</b> 88:7,10	<b>week</b> 98:24,25
148:17	<b>understanding</b>	<b>urged</b> 4:15	<b>waiting</b> 87:6	<b>welcome</b> 81:24
<b>tubulars</b> 25:18	16:1 30:12	<b>urgent</b> 121:18	<b>wake</b> 88:11	131:17
27:18,25 29:3	51:21 70:13	121:21	<b>wall</b> 45:17,25	<b>WellCAP</b> 10:15
<b>turned</b> 92:6	71:24 72:1,10	<b>USCG/BOEM</b>	147:3 148:4	<b>wellhead</b> 47:9
<b>Turning</b> 80:22	72:13,19 76:2	1:1	<b>walls</b> 15:10	<b>Wells</b> 71:5
<b>two</b> 9:1,1,3,5,5	77:7 78:19,25	<b>use</b> 50:7 61:5	<b>want</b> 4:4 5:14	<b>went</b> 12:15
36:20 45:21	80:5 85:2	81:23 133:25	15:14 20:11	13:11 20:1
60:7 79:12	87:12 89:20	138:12 139:18	24:8 30:11	27:13 38:10
98:8,9,15 99:6	100:3,4 105:7	147:20 148:8	35:10 45:21	51:22 120:7
104:10 105:13	128:7,10,16,25	154:6 155:19	54:25 55:3	147:6
121:21 148:24	129:13,24	<b>uses</b> 49:12	65:10 74:25	<b>weren't</b> 59:1
148:25 149:16	130:5 141:25	<b>utilized</b> 49:9	89:16 90:15	101:10
158:7	146:3 147:8,16	<b>U.S</b> 2:8	100:14 111:10	<b>WEST</b> 23:17
<b>type</b> 10:16 12:19	147:22 148:3		124:1 127:17	55:16 82:21
14:8,13,20	148:12,20,22	<hr/> <b>V</b> <hr/>	132:2 133:15	<b>we're</b> 15:6 22:6
15:7,9,10 17:2	149:6,15	<b>validation</b> 59:24	140:9 149:19	38:16 46:3
23:11,11 28:20	151:17,20	<b>value</b> 44:17	<b>wanted</b> 54:16	54:18 55:1,2
29:21 30:15	152:23 153:6	78:24	55:6 65:5	62:20 67:11
50:8,13 51:11	156:7,12 157:3	<b>valves</b> 31:11	66:24	72:2,9 77:14
54:1 61:9 66:9	159:10	67:17	<b>wants</b> 62:17	78:2,3 79:8
67:24 70:3	<b>understandings</b>	<b>variance</b> 26:14	71:14 77:22	86:17 88:10
87:21 116:10	74:17 78:21	26:16,18	<b>wasn't</b> 28:12	99:6 106:24
124:7,24	79:5 156:23	<b>various</b> 102:24	49:8 64:21	113:24 114:5
135:18 141:2	<b>understands</b>	126:18 138:17	112:9 123:10	126:22 127:9
<b>types</b> 32:20	77:18,19	146:1,18	155:22	134:9 145:8
124:4	<b>understood</b>	<b>vehicle</b> 148:8	<b>watch</b> 19:22	150:19 152:21
<b>typical</b> 53:6	132:12	<b>verbally</b> 96:1	22:1	<b>whack</b> 149:20
<b>typically</b> 140:16	<b>unfair</b> 79:12	<b>verify</b> 72:3	<b>watched</b> 73:16	<b>Williams</b> 117:24
141:18	<b>UNIT</b> 1:4	<b>versa</b> 89:3	<b>water</b> 103:22	<b>witness</b> 3:4 4:5,6
	<b>United</b> 1:13 2:4	<b>vessel</b> 16:3 21:24	120:7	6:23 40:18
<hr/> <b>U</b> <hr/>	2:10,15 157:25	150:5,22 151:4	<b>wave</b> 93:6,8	42:10 58:8
<b>ultimate</b> 100:2,7	<b>unsafe</b> 144:23	<b>vessels</b> 152:8	<b>wavering</b> 22:2	74:2,2,11,13
<b>unclear</b> 90:16	145:12	<b>vested</b> 120:14	<b>way</b> 85:20 109:5	77:10 80:1
112:18	<b>unusual</b> 149:8	<b>vice</b> 89:2	109:13 111:8	91:12 95:3,16

117:12 130:9 132:21 142:5 144:1,8,17,19 145:7 146:6,13 151:19 153:8 154:16 155:8 157:10,19 <b>witnesses</b> 1:18 74:20 <b>word</b> 131:11,11 <b>words</b> 120:21 <b>work</b> 47:13 51:11 52:12 78:20 79:12 103:8,10 119:18 140:3 140:19,24,25 141:4 <b>worked</b> 31:24 91:12 107:17 119:6 136:1 <b>working</b> 54:17 54:19 56:23 69:25 103:17 122:24 141:17 153:11 <b>works</b> 124:20 <b>world</b> 78:16,17 100:12 <b>worldwide</b> 32:12 <b>worried</b> 120:21 <b>wouldn't</b> 16:7 51:14 52:13 120:16 126:6 155:9 <b>writing</b> 80:6 <b>written</b> 137:17 <b>wrong</b> 38:4 39:22 42:24 60:22 82:16 105:15 121:12 <b>wrote</b> 80:16 <hr/> <b>X</b> <hr/> <b>X</b> 44:15 <hr/> <b>Y</b> <hr/>	<b>Yeah</b> 109:9 146:15 <b>year</b> 11:23 56:1 70:1 98:4 100:18 101:13 112:22 <b>yearly</b> 40:5 41:7 90:11,19 101:2 <b>years</b> 9:1,3,5,9 10:4 11:18 36:3 38:18,23 38:24,24 39:17 41:10 104:10 135:22 146:16 153:10 <b>yellow</b> 20:22,23 86:18 87:2 118:19 127:12 <b>yesterday</b> 4:7 30:3 <hr/> <b>0</b> <hr/> <b>00</b> 81:9 <b>01</b> 80:23 81:12 <b>0800</b> 158:17 <b>09</b> 53:11 <hr/> <b>1</b> <hr/> <b>1st</b> 5:2 <b>1.2</b> 128:4 130:19 <b>1.2.1</b> 128:5 130:20,24 <b>1:00</b> 121:13 122:10,16 123:8 <b>10</b> 35:11 38:23 38:24,24 46:24 64:1 135:22 149:11 <b>10-minute</b> 69:1 <b>102</b> 3:11 <b>10235</b> 86:8 <b>1060-01-0304</b> 53:11 <b>1060-03</b> 53:21 <b>1085</b> 34:6,16,17 34:18,24 35:4	<b>11</b> 35:11 46:24 93:25 <b>1136</b> 81:20 <b>118</b> 3:11 <b>12</b> 10:4 13:23 80:23 81:12 149:11 <b>123</b> 3:12 <b>13</b> 1:19 82:3 <b>135</b> 3:12 <b>14</b> 13:18 <b>142</b> 3:13 <b>143</b> 3:13 <b>15</b> 64:1 <b>15M</b> 25:4 <b>150</b> 3:14 <b>16</b> 53:11 <b>16A</b> 137:17 <b>1600</b> 38:19 <b>17.10</b> 70:25 <b>17.10.3</b> 53:7 <b>17.11</b> 71:1 <b>17.12</b> 71:2 <b>1700</b> 38:19 <b>18</b> 38:24 <b>18-3/4</b> 25:4 <b>18.10</b> 53:7 70:25 <b>18.10.3</b> 53:7 60:12 93:19 94:17 <b>18.11</b> 71:1 <b>18.12</b> 71:2 <b>1825</b> 34:17 38:14 <b>1825-day</b> 34:6 34:22 35:12,18 36:15 37:7,10 37:16,18,20 46:3 <b>1950</b> 1:20 <hr/> <b>2</b> <hr/> <b>2</b> 60:10 <b>20</b> 99:15 114:1 127:25 130:19 <b>20th</b> 11:25 13:17 38:17 112:23 116:16,18	<b>2000</b> 81:2 82:3,8 111:24 <b>2001</b> 38:13 <b>2002</b> 51:5 <b>2004</b> 119:14,20 <b>2005</b> 10:13 55:17 82:21 83:1 <b>2006</b> 10:13 38:16 119:22 <b>2007</b> 26:6,12 112:22 <b>2008</b> 26:24 27:16 <b>2009</b> 55:18 92:5 92:7 94:5 139:21 142:20 155:15 <b>2010</b> 1:6 11:24 18:16 38:17 55:20 57:25 80:23 81:12 92:22 93:25 97:7 98:4,18 99:15 112:23 116:18 131:23 <b>2011</b> 1:9,24 5:2 30:19,22 31:3 58:1 59:14 62:5 92:22 131:23 <b>2060</b> 60:9 <b>21st</b> 26:24 <b>21-22</b> 1:6 <b>22nd</b> 119:14 <b>2261</b> 1:22 <b>24th</b> 38:12 <b>25</b> 5:4 <b>250.198</b> 71:7 <b>250.446</b> 70:19 <b>252</b> 48:9,19 <b>27</b> 4:20 <hr/> <b>3</b> <hr/> <b>3</b> 53:5 <b>3,000</b> 59:12,24 60:6 <b>30</b> 70:19 72:23 99:6	<b>348</b> 73:18 <b>365</b> 34:6,12,24 35:3 101:5 <b>365-day</b> 35:2 <b>38805</b> 25:2 <hr/> <b>4</b> <hr/> <b>4</b> 63:18 <b>4,000</b> 109:20 110:5 <b>400</b> 99:20 <b>476</b> 38:13 <hr/> <b>5</b> <hr/> <b>51</b> 63:20 <b>53</b> 36:16,17 53:6 54:9 60:12 70:14 71:3,9 72:17,24 73:2 73:6 92:12 93:12,18,18,23 94:13,16 96:4 97:8,17,19,23 129:16 136:15 136:24,25 137:11,22,25 156:13 157:3 <hr/> <b>6</b> <hr/> <b>6</b> 1:9,24 <b>6A</b> 137:16 <b>6-17-2005</b> 27:11 <b>69</b> 3:8 <hr/> <b>7</b> <hr/> <b>7</b> 3:8 <b>70</b> 3:9 <b>702D</b> 26:4,23 27:15 <hr/> <b>8</b> <hr/> <b>8</b> 35:10 67:1 <b>8th</b> 11:21 <b>8:00</b> 1:25 <b>88</b> 3:9 <hr/> <b>9</b> <hr/> <b>9:25</b> 69:4
--	---	---	--	---

**90** 3:10  
**902D** 52:22  
**92** 3:10  
**961.1** 1:19