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AFTERNOON SESSION

(January 26, 2015)

THE COURT: Please be seated, everyone.

Any preliminary matters before we resume testimony? None? Okay.

MR. BROCK: I had one matter I wanted to bring up, Your Honor.

THE COURT: Okay.

MR. BROCK: Thank you. As I mentioned on Friday, we have testifying today Captain Paskewich, Laura Folse. We have had -- we have Mike Utsler, and then we have Dr. Cox. Those are the four we had planned for today.

Our next witness is Richard Morrison. We are going pretty fast, and I would just like to ask, if possible, if we could start him first thing tomorrow morning if we finish four today.

THE COURT: Okay.

MR. BROCK: Would that be okay?

THE COURT: Yes, we can do that.

MR. BROCK: Our next witness is Mike Utsler, Your Honor.

THE COURT: Okay.

MIKE UTSLER,
having been duly sworn, testified as follows:

THE DEPUTY CLERK: State your full name and correct

01:24:23 1 spelling for the record, please.

01:24:31 2 **THE WITNESS:** My name is Mike Utsler.

01:24:32 3 **DIRECT EXAMINATION**

01:24:33 4 **BY MR. BROCK:**

01:24:40 5 **Q.** Good afternoon. I'm Mike Brock, and I am examining you on
01:24:44 6 direct on behalf of BPXP.

01:24:47 7 For the record, will you please state your full name
01:24:51 8 for the record and tell Judge Barbier where you live and work.

01:24:56 9 **A.** My name is Mike Utsler, and I currently live in Perth,
01:24:59 10 Australia, and work out of Perth, Australia, for Woodside
01:25:03 11 Energy.

01:25:05 12 **Q.** Could I get you to scoot just a little closer to the
01:25:07 13 microphone, please.

01:25:09 14 Are you here to testify today about your involvement
01:25:14 15 in the response to the *Deepwater Horizon* incident?

01:25:16 16 **A.** Yes, I am.

01:25:18 17 **Q.** What was your involvement in the *Deepwater Horizon*
01:25:21 18 incident?

01:25:22 19 **A.** I came to Houma, Louisiana, on April 25 to take the
01:25:27 20 Incident Command role for BP as part of the Unified Command. I
01:25:31 21 worked as both Incident Commander in Houma and subsequently as
01:25:35 22 Unified Area Commander for the entire response for three and a
01:25:38 23 half years.

01:25:39 24 **Q.** How did you learn about the *Deepwater Horizon* incident?
01:25:42 25 Where were you? What were you doing? And how did you learn

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01:25:45 1 about it?

01:25:45 2 A. I was actually at home in Anchorage, Alaska, at the time,
01:25:49 3 where I worked and saw the news coverage come across the
01:25:53 4 television.

01:25:54 5 Q. Were you asked to participate in the response effort by
01:25:57 6 BP?

01:25:58 7 A. I was. I was called by John Mingé, who was the president
01:26:02 8 for BP Alaska, who I worked for there; and he indicated that I
01:26:07 9 had been asked to see if I would be available to come
01:26:11 10 immediately to Houma to take on the role of Incident Commander.

01:26:15 11 MR. BROCK: D-35002, please.

01:26:18 12 BY MR. BROCK:

01:26:22 13 Q. Is this a demonstrative that sets out the positions that
01:26:26 14 you held within BP as relates to the *Deepwater Horizon*
01:26:31 15 incident?

01:26:32 16 A. Yes, it is.

01:26:34 17 Q. Do you understand that the defendant in this case is BPPX?

01:26:38 18 A. Yes, I do.

01:26:38 19 Q. So when I say BP, I'm referring to BPPX. Are we together
01:26:42 20 on that?

01:26:43 21 A. Yes, sir.

01:26:46 22 Q. Now, when we look at April 25 to August 3, what was your
01:26:50 23 position during that period of time?

01:26:52 24 A. I was the Houma Incident Commander representing BP as one
01:26:56 25 of the responsible parties.

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01:26:58 1 Q. Were you the lead BP representative in that office?

01:27:01 2 A. Yes, I was.

01:27:02 3 Q. What activities did you lead from Houma?

01:27:07 4 A. Well, specifically working as part of the Unified Command

01:27:09 5 in Houma for the Houma Incident Command Post, it was the three

01:27:15 6 parties: the State of Louisiana through its SOS, the

01:27:19 7 Coast Guard as the federal on-scene coordinator, and myself,

01:27:22 8 who were responsible for managing the operations and activities

01:27:26 9 for all of the Gulf of Mexico on-water efforts, excluding the

01:27:30 10 source control activities and the shoreline protection of

01:27:33 11 Louisiana.

01:27:35 12 Q. Then what happened on August 3? We show there that you

01:27:38 13 become Unified Area Commander from August of 2010 to December

01:27:46 14 of 2012. What does that mean?

01:27:48 15 A. I moved from Houma, Louisiana, where as Incident Commander

01:27:51 16 for the Louisiana operations, I took onboard representing BP as

01:27:54 17 the Unified Area Commander overseeing the totality of the

01:27:58 18 response efforts across all the states and offshore.

01:28:02 19 Q. Who served in that role prior to you?

01:28:05 20 A. Doug Suttles.

01:28:07 21 Q. Now, you show chief operating officer, GCRO, August 3,

01:28:12 22 2010 to May 2001, and I see that that role overlaps with some

01:28:20 23 of your work as Unified Area Commander. Is that right?

01:28:24 24 A. Yes, it did.

01:28:26 25 Q. What was your job as chief operating officer of GCRO?

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01:28:30 1 A. Well, GCRO was created to provide the BP mechanism for
01:28:35 2 ensuring we delivered against the support response -- support
01:28:38 3 to the response efforts. And as chief operating officer, it
01:28:43 4 was my responsibilities to oversee all ops associated with the
01:28:51 5 response on behalf of BP.

01:28:53 6 Q. And then in May of 2011, you became the president of GCRO.
01:28:59 7 What were your responsibilities in that role?

01:29:01 8 A. Well, it expanded from now being -- from having been
01:29:04 9 responsible for the operating side of the response efforts to
01:29:07 10 now including the overseeing of the efforts on environmental
01:29:11 11 and economic restoration as well as the community engagement
01:29:16 12 efforts.

01:29:19 13 Q. Then in December 2013, what happened with regard to your
01:29:25 14 employment?

01:29:26 15 A. Well, I retired from BP in December of 2013.

01:29:31 16 Q. And what did you do next employment-wise?

01:29:35 17 A. I took an opportunity to become the chief operating
01:29:37 18 officer with Woodside Energy, who's located in Perth,
01:29:41 19 Australia.

01:29:42 20 Q. How long does it take to fly from Perth, Australia, to
01:29:48 21 New Orleans?

01:29:48 22 A. 30 hours. It's a long trip.

01:29:53 23 Q. And why are you here today?

01:29:54 24 A. Well, after leading the efforts on behalf of BP and the
01:29:57 25 response for three and a half years, I truly feel it was --

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01:29:59 1 it's important for me to be able to have the opportunity to
01:30:02 2 represent those efforts and the contributions of so many that
01:30:06 3 came together in this.

01:30:08 4 Q. We will talk about that a little more. First let's do a
01:30:11 5 bit on your personal background and your educational
01:30:15 6 background.

01:30:17 7 First, please describe for Judge Barbier your
01:30:21 8 educational background.

01:30:22 9 THE WITNESS: Well, Your Honor, I went to the
01:30:25 10 University of Oklahoma. I'm a petroleum engineering graduate
01:30:28 11 from the University of Oklahoma in 1978.

01:30:31 12 BY MR. BROCK:

01:30:32 13 Q. And how long had you worked for BP prior to going to
01:30:34 14 Woodside Energy in Perth?

01:30:36 15 A. 36 years.

01:30:37 16 Q. Did you have experience working in the Gulf of Mexico?

01:30:41 17 A. I did. From 1989 through 2000, I actually worked both the
01:30:47 18 Gulf of Mexico shelf and Gulf of Mexico deepwater operations
01:30:51 19 for Amoco and BP, both living in New Orleans for almost nine
01:30:51 20 years and in Houston for two years of that time.

01:30:56 21 Q. You mentioned that you were with BP Alaska just prior to
01:31:00 22 the *Deepwater Horizon* incident. What was your job there?

01:31:03 23 A. I was the senior vice president of operations responsible
01:31:06 24 for BP's operations on behalf of others on the North Slope of
01:31:11 25 Alaska.

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01:31:14 1 Q. There's been a good bit of discussion in this case about
01:31:17 2 spill response training and preparation for an event like the
01:31:20 3 *Deepwater Horizon* event. Had you received training in spill
01:31:25 4 response prior to the *Deepwater Horizon* incident?

01:31:29 5 A. Yes, I had.

01:31:30 6 Q. Would you please describe that.

01:31:31 7 A. Well, literally from the beginning of my career through
01:31:34 8 the 32 years leading to the *Deepwater Horizon*, I was trained in
01:31:38 9 incident command, the systems and the processes for how to
01:31:42 10 manage unified responses, as well as individual response
01:31:46 11 efforts and activities. Typically that training would involve
01:31:50 12 quarterly drills training in specific roles and
01:31:54 13 responsibilities within the command structure, and then
01:31:57 14 obviously also had the opportunity to practice that training
01:32:00 15 throughout the course of my 32 years due to either man-made
01:32:06 16 circumstances or those events that occurred as a result of
01:32:10 17 natural causes like hurricanes, earthquakes, tornadoes.

01:32:15 18 Q. Beyond your formal training, do you have any experience
01:32:19 19 with spill response?

01:32:20 20 A. Yes, I have.

01:32:20 21 Q. What is that?

01:32:21 22 A. Both in the course of, again, responding to natural
01:32:25 23 disasters such as hurricanes in the Gulf of Mexico and the
01:32:28 24 post -- or the aftermath of those hurricanes and their damage
01:32:31 25 to our offshore structures that led to leaks on platforms and

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01:32:37 1 leaks on pipelines to operations around the world in differing
01:32:39 2 situations that were either, again, naturally caused or
01:32:43 3 man-made caused associated with operational issues.

01:32:48 4 Q. We have also heard from the Coast Guard and from experts
01:32:50 5 in this case descriptions of the Incident Command System. Were
01:32:56 6 you trained in the Incident Command System prior to the
01:33:00 7 *Deepwater Horizon* incident?

01:33:01 8 A. Yes, I was.

01:33:03 9 Q. Will you please describe that.

01:33:05 10 A. Well, again, it was extensively a part of the routine
01:33:09 11 training that I received in the various levels of leadership
01:33:14 12 that I held with BP. That training would involve external
01:33:17 13 parties coming in to train on specific ways to manage incidents
01:33:22 14 and the requirements and techniques to be used and how to
01:33:27 15 respond to very differing kinds of occurrences that could
01:33:32 16 happen.

01:33:32 17 Q. Have you ever worked as an incident commander before the
01:33:36 18 response to the *Deepwater Horizon* incident?

01:33:40 19 A. On a number of occasions, many, many occasions. In fact,
01:33:42 20 for 10 years I was one of BP's incident commanders in the Gulf
01:33:48 21 of Mexico.

01:33:50 22 Q. Now, I want to ask you a few questions with regard to your
01:33:54 23 relationship to BP. When you started working in the response,
01:33:59 24 which BP entity was employing you?

01:34:03 25 A. BP Alaska Exploration and Production Company.

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01:34:07 1 Q. When you became incident commander in Houma, do you know
01:34:10 2 who was paying your check; that is, who you got it from?

01:34:13 3 A. My paycheck continued to come from BP Alaska Exploration
01:34:15 4 and Production Company until I accepted the role of chief
01:34:21 5 operating officer in GCRO in August of 2010.

01:34:26 6 Q. What change occurred then?

01:34:28 7 A. At that point my payroll was managed by BP America
01:34:30 8 Production Company.

01:34:34 9 Q. In terms of your work in the response, did you have an
01:34:37 10 understanding of the relationship between the GCRO and BPXP?

01:34:42 11 A. Yes, I did.

01:34:45 12 Q. What was that?

01:34:45 13 A. As part of the response and as part of any response in the
01:34:48 14 setup of a response organization, one of the first things done
01:34:51 15 is to establish a mechanism by which the costs are associated
01:34:57 16 with -- and activities associated with a response are captured
01:35:01 17 such that they can be charged back to the specific entity
01:35:04 18 that's accountable for that activity set.

01:35:08 19 So in this particular case, coming on board as
01:35:10 20 incident commander, I was made aware of the process and the
01:35:14 21 fact that all of our costs needed to be captured and accounted
01:35:18 22 for such that they could be charged back to BPX&P.

01:35:21 23 Q. What about charges from organizations like Marine Spill
01:35:26 24 Response? How was that handled?

01:35:27 25 A. Yes. Again, all activities that are attributable -- not

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01:35:30 1 just the BP time and costs, but all other activities associated
01:35:34 2 with the specific response actions, be they contractors, the
01:35:39 3 federal government, or state components of costs that were
01:35:44 4 attributable to the response, would be captured and charged
01:35:46 5 back.

01:35:47 6 Q. Did you attend BPXP board meetings while you worked for
01:35:52 7 GCRO?

01:35:53 8 A. Yes, I did.

01:35:54 9 Q. What was the purpose of your attendance?

01:35:57 10 A. Typically two differing reasons. One would be to provide
01:36:04 11 input to the agenda that was developed for BPX&P board meetings
01:36:08 12 that was specifically looking at progress of the Gulf Coast
01:36:12 13 Restoration Organization's efforts and the response; and
01:36:18 14 secondly, to better understand the issues that BPX&P board were
01:36:22 15 looking to address and needing from GCRO such so that I could
01:36:26 16 better advise and provide support.

01:36:28 17 Q. Thank you. Let's turn now to your time as Incident
01:36:32 18 Commander in Houma, please.

01:36:37 19 What was BP's role in the establishment of the goals
01:36:42 20 that were set up in terms of the response effort to the
01:36:48 21 *Deepwater Horizon* incident?

01:36:50 22 A. So BP's role, as the named responsible party as part of
01:36:55 23 Unified Command, is to ensure that the resources and the
01:36:59 24 capabilities, the goods, the services, and the expertise could
01:37:03 25 be brought to the response in helping us to meet our mission.

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01:37:07 1 We had four specific areas of focus that we were
01:37:13 2 looking as a Unified Command to address.

01:37:16 3 Q. What were they?

01:37:17 4 A. First and foremost, they were the safety of our responders
01:37:21 5 and the assurance that we could protect their well-beings.

01:37:25 6 Secondly was to protect the shorelines across the
01:37:28 7 Gulf Coast from impact of oil and minimizing that impact.

01:37:33 8 Thirdly, it was to minimize and to address the impact
01:37:37 9 to wildlife, both sea and air.

01:37:40 10 And fourthly, it was to address the nature in which
01:37:44 11 we wanted to be seen as the best source of information possible
01:37:48 12 working as one team with one purpose.

01:37:52 13 Q. Were these goals communicated to the Response Team that
01:37:56 14 you interacted with in Houma?

01:37:58 15 A. Yes, they were, in two ways. One, every day, as part of
01:38:01 16 our integrated activity plans, they were written and sent to
01:38:05 17 all parts of the response organization; but probably more
01:38:09 18 importantly, it was every day at 10:00 a.m., we would have an
01:38:13 19 all-hands where across the entire operations, we would stop and
01:38:17 20 take 15 to 20 minutes to try to ensure that we shared uniformly
01:38:24 21 across the organization what those -- a reminder of what those
01:38:28 22 missions -- what our mission was, excuse me.

01:38:31 23 Q. During these all-hands meetings that would take place
01:38:35 24 every day at 10:00, did you have a speaking part or a
01:38:40 25 leadership role in those meetings?

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01:38:42 1 A. I did. Again, this was where the Unified Command
01:38:45 2 leadership in Houma, the Coast Guard, in the form of acting as
01:38:51 3 FOSC, would provide comments and input on the nature of our
01:38:55 4 mission.

01:38:56 5 I would describe the nature of our operations
01:38:59 6 starting with the source control and what had been accomplished
01:39:02 7 in the past 24 hours and what we were focusing on doing for the
01:39:06 8 next 24 hours, and then the FOSC would often add input to that
01:39:12 9 as well.

01:39:12 10 Q. Was this an opportunity also to communicate goals and
01:39:17 11 state reminders with regard to safety of operations and the
01:39:21 12 other goals of the response?

01:39:23 13 A. It was. And, in fact, almost every day we reminded people
01:39:26 14 that first and foremost, it was about protecting our people and
01:39:29 15 ensuring their safety and well-being; and then secondly, to
01:39:34 16 ensure that we were doing everything possible to minimize oil
01:39:37 17 impacting our shorelines, marshes, wetlands, and beaches. And
01:39:39 18 once oil did impact our shorelines, we modified that to include
01:39:44 19 minimizing and being the best at recovering and removing that
01:39:47 20 oil impact.

01:39:49 21 Q. When you began your work on the response in Houma,
01:39:52 22 Louisiana, were there any limits on the resources that were
01:39:57 23 available to you to achieve the goals?

01:40:00 24 A. None.

01:40:01 25 Q. How was that communicated?

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01:40:03 1 A. It was repeatedly reminded to me by Doug Suttles at the
01:40:07 2 time, when he was acting as Unified Area Command, you know, our
01:40:11 3 role and responsibility is to make the equipment, goods,
01:40:15 4 services, and expertise available. Find them; do your best.

01:40:19 5 Q. Let's turn to some of the specific work that you were
01:40:21 6 involved in out of the Houma operation.

01:40:25 7 MR. BROCK: If we can turn first to D-35003.

01:40:30 8 BY MR. BROCK:

01:40:31 9 Q. And just for orientation purposes, you see the box there,
01:40:37 10 "Houma, Louisiana, ICP, Offshore and Louisiana Shoreline
01:40:44 11 Operations," the yellow box that's right there in the middle?

01:40:47 12 A. Yes, sir.

01:40:47 13 Q. Is that where you were located in the initial -- with
01:40:51 14 regard to the initial response activity that you were involved
01:40:54 15 in?

01:40:54 16 A. Yes, from April through August of 2010.

01:41:00 17 Q. Did you spend time at other places in the Gulf other than
01:41:03 18 just Houma, Louisiana?

01:41:04 19 A. Yes, I did. From April through August, the blue boxes
01:41:09 20 that are shown along the Louisiana coastline represented our
01:41:14 21 branch offices where we were conducting the individual parish
01:41:17 22 operations and activities.

01:41:19 23 Myself and the Unified Command, in the form of the
01:41:20 24 FOSC and State On-Scene Coordinator, would frequently visit
01:41:22 25 each of these offices, and separately and together we would

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01:41:26 1 visit our offshore operations across the Gulf.

01:41:31 2 Q. These forward-operating bases or branch offices that were
01:41:40 3 located in Louisiana, were they under the organization in
01:41:44 4 Houma, Louisiana?

01:41:44 5 A. Yes, they were.

01:41:45 6 Q. What was their work?

01:41:47 7 A. Their work is site-specific to that area of Louisiana
01:41:53 8 shoreline, protecting and developing the actions that were
01:41:57 9 intended to provide protection and minimization of impact to
01:42:02 10 that particular area.

01:42:03 11 Q. What was your schedule like as Incident Commander?

01:42:07 12 A. Well, for the leadership of the Unified Command and
01:42:09 13 myself, we typically started the day between 4:45 and 5:00 a.m.
01:42:14 14 I routinely had a significant responsibility for communications
01:42:20 15 externally from 5:00 to 6:00.

01:42:22 16 And then our Incident Command structure has a whole
01:42:27 17 series of prescribed operational meetings that ran from
01:42:29 18 6:00 a.m. through to 6:00 p.m. And I would typically then stay
01:42:33 19 through, as did much of the other leadership, through to
01:42:38 20 somewhere between 10:00 and midnight each night.

01:42:40 21 Q. Through what period of time did you maintain a schedule
01:42:43 22 like that?

01:42:43 23 A. Actually from the period of April of 2010 all the way
01:42:49 24 through the end of 2012, when I moved from my role of Unified
01:42:54 25 Area Commander.

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01:42:56 1 Q. Did others in the response organization maintain a
01:43:00 2 schedule similar to yours?

01:43:02 3 A. The responders themselves, we worked 24-hours-a-day,
01:43:04 4 seven-days-a-week schedule, working 12-hour shifts. But the
01:43:09 5 leadership -- not just myself, but the leadership as a whole of
01:43:15 6 the Unified Command -- worked much longer schedules during that
01:43:19 7 period of time, bridging the two shifts to ensure the
01:43:22 8 continuity of operations.

01:43:23 9 Q. Looking just to Houma, Louisiana, right now, were
01:43:27 10 representatives from other agencies of government represented
01:43:33 11 in Houma?

01:43:35 12 A. They were. We had a number of state agencies represented
01:43:39 13 under the banner of the State of Louisiana, directed by the
01:43:43 14 State On-Scene Coordinator. We had many federal agencies
01:43:47 15 represented in Houma, again, directed under the banner of the
01:43:51 16 FOSC; in this form, the U.S. Coast Guard.

01:43:55 17 Q. Speaking just now to the work of the Coast Guard, what is
01:43:59 18 your view as to the quality of the work and the contribution of
01:44:03 19 the Coast Guard in this response effort?

01:44:06 20 A. I had worked on a limited basis with the Coast Guard in
01:44:10 21 other experiences. This was my first real opportunity to work
01:44:14 22 with them on an extended basis, and I came away incredibly
01:44:19 23 impressed by the U.S. Coast Guard, the Men and Women in Blue.

01:44:24 24 Q. I will ask you now, did the Coast Guard ever express to
01:44:27 25 you their appreciation for BP's efforts?

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01:44:30 1 A. They did on a number of occasion. In fact, I can recall
01:44:32 2 one instance in which it was mentioned that we actually put the
01:44:36 3 capital R in "Responsible Party" as an example of their view
01:44:41 4 and experiences that they had had, the example of an operator
01:44:47 5 committed to truly doing their best to help support a response.

01:44:51 6 Q. I think you arrived in Houma on April 25. Is that right?

01:44:54 7 A. Yes, I did.

01:44:55 8 Q. Do you recall how many people were working out of the
01:44:57 9 Houma operation at that point in time?

01:44:59 10 A. Approximately 435 men and women were working either in
01:45:04 11 Houma, in the command center, or offshore.

01:45:07 12 Q. Within two weeks, to what size did that workforce grow?

01:45:12 13 A. More than 12,000 workers out of the Houma Incident
01:45:14 14 Command, both offshore and onshore.

01:45:17 15 Q. At its peak, how many individuals were working out of
01:45:20 16 Houma, Louisiana?

01:45:22 17 A. Ultimately, more than 21,000.

01:45:26 18 Q. How was the Unified Command able to coordinate the work of
01:45:30 19 so many responders in a situation like this?

01:45:35 20 A. It's one of the basic powers of the Incident Command
01:45:38 21 System and the fact that that system, developed in the
01:45:42 22 United States for more than 40 years now, is used by government
01:45:45 23 and state agencies. It's used by industries as a means for how
01:45:49 24 to organize a response, either to natural or man-made
01:45:54 25 situations.

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01:45:54 1 It creates a common framework and process for how to
01:45:59 2 work a response. And it creates a common language that all of
01:46:04 3 us who have training and experience in that then understand how
01:46:07 4 to connect and use the incident command structure to be able to
01:46:12 5 manage in this scale.

01:46:14 6 This stretched the boundaries of the incident command
01:46:18 7 system and our learnings from it, certainly, but it did prove
01:46:23 8 that the system can manage robustly a huge challenge, as this
01:46:27 9 represented.

01:46:29 10 **MR. BROCK:** Let's look at D-35040.

01:46:32 11 **BY MR. BROCK:**

01:46:32 12 **Q.** Is this a graphic that you have worked with us to put
01:46:36 13 together to help you to explain some of the ways in which
01:46:41 14 communication and interaction was managed?

01:46:44 15 **A.** Yes, it is.

01:46:47 16 **Q.** Will you just please take this slide and walk
01:46:49 17 Judge Barbier through some of the challenges that were
01:46:53 18 presented by an operation that was as large as this one as well
01:46:57 19 as how some of those challenges were addressed with
01:47:01 20 communication technology that was in place or that you put in
01:47:04 21 place.

01:47:05 22 **A.** Very good.

01:47:06 23 **THE WITNESS:** Well, Your Honor, this was probably the
01:47:08 24 single greatest challenge that we as Unified Command faced as
01:47:15 25 the response unfolded -- and that was that going from a few

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01:47:20 1 hundred people, a few hundred vessels, both aircraft and boats,
01:47:23 2 to rapidly expanding over the course of this response to its
01:47:27 3 peak of 48,000 people, 6,500 vessels on the water, and
01:47:31 4 125 aircraft flying 200 missions a day -- was how do you bring
01:47:35 5 that all together? How do you, day-in and day-out, understand
01:47:39 6 where and how to best position the equipment, the people, and
01:47:43 7 support them in their ongoing operations to ensure that you did
01:47:46 8 the best job possible of protecting our shorelines and
01:47:50 9 addressing the potential impacts to both our shorelines and to
01:47:53 10 the wildlife?

01:47:55 11 This demonstrative attempts to give you a sense
01:47:58 12 of the fact that, to do that, what we had to do was to enable a
01:48:02 13 constant flow of communications from data that was being taken
01:48:07 14 on the shore; on the water, as the first picture on the upper
01:48:11 15 left describes; and in the air. Bringing that information
01:48:16 16 together on a realtime basis, sending it back to the command
01:48:21 17 center, and then allowing us to be able to understand where,
01:48:25 18 what, and how both people and equipment was positioned versus
01:48:29 19 where the oil on the water was.

01:48:32 20 The second picture, in the top middle, shows
01:48:35 21 that one of the techniques that we were able to bring to bear
01:48:38 22 in this response was we tagged with equipment every vessel on
01:48:42 23 the water to allow us essentially to be able to know where they
01:48:45 24 were at any given time and to understand how to manage their
01:48:50 25 operations and the safety of their activity sets in transit and

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01:48:54 1 in movement across the water.

01:48:57 2 The third picture, on your right, was, as the
01:49:00 3 response continued, our abilities to understand what was being
01:49:03 4 done at the source itself; and physically, in the subsurface
01:49:08 5 environment, understanding the nature of what was happening in
01:49:11 6 our efforts subsea to address control of that and how that
01:49:16 7 operation had to be integrated into the ongoing Houma and
01:49:20 8 broader Unified Area Command's efforts on the water and on the
01:49:26 9 shorelines.

01:49:27 10 That evolved over a period of time to enabling
01:49:30 11 us to actually go from just pins on a map on a wall to actually
01:49:35 12 electronically being able to capture this information and gave
01:49:38 13 us a much greater ability to real-time respond by developing
01:49:42 14 what was known as the "common operating picture." It's one of
01:49:46 15 the significant areas of advancement that the *Deepwater Horizon*
01:49:50 16 response has created as an enabling tool.

01:49:53 17 One of the other very important factors in our
01:49:56 18 abilities to manage this response and the importance of how we
01:49:59 19 had to address constantly our abilities to change was the
01:50:05 20 weather itself: the weather offshore, the weather nearshore,
01:50:09 21 and the weather onshore; everything from deepwater currents to
01:50:14 22 surface currents and, obviously, what was happening. Because
01:50:18 23 in particular, as I will talk a little bit more later, we were
01:50:22 24 limited to daylight operations only. The well was putting oil
01:50:24 25 into the water 24 hours a day, but we could only operate 16 to

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01:50:29 1 17 hours a day. So we had use the nighttime to reposition our
01:50:34 2 equipment to the best of our abilities to be prepared for
01:50:37 3 daylight the next morning to allow us to begin the operations
01:50:40 4 of cleaning.

01:50:41 5 Finally, we will talk about Houma as the
01:50:44 6 Incident Command post, but this facility itself was designed
01:50:48 7 originally to house 125 to 150 people who were being trained in
01:50:54 8 various skills to be used in an offshore/onshore working
01:50:59 9 environment in the oil industry. At its peak, we had 2100
01:51:03 10 people in this facility every day working to bring all of this
01:51:06 11 information together to create that common operating picture
01:51:10 12 and to drive the abilities to source and resource our response
01:51:15 13 efforts.

01:51:16 14 Q. Thank you. Let's turn now to some of the specific work
01:51:21 15 that was done and decision making that you were involved in.

01:51:24 16 MR. BROCK: If we could have D-35005.

01:51:26 17 BY MR. BROCK:

01:51:27 18 Q. And I will just ask you, when you arrived in Houma on
01:51:31 19 April 25, what tools were being prepared at that time for use
01:51:37 20 in the *Deepwater Horizon* response?

01:51:41 21 A. So already deployed in the offshore environment, we had
01:51:45 22 high-volume skimming operations under operational activities.
01:51:50 23 We also were preparing for the deployment of surface dispersant
01:51:55 24 applications in the offshore arena. Two other techniques were
01:52:00 25 being -- excuse me -- controlled burning as a technique was

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01:52:03 1 being discussed but had not yet been developed and deployed
01:52:07 2 when I arrived. And the idea of subsurface dispersants wasn't
01:52:11 3 developed and deployed until after I'd arrived on April 25.

01:52:16 4 In the nearshore area, there was the preparation
01:52:18 5 efforts to begin gathering equipment that could be utilized for
01:52:23 6 shallow water nearshore skimming operations, and boom was being
01:52:27 7 deployed along the shorelines against critical habitat areas
01:52:34 8 and other key areas specified within the area contingency
01:52:39 9 plans.

01:52:40 10 Finally, there was discussions around the readiness
01:52:44 11 of equipment to support differing types of shoreline cleanup,
01:52:46 12 be they marsh cleanup, wetlands or mangrove cleanup, and
01:52:52 13 amenity and recreation beaches.

01:52:54 14 Q. Is "cone of response" a term that you were familiar with?

01:52:58 15 A. Very. The Unified Command in Houma actually developed
01:53:02 16 this phrase to characterize the nature of how we would manage
01:53:06 17 our critical resources and our operations by using this concept
01:53:11 18 known as "the cone," starting from the subsea source control
01:53:15 19 efforts themselves through to the surface expression of oil
01:53:20 20 across the Gulf of Mexico and how we would deploy these
01:53:24 21 differing sets of tools from offshore to nearshore to once
01:53:27 22 impact occurred along the shoreline.

01:53:33 23 Q. Can you give Judge Barbier a sense, in terms of complexity
01:53:36 24 of operations, what would go into the planning for the response
01:53:42 25 activity that would take place on a given day, say, in early to

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01:53:47 1 mid-May.

01:53:49 2 **THE WITNESS:** So, Your Honor, as I described earlier,
01:53:52 3 the challenges of building a common operating picture. Each
01:53:57 4 day, thousands upon thousands of pieces of information would
01:54:02 5 come together. And each evening, between 6:00 p.m. and
01:54:05 6 8:00 p.m., we would develop an updated view of the progress
01:54:09 7 that we had made during the course of that day. We would
01:54:13 8 incorporate satellite imagery, our aerial observations, our
01:54:20 9 on-water observations with our meteorological forecasts for
01:54:24 10 where and what we thought the next day would look like.

01:54:27 11 We would build, from 8:00 p.m. through to early
01:54:30 12 sunrise hours, the plan for where and how to allocate our
01:54:37 13 equipment, our people, and the resources necessary to use
01:54:40 14 within this prioritized cone of response. And we would move
01:54:43 15 and reposition that equipment overnight such that at daylight
01:54:47 16 hours, we could begin immediately our efforts to begin to
01:54:50 17 remove oil from the Gulf of Mexico.

01:54:52 18 **BY MR. BROCK:**

01:54:52 19 **Q.** In your thinking in terms of the response tools that were
01:54:57 20 available to you, was there an order in which you generally
01:55:00 21 deployed the tools?

01:55:03 22 **A.** One of the keys in this response was very early on
01:55:06 23 learning and understanding the oil and its characteristics, how
01:55:11 24 it would behave coming from the wellhead through 5,000 feet of
01:55:14 25 water to the surface and where and how it would act through the

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01:55:19 1 course of -- this being the summer -- under atmospheric
01:55:26 2 conditions exposed onto the water surface. That caused the
01:55:30 3 Unified Command to learn quickly that there were differing
01:55:33 4 techniques that could be best served to reduce or remove oil
01:55:37 5 from on the water. And our actual priority became surface --

01:55:43 6 First let me back up. In mid-May, once approval from
01:55:47 7 the federal government was granted for subsea dispersants, to
01:55:50 8 be able to use subsea dispersant, it allowed us to operate
01:55:54 9 24 hours a day, seven days a week. It was the only tool in our
01:55:58 10 toolbox that we could use around the clock.

01:56:01 11 But once the oil expressed itself onto the surface of
01:56:06 12 the Gulf of Mexico and it spread across the Gulf in the way it
01:56:10 13 did every day, surface dispersants was our number one tool
01:56:14 14 because it allowed us to cover the largest area possible of the
01:56:18 15 Gulf of Mexico which we could contact with dispersants and use
01:56:21 16 that to minimize the impact to our shorelines.

01:56:25 17 Second was, as we expanded our controlled burning
01:56:28 18 operations, the abilities to accumulate oil. Oil would burn
01:56:32 19 the first six to eight days that it was on the surface of the
01:56:36 20 water. After that, it became too weathered and no longer would
01:56:42 21 burn efficiently. So it was important to utilize, and that we
01:56:45 22 did, as our second means of removing oil in significant
01:56:49 23 quantities.

01:56:50 24 Then third, in this particular response, we used
01:56:53 25 high-volume skimming as our third mechanism offshore, and we

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01:56:57 1 used it principally to pursue streamers of oil that were out
01:57:02 2 with the broader areas of application of surface dispersants
01:57:06 3 and of burning. So we used them almost as chasers of streamers
01:57:13 4 of oil to capture and remove oil from the surface of the water
01:57:16 5 with that technique.

01:57:19 6 Q. Just a minute here on high-volume skimmers.

01:57:21 7 MR. BROCK: D 35007, please.

01:57:23 8 BY MR. BROCK:

01:57:28 9 Q. I think we have a video here of one of the high-volume
01:57:32 10 skimmers. If you could just talk Judge Barbier through what
01:57:36 11 you are seeing here, the equipment that's involved, that type
01:57:39 12 of thing.

01:57:40 13 A. Yeah. So as the video is showing you, the vessel on the
01:57:43 14 left in this video is the actual skimmer. It's a larger
01:57:48 15 oceangoing vessel, 210 to 410 in length. It's specifically
01:57:52 16 designed and purpose-built to allow for the skimming of oil
01:57:55 17 from off the water and bringing onboard and separating into
01:57:59 18 storage vessels.

01:58:01 19 This video shows that it's supported by a supply
01:58:04 20 vessel that pulls a U-shaped boom, and that boom is what's used
01:58:11 21 to corral the oil on the surface of the water. And from that
01:58:16 22 skimming vessel, a skimmer, a vacuum hose is essentially is
01:58:20 23 lowered into that U-shaped area of collection, and oily water
01:58:22 24 is sucked up off the surface of the Gulf and into those storage
01:58:28 25 tanks.

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01:58:28 1 There is some limitations to mechanical skimming, but
01:58:32 2 it's an effective technique. The limitations really are
01:58:34 3 that -- as you can see here, they really need calm waters
01:58:37 4 because the oil can easily lap over the top of that boom, and
01:58:41 5 they typically only worked in up to about a foot of wave
01:58:46 6 height.

01:58:47 7 **Q.** Where is the skimming device in relation to the larger
01:58:51 8 vessel there?

01:58:51 9 **THE WITNESS:** If you could play the video one more
01:58:53 10 time for me, please?

01:58:55 11 **MR. BROCK:** Yes, just real quick until we see it.

01:58:55 12 **THE WITNESS:** So if you'll look at this U-shaped
01:58:59 13 video -- excuse me, if you look at the U-shaped boom, you will
01:59:03 14 see that the skimmer is typically deployed in that area right
01:59:09 15 at the base of the U. And there's a small hose that comes off
01:59:14 16 of that vessel that has the skimming device in it, and it sits
01:59:18 17 essentially in the U, in the base of the U, to get the maximum
01:59:21 18 ability to suck oil. Because the two vessels are slowly,
01:59:24 19 slowly moving forward, allowing the oil to be pulled into the
01:59:27 20 base of that U.

01:59:28 21 **BY MR. BROCK:**

01:59:30 22 **Q.** Let's talk a minute about nearshore skimming. We haven't
01:59:34 23 talked about that much during this trial.

01:59:36 24 Was nearshore skimming managed out of Houma for the
01:59:40 25 Louisiana coastline?

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01:59:41 1 A. Yes, it was.

01:59:43 2 MR. BROCK: Let's look at D-35013.

01:59:47 3 BY MR. BROCK:

01:59:47 4 Q. Is this a slide that will help you to discuss nearshore
01:59:51 5 skimming?

01:59:51 6 A. Yes, it is.

01:59:52 7 MR. BROCK: If we could play that, and if you could
01:59:55 8 just describe for Judge Barbier the vessel and then what he is
01:59:59 9 seeing here.

02:00:00 10 THE WITNESS: Here you see in this video two
02:00:03 11 differing types of shallow water, commercial fishing and/or
02:00:08 12 shrimping vessels that we used in two differing ways to
02:00:11 13 configure with the orange boom, which is known as "hard boom,"
02:00:12 14 which helps to corral the oil.

02:00:16 15 And if you'll notice in this video the white
02:00:17 16 boom inside of that is a cotton-absorbent boom. So we could
02:00:23 17 both absorb sheen and oily water into that cotton boom, but we
02:00:27 18 could also skim in those U-shaped hard-boom areas with small
02:00:32 19 skimmers in the same way that we did in the larger offshore
02:00:37 20 skimming operations.

02:00:39 21 Q. Why were the Vessels of Opportunity used for skimming in
02:00:42 22 the nearshore?

02:00:47 23 A. Again, when oil made it past our offshore techniques for
02:00:50 24 recovery and began to approach the shoreline, these vessels
02:00:55 25 could work in very shallow waters. They gave us another

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0 2 : 0 1 : 0 0 1 opportunity to minimize oil impacting our shoreline, our
0 2 : 0 1 : 0 3 2 marshes, and our wetlands by actually physically corralling the
0 2 : 0 1 : 0 9 3 oil or breaking it up from a sheen standpoint and capturing it
0 2 : 0 1 : 1 3 4 in our absorbent boom.

0 2 : 0 1 : 1 3 5 Q. Were they helpful as a response tool?

0 2 : 0 1 : 1 6 6 A. They were.

0 2 : 0 1 : 1 7 7 Q. Please describe how the skimming operations were organized
0 2 : 0 1 : 2 1 8 and deployed.

0 2 : 0 1 : 2 3 9 A. In Louisiana, we deployed these in squadrons of
0 2 : 0 1 : 2 6 10 25 vessels, under one captain overseeing 25 captains. We had a
0 2 : 0 1 : 3 3 11 command vessel, a supply vessel, and an HSE, or health,
0 2 : 0 1 : 3 7 12 safety and environmental vessel in support of each of those 25.

0 2 : 0 1 : 4 2 13 The squadrons -- which at its peak, we had
0 2 : 0 1 : 4 7 14 1700 squadrons, as I recall -- were stationed around the
0 2 : 0 1 : 5 0 15 shoreline of Louisiana, and they were used to cover specific
0 2 : 0 1 : 5 3 16 geographical areas in the near off offshore, doing sheen
0 2 : 0 1 : 5 9 17 busting, skimming, and patrolling and monitoring in terms of
0 2 : 0 2 : 0 3 18 visual on-water observation for oils approaching our shore.

0 2 : 0 2 : 0 6 19 Q. What was the number of fleets?

0 2 : 0 2 : 0 7 20 A. I believe it was 17 at its peak of 25 differing vessels
0 2 : 0 2 : 1 3 21 being used in each squadron.

0 2 : 0 2 : 1 5 22 Q. Was that part of the decision-making process that would
0 2 : 0 2 : 2 0 23 occur each day; that is, how those resources would be deployed
0 2 : 0 2 : 2 3 24 in the nearshore?

0 2 : 0 2 : 2 3 25 A. Again, they were part of the cone of response process. So

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0 2 : 0 2 : 2 5 1 we had to reconfigure daily and reposition them to be best used
0 2 : 0 2 : 3 1 2 on the basis of where we saw oil potentially coming to the
0 2 : 0 2 : 3 5 3 shorelines of Louisiana.

0 2 : 0 2 : 3 5 4 Q. Now, with regard to skimmers, were there instances during
0 2 : 0 2 : 4 2 5 the response when you were asked to procure additional
0 2 : 0 2 : 4 7 6 skimmers?

0 2 : 0 2 : 4 7 7 A. Yes, there was.

0 2 : 0 2 : 4 9 8 Q. Can you tell the Court about the procurement efforts of
0 2 : 0 2 : 5 1 9 skimmers.

0 2 : 0 2 : 5 3 10 A. So procurement of skimmers, like most of the equipment in
0 2 : 0 2 : 5 6 11 the response early on, was managed by Houma. One portion of
0 2 : 0 3 : 0 0 12 the Incident Command Structure is the logistics and procurement
0 2 : 0 3 : 0 6 13 part of the ICS system. and we would seek to procure skimmers,
0 2 : 0 3 : 1 1 14 boom, and other equipment, goods, and services to support our
0 2 : 0 3 : 1 7 15 daily operations.

0 2 : 0 3 : 1 7 16 Very quickly on, skimmers became a critical issue of
0 2 : 0 3 : 2 1 17 supply: On the basis of having procured everything available
0 2 : 0 3 : 2 4 18 in the Gulf of Mexico, where else and how else could we capture
0 2 : 0 3 : 2 8 19 additional resources?

0 2 : 0 3 : 2 9 20 That access logistically working for procurement
0 2 : 0 3 : 3 5 21 reasons was moved to Robert, to the Unified Area Command, and
0 2 : 0 3 : 4 1 22 managed by Unified Command on behalf of the global efforts to
0 2 : 0 3 : 4 4 23 procure.

0 2 : 0 3 : 4 5 24 Q. Were you aware at some point of Captain Laferriere's
0 2 : 0 3 : 5 0 25 concerns about skimmers?

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0 2 : 0 3 : 5 1 1 A. I was made aware of that both in my conversations with
0 2 : 0 3 : 5 3 2 Captain Laferriere, but also subsequently informed about
0 2 : 0 3 : 5 6 3 requests that he had made for status update on this issue.

0 2 : 0 3 : 5 9 4 MR. BROCK: Let's see TRES-13043.1.1.

0 2 : 0 4 : 0 1 5 BY MR. BROCK:

0 2 : 0 4 : 0 6 6 Q. Is this an e-mail that was forwarded to you with regard to
0 2 : 0 4 : 1 1 7 a request for offshore skimming assets?

0 2 : 0 4 : 1 3 8 A. Yes, it is.

0 2 : 0 4 : 1 7 9 Q. What were Captain Laferriere's comments at this point in
0 2 : 0 4 : 2 0 10 terms of his request?

0 2 : 0 4 : 2 2 11 MR. BROCK: Let's see if we can turn to 13043.3.1.

0 2 : 0 4 : 3 1 12 THE WITNESS: So an e-mail that was forwarded to me
0 2 : 0 4 : 3 3 13 by Jackie Mutschler included Captain Laferriere's original
0 2 : 0 4 : 4 1 14 request, through the Coast Guard chain to Unified Command,
0 2 : 0 4 : 4 4 15 asking for input with regards to what could be done to
0 2 : 0 4 : 4 9 16 accelerate. He.

0 2 : 0 4 : 5 1 17 Basically says, as highlighted here: "We all
0 2 : 0 4 : 5 2 18 know we can use more skimmers offshore, especially in the use
0 2 : 0 4 : 5 5 19 of dispersants becomes more problematic. I have been pushing
0 2 : 0 4 : 5 8 20 for more skimmers since I have been here."

0 2 : 0 5 : 0 1 21 This e-mail goes on to say: "What can be done?
0 2 : 0 5 : 0 3 22 What's being done at Robert? And how quickly can we identify
0 2 : 0 5 : 0 8 23 additional resources to meet this need?"

0 2 : 0 5 : 1 0 24 Q. This e-mail is from Captain Laferriere to Captain Hanzalik
0 2 : 0 5 : 1 4 25 and others, and it was forwarded to you?

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02:05:18 1 A. Yes, it was.

02:05:19 2 Q. Did you also receive a copy of a response to this e-mail?

02:05:24 3 A. Yes.

02:05:25 4 Q. Was this a response of the Coast Guard?

02:05:28 5 A. Yes, it was.

02:05:29 6 **MR. BROCK:** Let's look at TREG-13043.1.2, and if we
02:05:37 7 could just review the response that was made to
02:05:39 8 Captain Laferriere from Scott Knutson, please.

02:05:44 9 **BY MR. BROCK:**

02:05:45 10 Q. Can you review that with the Court.

02:05:47 11 A. Yes, in Scott Knutson's response to Captain Laferriere, he
02:05:50 12 have indicates: "We have just completed a review of the global
02:05:53 13 inventories of skimmers and busters. Other than a few federal
02:05:58 14 vessels, all the domestic and Canadian equipment within several
02:06:00 15 days' transit have already been procured and are in the Gulf.
02:06:05 16 Remaining equipment, which is more than a few days away, both
02:06:08 17 domestically and international, has either been procured or is
02:06:11 18 in the final stages of contracting."

02:06:14 19 Q. Is this response by Mr. Knutson consistent with your
02:06:18 20 recollection of the events?

02:06:20 21 A. It was, both in my conversations with Jackie on the
02:06:23 22 efforts of Robert in procuring supplies -- it's very
02:06:28 23 consistent.

02:06:29 24 Q. Did you ultimately procure all available skimmers for the
02:06:33 25 response?

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02:06:34 1 A. Yes, we did.

02:06:37 2 Q. Did Captain Laferriere acknowledge to you that everything
02:06:40 3 that could be done to procure skimmers was being done?

02:06:43 4 A. Yes. After receiving this e-mail, the captain and I had a
02:06:47 5 chance to talk about it. And while frustrated over the fact
02:06:50 6 that we could always use more equipment, we realized that
02:06:52 7 everything that could be done was being done.

02:06:57 8 Q. Let's turn just for a minute to subsea dispersants.

02:07:02 9 Did you have involvement in the daily planning and
02:07:06 10 recommendations with regard to the use of subsea dispersants?

02:07:10 11 A. With regards to the supplying of the dispersant materials
02:07:14 12 itself and supporting the surface operations of that, yes.

02:07:19 13 Q. Let's look at -- what about aerial applications? Did you
02:07:23 14 also have involvement with that?

02:07:24 15 A. Yes. Houma directly managed the approval and development
02:07:30 16 of planning for aerial dispersant deployments up to a point.

02:07:38 17 Q. When we talk about subsea dispersant applications, how
02:07:42 18 were they used in the response?

02:07:45 19 A. Well, this was the first time application of subsea
02:07:49 20 dispersants ever used. It was a technique that had been
02:07:53 21 suggested in the response by somebody from a different company
02:07:58 22 as a consideration.

02:07:59 23 The idea was taken, it was developed, and then it was
02:08:04 24 modeled using a laboratory and resources in Norway through
02:08:08 25 SINTEF to validate the concept. Once that model was validated,

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0 2 : 0 8 : 1 6 1 it was then tested on location at the request of the federal
0 2 : 0 8 : 2 0 2 government before granting approvals. And in mid-May, we began
0 2 : 0 8 : 2 5 3 to use the injection of subsea dispersants for the first time.

0 2 : 0 8 : 2 9 4 Q. What testing was performed before the dispersants were
0 2 : 0 8 : 3 1 5 used subsea?

0 2 : 0 8 : 3 3 6 A. Subsea-wise, again, it was tank-tested, meaning a model
0 2 : 0 8 : 3 8 7 was created that allowed for the testing of the dispersant to
0 2 : 0 8 : 4 2 8 be injected directly into the flow of oil. This was done in
0 2 : 0 8 : 4 6 9 the Norwegian tank testing models that I described by SINTEF.

0 2 : 0 8 : 5 2 10 It was then further tested using, different
0 2 : 0 8 : 5 5 11 concentrations, on the well itself in the *Deepwater Horizon*.
0 2 : 0 8 : 5 9 12 Those samples and evaluations were used to match to the model
0 2 : 0 9 : 0 5 13 results, which allowed for the government to provide approvals
0 2 : 0 9 : 0 9 14 for the utilization of it.

0 2 : 0 9 : 1 1 15 Q. Was there toxicity testing involved?

0 2 : 0 9 : 1 3 16 A. My understanding was yes, associated with confirming the
0 2 : 0 9 : 1 6 17 nature of the dispersant, which in this case, we continued to
0 2 : 0 9 : 1 9 18 use the same dispersant we were using aurally.

0 2 : 0 9 : 2 3 19 Q. Was the subsea dispersant effective in mitigating the
0 2 : 0 9 : 2 8 20 effects of the spill?

0 2 : 0 9 : 2 9 21 A. Yes, it was.

0 2 : 0 9 : 3 0 22 Q. Let's turn to surface dispersants.

0 2 : 0 9 : 3 3 23 Have you helped us prepare a slide to discuss the
0 2 : 0 9 : 3 7 24 surface dispersant applications?

0 2 : 0 9 : 3 9 25 A. Yes, I have.

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0 2 : 0 9 : 4 1 1 Q. Let's look at D-35009 and, again, this is a short video.
0 2 : 0 9 : 4 6 2 If you would just describe for Judge Barbier's benefit what we
0 2 : 0 9 : 5 0 3 see here in the surface application of dispersants.

0 2 : 0 9 : 5 7 4 A. So, Your Honor, once an area for application of surface
0 2 : 1 0 : 0 2 5 dispersant had been identified in the form of a slick on the
0 2 : 1 0 : 0 5 6 water that we thought was most viable, airplanes would be
0 2 : 1 0 : 0 9 7 loaded with dispersant. They would be brought to -- they would
0 2 : 1 0 : 1 1 8 be flown to a location, and they would drop down to below a
0 2 : 1 0 : 1 5 9 hundred feet above the water level, where they would deploy
0 2 : 1 0 : 1 8 10 their dispersant in a manner that would allow it to fall to the
0 2 : 1 0 : 2 1 11 water surface, coming in contact with the oil and, therefore,
0 2 : 1 0 : 2 5 12 beginning the process of separating that oil into individual
0 2 : 1 0 : 2 9 13 droplets and suspending it in the water column.

0 2 : 1 0 : 3 2 14 Q. What was done to ensure the safety of individuals who were
0 2 : 1 0 : 3 7 15 working as part of the response in the application of surface
0 2 : 1 0 : 4 5 16 dispersants?

0 2 : 1 0 : 4 5 17 A. So, first, these are trained crews that are provided to
0 2 : 1 0 : 4 9 18 the response by various enterprises, particularly MSRC. They
0 2 : 1 0 : 5 6 19 are crews that are trained in the handling of dispersant, the
0 2 : 1 0 : 5 8 20 loading of the dispersant and the deployment of the dispersant.

0 2 : 1 1 : 0 1 21 In addition, we used aerial spotters to confirm and
0 2 : 1 1 : 0 5 22 validate the location of the spotting of that dispersant to the
0 2 : 1 1 : 0 8 23 sheen. And then we would subsequently, once the dispersant had
0 2 : 1 1 : 1 2 24 been discharged and after a period of the plane's departure, we
0 2 : 1 1 : 1 8 25 would then move vessels in to do SMART testing to validate the

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02:11:23 1 nature of our application.

02:11:24 2 Q. What is SMART testing?

02:11:25 3 A. SMART testing was essentially on-water vessels doing water
02:11:30 4 column testing to see, in fact, did the dispersant contact the
02:11:35 5 oil? Was it being dispersed in the water column? And they
02:11:40 6 would measure the amount of oil dispersed now in the water
02:11:44 7 column throughout the area that had been deployed.

02:11:47 8 Q. Based on your work during the response and your
02:11:50 9 interaction with the Coast Guard, did you come to a conclusion
02:11:52 10 about the effectiveness of dispersants as a response tool?

02:11:56 11 A. As Unified Command, and certainly myself personally, this
02:11:59 12 was one of our most effective tools at preventing oil from
02:12:03 13 impacting our shorelines. It covered and allowed us to cover
02:12:07 14 the widest areas possible where these sheens and oil -- on the
02:12:13 15 surface, ribbons were flowing, and allowed us to have the
02:12:16 16 greatest concentration of abilities to prevent them from
02:12:21 17 hitting our shorelines.

02:12:23 18 Q. Did anyone from the Coast Guard ever say to you, "Let's
02:12:25 19 not use dispersants because it allows oil to remain in the
02:12:28 20 atmosphere or on the earth"?

02:12:32 21 A. No, sir. As Unified Command, we, day in and day out, made
02:12:37 22 this recommendation and used this as one of our principal tools
02:12:42 23 in the response effort.

02:12:44 24 Q. Let's talk about the boom. Did you have personal
02:12:46 25 involvement in securing boom as part of the response

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0 2 : 1 2 : 4 9 1 activities?

0 2 : 1 2 : 5 0 2 A. Well, through the Houma Unified Command and our logistics
0 2 : 1 2 : 5 6 3 groups, yes, we did.

0 2 : 1 2 : 5 8 4 Q. What were the issues with boom that needed to be addressed
0 2 : 1 3 : 0 0 5 as part of the response effort?

0 2 : 1 3 : 0 1 6 A. So the key is boom is something that can be used almost as
0 2 : 1 3 : 0 5 7 a last line of defense along the shorelines to protect oil from
0 2 : 1 3 : 1 2 8 impacting critical areas that you are trying to protect.

0 2 : 1 3 : 1 5 9 Within the area contingency plans, there's a priority
0 2 : 1 3 : 2 1 10 for the use of boom. And there are two types of boom that we
0 2 : 1 3 : 2 3 11 used in this response. There is what is known as hard boom;
0 2 : 1 3 : 2 6 12 and there is soft boom, the absorbent-type cotton boom that
0 2 : 1 3 : 3 0 13 would help to absorb but would have to be replaced every eight
0 2 : 1 3 : 3 3 14 to ten days. Whereas hard boom could stay in position for as
0 2 : 1 3 : 3 6 15 long as we kept it anchored.

0 2 : 1 3 : 3 8 16 MR. BROCK: Let's pull up D-35015.

0 2 : 1 3 : 4 1 17 BY MR. BROCK:

0 2 : 1 3 : 4 2 18 Q. Is this a demonstrative that demonstrates the use of boom?

0 2 : 1 3 : 4 7 19 A. Yes, it is.

0 2 : 1 3 : 4 7 20 Q. Let's look at this very quickly, please, and you can
0 2 : 1 3 : 5 0 21 describe for Judge Barbier what he is seeing, please.

0 2 : 1 3 : 5 3 22 A. Your Honor, here is an example in the video of the
0 2 : 1 3 : 5 4 23 deployment of what's known as hard boom. It's essentially a
0 2 : 1 3 : 5 7 24 plastic that's designed to float on the surface, with a curtain
0 2 : 1 4 : 0 1 25 that allows oil, obviously in gentle waters, to lap up against

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0 2 : 1 4 : 0 7 1 it.

0 2 : 1 4 : 0 8 2 We can then come along the leading edge of that
0 2 : 1 4 : 1 2 3 outboard of the shorelines we are trying to protect and
0 2 : 1 4 : 1 5 4 actually skim or suck up the oil off the water in the same way
0 2 : 1 4 : 1 9 5 that we did with nearshore and deepwater skimming operations.

0 2 : 1 4 : 2 0 6 Q. How was the Unified Command able to meet the demand for
0 2 : 1 4 : 2 5 7 boom during the response?

0 2 : 1 4 : 2 6 8 A. Well, this was one of the challenges that the response
0 2 : 1 4 : 2 8 9 faced, in that early on we used every available piece of boom
0 2 : 1 4 : 3 3 10 that we had in the Gulf of Mexico, and we used it against the
0 2 : 1 4 : 3 7 11 priorities that were established in the area contingency plans
0 2 : 1 4 : 4 1 12 for each of the states.

0 2 : 1 4 : 4 3 13 These plans typically identify the use of boom first
0 2 : 1 4 : 4 6 14 to be used to protect critical habitats, like bird hatcheries
0 2 : 1 4 : 5 2 15 and other environmentally sensitive areas; then the marshes and
0 2 : 1 4 : 5 5 16 the wetlands; then what was known as recreational beaches; then
0 2 : 1 5 : 0 0 17 finally amenity beaches as a last port of use of boom.

0 2 : 1 5 : 0 5 18 Q. I want to ask you now a general question about the safety
0 2 : 1 5 : 0 9 19 of operations. We have talked about the intervention
0 2 : 1 5 : 1 2 20 techniques that were used in the offshore and the nearshore.

0 2 : 1 5 : 1 5 21 What provision was made to ensure the safety of the
0 2 : 1 5 : 2 0 22 workforce executing the techniques that we have been talking
0 2 : 1 5 : 2 5 23 about?

0 2 : 1 5 : 2 6 24 A. So I go back to our mission as Unified Command started
0 2 : 1 5 : 2 9 25 with the safety and well-being of our responders. We worked to

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0 2 : 1 5 : 3 4 1 develop and ensure that we could train and properly equip each
0 2 : 1 5 : 3 9 2 of the differing groups of workforce.

0 2 : 1 5 : 4 2 3 Those who worked on the water, the U.S. Coast Guard
0 2 : 1 5 : 4 5 4 certified the vessels that were being used, provided training
0 2 : 1 5 : 4 8 5 and support to those vessels as necessary in terms of safe
0 2 : 1 5 : 5 3 6 operations. We had conditions in which we monitored wave
0 2 : 1 5 : 5 7 7 heights, wind, and temperatures, such that working between
0 2 : 1 6 : 0 1 8 summer and winter, when we could work on water and not, to
0 2 : 1 6 : 0 6 9 protect the people who physically worked on water.

0 2 : 1 6 : 0 8 10 Again, those who worked in the near-shoreline areas
0 2 : 1 6 : 1 1 11 of operations, training and working with those types of
0 2 : 1 6 : 1 5 12 operations, be they skimming and booming, the deployment of,
0 2 : 1 6 : 1 9 13 the use of the boom and how to handle both on a skimmer or on a
0 2 : 1 6 : 2 5 14 small vessel supporting boom deployment.

0 2 : 1 6 : 2 8 15 Then significant work done to manage our onshore
0 2 : 1 6 : 3 1 16 workforce safety and well-being. We worked collaboratively
0 2 : 1 6 : 3 6 17 with OSHA, we worked collaboratively with the Louisiana State
0 2 : 1 6 : 4 0 18 Health and Sciences departments to look at everything from heat
0 2 : 1 6 : 4 3 19 management, heat stress management to the physical labor
0 2 : 1 6 : 4 6 20 management of the work and activities being done by the
0 2 : 1 6 : 4 9 21 workforce.

0 2 : 1 6 : 5 3 22 Q. On the issue of boom, coming back to that just for one
0 2 : 1 6 : 5 9 23 more question, starting in April, soon after the response, how
0 2 : 1 7 : 0 7 24 did BP go about obtaining the boom that was needed to meet the
0 2 : 1 7 : 1 2 25 demands?

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0 2 : 1 7 : 1 3 1 A. So boom very rapidly became a critically short --
0 2 : 1 7 : 1 5 2 critically short in supply, having exhausted the supplies that
0 2 : 1 7 : 2 1 3 were already stockpiled across the Gulf of Mexico.

0 2 : 1 7 : 2 4 4 BP expanded its search for boom all across the
0 2 : 1 7 : 2 8 5 United States and worked with the U.S. Coast Guard in looking
0 2 : 1 7 : 3 0 6 at supplies that were held within the ports around the
0 2 : 1 7 : 3 2 7 United States and beyond.

0 2 : 1 7 : 3 3 8 We actually chartered the *Antonov* and flew the
0 2 : 1 7 : 3 8 9 *Antonov* and other aircraft around the world, collecting boom
0 2 : 1 7 : 4 2 10 from all across the world to be brought back to the Gulf of
0 2 : 1 7 : 4 5 11 Mexico for use in deployment.

0 2 : 1 7 : 4 9 12 In addition, at the time of this incident, there were
0 2 : 1 7 : 5 2 13 only three companies manufacturing hard boom and could only
0 2 : 1 7 : 5 7 14 manufacture approximately 5,000 feet of boom a week. We
0 2 : 1 8 : 0 1 15 engaged with those companies. We ramped up their operations to
0 2 : 1 8 : 0 5 16 24 hours a day, three shifts a day, working 7 days a week. We
0 2 : 1 8 : 0 9 17 also built new capabilities with regards to hard boom.

0 2 : 1 8 : 1 3 18 We also looked at differing styles and designs of
0 2 : 1 8 : 1 6 19 boom that could be manufactured by nontraditional boom
0 2 : 1 8 : 2 0 20 manufacturers, all of these to provide resources that were
0 2 : 1 8 : 2 4 21 critically needed across the Gulf of Mexico.

0 2 : 1 8 : 2 7 22 Q. I'm intrigued by your comment about the *Antonov*. What is
0 2 : 1 8 : 3 1 23 that?

0 2 : 1 8 : 3 1 24 A. That's the world's largest airplane. It's Russian-built.
0 2 : 1 8 : 3 7 25 We chartered it from a Russian service to allow us -- because

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02:18:41 1 it had the hugest payload available to us, that would allow us
02:18:47 2 to carry this very heavy product as we worked around the world
02:18:50 3 to pick it up from various sites.

02:18:52 4 Q. Would that be a good example of BP's efforts in the way it
02:18:56 5 spared no expense to get the resources needed to the Gulf of
02:18:59 6 Mexico for the response?

02:19:00 7 MR. CHAKERES: Objection, Your Honor, leading.

02:19:03 8 THE COURT: Overruled.

02:19:06 9 THE WITNESS: Certainly I think it's just one of
02:19:07 10 those examples that -- again, we were charged with sparing no
02:19:11 11 expense to find the resources, capabilities, and services that
02:19:13 12 we needed to meet this response, and we made every effort to do
02:19:17 13 so.

02:19:19 14 BY MR. BROCK:

02:19:19 15 Q. Let's turn to a new topic now, and that is the importance
02:19:23 16 of communications. I'll just ask, to set this up, was
02:19:27 17 effective communication with the public one of the goals of the
02:19:31 18 Unified Command?

02:19:31 19 A. Yes, it was. Both the Coast Guard and BP saw this as a
02:19:36 20 critical component of our effective response.

02:19:38 21 Q. Why was effective communication with the public important
02:19:42 22 during this time?

02:19:43 23 A. Number one, to address the fears and concerns of the
02:19:46 24 public, who every day were being told or saw images that caused
02:19:50 25 them to not -- to wonder and to want to understand what was

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0 2 : 1 9 : 5 5 1 being done, how it was being done, and what was the effect of
0 2 : 1 9 : 5 9 2 the efforts being made.

0 2 : 2 0 : 0 1 3 Number two, it was important because those issues and
0 2 : 2 0 : 0 3 4 concerns enabled us to better equip and be better prepared to
0 2 : 2 0 : 0 7 5 meet the needs and demands of the local communities.

0 2 : 2 0 : 1 2 6 Q. Generally, how was effective communication with the public
0 2 : 2 0 : 1 5 7 achieved?

0 2 : 2 0 : 1 6 8 A. There were three principal lenses in which we, as Unified
0 2 : 2 0 : 1 9 9 Command, worked on, on trying to communicate. One was through
0 2 : 2 0 : 2 3 10 the local, state, and federal lines of communications, the
0 2 : 2 0 : 3 1 11 officials, the entities, and agencies that were there working
0 2 : 2 0 : 3 5 12 on behalf of their citizenry, to engage with them to ensure
0 2 : 2 0 : 3 7 13 they had the information they needed.

0 2 : 2 0 : 4 0 14 The second was using the media, and the third was
0 2 : 2 0 : 4 2 15 using the communities themselves, in going out into the
0 2 : 2 0 : 4 6 16 communities to engage with them.

0 2 : 2 0 : 4 8 17 Q. When you arrived on April 25, did you assist in putting in
0 2 : 2 0 : 5 2 18 place communications with local and state governments?

0 2 : 2 0 : 5 5 19 A. Yes, I did.

0 2 : 2 0 : 5 6 20 Q. What communications did you have with them beginning at
0 2 : 2 1 : 0 0 21 that time point?

0 2 : 2 1 : 0 2 22 A. There were differing techniques or tools used in a
0 2 : 2 1 : 0 4 23 communications sense, but one of the most critical in Louisiana
0 2 : 2 1 : 0 8 24 was every day at 3:30, myself and the FOSC would have a
0 2 : 2 1 : 1 5 25 telecon, a standing telecon with the individual parish

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0 2 : 2 1 : 2 4 1 emergency response centers and representatives from the
0 2 : 2 1 : 2 7 2 individual parish governments as well as the state government
0 2 : 2 1 : 3 1 3 and the governor's office. And that call would typically last
0 2 : 2 1 : 3 6 4 for an hour, from 3:30 to 4:30.

0 2 : 2 1 : 3 9 5 The captain and I would provide -- typically I would
0 2 : 2 1 : 4 1 6 provide an operational overview on behalf of everybody who has
0 2 : 2 1 : 4 5 7 dialed into that call, and then the captain and I would respond
0 2 : 2 1 : 4 8 8 to specific questions raised by the parish, by the parish
0 2 : 2 1 : 5 4 9 presidents, or by the governor or the governor's
0 2 : 2 1 : 5 6 10 representatives.

0 2 : 2 1 : 5 7 11 Q. Why was this an important component of the response from
0 2 : 2 2 : 0 0 12 the Unified Command perspective?

0 2 : 2 2 : 0 2 13 A. Because in the same way that we were getting questions as
0 2 : 2 2 : 0 7 14 Unified Command, so were these local officials and obviously
0 2 : 2 2 : 1 1 15 State officials who were trying to respond and wanting to
0 2 : 2 2 : 1 4 16 respond to the same questions that we were receiving.

0 2 : 2 2 : 1 6 17 So the better source of information that we could be,
0 2 : 2 2 : 1 9 18 the better they were able to help in addressing the response
0 2 : 2 2 : 2 4 19 concerns that existed across the states and beyond.

0 2 : 2 2 : 2 9 20 Q. In addition to the 3:30 call that you have just referenced
0 2 : 2 2 : 3 3 21 and the communications that would take place there, were there
0 2 : 2 2 : 3 5 22 also liaisons that worked with the community?

0 2 : 2 2 : 4 3 23 A. Yes. Both the Coast Guard and BP appointed specifically
0 2 : 2 2 : 4 7 24 community liaisons to work in each of the parishes, directly
0 2 : 2 2 : 5 0 25 with the parish presidents and/or with the governors of each of

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0 2 : 2 2 : 5 3 1 the states.

0 2 : 2 2 : 5 4 2 Their jobs were to be available to those key
0 2 : 2 2 : 5 7 3 officials 24 hours a day, 7 days a week, and be a direct
0 2 : 2 3 : 0 2 4 conduit of information between the Unified Command in Houma and
0 2 : 2 3 : 0 5 5 the Unified Command in Robert and the other respective Unified
0 2 : 2 3 : 0 8 6 Command posts across the Gulf states.

0 2 : 2 3 : 1 2 7 Q. If we just took an example, say, Plaquemines Parish, what
0 2 : 2 3 : 1 6 8 would be done in a place like Plaquemines by the Unified
0 2 : 2 3 : 2 0 9 Command to keep officials and the community updated on the
0 2 : 2 3 : 2 4 10 events that were taking place in the Gulf?

0 2 : 2 3 : 2 6 11 A. So typically the U.S. Coast Guard liaison and the BP
0 2 : 2 3 : 3 1 12 liaison would provide a briefing in the morning, post our
0 2 : 2 3 : 3 5 13 morning briefings. They would brief them through the course of
0 2 : 2 3 : 3 6 14 the day, typically sometime there after lunch and again prepare
0 2 : 2 3 : 4 0 15 them for questions and us questions that might be raised in the
0 2 : 2 3 : 4 5 16 3:30 call.

0 2 : 2 3 : 4 7 17 They would provide them information with regards to
0 2 : 2 3 : 4 8 18 the ongoing response, movement of equipment and goods, to the
0 2 : 2 3 : 5 2 19 issues about -- responding to the questions around boom and
0 2 : 2 3 : 5 5 20 other supplies or materials, as well as questions that might
0 2 : 2 4 : 0 2 21 arise in terms of other resources that the parish officials
0 2 : 2 4 : 0 4 22 thought they needed.

0 2 : 2 4 : 0 6 23 Q. For Louisiana, which was your area of responsibility, how
0 2 : 2 4 : 1 1 24 many parishes had community liaisons?

0 2 : 2 4 : 1 4 25 A. We had eight parishes that attributed both BP and

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0 2 : 2 4 : 2 2 1 Coast Guard liaisons as well as the state governor's office.

0 2 : 2 4 : 2 7 2 Q. How long did the community liaisons remain in place?

0 2 : 2 4 : 3 1 3 A. So those remained in place well into 2011.

0 2 : 2 4 : 3 8 4 Q. With regard to interaction in the community, did you also
0 2 : 2 4 : 4 0 5 use town hall meetings as a way to communicate directly with
0 2 : 2 4 : 4 3 6 the public?

0 2 : 2 4 : 4 4 7 A. We did. In trying to engage with the communities
0 2 : 2 4 : 4 8 8 directly, we initiated out of Houma initially town halls, where
0 2 : 2 4 : 5 4 9 we would go into the respective communities. Of an evening, we
0 2 : 2 4 : 5 6 10 would bring two or three representatives from the Unified
0 2 : 2 5 : 0 0 11 Command; and we would set up a Q and A session, where we would
0 2 : 2 5 : 0 4 12 give a brief overview of the ongoing response efforts and then
0 2 : 2 5 : 0 8 13 just open it up to questions.

0 2 : 2 5 : 1 0 14 Q. Did you learn, as you began to interact with folks in the
0 2 : 2 5 : 1 4 15 community, that you needed to refine your message and the
0 2 : 2 5 : 1 7 16 manner in which you presented information in the town halls?

0 2 : 2 5 : 2 0 17 A. We did. We very quickly realized that the questions they
0 2 : 2 5 : 2 3 18 were asking involved more than us just saying with words. We
0 2 : 2 5 : 2 7 19 needed to provide visual examples and demonstrations.

0 2 : 2 5 : 3 0 20 So we evolved the town hall to, as a Unified Command,
0 2 : 2 5 : 3 4 21 the use of what we called "expos." Essentially think of them
0 2 : 2 5 : 3 8 22 as science fairs, where we brought examples of booms; and the
0 2 : 2 5 : 4 5 23 experts, as well as local people who were working in the boom
0 2 : 2 5 : 4 8 24 crews, to talk about what it is we do with boom; what it is we
0 2 : 2 5 : 5 1 25 were doing with burning; what dispersants were, what they

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0 2 : 2 5 : 5 4 1 looked like, how they were used; what we were doing with fish
0 2 : 2 5 : 5 6 2 and wildlife; and what we were doing to ensure that their water
0 2 : 2 6 : 0 0 3 was safe, their beaches were safe, their air was safe; and many
0 2 : 2 6 : 0 4 4 other types of questions on a show-and-tell basis.

0 2 : 2 6 : 0 7 5 Q. Was there a significant contribution from the Coast Guard
0 2 : 2 6 : 1 0 6 in terms of understanding the best way to present this
0 2 : 2 6 : 1 5 7 information at the town hall meetings?

0 2 : 2 6 : 1 7 8 A. There absolutely was. Captain Laferriere, in particular,
0 2 : 2 6 : 1 9 9 from his experiences post-Katrina, really helped bring the idea
0 2 : 2 6 : 2 5 10 together in terms of how to best utilize this capability that
0 2 : 2 6 : 3 0 11 we had, but also using local citizenry who were working in the
0 2 : 2 6 : 3 5 12 response to help tell the story in a way that their next-door
0 2 : 2 6 : 3 9 13 neighbors could best understand what was being done.

0 2 : 2 6 : 4 2 14 Q. Was it the view of the Unified Command that these expos
0 2 : 2 6 : 4 6 15 that were being conducted in the local communities were
0 2 : 2 6 : 4 9 16 effective in addressing community concerns?

0 2 : 2 6 : 5 3 17 A. They did make a definite difference. We saw a marked
0 2 : 2 6 : 5 7 18 increase in understanding, and just in the nature of the
0 2 : 2 7 : 0 0 19 questions that were being asked of us as people better
0 2 : 2 7 : 0 3 20 understood and learned what was really going on in the response
0 2 : 2 7 : 0 6 21 efforts.

0 2 : 2 7 : 0 7 22 Q. Now, did BP also have involvement in establishing
0 2 : 2 7 : 1 2 23 Community Outreach Centers?

0 2 : 2 7 : 1 4 24 A. Yes, it did.

0 2 : 2 7 : 1 5 25 Q. What are Community Outreach Centers, and how were they

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0 2 : 2 7 : 1 9 1 utilized as part of the response activity?

0 2 : 2 7 : 2 3 2 A. So early in the response, as part of Unified Command's
0 2 : 2 7 : 2 7 3 discussion, we talked about the nature of how do we ensure that
0 2 : 2 7 : 3 1 4 BP is helping to answer some of the questions that are being
0 2 : 2 7 : 3 6 5 raised specific to BP. And from that, we expanded into a
0 2 : 2 7 : 4 0 6 BP-specific effort called the "Community Outreach Program" in
0 2 : 2 7 : 4 5 7 which we went into each of the parishes and we established a BP
0 2 : 2 7 : 5 0 8 site that was used to do everything from being just a source of
0 2 : 2 7 : 5 5 9 "come in, tell us what your issues are," to helping provide
0 2 : 2 8 : 0 0 10 support on claims and how to file claims, to helping to provide
0 2 : 2 8 : 0 6 11 support in terms of job opportunities and what might be
0 2 : 2 8 : 1 0 12 happening.

0 2 : 2 8 : 1 0 13 But also to listening to what the community's issues,
0 2 : 2 8 : 1 3 14 concerns, and needs were, which led to our opportunities to
0 2 : 2 8 : 1 7 15 fund a variety of differing activities in the community itself
0 2 : 2 8 : 2 0 16 to help with the quality of life.

0 2 : 2 8 : 2 1 17 Q. Was this a Unified Command effort --

0 2 : 2 8 : 2 4 18 A. It was --

0 2 : 2 8 : 2 4 19 Q. -- the establishment of the outreach centers?

0 2 : 2 8 : 2 7 20 A. It was a BP effort.

0 2 : 2 8 : 2 9 21 Q. How many Community Outreach Centers were put in place out
0 2 : 2 8 : 3 4 22 of Houma, Louisiana; that is, within the Louisiana region?

0 2 : 2 8 : 3 7 23 A. Within Louisiana, there were eight.

0 2 : 2 8 : 3 9 24 Q. How many total? Do you know?

0 2 : 2 8 : 4 0 25 A. As I recall, there were 17. That number may not be exact

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0 2 : 2 8 : 4 3 1 across the entire Gulf states. Each of the states, from
0 2 : 2 8 : 4 7 2 Florida Panhandle through to Louisiana, had community liaison
0 2 : 2 8 : 5 5 3 offices.

0 2 : 2 8 : 5 5 4 Q. For how long were these community centers operational?

0 2 : 2 9 : 0 1 5 A. While they were scaled back over a period of time, they
0 2 : 2 9 : 0 4 6 continued to be in place through 2013 across the Gulf states.

0 2 : 2 9 : 0 9 7 Q. Did the Community Outreach Centers provide funds for the
0 2 : 2 9 : 1 4 8 local communities in some fashion?

0 2 : 2 9 : 1 6 9 A. They did, in a wide range of -- as we responded in
0 2 : 2 9 : 1 9 10 listening to what the community's concerns were, we started to
0 2 : 2 9 : 2 3 11 look at ways that we could demonstrate and support the way of
0 2 : 2 9 : 2 5 12 life in those communities beyond just the response efforts.

0 2 : 2 9 : 3 0 13 Q. Now, we have heard some testimony in this case that one of
0 2 : 2 9 : 3 5 14 the issues with the response is that there was a disparity in
0 2 : 2 9 : 4 2 15 people who were able to take advantage of programs that were
0 2 : 2 9 : 4 5 16 being offered by BP. So I want to address just a couple things
0 2 : 2 9 : 4 9 17 on that, if I can.

0 2 : 2 9 : 5 1 18 Was it important to convey to the public that the
0 2 : 2 9 : 5 4 19 community centers were available and were resources for those
0 2 : 2 9 : 5 8 20 in the local community?

0 2 : 2 9 : 5 9 21 A. It was.

0 2 : 3 0 : 0 1 22 Q. How did BP let the communities know that these resource
0 2 : 3 0 : 0 7 23 centers were available?

0 2 : 3 0 : 0 8 24 A. We used a variety of differing tools, including
0 2 : 3 0 : 1 1 25 advertising, posting locally within the communities themselves,

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02:30:15 1 and using social media and websites, including the BP.com
02:30:22 2 *Deepwater Horizon* website.

02:30:23 3 Q. Do you have an example of one of these videos that was
02:30:28 4 available publicly to inform local communities about the
02:30:33 5 availability of the resource centers?

02:30:35 6 A. I do.

02:30:37 7 MR. BROCK: So if we could pull up now D-35039.

02:30:44 8 MR. CHAKERES: Your Honor, we're going to object to
02:30:45 9 this is as hearsay. It's a narrated video, unlike the other
02:30:51 10 videos that have been shared today, by a witness who had
02:30:52 11 previously been on BP's trial exhibit list -- excuse me, trial
02:30:55 12 witness list.

02:30:58 13 MR. BROCK: This is a video that was publicly
02:31:01 14 available. It addresses the issue specifically of letting the
02:31:04 15 community know what resources are available.

02:31:09 16 THE COURT: Was this some PR program or something?

02:31:12 17 MR. BROCK: It's part of the information that was
02:31:15 18 available on the BP website so that people could learn about
02:31:19 19 the community centers and what services they offered.

02:31:25 20 THE COURT: It's narrated?

02:31:27 21 MR. BROCK: It's narrated by a single individual.

02:31:29 22 THE COURT: That individual is not testifying?

02:31:32 23 MR. BROCK: That individual may testify by
02:31:33 24 deposition.

02:31:33 25 I think our point about this is a little

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0 2 : 3 1 : 3 5 1 different than that, in the sense that especially Dr. Austin,
0 2 : 3 1 : 3 9 2 who criticized the company for not getting the word out about
0 2 : 3 1 : 4 5 3 what was available -- this is a video, one of the tools that
0 2 : 3 1 : 4 7 4 was used to address that issue.

0 2 : 3 1 : 5 2 5 **MR. CHAKERES:** Your Honor, the fact remains it's
0 2 : 3 1 : 5 3 6 going to be narration testimony.

0 2 : 3 1 : 5 6 7 **THE COURT:** I sustain the objection.

0 2 : 3 1 : 5 8 8 **BY MR. BROCK:**

0 2 : 3 1 : 5 9 9 **Q.** All right. Did BP make information available to the
0 2 : 3 2 : 0 6 10 community through advertising and through videos?

0 2 : 3 2 : 1 0 11 **A.** Yes, it did.

0 2 : 3 2 : 2 0 12 **Q.** Mr. Utsler, just to wrap up, in light of everything that
0 2 : 3 2 : 2 4 13 you have said today and taking into account your entire
0 2 : 3 2 : 2 8 14 experience, what is your assessment of the *Deepwater Horizon*
0 2 : 3 2 : 3 0 15 response effort and BP's work with the Coast Guard in this
0 2 : 3 2 : 3 4 16 matter, please?

0 2 : 3 2 : 3 8 17 **A.** This was a humbling experience. Nothing can prepare you
0 2 : 3 2 : 4 2 18 for the scale and magnitude of the response efforts as we
0 2 : 3 2 : 4 5 19 realized them to unfold. But for me personally, it was an
0 2 : 3 2 : 5 0 20 incredible honor and an opportunity to have worked with so many
0 2 : 3 2 : 5 5 21 talented people from all across the world?

0 2 : 3 2 : 5 7 22 Starting first and foremost with the U.S.
0 2 : 3 3 : 0 0 23 Coast Guard. I cannot say enough in terms of my regard for
0 2 : 3 3 : 0 3 24 their professionalism, their competency and their capability as
0 2 : 3 3 : 0 7 25 exhibited throughout the course of this, and the many other men

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0 2 : 3 3 : 1 1 1 and women who serve us in many other branches, as well as those
0 2 : 3 3 : 1 3 2 who worked in the federal and state agencies. I'm proud to
0 2 : 3 3 : 1 7 3 have had the opportunity to help lead in this effort, as
0 2 : 3 3 : 2 1 4 challenging as it was, to have worked with the many amazing
0 2 : 3 3 : 2 4 5 people.

0 2 : 3 3 : 2 5 6 **MR. BROCK:** Thank you, Mr. Utsler. Please answer
0 2 : 3 3 : 2 8 7 their questions.

0 2 : 3 3 : 3 0 8 **MR. CHAKERES:** Your Honor, the United States has no
0 2 : 3 3 : 3 2 9 cross-examination.

0 2 : 3 3 : 3 3 10 **THE COURT:** I guess you are done, sir. Thank you.

0 2 : 3 3 : 3 6 11 **THE WITNESS:** Thank you, sir.

0 2 : 3 3 : 4 7 12 **THE COURT:** Who is your next witness? Do you have an
0 2 : 3 3 : 4 8 13 expert?

0 2 : 3 3 : 4 8 14 **MR. BROCK:** Yes, sir. Dr. Cox is our next witness.

0 2 : 3 3 : 5 2 15 **THE COURT:** How long do you expect your direct exam
0 2 : 3 3 : 5 5 16 to be?

0 2 : 3 3 : 5 6 17 **MR. BROCK:** 45 minutes to an hour.

0 2 : 3 3 : 5 7 18 **THE COURT:** Let's take about a 15-minute recess right
0 2 : 3 4 : 0 0 19 now.

0 2 : 3 4 : 0 1 20 **MR. BROCK:** Thank you, Your Honor.

0 2 : 3 4 : 0 3 21 **THE DEPUTY CLERK:** All rise.

0 2 : 3 6 : 2 3 22 (Recess.)

0 2 : 5 6 : 4 7 23 **THE COURT:** Please be seated, everyone.

0 2 : 5 6 : 4 9 24 All right. Call your next witness.

0 2 : 5 6 : 5 3 25 **MR. JARRETT:** Good afternoon, Your Honor. Keith

ROBERT COX - VOIR DIRE

0 2 : 5 6 : 5 4 1 Jarrett for BXP. BP calls Dr. Robert Cox.

0 2 : 5 7 : 0 3 2 **ROBERT COX,**

0 2 : 5 7 : 0 3 3 having been duly sworn, testified as follows:

0 2 : 5 7 : 0 4 4 **THE DEPUTY CLERK:** State your full name and correct
0 2 : 5 7 : 0 4 5 spelling for the record, please.

0 2 : 5 7 : 2 9 6 **THE WITNESS:** Dr. Robert Cox, C-0-X.

0 2 : 5 7 : 3 2 7 **VOIR DIRE**

0 2 : 5 7 : 3 5 8 **BY MR. JARRETT:**

0 2 : 5 7 : 3 6 9 **Q.** Dr. Cox, could you begin by stating where you live and
0 2 : 5 7 : 4 0 10 what you do for a living.

0 2 : 5 7 : 4 1 11 **A.** I live in Brandon, Mississippi. I'm a physician and a
0 2 : 5 7 : 4 5 12 professor at the University of Mississippi Medical Center.

0 2 : 5 7 : 4 9 13 **Q.** And were you retained by BP to evaluate some questions
0 2 : 5 7 : 5 2 14 that they asked you to look into?

0 2 : 5 7 : 5 4 15 **A.** Yes, sir.

0 2 : 5 7 : 5 4 16 **Q.** Have you prepared a slide for us that shows those
0 2 : 5 7 : 5 7 17 questions?

0 2 : 5 7 : 5 8 18 **A.** Yes, sir.

0 2 : 5 7 : 5 8 19 **MR. JARRETT:** Could I ask that they bring up D-35102.

0 2 : 5 8 : 1 0 20 **BY MR. JARRETT:**

0 2 : 5 8 : 1 2 21 **Q.** Dr. Cox, would you tell us the questions you were asked to
0 2 : 5 8 : 1 7 22 look at on behalf of BXP.

0 2 : 5 8 : 1 9 23 **A.** Yes. I was asked to evaluate potential human health
0 2 : 5 8 : 2 2 24 impacts both to cleanup workers and to Gulf Coast residents as
0 2 : 5 8 : 2 7 25 a result of the *Deepwater Horizon* oil spill. I also was asked

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0 2 : 5 8 : 3 1 1 to look at any public health implications of the oil spill.
0 2 : 5 8 : 3 6 2 And then, finally, I was asked to look at the mitigation
0 2 : 5 8 : 4 0 3 information with regards to BP's efforts to mitigate those
0 2 : 5 8 : 4 4 4 health impacts.

0 2 : 5 8 : 4 7 5 Q. Did you have enough information to reach an opinion as to
0 2 : 5 8 : 5 0 6 all three of these questions?

0 2 : 5 8 : 5 1 7 A. Yes, I did.

0 2 : 5 8 : 5 2 8 Q. Did you express those opinions in written reports?

0 2 : 5 8 : 5 8 9 A. Yes, I did.

0 2 : 5 9 : 0 0 10 Q. In terms of the oil spill and what you looked into, did
0 2 : 5 9 : 0 4 11 you look into all the chemicals or constituents of concern?

0 2 : 5 9 : 1 0 12 A. Yes. I looked at a wide variety of chemicals, chose those
0 2 : 5 9 : 1 4 13 that were primarily ones that are potentially toxic within oil
0 2 : 5 9 : 2 0 14 as well as dispersants and some of the products of in-situ
0 2 : 5 9 : 2 4 15 burning.

0 2 : 5 9 : 2 6 16 Q. You looked at the constituents of oil and dispersants and
0 2 : 5 9 : 3 0 17 in-situ burning, all of those three?

0 2 : 5 9 : 3 4 18 A. Yes, sir.

0 2 : 5 9 : 3 5 19 Q. I noticed that what's not on here is that you didn't
0 2 : 5 9 : 3 7 20 investigate the human health impact concerning the events on
0 2 : 5 9 : 3 9 21 the rig itself. Is that fair?

0 2 : 5 9 : 4 2 22 A. That's correct.

0 2 : 5 9 : 4 3 23 Q. What was it about your field of expertise that allowed you
0 2 : 5 9 : 4 7 24 to reach opinions -- make you comfortable reaching opinions on
0 2 : 5 9 : 5 2 25 these three things?

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02:59:53 1 A. I am a medical doctor. I'm also a medical toxicologist,
02:59:57 2 as well as I hold a doctorate in chemistry.

03:00:08 3 Q. Did you prepare a slide to illustrate your qualifications
03:00:09 4 that you brought to bear on this assignment?

03:00:09 5 A. I did.

03:00:10 6 MR. JARRETT: Can you bring up, please, D-35103.

03:00:12 7 BY MR. JARRETT:

03:00:13 8 Q. Dr. Cox, does this slide here outline the highlights of
03:00:17 9 your professional career that were relevant to this engagement?

03:00:21 10 A. The highlights, yes.

03:00:22 11 Q. Can you walk us through this slide, please, and talk about
03:00:26 12 your background.

03:00:27 13 A. Sure. As I said, I'm a practicing physician, also hold a
03:00:30 14 Ph.D. in chemistry. I hold board certifications through the
03:00:36 15 American Board of Medical Specialties in medical toxicology,
03:00:41 16 emergency medicine, and a separate certification in toxicology
03:00:45 17 through the American Board of Toxicology.

03:00:47 18 Q. Can I interrupt you for a second, sir? Explain to us,
03:00:51 19 what's the field of toxicology?

03:00:53 20 A. Yes. The field of toxicology is the science that deals
03:00:57 21 with the adverse effects that chemicals and physical agents,
03:00:59 22 such as radiation, can have on living systems. In my case I
03:01:03 23 deal with the effects on human beings.

03:01:06 24 Q. I noticed you mentioned earlier that you're a professor at
03:01:10 25 the University of Mississippi Medical School. Are you also a

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03:01:13 1 practicing physician?

03:01:13 2 A. I am, in two areas. I'm an emergency physician. I work
03:01:19 3 in the emergency department, have for over 25 years. As a
03:01:25 4 professor, I also teach our young physicians. I'm the primary
03:01:30 5 person who's taught toxicology to our training physicians in
03:01:35 6 Mississippi for at least the last 15 years.

03:01:38 7 Q. Any other relevant professional experience on this slide
03:01:41 8 that you would like to address?

03:01:42 9 A. Yes, a little bit. I also run now the Medical Toxicology
03:01:46 10 Service. That's a medical specialty service that deals with
03:01:50 11 individuals who have been exposed to chemicals, drug overdoses,
03:01:56 12 substance abuse, so forth.

03:01:58 13 Q. And do you provide that service across the state of
03:02:02 14 Mississippi?

03:02:02 15 A. Well, I do the service at the medical center; but we take
03:02:06 16 transfers from the entire state since I'm the only medical
03:02:10 17 toxicologist in the state.

03:02:11 18 Q. What about your field of research? Have you done research
03:02:14 19 on issues that might be pertinent and germane to the tasks that
03:02:18 20 you were asked to do here?

03:02:19 21 A. Yes. Earlier in my career, I was very active in
03:02:22 22 developing methods and evaluating methods for measuring trace
03:02:26 23 levels of hydrocarbons, or VOCs, the same chemicals that are
03:02:32 24 associated with oil in the atmosphere.

03:02:34 25 Since that time I have also been involved with

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03:02:38 1 looking at the adverse health effects of different types of
03:02:43 2 exposures on human beings. As well, I've also published on the
03:02:48 3 use of personal protective equipment. And in our situation,
03:02:52 4 that was for protecting healthcare workers who might be -- have
03:02:57 5 to deal with victims of hazardous chemical exposures.

03:03:02 6 Q. I want to talk for a minute about your public health
03:03:05 7 experience and specifically what attributes of your public
03:03:09 8 health experience you brought to bear on this engagement.

03:03:12 9 A. Yes. Well, first of all, pretty much everything I'm
03:03:15 10 talking about on this slide involves public health. I've been
03:03:19 11 involved with public health in Mississippi -- I'm going on my
03:03:22 12 28th year there -- pretty much the entire time.

03:03:26 13 Mississippi is a small state. We do not have a state
03:03:29 14 toxicologist, and kind of by de facto, I serve in that role.
03:03:33 15 And so I have assisted them in a number of things, not only in
03:03:37 16 toxicology. Most recently I set up their Ebola hotline and
03:03:42 17 influenza, anthrax, infectious diseases, as well as we have had
03:03:49 18 episodes of mercury being spilled in schools.

03:03:51 19 Q. As part of that role in public health, do you have to be
03:03:54 20 familiar with statistical analyses of illness rates and injury
03:03:56 21 rates and prevalence and things such as that?

03:03:59 22 A. Yes. And that's also something that we teach to our
03:04:00 23 training physicians.

03:04:02 24 Q. Last question, I think: What about the field of
03:04:05 25 occupational medicine, Doctor? Do you have experience in that

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03:04:08 1 as well?

03:04:08 2 A. Yes, I do. I treat victims of chemical exposures, and a
03:04:17 3 lot of those are occupational exposures; and so, yes, that's
03:04:21 4 something I have to deal with very routinely.

03:04:24 5 Q. Before I tender you, do you have specific experience in
03:04:29 6 the *Deepwater Horizon* incidence unrelated to the assignment you
03:04:31 7 were asked to do here?

03:04:32 8 A. Yes, unrelated. Early in -- when this happened, I was
03:04:37 9 involved, first of all, through the poison control center. We
03:04:44 10 cataloged all the calls that we had. And then I also was
03:04:46 11 involved -- I spent some time at the Mobile Incident Command
03:04:49 12 Center and also worked with our state health department and
03:04:53 13 assisted them with setting up some of their health
03:04:57 14 surveillance.

03:04:58 15 Q. Was that experience useful in the assignment you were
03:05:01 16 asked to do for BPXP?

03:05:03 17 A. The experience was useful, but really none of that work
03:05:07 18 directly -- I used directly in what I did here.

03:05:12 19 MR. JARRETT: Your Honor, at this time BP would
03:05:15 20 tender Dr. Cox generally as an expert in the field of medicine
03:05:18 21 and toxicology and specifically in the assessment and treatment
03:05:23 22 of acute and chronic health conditions resulting from exposures
03:05:25 23 to hazardous substances or working conditions as well as an
03:05:30 24 expert in the assessment of public health.

03:05:41 25 MS. PENCAK: No objection, Your Honor, subject to

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03:05:42 1 cross-examination.

03:05:44 2 THE COURT: All right. Would counsel approach the
03:05:45 3 bench. I have a question.

03:05:56 4 (Off the record.)

03:07:04 5 THE COURT: Let me just follow up, if you would.
03:07:08 6 Dr. Cox, you did some work in connection with the
03:07:14 7 *Deepwater Horizon* oil spill on behalf of the State of
03:07:17 8 Mississippi?

03:07:18 9 THE WITNESS: Yes, Your Honor.

03:07:21 10 THE COURT: Explain to me whether and how that
03:07:24 11 differs from what you are testifying about here today.

03:07:27 12 THE WITNESS: All of the information that I'm going
03:07:29 13 to testify today was publicly available. It's been published,
03:07:33 14 and so it was not my experience of what I did in 2010. I'm
03:07:40 15 using publicly available information.

03:07:45 16 THE COURT: You're not using anything you did or
03:07:48 17 learned in your experience working on behalf of the State of
03:07:52 18 Mississippi?

03:07:53 19 THE WITNESS: That's correct.

03:07:54 20 THE COURT: Okay.

03:08:01 21 MR. JARRETT: Thank you, Your Honor.

03:08:01 22 THE COURT: Go ahead.

03:08:01 23 MR. JARRETT: The tender is accepted, Your Honor?

03:08:03 24 THE COURT: I'm sorry. Yes. Yes, he is accepted.

03:08:04 25 MR. JARRETT: Can we bring up slide D-35104, please.

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DIRECT EXAMINATION

BY MR. JARRETT:

Q. Dr. Cox, did you render multiple expert reports in this matter?

A. Yes, sir.

Q. How many, sir?

A. Three.

Q. Can you confirm for us this slide depicts the first page of your three reports, one dated August 15 of last year, the second dated September 12, and the third dated September 26?

A. Yes.

Q. They bear TREX numbers shown in this slide 240110, 240111, and 013087; is that correct, sir?

A. Yes, that's correct.

Q. Those three written opinions contain the opinions that you intend to offer and discuss today?

A. Yes.

Q. What work did you do in connection with the assignment that BP asked you to engage in?

A. Yes. The first thing I did was to look at a very, very large quantity of sampling and analytical data that was all publicly available. I downloaded it through the Internet.

The next thing I did was to analyze that to do what's called a toxicology risk assessment on it. And then I also looked at a large quantity of information from various

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03:09:30 1 government agencies.

03:09:32 2 Q. And would you have described the amount of information you
03:09:35 3 have as modest, robust?

03:09:39 4 A. It was tremendous. I've been involved in a number of
03:09:42 5 different environmental and human health issues throughout my
03:09:48 6 career, and I have never seen anything with the amount of
03:09:51 7 information we had here.

03:09:52 8 Q. Did you have critically the information you needed to
03:09:54 9 reach the opinions that we are about to discuss?

03:09:56 10 A. I feel that I did.

03:09:57 11 Q. Have you prepared a slide that summarizes your overall
03:10:01 12 opinions regarding the seriousness of the human health impacts
03:10:04 13 that resulted from the spill and its cleanup?

03:10:08 14 A. Yes, I did.

03:10:11 15 MR. JARRETT: Can you bring up D-35105, please.

03:10:15 16 BY MR. JARRETT:

03:10:15 17 Q. Doctor, can you tell us, please, what your opinions on the
03:10:18 18 human health impacts were.

03:10:20 19 A. Yes. First of all, I found no compelling evidence for any
03:10:24 20 significant exposure-related adverse effects either in cleanup
03:10:30 21 workers or in Gulf Coast residents. I also found it highly
03:10:34 22 unlikely that any adverse health effects will become manifest
03:10:38 23 in the future.

03:10:41 24 Q. Said in simple ways, like I like to think of things, is
03:10:45 25 your first opinion backward-looking and your second opinion

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03:10:49 1 forward-looking?

03:10:50 2 A. Yes.

03:10:50 3 Q. And these opinions, do they address both long- and
03:10:55 4 short-term possibilities?

03:10:56 5 A. Yes, they do.

03:10:59 6 Q. As I said before, you examined all the constituents of
03:11:03 7 concern that you identified in any of the materials that were
03:11:07 8 involved in the spill?

03:11:08 9 A. Yes.

03:11:11 10 Q. And did you do your work independently to reach the
03:11:15 11 opinions we are about to discuss?

03:11:17 12 A. I did. As I said, I looked at a lot of government
03:11:19 13 documents; but I did all of my work by myself first, and I
03:11:23 14 should say it took a lot of time.

03:11:27 15 Q. Well, you bring up a good point. The questions that BP
03:11:31 16 asked you to look at and address, had those been looked at by
03:11:36 17 other folks as well?

03:11:37 18 A. They have.

03:11:38 19 Q. Specifically, have those questions been looked at by
03:11:40 20 various government agencies?

03:11:42 21 A. They have.

03:11:43 22 Q. Has the government made findings on these very same issues
03:11:46 23 that we have asked you to look at?

03:11:47 24 A. Yes.

03:11:48 25 Q. Did you study those government findings?

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03:11:50 1 A. I did.

03:11:52 2 Q. Did you find them to be useful in your work?

03:11:54 3 A. I found them to be reassuring, that they came up with the
03:11:58 4 same opinions that I did.

03:11:59 5 Q. Have you prepared a slide that illustrates those
03:12:01 6 government findings, sir?

03:12:02 7 A. Yes.

03:12:03 8 MR. JARRETT: Can we please bring up slide D-35106.

03:12:08 9 BY MR. JARRETT:

03:12:10 10 Q. This looks like a pretty busy slide, Dr. Cox. Can you
03:12:14 11 tell us what we are looking at here generally, please.

03:12:17 12 A. Yes. Along the left side here, these are a number of
03:12:23 13 different federal agencies whose work looked at and examined
03:12:28 14 the health effects from the *Deepwater Horizon* oil spill: CDC,
03:12:33 15 EPA, FDA, NIOSH. And then I pulled a number of their opinions
03:12:41 16 that I felt were relevant to my work.

03:12:44 17 Q. What did these government agencies do in order to reach
03:12:47 18 the opinions or findings that they published?

03:12:50 19 A. For the most part, the same thing I did. They looked at
03:12:53 20 all of the monitoring data; they analyzed it; they compared it
03:12:59 21 to something we will discuss, called "human health benchmarks";
03:13:06 22 and came up with opinions, whether or not they felt there would
03:13:08 23 be significant human health effects.

03:13:11 24 Q. Did they issue written findings?

03:13:13 25 A. They did.

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- 03:13:13 1 Q. Did they publish those findings?
- 03:13:15 2 A. Yes.
- 03:13:16 3 Q. Are they available for anyone to see who wants to go on
03:13:19 4 the Internet and track them down?
- 03:13:21 5 A. That's where I found them.
- 03:13:22 6 Q. Did you review all of those papers?
- 03:13:24 7 A. Yes.
- 03:13:24 8 Q. Were the findings between those various government
03:13:27 9 agencies consistent or inconsistent?
- 03:13:30 10 A. They were consistent. That was another thing. It was
03:13:32 11 nice that this wasn't one of those situations, as I have seen
03:13:35 12 in the past, where one agency says this and another one says
03:13:38 13 this, and a third one might say something different. In this
03:13:42 14 case all of their opinions were very consistent.
- 03:13:45 15 Q. Did you find their work to be reliable?
- 03:13:49 16 A. I did.
- 03:13:49 17 Q. Did you find their work to be of the quality that experts
03:13:53 18 in your field would use to help render their opinions?
- 03:13:57 19 A. Yes.
- 03:13:57 20 Q. Finally, did these agencies reach the same or different
03:14:02 21 conclusions than you did in your independent work?
- 03:14:04 22 A. The same conclusions.
- 03:14:06 23 Q. Have you identified some highlights of their conclusions
03:14:09 24 that you want to bring to the Court's attention?
- 03:14:11 25 A. Yes, please.

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03:14:12 1 MR. JARRETT: Can we bring up D-35106.1.

03:14:18 2 BY MR. JARRETT:

03:14:22 3 Q. Can you read this slide and tell us why it was meaningful
03:14:25 4 to you.

03:14:25 5 A. Yes. Working separately, EPA and CDC came to the same
03:14:32 6 conclusion. These agencies found that there was no direct
03:14:35 7 exposures to these substances -- and by "these substances,"
03:14:39 8 they are talking about the types of emissions from oil and/or
03:14:43 9 dispersants -- at levels high enough to be expected to cause
03:14:47 10 harm.

03:14:49 11 Q. Was this finding informative for you?

03:14:52 12 A. Yes, it was.

03:14:53 13 Q. Was it corroborative for you?

03:14:55 14 A. Yes.

03:14:56 15 Q. Is there another example of a conclusion by a different
03:15:00 16 agency that is informative?

03:15:02 17 A. Yes.

03:15:07 18 THE WITNESS: How do I make the red line go away?

03:15:11 19 THE DEPUTY CLERK: I can do that.

03:15:15 20 MR. JARRETT: Thank you, Your Honor. I think it's
03:15:15 21 gone.

03:15:15 22 THE WITNESS: Thank you.

03:15:16 23 THE COURT: I did it for you. If you look at the
03:15:18 24 bottom left of the screen, do you see it says "clear"?

03:15:20 25 THE WITNESS: Yes.

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03:15:20 1 THE COURT: You just touch the screen down in that
03:15:23 2 corner, and it will make it go away.

03:15:23 3 THE WITNESS: Screen. Okay. I kept hitting the
03:15:25 4 clear button. Thank you.

03:15:27 5 BY MR. JARRETT:

03:15:27 6 Q. Dr. Cox, would --

03:15:29 7 MR. JARRETT: Or, Donnie, could you bring up, please,
03:15:30 8 D-35106.3.

03:15:40 9 BY MR. JARRETT:

03:15:40 10 Q. Can you read what this different federal agency -- I
03:15:44 11 should interrupt you. What does the acronym NIOSH stand for,
03:15:47 12 the author?

03:15:49 13 A. That's the National Institute for Occupational Safety and
03:15:49 14 Health.

03:15:52 15 Q. What did that government agency find, sir?

03:15:55 16 A. Their finding was with regard to the monitoring they did
03:15:58 17 for cleanup workers; and they said that "Throughout the
03:16:01 18 evaluation, results for all airborne chemicals sampled were
03:16:05 19 uniformly either nondetectable or," if they were detectable,
03:16:08 20 "at levels that were well below applicable OELs," or
03:16:14 21 occupational exposure limits.

03:16:15 22 Q. And occupational exposure limit, is that a synonym for the
03:16:20 23 word "benchmark" that we're going to use later today?

03:16:25 24 A. Yes, it is.

03:16:26 25 Q. What are benchmarks? I know we're going to talk about

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03:16:26 1 them in detail, but just to frame it for us, please.

03:16:28 2 A. Yes. When we are doing air monitoring specifically for --
03:16:31 3 well, either for the community or for the cleanup workers --
03:16:34 4 the OELs apply to cleanup workers, and those are levels of
03:16:41 5 chemicals in the air that they're breathing, that below that
03:16:46 6 level, no adverse health effect is expected. And this is for
03:16:52 7 being exposed either 8 or 10 hours a day, 40 hours a week over
03:16:56 8 a working lifetime, up to 30 years.

03:16:59 9 Q. Was it significant to you and useful to you that NIOSH
03:17:02 10 concluded that the results for their chemical sampling were
03:17:07 11 uniformly nondetectable or at levels well below those
03:17:13 12 occupational exposure limits?

03:17:13 13 A. Yes. To me, that was very reassuring, that they
03:17:16 14 weren't -- the cleanup workers were not being exposed to any
03:17:22 15 significant air contaminants.

03:17:24 16 Q. Before we leave the federal government findings, is there
03:17:28 17 another one that you thought would be informative?

03:17:31 18 A. Yes, there's one more.

03:17:33 19 **MR. JARRETT:** Can you bring up D-35106.2, please.

03:17:39 20 **BY MR. JARRETT:**

03:17:40 21 Q. This looks like it's another quote from the Centers for
03:17:42 22 Disease Control and Prevention?

03:17:45 23 A. Yes, it is. And they found that after the oil spill, the
03:17:49 24 environmental agencies sampled the air for VOCs, and the levels
03:17:54 25 that they found were very low and were not likely to result in

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03:17:58 1 any increased cancer risk or long-term health effects.

03:18:03 2 Q. Now, we saw that NIOSH was an occupational agency. Was
03:18:09 3 this evaluation also done for occupational?

03:18:11 4 A. No. CDC, ATSDR, and EPA primarily were involved with the
03:18:19 5 community exposures.

03:18:22 6 Q. So the point is clear for us, there was sampling that was
03:18:26 7 conducted to evaluate the exposure of the cleanup workers. Is
03:18:31 8 that fair?

03:18:32 9 A. Yes.

03:18:32 10 Q. There was more sampling done, a different set of samples
03:18:36 11 taken to evaluate whether citizens were being exposed?

03:18:39 12 A. Yes.

03:18:42 13 Q. You have looked at both sets of data?

03:18:44 14 A. I have.

03:18:47 15 Q. We talked about these federal agencies, and we have
03:18:50 16 highlighted a few of their conclusions. Did any of the state
03:18:53 17 agencies also look into this question in the aftermath of the
03:18:57 18 spill?

03:18:57 19 A. They did.

03:18:58 20 Q. Did you help us create a slide to illustrate that?

03:19:00 21 A. I did.

03:19:01 22 **MR. JARRETT:** Can we bring up D-35107, please.

03:19:05 23 **THE WITNESS:** Yes. All of the health departments
03:19:11 24 from each of the four states, as well as their environmental
03:19:14 25 departments within the state, also were involved in the

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03:19:17 1 response to the *Deepwater Horizon* oil spill.

03:19:20 2 **BY MR. JARRETT:**

03:19:21 3 Q. Did they issue findings as a result of their work?

03:19:24 4 A. Yes, sir.

03:19:24 5 Q. Are those findings also publicly available?

03:19:27 6 A. Yes.

03:19:27 7 Q. Did you review them?

03:19:28 8 A. I did.

03:19:31 9 Q. Did you find those state department findings to be
03:19:34 10 reliable?

03:19:35 11 A. Yes.

03:19:37 12 Q. Did you find those state findings to be the sort of
03:19:41 13 information ordinarily relied on by an expert in the field?

03:19:46 14 A. Yes.

03:19:46 15 Q. The state agencies, who did their work independently from
03:19:51 16 the federal government, did they reach the same or different
03:19:54 17 conclusions than you did?

03:19:55 18 A. The state agencies reached the same conclusions as well.

03:20:01 19 Q. Are there any of these state conclusions or findings that
03:20:04 20 you would particularly like to highlight for our information?

03:20:07 21 A. Yes. I picked a couple.

03:20:10 22 **MR. JARRETT:** Can we bring up D-35107.1.

03:20:12 23 **BY MR. JARRETT:**

03:20:15 24 Q. Can you tell us what we are looking at here, Dr. Cox.

03:20:17 25 A. Yes. This is a statement from the Louisiana Department of

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03:20:19 1 Environmental Quality, and they stated that "Monitoring data
03:20:23 2 has not shown any exceedances of any state or federal air
03:20:29 3 quality standards since the oil spill began," and this was in
03:20:33 4 July 2010.

03:20:34 5 Q. This seems similar to what the federal agencies found?

03:20:37 6 A. Yes.

03:20:38 7 Q. Is that why it was significant to you?

03:20:40 8 A. Yes.

03:20:44 9 Q. Is there another state finding that is useful to you?

03:20:47 10 A. Yes.

03:20:48 11 Q. And that you want to highlight for us?

03:20:50 12 A. Yes.

03:20:51 13 MR. JARRETT: Can you bring up D-35107.2.

03:20:53 14 BY MR. JARRETT:

03:20:56 15 Q. Doctor, explain what we are looking at here, please.

03:20:58 16 A. Yes. This is a statement from the Mississippi State
03:21:00 17 Department of Health. It was published in September of 2011.

03:21:05 18 They found that "Reviews of the data indicated that
03:21:09 19 there were no increases of health effects attributable to oil
03:21:15 20 in the monitored illness in the coastal area over the time of
03:21:20 21 the spill."

03:21:21 22 Q. Is this what was referred to in the profession as "health
03:21:25 23 surveillance"?

03:21:25 24 A. Yes. And so this is somewhat different. So far we have
03:21:29 25 been talking about toxicology-type information where we look at

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03:21:33 1 air monitoring data, compare it to health standards, and use it
03:21:38 2 as a predictive tool.

03:21:38 3 This is sort of looking at it in the opposite
03:21:40 4 direction for corroboration where the health departments from
03:21:40 5 each state -- the CDC did this as well. They monitored for
03:21:50 6 certain types of health complaints or illnesses along the Gulf
03:22:00 7 Coast.

03:22:00 8 Q. How did they do that?

03:22:01 9 A. Primarily by collecting health information from either the
03:22:04 10 hospitals on the coast or, for example, hospitals in
03:22:09 11 New Orleans.

03:22:09 12 Q. Did you find this health surveillance information helpful
03:22:12 13 to you?

03:22:12 14 A. I did, because it was -- once again, it was consistent
03:22:17 15 with the air monitoring information. And with that
03:22:23 16 information, it all said that we really shouldn't be seeing any
03:22:26 17 illness.

03:22:28 18 It was nice to go at it from the opposite direction,
03:22:34 19 from the health surveillance, and say the health departments
03:22:34 20 and the CDC didn't find any illnesses either.

03:22:37 21 Q. Just for my own clarity, you used the word "information."
03:22:41 22 What you are telling us is that analysis of the sampling data
03:22:45 23 would have predicted effects or no effects from the
03:22:51 24 constituents?

03:22:52 25 A. It would have predicted no effects, again, because the

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03:22:55 1 levels were so far below the toxicology benchmarks.

03:22:59 2 Q. When the state agencies did their surveillance to see if
03:23:04 3 those illnesses were cropping up, what did they find?

03:23:08 4 A. They pretty much did not find any illnesses.

03:23:12 5 Q. Do you have a slide that kind of catalogs those findings?

03:23:16 6 A. I do.

03:23:19 7 MR. JARRETT: Can we bring up D-35117, please.

03:23:21 8 BY MR. JARRETT:

03:23:26 9 Q. Doctor, can you explain what this slide depicts, please.

03:23:29 10 A. Yes. These are some findings from both the CDC as well as
03:23:34 11 Louisiana and Mississippi health departments. CDC, their
03:23:37 12 surveillance revealed no trends of public health concern
03:23:41 13 related to the oil spill.

03:23:42 14 The Louisiana Department of Health and Hospitals,
03:23:43 15 their health department, their surveillance showed no increase
03:23:48 16 in asthma and upper respiratory symptoms in New Orleans
03:23:52 17 hospitals. And they monitored seven New Orleans hospitals,
03:23:56 18 looked at respiratory complaints and asthma and compared them
03:24:02 19 to data from the previous three years, and there was no
03:24:05 20 increase whatsoever.

03:24:09 21 Q. The state and federal surveillance findings are consistent
03:24:13 22 with what the exposure data would have predicted?

03:24:16 23 A. Yes, they are consistent.

03:24:18 24 Q. We have talked about what the federal government studied
03:24:21 25 and found and what the state government studied and found.

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1 Let's talk about what you did independently from that.

2 Have you prepared a slide that outlines your
3 independent work?

4 A. Yes.

5 MR. JARRETT: Can we bring up D-35108.

6 BY MR. JARRETT:

7 Q. This slide is entitled "Steps Performed in Reaching
8 Independent Conclusions." Can you walk us through your process
9 when you went about doing your work to reach your own opinions.

10 A. Yes. The first thing I did was a very thorough data
11 review and analysis of the available monitoring data that was
12 done, and I will go through some of that in just a minute.

13 Excuse me. Then, with that, I evaluated the potential
14 inhalational exposures, did a toxicological risk assessment.

15 The third thing was to look at potential dermal and
16 oral exposures. And then finally, as we just mentioned, I
17 looked at the health surveillance information.

18 Q. So we've talked about step 4?

19 A. Yes.

20 Q. All right. Did you prepare a slide to show what was
21 involved in each of the three steps that you have outlined for
22 us here?

23 A. I did.

24 MR. JARRETT: Can we bring up D-35270, please.
25

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03:25:42 1 BY MR. JARRETT:

03:25:42 2 Q. Dr. Cox, this is a slide that I think depicts the data
03:25:45 3 sources that you had access to. Is that right?

03:25:47 4 A. Yes. All of these were publicly available data, and I
03:25:53 5 accessed it through the Internet and downloading them.

03:25:56 6 Q. To explain the table that we are looking at, can you tell
03:25:59 7 us first what this information is in the left-hand column.

03:26:05 8 A. Yes. In the left-hand column here, first of all, there's
03:26:11 9 a number of acronyms primarily for, first of all, federal
03:26:16 10 agencies, or who collected the data that we're referring to.
03:26:19 11 Then the BP data is next. And then finally, there was some --
03:26:24 12 a study that was done by OSAT, the Operational Science Advisory
03:26:27 13 Team, for the Federal On-Scene Coordinator.

03:26:34 14 Q. The OSHA data is federal data collected, right?

03:26:39 15 A. Yes.

03:26:39 16 Q. Is that true for NIOSH also?

03:26:40 17 A. Yes.

03:26:41 18 Q. Is that true for EPA?

03:26:43 19 A. Yes.

03:26:43 20 Q. Is that true for the OSAT data at the bottom?

03:26:45 21 A. Yes. The OSAT was a collection of scientists from various
03:26:49 22 agencies.

03:26:50 23 Q. Who put that collection of scientists together?

03:26:52 24 A. The Federal On-Scene Coordinator.

03:26:56 25 Q. I see that the type of data is divided into what we talked

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03:26:58 1 about earlier, occupational and community. Is that fair?

03:27:02 2 A. That's fair. The first, where it says occupational, these
03:27:05 3 are workers, samples that were collected to look at exposures
03:27:10 4 for workers.

03:27:12 5 The community data, next, is sampling data that was
03:27:16 6 looked at along the Gulf Coast, what Gulf Coast residents might
03:27:22 7 have been exposed to.

03:27:23 8 The branch area perimeter that's below that, these
03:27:27 9 are areas along the Gulf Coast that were performing
03:27:30 10 decontamination, washing off vessels or possibly some waste
03:27:35 11 disposal in an area; and BP set up monitors and collected
03:27:41 12 samples downwind of those to make sure that there was nothing
03:27:44 13 from that blowing downwind into a community.

03:27:47 14 Q. Have you ever seen any criticisms of any of the data
03:27:52 15 collection process?

03:27:53 16 A. No, I have not.

03:27:54 17 Q. Have you seen any criticism of the analyses that were run
03:27:59 18 on that data?

03:28:01 19 A. That I did?

03:28:01 20 Q. That anybody did. Did any --

03:28:02 21 A. No, I'm sorry, I haven't.

03:28:04 22 Q. Is this the same data that was used by the federal and
03:28:09 23 state governments to reach their conclusions that we saw
03:28:13 24 earlier?

03:28:13 25 A. Yes. Although I'm not aware that any -- well, I guess

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03:28:14 1 they did. CDC and EPA looked at pretty much all of the data;
03:28:19 2 and so, yes, it's the same data that they used.

03:28:22 3 Q. Is the data -- were the data that you -- you looked at
03:28:25 4 these data yourself?

03:28:27 5 A. I did.

03:28:28 6 Q. That's a lot of -- 1.4 million is a lot to look at. How
03:28:31 7 do you do that?

03:28:34 8 A. Computers are wonderful, and I did a lot of this with
03:28:37 9 computer assistance.

03:28:43 10 Q. Did you find the data to be consistent or inconsistent?

03:28:47 11 A. That was one of the nice things here. Again, a minute ago
03:28:53 12 we were talking about the agencies and their findings, but the
03:28:57 13 data itself was very consistent. In other words, sometimes
03:29:00 14 I've been involved in issues where one dataset might say, oh,
03:29:04 15 there's not a problem there, and another one says there is.
03:29:06 16 This data wasn't like that. All of it was very, very
03:29:10 17 consistent. Even if you looked at the community data and the
03:29:13 18 data that was collected downwind of the waste disposal, even
03:29:18 19 that was very, very similar.

03:29:23 20 Q. One of the witnesses that testified last week, Dr. Cox,
03:29:28 21 was Dr. Clapp, an epidemiologist who was called by the
03:29:32 22 United States. Have you seen his testimony?

03:29:34 23 A. Yes, I have.

03:29:34 24 Q. Have you seen his reports?

03:29:36 25 A. Yes.

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03:29:37 1 Q. He expressed an observation that he thought the NIOSH
03:29:40 2 dataset was incomplete. In your view, is that a fair
03:29:44 3 characterization of that dataset?

03:29:47 4 A. No. I think, for what they did, it was very complete.
03:29:50 5 And Dr. Howard, their director, in his deposition, he said that
03:29:55 6 their evaluation was complete.

03:29:57 7 Now, as you see, that's actually the smallest dataset
03:30:01 8 that we have here. And if that's the only thing somebody
03:30:03 9 looked at, because it was very easily available in the back of
03:30:06 10 the HHEs, one might say, well, that's just not enough.

03:30:11 11 But it wasn't the only thing. You've got to look at
03:30:14 12 all of the data, and we look at the fact that OSHA had nearly
03:30:19 13 twice as many and BP 20 times as many.

03:30:21 14 Q. You did look at all those data, did you not, sir?

03:30:25 15 A. Yes.

03:30:26 16 Q. After you do this data analysis and you review the data,
03:30:30 17 collect the data, what's the next step in your process?

03:30:34 18 Do we have a slide to illustrate that?

03:30:38 19 You have to answer me.

03:30:39 20 A. I'm sorry. Yes. I was working on clearing the screen.

03:30:43 21 Q. Thank you.

03:30:44 22 THE COURT: Press the right button this time.

03:30:48 23 THE WITNESS: I did. I got it this time.

03:30:49 24 MR. JARRETT: Can we bring up D-35108.2, please.
25

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03:30:53 1 BY MR. JARRETT:

03:30:54 2 Q. This is step 2 in your process, sir, the evaluation of
03:30:57 3 potential inhalation exposures and a toxicological risk
03:31:02 4 assessment?

03:31:03 5 A. Yes.

03:31:04 6 Q. First, I think you need to tell us what that is. What is
03:31:08 7 a toxicological risk assessment?

03:31:10 8 A. That's a process of looking at the air monitoring data and
03:31:16 9 comparing it to levels that are known or expected to be either
03:31:24 10 bad or good, that were protective and not toxic.

03:31:31 11 Q. Why is that a necessary step in offering opinions on
03:31:36 12 exposure-related health effects?

03:31:40 13 A. Well, in toxicology, one of our favorite statements is
03:31:44 14 "dose is everything." And some things can be toxic at certain
03:31:48 15 doses; and then at low doses, there is no danger whatsoever.

03:31:52 16 And even things that are considered to be completely
03:31:56 17 safe, drinking water or possibly even breathing oxygen, in
03:32:05 18 certain situations those can be toxic.

03:32:10 19 Q. Can a person assess the risk of adverse future health
03:32:15 20 risks from exposure-related chemicals without doing such an
03:32:19 21 assessment?

03:32:20 22 A. No.

03:32:21 23 Q. Has any other expert to testify in this case done a
03:32:26 24 toxicological risk assessment?

03:32:28 25 A. Not that I'm aware of.

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03:32:31 1 Q. Have you brought up a slide to explain what -- have you
03:32:34 2 created a slide to explain what's involved in preparing one of
03:32:39 3 those toxicological risk assessments?

03:32:42 4 A. I did.

03:32:43 5 MR. JARRETT: Can we bring up, please, D-35109.
03:32:45 6 Thank you.

03:32:47 7 BY MR. JARRETT:

03:32:50 8 Q. I see this illustrates a four-step process to do a risk
03:32:55 9 assessment. Can you tell us, please, what's involved.

03:32:57 10 A. Yes. I sort of customized this to the work involved with
03:33:01 11 the *Deepwater Horizon* oil spill.

03:33:03 12 The first step is identification of the hazards:
03:33:05 13 What chemicals are we looking at both associated with oil,
03:33:08 14 dispersants, or possibly the in-situ burning?

03:33:12 15 The second step, then, is to look at what data we
03:33:15 16 have available that says this is a safe level for those
03:33:19 17 chemicals.

03:33:21 18 Q. Does that involve the use of benchmarks?

03:33:23 19 A. It does.

03:33:25 20 Q. Before I get to those benchmarks, I want to ask you this:
03:33:27 21 Is this approach that you followed and have outlined for us
03:33:33 22 here the standard protocol for toxicological risk assessment in
03:33:37 23 our country?

03:33:38 24 A. Yes, it is. For this type of work, it is. And this is
03:33:42 25 what was used by the various federal agencies in this

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03:33:45 1 situation.

03:33:46 2 Q. All right. You mentioned benchmarks. We alluded to them
03:33:49 3 earlier. Have you created a slide to illustrate precisely what
03:33:54 4 a benchmark is?

03:33:55 5 A. Yes.

03:33:56 6 MR. JARRETT: Can we bring up D-35140, please.

03:33:59 7 BY MR. JARRETT:

03:34:02 8 Q. Can you tell us what we're looking at here, Dr. Cox.

03:34:04 9 A. Yes. These are the three agencies that are primarily
03:34:08 10 responsible for developing benchmarks for occupational workers.
03:34:13 11 Well, I should say the first two, OSHA and NIOSH, are federal
03:34:19 12 agencies. ACGIH, the American Conference of Governmental
03:34:25 13 Industrial Hygienists, is a private organization. They all do
03:34:29 14 independent work and develop benchmarks for occupational
03:34:34 15 workers.

03:34:35 16 What a benchmark is, it's a level of potential
03:34:39 17 exposure that below that level, no adverse health effects
03:34:45 18 should be expected. And again, for the occupational exposures,
03:34:48 19 we are looking at an exposure 40 hours a week over a working
03:34:55 20 lifetime, 30 to 40 years.

03:34:58 21 Q. These are three different -- well, two are federal
03:35:01 22 agencies and one's a private group. Do they have identical or
03:35:05 23 different benchmarks for particular chemicals?

03:35:09 24 A. Now, each of them are always working on kind of something
03:35:13 25 independently. OSHA's are legally enforceable; and when they

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03:35:17 1 have to change theirs, as I understand it, it's a lot more of a
03:35:22 2 big deal because they have to go through federal approval and
03:35:25 3 whatever.

03:35:25 4 But, yeah, they each develop these levels, and they
03:35:27 5 are not always the same. That's one of the reasons why I think
03:35:31 6 it's very, very important to not just look at, say, OSHA's
03:35:35 7 levels. I looked at all three of them. And actually -- but
03:35:38 8 the federal agencies did the same thing, they looked at all
03:35:41 9 three.

03:35:42 10 Q. So you compared the sampling data to the benchmark for all
03:35:47 11 applicable benchmarks. Is that what you are telling us?

03:35:53 12 A. I did.

03:35:54 13 MR. JARRETT: Can we go back to the prior slide,
03:35:55 14 please, D-35109.

03:35:58 15 BY MR. JARRETT:

03:35:58 16 Q. If you could -- Dr. Cox, this is your four-step process
03:36:02 17 for risk assessment. Can you walk us through the balance of
03:36:04 18 the slide, please.

03:36:07 19 A. Yes. The next step is an exposure assessment, which
03:36:10 20 basically is to take the data and analyze it and say, this is
03:36:16 21 the average or the median value that an individual might have
03:36:19 22 been exposed to. And then the final step is just putting
03:36:24 23 together the exposure data with the benchmark and comparing the
03:36:30 24 two.

03:36:32 25 Q. What form does the resulting product take?

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03:36:39 1 A. I'm sorry, could you --

03:36:40 2 Q. Yes. How are the data -- how are the results of your
03:36:43 3 analysis presented? In what format? Are they in graphs or
03:36:47 4 tables?

03:36:48 5 A. I'm sorry. They are in tables in my report.

03:36:51 6 Q. Have you created a slide to illustrate how those tables
03:36:55 7 will appear in your report?

03:36:58 8 A. I have.

03:36:59 9 MR. JARRETT: Can we bring up D-35110.

03:37:03 10 BY MR. JARRETT:

03:37:06 11 Q. Dr. Cox, I understand these are call-outs of the slides --
03:37:08 12 on this slide from Table 7 through 13 of your initial report?

03:37:13 13 A. Yes.

03:37:15 14 Q. Can you describe generally how these tables -- what these
03:37:19 15 tables show.

03:37:20 16 A. Yes. In the left-hand column here, this would be the
03:37:26 17 chemicals. The next column would be the number of results for
03:37:30 18 those chemicals. A lot of these, depending on which we were
03:37:34 19 looking at, had a lot of nondetects. In other words, whatever
03:37:38 20 concentration they were present at was below the analytical
03:37:42 21 detection limit.

03:37:43 22 I then calculated a central value using medians. I
03:37:46 23 also compared a 95th percentile, and then I compared the median
03:37:54 24 to the three different occupational benchmarks.

03:37:57 25 Q. So this is an occupational -- these results that we see on

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03:38:00 1 here are an analysis of the samples involving the workers?

03:38:05 2 A. Yes.

03:38:05 3 Q. And there are similar tables for the public at large?

03:38:10 4 A. Yes.

03:38:11 5 Q. You described having calculated the median. Is that the
03:38:16 6 standard toxicological approach?

03:38:17 7 A. You need a central approach, either a median or a mean.
03:38:21 8 In this case, since there were -- for some of the other data,
03:38:24 9 there were so many nondetects, I chose to use a median.

03:38:29 10 Q. The mean, is it -- I won't get into it; but if you use the
03:38:34 11 mean, it brings the number too low, wouldn't it?

03:38:36 12 A. No. The mean is an average, and you have to have -- to
03:38:38 13 really calculate a mean, you have to have real data. And so if
03:38:41 14 you have a lot of nondetects, you really can't calculate a mean
03:38:45 15 without putting artificial values into it.

03:38:48 16 There is a way to do it mathematically with a median,
03:38:52 17 to get it, if you still have nondetect values.

03:38:56 18 Q. So after you do this work, what did you determine in terms
03:39:01 19 of whether these median values were above or below these
03:39:07 20 benchmarks that we talked about?

03:39:09 21 A. Almost uniformly they were below the benchmarks.

03:39:12 22 Q. To what degree were they below the benchmarks?

03:39:15 23 A. A lot.

03:39:16 24 Q. Have you prepared a slide to illustrate that, sir?

03:39:18 25 A. Yes.

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03:39:19 1 MR. JARRETT: Can we bring up D-35111-A.

03:39:22 2 BY MR. JARRETT:

03:39:25 3 Q. Is this a graph or a chart that you created, Doctor?

03:39:29 4 A. Yes, it is.

03:39:31 5 Q. Tell us generally -- I'll ask some specific questions, but

03:39:34 6 generally what's depicted here?

03:39:36 7 A. Yes. Along the top here -- first of all, we have three of

03:39:40 8 what's known as the BTEX compounds. Those are the volatile

03:39:47 9 hydrocarbons that are of most -- the BTEX compounds are the

03:39:51 10 most concerned for toxicity from breathing vapors of oil;

03:39:52 11 naphthalene, which is the lightest of the polycyclic aromatic

03:39:59 12 hydrocarbons; and then 2-butoxyethanol that is a dispersant

03:40:06 13 chemical. And I just chose these as example chemicals.

03:40:08 14 Q. You examined for a lot more chemicals than are on this

03:40:10 15 chart?

03:40:10 16 A. Yes, but if you put them all on this, it would just get

03:40:14 17 too cluttered.

03:40:16 18 Q. So you've selected some -- I guess you would call

03:40:18 19 examples. Right?

03:40:19 20 A. Yes.

03:40:19 21 Q. What's this line across the page that's labeled

03:40:21 22 "Benchmark"?

03:40:23 23 A. Okay. So for each of those, this line would be the

03:40:25 24 benchmark.

03:40:31 25 Q. Ideally, do you want the results to be above or below the

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03:40:34 1 benchmarks?

03:40:35 2 A. You want them to be below the benchmark if you want to
03:40:39 3 protect human health.

03:40:40 4 Q. How many of these findings here are above the benchmark?

03:40:44 5 A. None.

03:40:48 6 Q. Can you explain the degree -- pick any one of these that
03:40:57 7 you like, but can you explain the degree to which the data that
03:41:00 8 you examined were below the benchmarks.

03:41:04 9 A. Yes. And let me say also that the data I'm using here are
03:41:07 10 from NIOSH and EPA, and the reason I chose those is they had
03:41:12 11 the lowest detection limits. And so we had a lot of real
03:41:16 12 values instead of just 95 percent nondetects. And so it
03:41:20 13 allowed us to look at this.

03:41:22 14 But let me give you an example for toluene. For
03:41:26 15 NIOSH and OSHA, for their benchmarks, actually we were more
03:41:31 16 than 25,000 times below the benchmark. ACGIH has a more
03:41:38 17 conservative benchmark here, and so it was still, I think,
03:41:41 18 12 1/2 thousand times below. And then for the community for
03:41:46 19 EPA, we were about 6,000 times below.

03:41:53 20 Q. And there's been a discussion -- or I think there's a
03:41:57 21 discussion in the literature about orders of magnitude and how
03:42:00 22 many orders of magnitude the findings are below a pertinent
03:42:05 23 benchmark.

03:42:05 24 A. Yes. A lot of these were two to three orders of magnitude
03:42:10 25 below.

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03:42:11 1 Let me give you one more example for toluene. Even
03:42:14 2 this value here that looks close, that was a thousand times
03:42:18 3 below. And so that's three orders of magnitude below the
03:42:21 4 benchmark. Naphthalene is the simplest of the PAHs, polycyclic
03:42:29 5 aromatic hydrocarbons, and all of those were between a thousand
03:42:33 6 and 5,000 times below the benchmark.

03:42:37 7 Q. If we were to graph all of the other chemicals you've
03:42:39 8 examined, would they look demonstrably like this?

03:42:43 9 A. For the most part, yes.

03:42:45 10 Q. Is the degree to which these data points are below the
03:42:50 11 benchmark meaningful in your business?

03:42:53 12 A. Well, I would say it's reassuring. First of all, if
03:42:55 13 they're below the benchmark at all, we shouldn't expect any
03:42:58 14 adverse health effect because, first of all, people were only
03:43:02 15 being exposed for days to weeks to a couple of months. And for
03:43:07 16 example, the occupational benchmarks were developed for a
03:43:11 17 30-year working lifetime of being exposed to that amount every
03:43:15 18 day. The community benchmarks were developed for at least a
03:43:19 19 year.

03:43:21 20 And so just being below the benchmark in and of
03:43:25 21 itself is something. But when it's so far below the benchmark,
03:43:28 22 it just tells me that there really wasn't anything to worry
03:43:31 23 about here.

03:43:32 24 Q. We heard last week and during Dr. Clapp's testimony about
03:43:37 25 a constituent called benzene. Have you prepared a graph to

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03:43:41 1 illustrate your benzene findings?

03:43:44 2 A. I did.

03:43:44 3 MR. JARRETT: Can we bring up D-35112.

03:43:47 4 BY MR. JARRETT:

03:43:51 5 Q. Dr. Cox, this graph or chart looks much similar to the one
03:43:55 6 that we saw just a moment ago, but can you tell us what we are
03:43:58 7 looking at here. Is it set up the same way?

03:44:01 8 A. Sure, and let me tell you the reason it's separated.
03:44:03 9 Because benzene, at high concentrations in an industrial
03:44:10 10 situation for a long period of exposure, is known to be a human
03:44:14 11 carcinogen. And so because of that, the agencies that put
03:44:19 12 benchmarks out for benzene, they're much lower than the
03:44:23 13 benchmarks for other chemicals. And so instead of being
03:44:26 14 thousands of times lower, we are a little bit closer.

03:44:29 15 But let me say one other thing. For benzene, the
03:44:33 16 data from NIOSH and from EPA, which was the most sensitive, the
03:44:38 17 best detection limits, even that was, for the most part, the
03:44:44 18 means -- the medians were in the nondetectable range. And so
03:44:47 19 we don't know what the true value is. We know that it's less
03:44:51 20 than a certain amount.

03:44:52 21 And so when we look at this, that's why I say that
03:44:55 22 it's at -- for example, benzene and let's take the NIOSH
03:45:01 23 occupational safety level, it's at least a hundred times below
03:45:05 24 that.

03:45:08 25 Q. Could be more?

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03:45:09 1 A. Probably is more, but we don't know how far below that it
03:45:13 2 is.

03:45:13 3 And for the community, we are at least 32 times
03:45:16 4 below. Once again, we don't know how much further below it is.
03:45:22 5 And actually, with benzene, if you look at the data that was
03:45:25 6 collected right over the oil spill by NOAA, as it turns out,
03:45:32 7 the BTEX compounds, benzene, toluene, ethylbenzene, they are
03:45:40 8 water soluble. And so when the oil was released and went
03:45:43 9 5,000 feet up to the surface, they dissolved. So right over
03:45:47 10 the oil spill, the levels of benzene were actually less than we
03:45:55 11 saw anywhere else.

03:45:56 12 Q. In other words, right where you thought they should -- one
03:45:58 13 might think intuitively they would be the highest, that wasn't
03:46:00 14 the case?

03:46:01 15 A. No, they were the lowest.

03:46:03 16 Q. So it sounds like this is reassuring data, Doctor. Is
03:46:07 17 that your opinion?

03:46:07 18 A. Yes, it is.

03:46:08 19 Q. Have you reached conclusions regarding the potential
03:46:12 20 inhalation exposures of *Deepwater Horizon* compounds based on
03:46:15 21 your risk assessment?

03:46:17 22 A. I have.

03:46:17 23 Q. Do we have a slide to depict your conclusions, sir?

03:46:22 24 A. I'm sorry, yes.

03:46:25 25 MR. JARRETT: Can we bring up D-35113, please.

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03:46:27 1 BY MR. JARRETT:

03:46:31 2 Q. Can you tell us what your conclusions are about these
03:46:35 3 inhalational exposures that you analyzed.

03:46:39 4 A. Yes. Both cleanup workers as well as Gulf Coast residents
03:46:43 5 were not exposed to airborne concentrations of chemical
03:46:47 6 compounds either from dispersants or from the oil at levels
03:46:50 7 that were expected to result in any significant adverse health
03:46:54 8 effects.

03:46:55 9 Q. What about the second conclusion, sir?

03:46:58 10 A. Yes. Let me say with that that all of these chemicals,
03:47:02 11 these BTEX chemicals and a lot of the hydrocarbons, they're in
03:47:10 12 air everywhere. They're products of any burning, cigarette
03:47:13 13 smoking, automobile emissions, and so forth. And that's why I
03:47:19 14 said they were slightly higher right along the coast than they
03:47:23 15 actually were right over the *Deepwater Horizon* oil spill and
03:47:27 16 they were removed from the oil.

03:47:28 17 So I feel that what we are actually measuring was
03:47:35 18 environmental levels of those chemicals. And so any airborne
03:47:39 19 exposures to Gulf Coast residents were actually at or below
03:47:44 20 levels that were typical for outdoor ambient air
03:47:47 21 concentrations. And as it turns out, the concentrations
03:47:50 22 indoors are always higher, and so they are less than indoor air
03:47:55 23 concentrations.

03:47:56 24 Q. Doctor, remind us -- back on your first bullet point about
03:48:01 25 the nonexposure at levels that should be of concern, is that

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03:48:06 1 consistent with the government findings or inconsistent with
03:48:08 2 the government findings?

03:48:10 3 A. It's completely consistent with the government findings.

03:48:12 4 Q. What degree of confidence do you have in your opinions
03:48:15 5 that you have expressed here?

03:48:16 6 A. I'm very confident, especially considering how far below
03:48:20 7 the benchmarks the data really was.

03:48:23 8 Q. Last week when Dr. Clapp testified, he mentioned that one
03:48:30 9 federal agency -- I think the National Institute of Health --
03:48:32 10 have commissioned an ongoing health study of response workers,
03:48:38 11 and Dr. Clapp says we will know some day.

03:48:44 12 What's your opinion about the need of that health
03:48:47 13 study and its likely results, if you have one?

03:48:49 14 A. I do.

03:48:51 15 First of all, the science that we just talked about
03:48:53 16 all of this certainly does not suggest that there were any
03:48:55 17 exposures that would result in any either short or long-term
03:48:59 18 health effects.

03:49:02 19 Dr. Howard from NIOSH stated -- he also stated that
03:49:08 20 because the levels were so far below the occupational exposure
03:49:13 21 limits, that his epidemiologists at NIOSH also looked at this
03:49:18 22 and said that they felt it would not be productive.

03:49:22 23 The final thing I'll mention about that is that we
03:49:25 24 are just about five years past the *Deepwater Horizon* oil spill,
03:49:33 25 and I'm not aware of any information that has come out

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03:49:36 1 suggesting that we have any adverse health effects at this
03:49:40 2 point in time.

03:49:41 3 Q. That's where that health surveillance piece comes in?

03:49:45 4 A. Well, that health surveillance piece was for the first
03:49:48 5 year. I'm just talking medically of listening to things and
03:49:50 6 what's around. I haven't seen anything published, any
03:49:52 7 information stating that, Oh, something is starting to pop up.

03:49:55 8 I mean, compare that to what we saw after the Twin
03:49:58 9 Towers. We knew people were exposed to very, very high
03:50:02 10 concentrations of dust. Within two years, we were seeing those
03:50:08 11 health effects.

03:50:10 12 Q. Just as predicted by the science of toxicology?

03:50:15 13 A. Yes.

03:50:17 14 Q. So moving past that study, Dr. Clapp also testified about
03:50:23 15 a NIOSH survey that was conducted during the response that he
03:50:29 16 suggested showed substantial health effects to response
03:50:34 17 workers. Are you familiar with the document that Dr. Clapp was
03:50:37 18 reviewing?

03:50:38 19 A. I am.

03:50:39 20 Q. Have you prepared a slide to discuss your opinions about
03:50:42 21 that?

03:50:42 22 A. Yes.

03:50:43 23 MR. JARRETT: Can you bring up D-35142, please.

03:50:49 24 BY MR. JARRETT:

03:50:51 25 Q. Dr. Cox, those of us in the courtroom will remember that

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03:50:53 1 Dr. Clapp discussed this convenience survey last week and
03:51:01 2 specifically this table suggesting that the table was -- showed
03:51:07 3 substantial respiratory health impacts. And you have read his
03:51:13 4 testimony?

03:51:13 5 A. Yes.

03:51:14 6 Q. First of all, what is a convenience survey?

03:51:16 7 A. Well, this was not some type of a well-designed study. It
03:51:21 8 was just they passed out a questionnaire of people who were
03:51:25 9 showing up to work that day, and the study cannot show
03:51:33 10 causation.

03:51:34 11 The other thing I would mention here is even
03:51:36 12 though --

03:51:37 13 Q. Can I back up a second?

03:51:39 14 A. I'm sorry.

03:51:40 15 Q. Is the study even designed to attempt to show causation?

03:51:42 16 A. No, that's why I said it can't show causation; it's not
03:51:46 17 designed to do that.

03:51:47 18 Q. It's not even a study. You used the word "survey."
03:51:51 19 What's the difference?

03:51:52 20 A. Well, a survey is -- again, it's just a little convenience
03:51:55 21 survey. They passed out these questionnaires and said, fill
03:51:57 22 this out.

03:52:01 23 Q. Would you agree with Dr. Clapp's characterization that the
03:52:03 24 study shows potential health effects?

03:52:06 25 A. No, I wouldn't. These things, upper respiratory symptoms

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03:52:09 1 or cough or even, for that matter, a little bit of lower
03:52:12 2 respiratory symptoms, these are what we call -- in toxicology
03:52:14 3 and in medicine, these are "irritant symptoms." So they occur
03:52:18 4 whenever we are exposed to something that irritates us.

03:52:21 5 Let's say you -- of course, bars don't have any --
03:52:22 6 you would walk into a room and cigarette smoke was there. I
03:52:29 7 know with me, my eyes burn, my nose burns, I might have a
03:52:34 8 cough. But the thing with irritant symptoms is it gets better
03:52:38 9 when you get away from it. So it might affect me the next few
03:52:43 10 hours. The next morning, I feel fine.

03:52:45 11 First of all, these are the types of symptoms --
03:52:47 12 again, these were people who were showing up to go to work that
03:52:50 13 day.

03:52:51 14 Q. In other words, they were people who, if they had
03:52:53 15 symptoms, the symptoms weren't severe enough to keep them away
03:52:56 16 from work?

03:52:57 17 A. No, and the symptoms were did this occur, you know, in the
03:53:00 18 past month or so?

03:53:01 19 The other thing, if you read it -- there's a couple
03:53:04 20 other things there.

03:53:05 21 Number one, although they list oil and dispersants,
03:53:08 22 really what they said -- this was a comparison of people who
03:53:12 23 worked on boats versus people who did not work on boats. And
03:53:16 24 so what other types of potential exposures are there from
03:53:20 25 working on boats? This could just be a comparison of people

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03:53:25 1 working outdoors in the heat versus people working in an
03:53:29 2 air-conditioned room.

03:53:30 3 Q. Did NIOSH itself, in this very document, illuminate some
03:53:34 4 of the limitations of its survey?

03:53:37 5 A. They did.

03:53:37 6 Q. Do we have a slide to show that?

03:53:39 7 A. Yes.

03:53:40 8 MR. JARRETT: Can we bring up D-35145.

03:53:44 9 THE WITNESS: Yes --

03:53:44 10 BY MR. JARRETT:

03:53:45 11 Q. Is this a quote taken from the very same survey, Doctor?

03:53:49 12 A. It is. Actually, this was right below there. And it
03:53:51 13 said: In addition to possible chemical exposures from oil,
03:53:55 14 cleaning operations are exposure to road and gravel dust,
03:53:59 15 tobacco smoke, upper respiratory infections resulting from
03:54:03 16 crowded work and living conditions, previously existing medical
03:54:09 17 conditions, and symptoms resulting from overexertion in the
03:54:12 18 heat.

03:54:13 19 And I would add a few things there. Allergies from
03:54:16 20 being outside can most certainly do this as well. And we also
03:54:20 21 know that there was a very large amount of tobacco use amongst
03:54:25 22 the cleanup workers, at least that's what NIOSH said.

03:54:29 23 Q. What's the significance to you of the sentence that reads,
03:54:34 24 "The NIOSH survey did not account for those factors"?

03:54:39 25 A. Well, that's why I think it's kind of a misleading to put

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03:54:42 1 this up here and say, Oh, this showed that there's potentially
03:54:45 2 something from either oil or dispersants because it didn't show
03:54:47 3 that. They didn't take into account for these things. And
03:54:50 4 whenever I'm looking at any type of a study on respiratory
03:54:54 5 symptoms and it doesn't control for smoking or secondhand
03:54:58 6 tobacco smoke, it doesn't tell me anything.

03:55:02 7 Q. What about the last sentence where NIOSH comments that its
03:55:06 8 findings from this convenience sample of workers may not apply
03:55:10 9 to other workers in different locations? What do you take from
03:55:13 10 that, infer from that document?

03:55:15 11 A. Well, they actually did similar surveys of people working
03:55:19 12 on boats that were using dispersants around oil, and they
03:55:22 13 didn't have the same findings or complaints. And so, again,
03:55:28 14 it's a simple convenience survey. I don't think that you can
03:55:32 15 really take anything from it.

03:55:35 16 Q. Is it appropriate science to use this survey that's not
03:55:39 17 even a study to make conclusions about causation?

03:55:42 18 A. I certainly would never do it.

03:55:44 19 Q. I want to change subjects now, Doctor, and move from your
03:55:48 20 inhalation assessment to your investigation of other pathways
03:55:51 21 of possible chemical exposure. Did you look at other pathways?

03:55:56 22 A. Yes, I did.

03:55:58 23 Q. Have you created a slide to help us understand how?

03:56:00 24 A. Yes.

03:56:01 25 MR. JARRETT: Can you bring up D-35108.3.

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03:56:04 1 BY MR. JARRETT:

03:56:08 2 Q. So, Doctor, you have explained how you went about
03:56:11 3 evaluating inhalation exposures by performing a toxicological
03:56:19 4 risk assessment. Can you do the same sort of thing for dermal?

03:56:22 5 A. No, you can't.

03:56:23 6 Q. How do you go about evaluating dermal and oil exposures?

03:56:28 7 A. Well, first of all, with dermal exposure, there is no
03:56:31 8 reliable test that can be used to measure chemical exposures
03:56:37 9 from dermal exposure at the concentration levels that we were
03:56:41 10 dealing -- that were present for the *Deepwater Horizon* oil
03:56:46 11 spill. There are some blood and urine tests that can be used
03:56:51 12 at very high concentrations in industrial situations when
03:56:55 13 you're dealing with very high levels, but not with the levels
03:56:58 14 that we were dealing with here.

03:56:59 15 Q. So if you can't do the toxicological risk assessment, how
03:57:02 16 do you go about it? Have you created a slide to show us that?

03:57:06 17 A. I have. It's a little bit of a different approach.

03:57:08 18 MR. JARRETT: Can we bring up D-35115, please.

03:57:13 19 THE WITNESS: The first thing I would look at -- this
03:57:15 20 is sort of my approach, but this also was looked at by NIOSH
03:57:19 21 and OSHA when they were evaluating some of this.

03:57:23 22 BY MR. JARRETT:

03:57:23 23 Q. The first bullet point says: "Oil: Low toxicity."

03:57:30 24 And the first thing I want to know is: Is that your
03:57:31 25 opinion, or is that the opinion of others?

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03:57:33 1 A. No, that's actually coming from CDC and they stated that
03:57:36 2 Louisiana sweet crude is of low toxicity and that dermal
03:57:42 3 exposure for short periods should cause no harm. Again, that's
03:57:48 4 coming from CDC.

03:57:50 5 Q. Do you agree with that?

03:57:52 6 A. I do agree with that.

03:57:53 7 Q. What's the significance of the weathered oil aspect?

03:57:59 8 A. All right. So we are starting off with something that
03:58:01 9 dermally is of low toxicity, and then it's weathering. We have
03:58:04 10 already discussed the removal of the volatile BTEX compounds as
03:58:10 11 the oil comes to the surface.

03:58:10 12 Q. Those are the hydrocarbon constituents that come out in
03:58:14 13 solution as the oil rises?

03:58:16 14 A. Right.

03:58:16 15 But then as the oil took weeks to a month to get to
03:58:20 16 where the cleanup workers were coming into contact with it to
03:58:24 17 the coast, it changed more. And once you remove the BTEX
03:58:30 18 compounds, the primary constituents that are of toxicology
03:58:36 19 concern are going to be the polycyclic aromatic hydrocarbons,
03:58:41 20 known as PAHs. And up to 88 to 96 percent of those were
03:58:46 21 removed as the oil underwent this weathering process.

03:58:51 22 Q. So by the time the oil finally reached the shore or the
03:58:56 23 beach, it was a much different compound than it was when it
03:59:01 24 exited the well. Is that your point?

03:59:03 25 A. Right. I even presented some data in my Round 1 report

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03:59:07 1 that PAHs are allowed by FDA in consumer products for dandruff
03:59:14 2 shampoo and medications for treating psoriasis. And the
03:59:19 3 concentrations of PAHs in the weathered oil was less than the
03:59:24 4 concentrations of PAHs in FDA-approved products.

03:59:29 5 Q. Is knowing the toxicity of the products that might come
03:59:32 6 into contact with a worker or the public an important part of
03:59:36 7 the toxicological approach?

03:59:39 8 A. Yes, it is.

03:59:44 9 Q. I see that your next major bullet point says: "Workers:
03:59:48 10 Low-risk."

03:59:49 11 How did you reach that conclusion, sir?

03:59:50 12 A. Okay. So again, the first step I did was to look at the
03:59:53 13 toxicity of oil, then weathered oil, and then was to look at
03:59:56 14 what is the likelihood that people were going to come in
04:00:00 15 contact with oil and have it on them for a long period of time.
04:00:03 16 And PPE -- that stands for personal protective equipment -- was
04:00:08 17 used throughout the cleanup response in the Gulf.

04:00:13 18 And both OSHA, NIOSH, NOAA, the Coast Guard, as well
04:00:21 19 BP had industrial hygienists and trained observers in the
04:00:25 20 field, and they did what they called an Observational Exposure
04:00:31 21 Assessment. So, in other words, they were looking at workers
04:00:33 22 and saying, Is this person using his PPE appropriately, and are
04:00:40 23 we seeing a lot of -- are they seeing a lot of oil on those
04:00:46 24 individuals.

04:00:50 25 Q. Is it problematic if this weathered oil gets on someone's

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04:00:56 1 skin for short periods of time?

04:00:58 2 A. No.

04:00:58 3 Q. A lot of us are used to changing our oil, if we are of a
04:01:04 4 certain age. So how does the motor oil that we might handle in
04:01:07 5 that process compare to this?

04:01:08 6 A. The motor oil actually has more PAHs. It's got a higher
04:01:13 7 content of them.

04:01:14 8 Q. Than this weathered oil that you observed?

04:01:18 9 A. Yes.

04:01:19 10 Q. So we have talked about workers. What about Gulf
04:01:23 11 residents? There is a bullet point here that says that it was
04:01:27 12 your opinion that they were at low risk.

04:01:29 13 A. Right. So what I have talked about so far has been for
04:01:31 14 the workers. The OSAT team, Operational Science Advisory Team
04:01:34 15 for the FOSC, they put together a team of specialists from a
04:01:41 16 variety of different federal agencies. And they did sort of a
04:01:47 17 toxicology risk assessment, mathematical study where they
04:01:50 18 looked at the concentrations of PAHs that were in seawater, the
04:01:55 19 sediments along the coast, and then left on the beach; and they
04:02:03 20 did a modeling and a calculation to see whether or not there
04:02:09 21 was a risk there.

04:02:10 22 And they looked at two scenarios, if I could. One
04:02:14 23 scenario was from a child who was visiting, was on the beach
04:02:20 24 for 90 days. And the other one was for someone growing up and
04:02:25 25 spending their entire lifetime along the beach, swimming and so

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0 4 : 0 2 : 2 9 1 forth.

0 4 : 0 2 : 2 9 2 Q. So this particular analysis that these government

0 4 : 0 2 : 3 2 3 scientists did was focused on the public --

0 4 : 0 2 : 3 5 4 A. Yes.

0 4 : 0 2 : 3 6 5 Q. -- as opposed to workers?

0 4 : 0 2 : 3 7 6 A. Yes.

0 4 : 0 2 : 3 8 7 Q. Have you reviewed their findings and their report?

0 4 : 0 2 : 4 1 8 A. I did.

0 4 : 0 2 : 4 1 9 Q. Have you relied upon that in reaching your opinions?

0 4 : 0 2 : 4 3 10 A. Yes.

0 4 : 0 2 : 4 4 11 Q. Did you find it reliable?

0 4 : 0 2 : 4 5 12 A. Yes.

0 4 : 0 2 : 4 6 13 Q. Can we look, please -- and have you prepared a slide to

0 4 : 0 2 : 4 9 14 illustrate what they concluded in their modeling analysis?

0 4 : 0 2 : 5 2 15 A. I did.

0 4 : 0 2 : 5 2 16 MR. JARRETT: Can we bring up D-35133, please.

0 4 : 0 2 : 5 8 17 BY MR. JARRETT:

0 4 : 0 3 : 0 0 18 Q. Doctor, this is a slide that is a call-out from a

0 4 : 0 3 : 0 4 19 particular TRES number, 12238. Are you familiar with that

0 4 : 0 3 : 0 9 20 document?

0 4 : 0 3 : 1 0 21 A. I am.

0 4 : 0 3 : 1 1 22 Q. You said that this was the report from the OSAT team

0 4 : 0 3 : 1 5 23 issued in February of 2011?

0 4 : 0 3 : 1 7 24 A. Yes.

0 4 : 0 3 : 1 8 25 Q. I think it's called OSAT-2?

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0 4 : 0 3 : 2 1 1 A. That's correct.

0 4 : 0 3 : 2 2 2 Q. Is that right?

0 4 : 0 3 : 2 2 3 A. That's correct.

0 4 : 0 3 : 2 4 4 Q. They did modeling for a child playing on the beach and for
0 4 : 0 3 : 2 9 5 a child swimming?

0 4 : 0 3 : 3 1 6 A. Well, growing up, they're swimming on the beach their
0 4 : 0 3 : 3 4 7 entire life.

0 4 : 0 3 : 3 6 8 Q. And what did these government scientists conclude?

0 4 : 0 3 : 4 0 9 A. They found that the calculated potential cancer and
0 4 : 0 3 : 4 6 10 noncancer health effects from short and long-term exposures
0 4 : 0 3 : 4 9 11 were below the EPA's acceptable health-based risk and hazard
0 4 : 0 3 : 5 5 12 standards.

0 4 : 0 3 : 5 6 13 Q. Just for purposes of clarity, when it's below, is that the
0 4 : 0 3 : 5 9 14 good side or the bad side?

0 4 : 0 4 : 0 1 15 A. That's the good side. The EPA normally considers -- well,
0 4 : 0 4 : 0 5 16 let me just give you an example for cancer -- between 1 and --
0 4 : 0 4 : 1 0 17 1 in 10,000 and 1 in 1 million acceptable. And from what they
0 4 : 0 4 : 1 7 18 said, they were below 1 in 1 million.

0 4 : 0 4 : 2 2 19 Q. Did you also evaluate oral exposures to chemicals?

0 4 : 0 4 : 2 7 20 A. I did.

0 4 : 0 4 : 2 8 21 Let me say that in the OSAT evaluation, they also
0 4 : 0 4 : 3 2 22 considered some ingestion of seawater and sediments that just
0 4 : 0 4 : 3 7 23 might occur accidentally while you were swimming.

0 4 : 0 4 : 4 1 24 Q. In fact, has the director of -- has one of the government
0 4 : 0 4 : 4 6 25 officials spoken on that issue? Did Dr. Howard or Dr. --

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0 4 : 0 4 : 4 9 1 A. Well, Dr. Howard actually said that, once again, drinking
0 4 : 0 4 : 5 4 2 a coffee cup full of oil would not hurt you.

0 4 : 0 5 : 0 1 3 Q. You don't recommend that, do you?

0 4 : 0 5 : 0 3 4 A. As a physician, I can't recommend anybody drinking a cup
0 4 : 0 5 : 0 7 5 of oil.

0 4 : 0 5 : 0 8 6 Q. Well, it is comforting, I get that.

0 4 : 0 5 : 1 1 7 Let's bring up the next slide to talk about your
0 4 : 0 5 : 1 4 8 seafood project.

0 4 : 0 5 : 1 9 9 MR. JARRETT: D-35141.

0 4 : 0 5 : 2 1 10 BY MR. JARRETT:

0 4 : 0 5 : 2 3 11 Q. You will see, Dr. Cox, that this is a document that deals
0 4 : 0 5 : 2 9 12 with consumers -- the title is "Consumers Can Be Confident In
0 4 : 0 5 : 3 5 13 the Safety of Gulf Seafood."

0 4 : 0 5 : 3 9 14 Was that issued by one of the government agencies?

0 4 : 0 5 : 4 2 15 A. That was issued by representatives from NOAA, from the
0 4 : 0 5 : 4 7 16 Food and Drug Administration, and the Louisiana State Health
0 4 : 0 5 : 4 9 17 Officer.

0 4 : 0 5 : 5 1 18 Q. Why did you find this particular quote that we have
0 4 : 0 5 : 5 5 19 highlighted here pertinent to your assignment?

0 4 : 0 5 : 5 8 20 A. Well, just looking at it initially, "Driven by science and
0 4 : 0 6 : 0 2 21 by human health at the highest priority, the extensive sampling
0 4 : 0 6 : 0 6 22 and testing plan allowed areas to open only when every piece of
0 4 : 0 6 : 1 1 23 seafood sampled there passed both sensory and chemical
0 4 : 0 6 : 1 5 24 testing."

0 4 : 0 6 : 1 6 25 Q. From the perspective of a toxicologist -- a medical

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04:06:21 1 toxicologist and a public health officer, is that important to
04:06:25 2 you?

04:06:25 3 A. Yes. It sounds like, once again, they had their
04:06:28 4 priorities in the right place and they did -- there's a lot
04:06:34 5 more that I did with evaluating the seafood safety program;
04:06:40 6 but, yes, that's the end result there.

04:06:41 7 Q. Tell you what else you did. I don't want to cut you off.

04:06:44 8 A. Well, again, I looked at how they were closing areas to
04:06:47 9 fishing, what their protocols were for opening the areas to
04:06:50 10 fishing, and then I also looked at the data the FDA and some of
04:06:55 11 the states had.

04:06:56 12 And I will say that on this last state here, "The
04:06:57 13 results of the tests" -- and all of these were publicly
04:07:01 14 available -- "should help Americans to buy seafood with
04:07:04 15 confidence. The seafood has consistently tested 100 to
04:07:05 16 1,000 times lower than the safety thresholds established by FDA
04:07:10 17 for residues of oil contamination." That's for the PAHs.

04:07:16 18 They have also found that -- they had a -- they
04:07:19 19 developed a test for dispersants and found that that was --
04:07:22 20 even when it was detected, it was a thousand times below the
04:07:26 21 benchmark.

04:07:27 22 Q. Here, if the seafood is testing 100 to 1,000 times lower
04:07:33 23 than the safety threshold, what order of magnitude is that,
04:07:35 24 sir?

04:07:36 25 A. Two to three orders of magnitude.

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04:07:39 1 Q. And did the FDA speak on its ultimate conclusion on this?

04:07:45 2 A. Yes.

04:07:46 3 Q. Have you prepared a slide to point that out?

04:07:48 4 A. Yes.

04:07:49 5 MR. JARRETT: Can you bring up D-35137.

04:07:52 6 THE WITNESS: Yes, this was a statement from Michael
04:07:55 7 Taylor, the deputy commissioner of foods for the Food and Drug
04:07:59 8 Administration. And he said, "Is seafood safe to eat? Yes,
04:08:05 9 it's safe to eat and it's safe for everyone to eat."

04:08:09 10 Q. Did your review of these materials and data allow you to
04:08:13 11 reach opinions concerning the oral exposures to citizens as a
04:08:16 12 result of the Gulf spill?

04:08:18 13 A. It did.

04:08:19 14 Q. Have we prepared a slide that outlines your ultimate
04:08:23 15 conclusions of both dermal and oral exposures?

04:08:28 16 A. Yes.

04:08:28 17 MR. JARRETT: Can we bring up D-35146.

04:08:29 18 BY MR. JARRETT:

04:08:30 19 Q. Dr. Cox, can you explain your ultimate conclusions about
04:08:33 20 dermal and oral exposures that you found in your work.

04:08:37 21 A. Right. First of all, the potential for significant dermal
04:08:41 22 exposures for cleanup workers was small and highly unlikely to
04:08:47 23 result in any significant adverse health effects. Once again,
04:08:50 24 because -- first of all, it was small because of the use of
04:08:54 25 personal protective equipment, and then also that the toxicity

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04:08:56 1 of the weathered oil to begin with was not high.

04:08:59 2 Q. The prospect -- and "dermal exposure," I'm assuming, also
04:09:04 3 relates -- has a temporal component, does it not?

04:09:07 4 A. Yes. It's not just being exposed for a short amount of
04:09:11 5 time; it's having oil on one's self for a long time.

04:09:14 6 Q. Did you see in any of your analysis or review of materials
04:09:16 7 that that occurred?

04:09:17 8 A. No. And that is, I should say, very different than some
04:09:22 9 of the literature on other oil spills in other places where
04:09:28 10 there was a high percentage of individuals that had oil, they
04:09:31 11 just said, at the end of the day, caked on their hands and
04:09:35 12 their face.

04:09:36 13 Q. What about your second opinion, sir, about what exposure
04:09:44 14 Gulf Coast residents faced?

04:09:46 15 A. I feel that the potential for significant dermal exposure
04:09:51 16 for Gulf Coast residents was small to nonexistent.

04:09:55 17 Q. Again, was this a result of the factor of the low toxicity
04:09:58 18 of the weathered oil?

04:09:59 19 A. That, and the OSAT evaluation.

04:10:02 20 Q. What about on seafood, sir? What was your ultimate
04:10:08 21 conclusion about that?

04:10:08 22 A. I felt that their safety program was very effective and
04:10:11 23 felt that it was sufficient to protect public health.

04:10:15 24 Q. Dr. Cox, to wrap up on this whole subject of exposure, are
04:10:17 25 you aware of any significant actual harm caused by exposures to

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04:10:22 1 chemicals associated with either the oil or the dispersants
04:10:25 2 that were used in the *Deepwater Horizon* spill?

04:10:28 3 A. No.

04:10:29 4 Q. Are you aware of any federal or state agencies that have
04:10:32 5 concluded that there was significant actual harm caused by
04:10:35 6 exposure to those chemicals?

04:10:37 7 A. No.

04:10:38 8 Q. Okay. I think we have covered your exposure analysis.
04:10:42 9 Have we not?

04:10:43 10 A. Yes.

04:10:44 11 Q. Let's change subjects completely and now go to another of
04:10:48 12 your opinions, essentially your evaluation of the effectiveness
04:10:53 13 of mitigation efforts. Have you prepared a slide to talk about
04:10:58 14 that?

04:10:58 15 A. I have.

04:10:59 16 MR. JARRETT: Can we bring up D-35102.2.

04:11:06 17 BY MR. JARRETT:

04:11:07 18 Q. Doctor, from the perspective of public health, have you
04:11:10 19 looked into the efforts that BP undertook after the spill to
04:11:15 20 mitigate adverse human health impacts?

04:11:17 21 A. Yes.

04:11:18 22 Q. Have you evaluated the effectiveness of those efforts?

04:11:21 23 A. Yes. Let me say with that, I wasn't there. I wasn't out
04:11:25 24 there looking at how things went. This is from my evaluation
04:11:29 25 of basically government documents and what I could find on the

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04:11:34 1 subject.

04:11:35 2 Q. That's a good point. Let's go into that a little bit.

04:11:38 3 And have you prepared a slide that talks about your
04:11:41 4 process in making that assessment?

04:11:42 5 A. Yes.

04:11:43 6 MR. JARRETT: Can we bring up D-35118.

04:11:46 7 BY MR. JARRETT:

04:11:52 8 Q. Before we go into what you observed as shown on this
04:11:56 9 slide, can you tell us what your source of information was that
04:11:59 10 allowed you to reach conclusions on this subject about
04:12:02 11 mitigation.

04:12:04 12 A. Well, again, my source was government documents, primarily
04:12:07 13 those from OSHA, NIOSH, and the Federal On-Scene Coordinator.

04:12:16 14 Q. Was there sufficient government information to allow you
04:12:19 15 to make an assessment on this subject?

04:12:22 16 A. I feel that there was.

04:12:23 17 Q. Was the information that you reviewed reliable?

04:12:26 18 A. I feel that it was. Once again, I felt that it was
04:12:29 19 important that it was all consistent. They weren't disagreeing
04:12:33 20 with one another.

04:12:34 21 Q. Well, the Court has heard testimony this morning from
04:12:39 22 Captain Paskewich, who talked about the extent of the efforts
04:12:42 23 undertaken to mitigate harm. He talked about monitoring for
04:12:46 24 health impacts and for training cleanup workers and for
04:12:51 25 providing PPE for those cleanup workers, but I don't think he

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0 4 : 1 2 : 5 5 1 talked about this comprehensive heat stress plan that's shown
0 4 : 1 3 : 0 1 2 on your slide.

0 4 : 1 3 : 0 4 3 Why was that significant for you?

0 4 : 1 3 : 0 4 4 A. Well, fairly early on in the response, it became evident
0 4 : 1 3 : 0 8 5 to all of the people who were looking out for the workers'
0 4 : 1 3 : 1 2 6 safety that chemical exposures were not the primary health
0 4 : 1 3 : 1 7 7 concern; it was heat exposure. So they had to sort of
0 4 : 1 3 : 2 0 8 backtrack and change early on and do things in an attempt to
0 4 : 1 3 : 2 7 9 mitigate the heat exposures.

0 4 : 1 3 : 3 1 10 Q. And the conclusion that heat exposure, not chemical
0 4 : 1 3 : 3 4 11 exposure, was the greatest risk to workers, who made that
0 4 : 1 3 : 4 0 12 observation?

0 4 : 1 3 : 4 1 13 A. That was by OSHA and NIOSH.

0 4 : 1 3 : 4 3 14 Q. Did those agencies evaluate that very exposure and reach
0 4 : 1 3 : 4 7 15 conclusions on it?

0 4 : 1 3 : 4 7 16 A. Yes, they did. OSHA said that they didn't have a heat
0 4 : 1 3 : 5 1 17 stress program of their own, so I guess the FOSC took one from
0 4 : 1 3 : 5 5 18 the Coast Guard, I think.

0 4 : 1 3 : 5 7 19 Q. And do the results of the analysis of those data lead you
0 4 : 1 4 : 0 2 20 to a conclusion about the effectiveness of those mitigation
0 4 : 1 4 : 0 5 21 efforts?

0 4 : 1 4 : 0 5 22 A. Yes, it does.

0 4 : 1 4 : 0 7 23 Q. What was your conclusion about the effectiveness of these
0 4 : 1 4 : 1 2 24 mitigation efforts directed to the human health effects?

0 4 : 1 4 : 1 5 25 A. I felt that, first of all, BP worked cooperatively and

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04:14:20 1 successfully. I didn't see information in there that they were
04:14:25 2 arguing and BP said, no, I didn't want to do this. The whole
04:14:29 3 thing sounded very cooperative, but I also feel that it was
04:14:34 4 successful in minimizing adverse health effects to the workers.

04:14:40 5 **MR. JARRETT:** Can we bring up TREX-12020.

04:14:43 6 **BY MR. JARRETT:**

04:14:47 7 **Q.** Dr. Cox, are you familiar with this document?

04:14:50 8 **A.** Yes.

04:14:50 9 **Q.** I think a portion of this was used last week with
04:14:53 10 Dr. Clapp. What are the data that are in this document?

04:14:58 11 **A.** This is one of the logs that BP provided to OSHA for
04:15:08 12 worker injuries.

04:15:09 13 **Q.** It says the subject is HS&E. Do you understand what that
04:15:16 14 means?

04:15:16 15 **A.** No, I'm afraid I --

04:15:17 16 **Q.** If that's Health, Safety, and the Environment, would that
04:15:20 17 remind you of what that stands for?

04:15:22 18 **A.** Yes, thank you.

04:15:23 19 **Q.** These are statistics that BP provided to OSHA?

04:15:26 20 **A.** Yes.

04:15:27 21 **MR. JARRETT:** Can we go to 12020.4.

04:15:31 22 **BY MR. JARRETT:**

04:15:33 23 **Q.** Dr. Clapp (verbatim), what is this table of data that we
04:15:36 24 are looking at here?

04:15:38 25 **A.** Cox.

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04:15:38 1 Q. I'm sorry. We are going to talk about Dr. Clapp.

04:15:42 2 Dr. Cox, tell me what this table of data is.

04:15:44 3 A. Yes. This is a table of data that was reported to OSHA
04:15:50 4 from BP on their recordable injury and illness data.

04:15:59 5 Q. It looks like it presents data over an eight-month period,
04:16:02 6 from April through December; is that right?

04:16:06 7 A. It does.

04:16:07 8 Q. What is this --

04:16:07 9 MR. JARRETT: Can we zoom in on this box called
04:16:10 10 "Incidents to Date"? Maybe, Donnie, can you see that, what I'm
04:16:16 11 talking about there? Yeah, that box there. Thank you.

04:16:19 12 BY MR. JARRETT:

04:16:19 13 Q. What is meaningful -- do you see that number 5986 down
04:16:26 14 there, Doctor?

04:16:28 15 A. I do.

04:16:28 16 Q. Is that a meaningful number to you?

04:16:31 17 A. Well, yes. Normally, OSHA reportable cases are only those
04:16:36 18 that require medical treatment beyond first aid and those that
04:16:42 19 result in time away from work or restricted work. But in this
04:16:47 20 situation, OSHA was more stringent with BP's reporting and
04:16:52 21 said, we also want to know all the first aid cases. And so
04:16:56 22 this number, 5986, these are all the OSHA reportable cases plus
04:17:03 23 the first aid cases.

04:17:06 24 If you look at -- if you were to add up this amount
04:17:10 25 here, those are the typical OSHA reportable cases. I think

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04:17:16 1 there was 920 when you add all those up.

04:17:19 2 Q. 920 cases that required more than first aid?

04:17:22 3 A. No. 920 that required either medical treatment more than
04:17:28 4 first aid or days away from work or restricted work.

04:17:33 5 Q. Resulted in time off or medical treatment?

04:17:34 6 A. Yes.

04:17:35 7 Q. Or restricted duty?

04:17:37 8 A. Yes.

04:17:38 9 Q. And in connection with the scope of the spill response,
04:17:43 10 did you find this rate of reportable OSHA events meaningful?

04:17:49 11 A. Yes. Looking at the magnitude and the scope of the
04:17:55 12 response, the type of work that was done in the response, I
04:17:59 13 find this an incredibly low number.

04:18:02 14 Even if you look at the medical cases right here, we
04:18:05 15 are talking about 576 cases that required treatment beyond
04:18:11 16 first aid. Again, I -- just looking at -- I think I read
04:18:16 17 somewhere that there were 70 million worker hours for the
04:18:25 18 entire worker response. That large of a number -- at the
04:18:31 19 maximum week, there were 46,000 workers in one week; and to end
04:18:36 20 up with this low of a number, I find that very significant.

04:18:40 21 MR. JARRETT: Donnie, can you zoom out back to the
04:18:40 22 main document, please.

04:18:40 23 BY MR. JARRETT:

04:18:46 24 Q. Can you clear those marks, Dr. Cox?

04:18:48 25 A. I'm sorry. That's me.

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04:18:49 1 Q. Is there information on this form that actually talks
04:18:52 2 about the rate of injury and illness?

04:18:54 3 A. Yes. If you look at this box right here.

04:18:57 4 MR. JARRETT: Donnie, can you zoom in on that box for
04:18:59 5 us, please.

04:19:00 6 BY MR. JARRETT:

04:19:03 7 Q. What does that box depict?

04:19:04 8 A. Yes. This is the total incident rate that -- this is the
04:19:10 9 standard calculation that OSHA requires for this; and it's, I
04:19:15 10 believe, the number of injuries and illnesses for
04:19:20 11 OSHA-reportable cases for 200 workers in a year -- I'm sorry, a
04:19:29 12 thousand workers in a year.

04:19:34 13 Q. Well, significantly, how does the rate here compare with
04:19:39 14 your experience in public health?

04:19:41 15 A. Right. The rate here, 3.14, is below the national average
04:19:48 16 for all workers in the United States that in 2010 was 3.5.

04:19:53 17 Q. Your conclusion that the rate of injury for response
04:19:56 18 workers was low compared to the national average, is that a
04:19:59 19 view or opinion that's held by other government officials?

04:20:04 20 A. Yes, it is.

04:20:05 21 MR. JARRETT: Can we bring up D-35139-A.

04:20:12 22 Oops, so sorry, I gave you the wrong number. We
04:20:15 23 will come to that in a minute.

04:20:16 24 Can you bring up D-35144. Thank you, Donnie.

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04:20:20 1 BY MR. JARRETT:

04:20:22 2 Q. Doctor, what is the document that we are looking at here?

04:20:25 3 A. Yes, this is a document that was published by the
04:20:28 4 directors of NIOSH and OSHA, the two primary occupational
04:20:36 5 agencies in the country.

04:20:37 6 Q. Do you know the date of this document?

04:20:39 7 A. I'm trying to read it. I think it's July 2012.

04:20:46 8 Q. What did the directors of OSHA and NIOSH conclude with
04:20:51 9 regard to the rate of injury on this response effort?

04:20:55 10 A. Well, they stated in one place that OSHA believes this
04:21:01 11 contributed to a low rate of injury and illness amongst cleanup
04:21:05 12 workers. And in another place they stated that there were no
04:21:09 13 worker fatalities and very few injuries and illnesses.

04:21:16 14 Q. In an undertaking like this with 46,000 people working
04:21:19 15 outdoor in the middle of summer, surely there were some
04:21:22 16 injuries and illnesses.

04:21:25 17 A. Yes, there were. It was brought to my attention that, you
04:21:28 18 know, in this there were several people that had broken bones
04:21:34 19 and had fingers cut off. There were no fatalities.

04:21:41 20 Q. Nonetheless --

04:21:42 21 THE COURT: Could I ask him a question just so I'm
04:21:44 22 understanding?

04:21:44 23 MR. JARRETT: Yes.

04:21:44 24 THE COURT: Your bottom line here, are you saying
04:21:47 25 that no one had any adverse effects at all from exposure to oil

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0 4 : 2 1 : 5 5 1 or chemicals; or are you saying that they weren't significant,
0 4 : 2 1 : 5 8 2 in your opinion, or long term?

0 4 : 2 2 : 0 1 3 THE WITNESS: The latter, that they were not
0 4 : 2 2 : 0 3 4 significant or long term. But this is also -- what we are
0 4 : 2 2 : 0 5 5 talking about here also is regarding injuries.

0 4 : 2 2 : 0 9 6 THE COURT: No. I understand that.

0 4 : 2 2 : 1 0 7 THE WITNESS: Okay. Okay.

0 4 : 2 2 : 1 1 8 THE COURT: It's beyond this, and it could be heat
0 4 : 2 2 : 1 3 9 related, it could be somebody fell and injured themselves or
0 4 : 2 2 : 1 7 10 whatever.

0 4 : 2 2 : 1 7 11 THE WITNESS: Yes.

0 4 : 2 2 : 1 9 12 THE COURT: Cut their fingers.

0 4 : 2 2 : 2 0 13 THE WITNESS: Yes. It's hard to say. Again, some
0 4 : 2 2 : 2 4 14 things you can be exposed to and you will get what we call
0 4 : 2 2 : 2 6 15 irritant symptoms; your eyes burn, your nose runs a little bit,
0 4 : 2 2 : 3 1 16 you might have a cough. Those are short term; they are not
0 4 : 2 2 : 3 5 17 significant illnesses. But, again, they are also very
0 4 : 2 2 : 3 7 18 nonspecific, and we can't say what they are coming from.

0 4 : 2 2 : 4 2 19 THE COURT: Well, I think you gave an example. You
0 4 : 2 2 : 4 9 20 walked into a smoke-filled room. Your eyes start watering.
0 4 : 2 2 : 5 3 21 Mine does like yours. You pretty much know it's from the
0 4 : 2 2 : 5 8 22 smoke.

0 4 : 2 2 : 5 8 23 THE WITNESS: Right.

0 4 : 2 2 : 5 9 24 THE COURT: You don't need a medical test to tell you
0 4 : 2 3 : 0 2 25 that, right?

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0 4 : 2 3 : 0 2 1 THE WITNESS: Right.

0 4 : 2 3 : 0 2 2 THE COURT: So I understand that -- well, go ahead.

0 4 : 2 3 : 0 5 3 BY MR. JARRETT:

0 4 : 2 3 : 0 6 4 Q. To pick up on what the judge was asking you, Dr. Cox, is
0 4 : 2 3 : 1 1 5 it fair to say that the reason you can't rule out anybody
0 4 : 2 3 : 1 4 6 having any exposure-related problem is because you didn't
0 4 : 2 3 : 1 7 7 examine the individuals involved?

0 4 : 2 3 : 1 9 8 A. Yes, that's one portion of it.

0 4 : 2 3 : 2 2 9 THE WITNESS: Another, Your Honor, is that, yes,
0 4 : 2 3 : 2 5 10 someone might get on a boat and they have those things. We
0 4 : 2 3 : 3 0 11 don't know if it's allergies, they've got a cold that day, it's
0 4 : 2 3 : 3 4 12 from exhaust from the engines on the boat. We don't know.
0 4 : 2 3 : 3 8 13 But, again, none of those are significant health effects that
0 4 : 2 3 : 4 3 14 are going to create some sort of long-lasting illness.

0 4 : 2 3 : 4 7 15 THE COURT: You have answered my question, my primary
0 4 : 2 3 : 5 0 16 question.

0 4 : 2 3 : 5 1 17 BY MR. JARRETT:

0 4 : 2 3 : 5 2 18 Q. The last part of that, the comforting part of that whole
0 4 : 2 3 : 5 5 19 story is that your exposure analysis suggests that anyone who
0 4 : 2 3 : 5 9 20 did have such symptoms doesn't have a risk going forward. Is
0 4 : 2 4 : 0 2 21 that what your conclusion was?

0 4 : 2 4 : 0 3 22 A. I'm sorry, repeat that last one.

0 4 : 2 4 : 0 6 23 Q. Sure. If there were people who had those kind of irritant
0 4 : 2 4 : 0 9 24 exposures, based on your analogy of toxicological risk
0 4 : 2 4 : 1 3 25 assessment, are you comfortable advising them that they do not

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0 4 : 2 4 : 1 6 1 face any long-term health effects from that exposure?

0 4 : 2 4 : 2 2 2 A. I am.

0 4 : 2 4 : 3 1 3 Q. Let me just wrap up, I think, this whole discussion. We
0 4 : 2 4 : 3 6 4 talked about exposure-related stuff earlier. Now we just
0 4 : 2 4 : 4 3 5 talked about the rate of ordinary illnesses and accidents or
0 4 : 2 4 : 4 7 6 injuries on this response.

0 4 : 2 4 : 4 8 7 Are your conclusions about the low rate and -- the
0 4 : 2 4 : 5 1 8 safety record and the low rate of injury held by government
0 4 : 2 4 : 5 5 9 officials?

0 4 : 2 4 : 5 5 10 A. Yes.

0 4 : 2 4 : 5 6 11 MR. JARRETT: Can we bring up slide D-35139-A.

0 4 : 2 5 : 0 6 12 BY MR. JARRETT:

0 4 : 2 5 : 0 7 13 Q. Doctor, this is a slide much like the one we reviewed
0 4 : 2 5 : 1 0 14 earlier today. Is this a collection of conclusions from
0 4 : 2 5 : 1 6 15 various government agencies who did look into the safety record
0 4 : 2 5 : 1 9 16 of this spill response?

0 4 : 2 5 : 2 1 17 A. Yes, from OSHA, NIOSH, and the Federal On-Scene
0 4 : 2 5 : 2 3 18 Coordinator.

0 4 : 2 5 : 2 5 19 Q. Again, have you looked at their findings and their
0 4 : 2 5 : 2 8 20 reports?

0 4 : 2 5 : 2 9 21 A. I have.

0 4 : 2 5 : 3 0 22 Q. Do you have particular -- is there a particular quote here
0 4 : 2 5 : 3 7 23 that you want to call to our attention?

0 4 : 2 5 : 3 9 24 A. Yes.

0 4 : 2 5 : 4 1 25 Q. I think you had mentioned heat earlier as being the major

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0 4 : 2 5 : 4 5 1 exposure risk faced by these workers. Is that your opinion?

0 4 : 2 5 : 4 9 2 A. That's correct. And there were heat-related illnesses.

0 4 : 2 5 : 5 4 3 They weren't severe heat-related illnesses and anything that
0 4 : 2 5 : 5 9 4 should result in any long-term health effects.

0 4 : 2 6 : 0 2 5 Q. Was that addressed by some of the agencies and that
0 4 : 2 6 : 0 6 6 observed or commented upon?

0 4 : 2 6 : 0 7 7 A. It was. It was addressed by -- excuse me, by the
0 4 : 2 6 : 1 0 8 directors of OSHA and NIOSH.

0 4 : 2 6 : 1 4 9 Q. Do the conclusions that we see on this page, the various
0 4 : 2 6 : 1 6 10 conclusions, include those from NIOSH and OSHA?

0 4 : 2 6 : 1 9 11 A. Yes.

0 4 : 2 6 : 2 1 12 Q. Dr. Paskewich testified earlier today as to the important
0 4 : 2 6 : 2 5 13 role of the FOSC, the Federal On-Scene Coordinator. Did that
0 4 : 2 6 : 3 1 14 individual government official address this subject?

0 4 : 2 6 : 3 3 15 A. Yes.

0 4 : 2 6 : 3 4 16 Q. Did he address the effectiveness of the health and safety
0 4 : 2 6 : 3 8 17 mitigation efforts?

0 4 : 2 6 : 3 9 18 A. Yes.

0 4 : 2 6 : 4 0 19 Q. Is there a slide here that addresses itself both to this
0 4 : 2 6 : 4 4 20 heat exposure issue that you had?

0 4 : 2 6 : 4 7 21 A. Yes.

0 4 : 2 6 : 4 7 22 **MR. JARRETT:** Can we bring up D-35139.4.

0 4 : 2 6 : 5 6 23 **THE WITNESS:** This, again, is from the document
0 4 : 2 6 : 5 8 24 written by the directors of NIOSH and OSHA, Your Honor. Once
0 4 : 2 7 : 0 4 25 again, as I already said, they said that the most serious

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04:27:07 1 health hazard faced by the response and cleanup workers was
04:27:11 2 heat. However, they said no workers involved in the cleanup
04:27:19 3 response developed serious heat illness.

04:27:20 4 **BY MR. JARRETT:**

04:27:22 5 **Q.** I think you have seen notations that some workers had to
04:27:24 6 have IVs and the like. Does that alter your view about whether
04:27:29 7 there were serious effects from the spill, heat effects?

04:27:31 8 **A.** No. Once again, as an emergency physician, I treat heat
04:27:37 9 illness all the time, living in Mississippi. And, yes,
04:27:41 10 sometimes people develop a degree of heat illness, some
04:27:44 11 dehydration. We give them a liter or two of IV fluids, and
04:27:50 12 they are better. And there should be no long-lasting health
04:27:54 13 effects from that.

04:27:56 14 **Q.** Dr. Cox, did you find any of the conclusions of the
04:28:01 15 Federal On-Scene Coordinator to be particularly pertinent to
04:28:04 16 the topic we are talking about here?

04:28:05 17 **A.** Yes.

04:28:06 18 **Q.** Did you prepare a slide to call out that language?

04:28:09 19 **A.** I did.

04:28:10 20 **MR. JARRETT:** Can we bring up 35139.2, please.

04:28:14 21 **BY MR. JARRETT:**

04:28:17 22 **Q.** Doctor, can you read into the record here and tell us
04:28:20 23 whether the Federal On-Scene Coordinator agrees or disagrees
04:28:24 24 with your conclusion.

04:28:25 25 **A.** Well, I agree with his conclusions. He said that health

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0 4 : 2 8 : 2 8 1 and safety was the number one strategic goal throughout the
0 4 : 2 8 : 3 1 2 response and felt that in the end, it was reflected in the
0 4 : 2 8 : 3 5 3 efforts they made to address potential public health impacts of
0 4 : 2 8 : 3 9 4 the spill, and also the -- they called it a remarkably low
0 4 : 2 8 : 4 4 5 injury rate for the responders of the operation.

0 4 : 2 8 : 4 8 6 **Q.** Is this statement from the Federal On-Scene Coordinator
0 4 : 2 8 : 5 0 7 consistent with the opinions you reached based on your
0 4 : 2 8 : 5 4 8 independent evaluation as to the relative degree of success of
0 4 : 2 8 : 5 8 9 the mitigation efforts that were undertaken to protect workers
0 4 : 2 9 : 0 3 10 and the public?

0 4 : 2 9 : 0 4 11 **A.** It is.

0 4 : 2 9 : 0 7 12 **MR. JARRETT:** Your Honor, I think that concludes my
0 4 : 2 9 : 1 0 13 direct, and I will tender Dr. Cox for cross.

0 4 : 2 9 : 1 7 14 **THE COURT:** All right. Very well.

0 4 : 2 9 : 2 0 15 **THE WITNESS:** Your Honor, may I just stand up for
0 4 : 2 9 : 2 3 16 just a second?

0 4 : 2 9 : 2 4 17 **THE COURT:** Sure. Go ahead.

0 4 : 2 9 : 3 9 18 **MS. PENCAK:** Good afternoon, Your Honor. Erica
0 4 : 2 9 : 4 1 19 Pencak for the United States. May I proceed with my
0 4 : 2 9 : 4 2 20 cross-examination?

0 4 : 2 9 : 4 2 21 **THE COURT:** Sure.

CROSS-EXAMINATION

0 4 : 2 9 : 4 5 22 **BY MS. PENCAK:**

0 4 : 2 9 : 4 6 23 **Q.** Good afternoon, Dr. Cox. I'm Erica Pencak. We met at
0 4 : 2 9 : 4 8 24 your deposition; is that correct?
25

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04:29:49 1 A. Good afternoon.

04:29:49 2 Q. Dr. Cox, you testified on direct that you found no
04:29:52 3 compelling evidence for significant exposure-related adverse
04:29:56 4 health effects to cleanup workers or Gulf Coast residents as a
04:29:59 5 result of the spill; is that correct?

04:30:01 6 A. That's correct.

04:30:01 7 Q. But you would agree that there were significant
04:30:04 8 nonexposure-related adverse health effects of the spill,
04:30:07 9 wouldn't you?

04:30:08 10 A. Yes. As we mentioned, that there were some injuries that
04:30:11 11 I do feel were significant.

04:30:14 12 Q. Dr. Cox, you reviewed BP's Medical Encounters Database,
04:30:17 13 correct?

04:30:19 14 A. I did.

04:30:21 15 Q. In fact, you cited to that database in your August 15
04:30:24 16 report, didn't you?

04:30:24 17 A. Yes.

04:30:25 18 Q. And you noted in your report that the Medical Encounters
04:30:27 19 Database is a register of visits to health clinics that were
04:30:32 20 set up at various sites throughout the response area, correct?

04:30:37 21 A. Yes.

04:30:38 22 Q. Isn't it true that you counted 2,109 visits to those
04:30:42 23 clinics for suspected heat-related illnesses?

04:30:46 24 A. Yes. And, again, those were -- the large BP Medical
04:30:52 25 Encounters Database was a little bit unclear. Some of those

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04:30:57 1 were work related and some of those were not work related.
04:31:01 2 Apparently they had some people just coming in from the
04:31:05 3 community, and so not all of those were considered work
04:31:07 4 related.
04:31:08 5 Q. But you can filter the BP Medical Encounters Database to
04:31:12 6 only show the entries that were determined to be occupational,
04:31:15 7 right?
04:31:17 8 A. Possibly.
04:31:18 9 Q. Did you do that in your work in this case?
04:31:20 10 A. I tried to do that, yes. Once again, it wasn't real clear
04:31:25 11 in a lot of the cases.
04:31:32 12 Q. There's not a column in the Medical Encounters Database
04:31:34 13 that says, Was this injury or illness determined to be
04:31:40 14 occupational?
04:31:41 15 A. There was one that said work related.
04:31:44 16 Q. There isn't one that says occupational?
04:31:49 17 A. I would have to look at it. I don't recall. I do recall
04:31:52 18 something that said work related.
04:31:55 19 Q. We will come back to that.
04:31:56 20 Dr. Cox, you noted in your report that 370 of the
04:32:05 21 visits to the clinic that you counted for suspected
04:32:09 22 heat-related illnesses resulted in further care or time off of
04:32:13 23 work, correct?
04:32:14 24 A. Yes.
04:32:16 25 Q. Dr. Cox, isn't it true that there are approximately

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0 4 : 3 2 : 1 8 1 750 entries in the Medical Encounters Database where a person
0 4 : 3 2 : 2 4 2 visited one of those on-site clinics complaining of nausea or
0 4 : 3 2 : 2 9 3 stomach pain, and the illness was deemed to be occupational?

0 4 : 3 2 : 3 5 4 A. Do we have a copy of my final report I could look at? I
0 4 : 3 2 : 4 1 5 don't have those numbers memorized.

0 4 : 3 2 : 4 3 6 THE COURT: Here you go.

0 4 : 3 2 : 4 4 7 THE WITNESS: Thank you, sir.

0 4 : 3 2 : 4 4 8 What page are we on, please?

0 4 : 3 2 : 4 6 9 BY MS. PENCAK:

0 4 : 3 2 : 4 7 10 Q. Dr. Cox, I will represent to you that you did not, in your
0 4 : 3 2 : 5 0 11 reports, count the number of headaches that were deemed to be
0 4 : 3 2 : 5 5 12 occupational that are in the Medical Encounters Database.

0 4 : 3 3 : 0 0 13 A. Okay.

0 4 : 3 3 : 0 0 14 MS. PENCAK: Actually, if we could just bring that up
0 4 : 3 3 : 0 1 15 for a second. Charles, could you bring up 230437NR, please.

0 4 : 3 3 : 1 3 16 I'm sorry, I got the TREX number wrong. It's
0 4 : 3 3 : 1 4 17 TREX-230479NR. Charles, could you please scroll over to column
0 4 : 3 3 : 2 2 18 AJ.

0 4 : 3 3 : 2 8 19 BY MS. PENCAK:

0 4 : 3 3 : 3 4 20 Q. Dr. Cox, do you see where it says, "Was this determined to
0 4 : 3 3 : 3 9 21 be an occupational injury or illness?" And you see the answers
0 4 : 3 3 : 4 4 22 are yes or no?

0 4 : 3 3 : 4 6 23 A. Yes.

0 4 : 3 3 : 4 7 24 Q. Dr. Cox, I will represent to you that if you filter the
0 4 : 3 3 : 5 0 25 Medical Encounters Database to only show occupational illnesses

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0 4 : 3 3 : 5 4 1 and injuries and search for words and phrases describing nausea
0 4 : 3 3 : 5 8 2 and then make some attempt to de-duplicate, you get
0 4 : 3 4 : 0 3 3 approximately 750 entries for nausea and stomach pain.

0 4 : 3 4 : 0 9 4 But you didn't report that in your expert reports,
0 4 : 3 4 : 1 3 5 did you?

0 4 : 3 4 : 1 4 6 **MR. JARRETT:** Objection to foundation, Your Honor, it
0 4 : 3 4 : 1 6 7 hasn't been established through a witness.

0 4 : 3 4 : 1 8 8 **THE COURT:** Well, she's asking him if he -- I mean, I
0 4 : 3 4 : 2 2 9 think it's a fair question. The witness can respond.

0 4 : 3 4 : 2 6 10 **THE WITNESS:** Could you repeat the question, please?

0 4 : 3 4 : 2 9 11 **THE COURT:** I think she's asking you whether you
0 4 : 3 4 : 3 1 12 noted those statistics in your report anywhere.

0 4 : 3 4 : 3 4 13 **THE WITNESS:** No, I didn't look specifically at those
0 4 : 3 4 : 3 7 14 types of symptoms.

0 4 : 3 4 : 4 0 15 **BY MS. PENCAK:**

0 4 : 3 4 : 4 0 16 **Q.** Dr. Cox, you stated in your reports that the crude oil
0 4 : 3 4 : 4 6 17 released during the *Deepwater Horizon* oil spill contained BTEX
0 4 : 3 4 : 5 2 18 compounds, didn't it?

0 4 : 3 4 : 5 3 19 **A.** Yes.

0 4 : 3 4 : 5 4 20 **Q.** And I believe you stated on direct that BTEX stands for
0 4 : 3 4 : 5 8 21 benzene, toluene, ethylbenzene, and xylene. Correct?

0 4 : 3 4 : 5 9 22 **A.** Yes.

0 4 : 3 5 : 0 1 23 **Q.** Dr. Cox, in your reports, you cited an entry from the
0 4 : 3 5 : 0 5 24 *NIOSH Pocket Guide to Chemical Hazards*, didn't you?

0 4 : 3 5 : 0 7 25 **A.** Yes.

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0 4 : 3 5 : 0 8 1 Q. NIOSH in this instance stands for the National Institute
0 4 : 3 5 : 1 2 2 of Occupational Safety and Health, right?

0 4 : 3 5 : 1 3 3 A. Yes.

0 4 : 3 5 : 1 3 4 Q. The *NIOSH Pocket Guide to Chemical Hazards* is a source of
0 4 : 3 5 : 1 7 5 industrial hygiene information for several hundred chemicals,
0 4 : 3 5 : 1 9 6 correct?

0 4 : 3 5 : 2 0 7 A. Yes.

0 4 : 3 5 : 2 0 8 Q. According to the *NIOSH Pocket Guide to Chemical Hazards*,
0 4 : 3 5 : 2 2 9 one of the symptoms of exposure to benzene is nausea, isn't it?

0 4 : 3 5 : 2 8 10 A. Yes, but let me -- when you look at that, those pocket
0 4 : 3 5 : 3 7 11 guides, you are primarily looking at exposures to either pure
0 4 : 3 5 : 3 9 12 benzene or high concentrations of benzene. You cannot take
0 4 : 3 5 : 4 3 13 that and say that's applicable to the extremely low levels, if
0 4 : 3 5 : 5 0 14 there were levels at all, in this situation.

0 4 : 3 5 : 5 3 15 Q. Dr. Cox, the crude oil released during the
0 4 : 3 5 : 5 7 16 *Deepwater Horizon* oil spill contained hexene, didn't it?

0 4 : 3 6 : 0 0 17 A. Yes.

0 4 : 3 6 : 0 0 18 Q. According to the *NIOSH Pocket Guide to Chemical Hazards*,
0 4 : 3 6 : 0 2 19 one of the symptoms of exposure to hexene is nausea, isn't it?

0 4 : 3 6 : 1 0 20 A. You will find nausea with just about exposure to high
0 4 : 3 6 : 1 4 21 concentrations of any chemical, as well as just about any drug
0 4 : 3 6 : 1 7 22 that we have. We have something called the *Physicians Desk*
0 4 : 3 6 : 2 0 23 *Reference*. You look up any drug, nausea is almost the
0 4 : 3 6 : 2 3 24 number one side effect from any medication.

0 4 : 3 6 : 2 6 25 Q. Nausea is a symptom of exposure to hexane as reported in

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0 4 : 3 6 : 3 1 1 the *NIOSH Pocket Guide to Chemical Hazards*, correct?

0 4 : 3 6 : 3 4 2 A. Once again, not from trace levels of hexane that are
0 4 : 3 6 : 3 9 3 present in the environment right now. We are talking about
0 4 : 3 6 : 4 1 4 more concentrated levels of hexane.

0 4 : 3 6 : 4 5 5 Q. Dr. Cox, the crude oil released during the
0 4 : 3 6 : 4 7 6 *Deepwater Horizon* oil spill contained polycyclic aromatic
0 4 : 3 6 : 5 0 7 hydrocarbons, or PAHs, such as naphthalene, didn't it?

0 4 : 3 6 : 5 8 8 A. Yes, it did.

0 4 : 3 6 : 5 8 9 Q. According to the *NIOSH Pocket Guide to Chemical Hazards*,
0 4 : 3 6 : 5 9 10 one of the symptoms of exposure to naphthalene is nausea, isn't
0 4 : 3 7 : 0 4 11 it?

0 4 : 3 7 : 0 5 12 A. Once again, I'd give you same response. We are talking
0 4 : 3 7 : 0 7 13 about exposures to either pure chemical or high concentrations
0 4 : 3 7 : 1 1 14 of chemicals. With regard to naphthalene, you might not
0 4 : 3 7 : 1 5 15 remember this, but we all can remember going in our
0 4 : 3 7 : 1 8 16 grandmother's house and that smell of her drawers because she
0 4 : 3 7 : 2 3 17 has mothballs in there. Mothballs were made of naphthalene.

0 4 : 3 7 : 2 9 18 Q. Nausea is one of the symptoms of exposure to naphthalene,
0 4 : 3 7 : 3 0 19 correct?

0 4 : 3 7 : 3 1 20 A. Once again, of high enough concentrations to naphthalene.

0 4 : 3 7 : 3 4 21 Q. Dr. Cox, isn't it true that the *NIOSH Pocket Guide to*
0 4 : 3 7 : 3 8 22 *Chemical Hazards* entries for benzene, toluene, ethylbenzene,
0 4 : 3 7 : 3 8 23 hexane, and naphthalene also list headache as one of the
0 4 : 3 7 : 4 6 24 symptoms of exposure to those compounds?

0 4 : 3 7 : 4 9 25 A. Once again, we are talking about a very nonspecific

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0 4 : 3 7 : 5 1 1 symptom, something that also is incredibly common. And the
0 4 : 3 7 : 5 5 2 things you are referring to are either pure substances or very
0 4 : 3 8 : 0 1 3 high concentrations of the vapors, not talking about what's
0 4 : 3 8 : 0 3 4 present in the air right now.

0 4 : 3 8 : 0 7 5 Q. Isn't it true that the *NIOSH Pocket Guide to Chemical*
0 4 : 3 8 : 0 9 6 *Hazards* entries for benzene, toluene, and hexane list dizziness
0 4 : 3 8 : 1 4 7 as one of the symptoms of exposure to those compounds?

0 4 : 3 8 : 1 7 8 A. Once again, I would give you the same response, that you
0 4 : 3 8 : 2 0 9 will see those things from being exposed to high levels of
0 4 : 3 8 : 2 5 10 vapors, not due to what's present in the air right now, which
0 4 : 3 8 : 2 9 11 is probably higher than what we were measuring along the
0 4 : 3 8 : 3 4 12 Gulf Coast.

0 4 : 3 8 : 3 5 13 Q. Dr. Cox, let's talk about your risk assessment for a
0 4 : 3 8 : 3 7 14 moment. The conclusions you draw from your risk assessment are
0 4 : 3 8 : 4 1 15 all premised on your opinion that as long as exposure levels
0 4 : 3 8 : 4 6 16 are below the benchmarks you used, there is no risk to human
0 4 : 3 8 : 5 0 17 health, correct?

0 4 : 3 8 : 5 1 18 A. I don't know that I would say absolutely no risk. There
0 4 : 3 8 : 5 5 19 would be a very low chance of a risk because they are very
0 4 : 3 8 : 5 8 20 protective. Once again, that's from being just right below the
0 4 : 3 9 : 0 4 21 benchmark. Those benchmarks are very conservative.

0 4 : 3 9 : 0 7 22 Remember, again, they are talking about for the
0 4 : 3 9 : 0 9 23 occupational exposures, exposure to a chemical at or right
0 4 : 3 9 : 1 6 24 above that benchmark level every day for eight to 10 hours a
0 4 : 3 9 : 2 0 25 day for 30 years. That's what the risk of those benchmarks are

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04:39:25 1 meant to be.

04:39:27 2 In this situation, we are only talking about, first
04:39:32 3 of all, a couple months and then, on top of that, the levels
04:39:36 4 weren't just below the benchmarks; they were hundreds to
04:39:40 5 thousands of times below the benchmarks.

04:39:43 6 Q. Dr. Cox, you talked on direct about your review of
04:39:47 7 occupational air sampling data, correct?

04:39:50 8 A. That's correct.

04:39:51 9 Q. And that was data that was collected by BP, OSHA, and
04:39:59 10 NIOSH, right?

04:40:00 11 A. And BP -- I'm sorry, yes. Yes.

04:40:01 12 Q. And in your reports you described that data as robust,
04:40:04 13 didn't you?

04:40:05 14 A. I did.

04:40:06 15 Q. And I believe on the stand you called it tremendous,
04:40:09 16 correct?

04:40:10 17 A. Yes.

04:40:10 18 Q. And you noted in your August 15 report that OSHA, NIOSH,
04:40:13 19 and BP collected approximately 30,000 occupational air samples,
04:40:17 20 correct?

04:40:17 21 A. Yes.

04:40:20 22 Q. And you also noted in your report that BP's occupational
04:40:24 23 air monitoring dataset was significantly larger than either
04:40:28 24 OSHA's or NIOSH's, right?

04:40:32 25 A. That's correct.

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04:40:32 1 Q. Dr. Cox, you stated in your August 15 report that
04:40:35 2 naphthalene and hexane are two of the components of crude oil
04:40:40 3 that are of greatest concern from a human toxicology
04:40:44 4 perspective if they are inhaled at significant concentrations,
04:40:47 5 didn't you?

04:40:48 6 A. Once again, that's correct. Remember, once again, that
04:40:51 7 dose is everything in toxicology and that statement, if they're
04:40:54 8 present at significant concentrations.

04:40:57 9 Q. Dr. Cox, you didn't review any BP occupational air sample
04:41:01 10 results for naphthalene, did you?

04:41:16 11 A. Just a minute, let me see.
04:41:24 12 No, I did not.

04:41:26 13 Q. You also did not review -- I'm sorry. You also did not
04:41:29 14 review any BP air sampling results for coal tar pitch
04:41:37 15 volatiles, did you?

04:41:38 16 A. I think you might be talking about things that I'm not
04:41:40 17 sure they looked for.

04:41:41 18 Q. So you don't know whether or not BP looked for coal tar
04:41:47 19 pitch volatiles?

04:41:49 20 A. I don't believe they had any in their dataset.

04:41:51 21 Q. Coal tar pitch volatiles are classified by NIOSH as a
04:41:57 22 potential occupational carcinogen, correct?

04:42:01 23 A. That's correct.

04:42:01 24 Q. You also didn't review any BP occupational air sample
04:42:02 25 results for hydrogen sulfide; total PAHs, meaning total

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0 4 : 4 2 : 0 8 1 polycyclic aromatic hydrocarbons; or total particulates. Did
0 4 : 4 2 : 1 4 2 you?

0 4 : 4 2 : 1 4 3 A. I did.

0 4 : 4 2 : 1 6 4 Q. And where would those -- occupational sampling results?

0 4 : 4 2 : 1 7 5 A. Yes.

0 4 : 4 2 : 2 0 6 MS. PENCAK: Charles, could you please call up
0 4 : 4 2 : 2 1 7 TREN-13085.034.

0 4 : 4 2 : 4 4 8 BY MS. PENCAK:

0 4 : 4 2 : 4 4 9 Q. Dr. Cox, is this your Table 9, reviewing the BP
0 4 : 4 2 : 4 8 10 occupational air sampling results for MC 252 oil constituents?

0 4 : 4 2 : 5 3 11 A. Yes.

0 4 : 4 2 : 5 4 12 Q. Are there any sample results listed here for hydrogen
0 4 : 4 2 : 5 9 13 sulfide?

0 4 : 4 2 : 5 9 14 A. Once again, just because it's not in this table doesn't
0 4 : 4 3 : 0 1 15 mean I didn't look at it. There was a very large quantity of
0 4 : 4 3 : 0 6 16 data in all of those datasets, and a lot of it I would, with
0 4 : 4 3 : 1 0 17 the computer, scroll through it; and if it just said nondetect,
0 4 : 4 3 : 1 4 18 nondetect, nondetect, from start to finish, I didn't do this
0 4 : 4 3 : 1 8 19 with it. It does not mean I did not look at it.

0 4 : 4 3 : 2 2 20 Q. You did not report on any BP occupational air sample
0 4 : 4 3 : 2 5 21 results for hydrogen sulfide, total PAHs, or total particulates
0 4 : 4 3 : 3 0 22 in your August 15 report, did you?

0 4 : 4 3 : 3 2 23 A. I did not report it. I did look at it, and I did not find
0 4 : 4 3 : 3 6 24 any reason to do this.

0 4 : 4 3 : 3 9 25 Q. Dr. Cox, OSHA did not begin its air sampling and

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0 4 : 4 3 : 4 4 1 monitoring until May 27; isn't that correct?

0 4 : 4 4 : 0 3 2 A. Let me check that date.

0 4 : 4 4 : 1 8 3 I'm sorry, you were asking about OSHA?

0 4 : 4 4 : 2 0 4 Q. Yes. They began their air sampling and monitoring on
0 4 : 4 4 : 2 3 5 May 27, 2010, correct?

0 4 : 4 4 : 2 5 6 A. That's correct.

0 4 : 4 4 : 2 6 7 Q. You testified earlier that you did not review any BP
0 4 : 4 4 : 2 9 8 occupational air sampling results for naphthalene, but you did
0 4 : 4 4 : 3 3 9 review two OSHA air sampling results for naphthalene, right?

0 4 : 4 4 : 3 7 10 A. Yes. Once again, with naphthalene, I don't recall off the
0 4 : 4 4 : 4 2 11 top of my head if it was there or not. But what I did with
0 4 : 4 4 : 4 6 12 those is I would use the computer and I would scroll down
0 4 : 4 4 : 4 9 13 through. If they were 100 percent nondetectable, I didn't
0 4 : 4 4 : 5 2 14 bother doing anything with them.

0 4 : 4 4 : 5 4 15 Q. But, Dr. Cox, you only reviewed two OSHA sample results
0 4 : 4 5 : 0 0 16 for naphthalene, correct?

0 4 : 4 5 : 1 1 17 A. Yes.

0 4 : 4 5 : 1 2 18 Q. And you didn't review any OSHA air sampling results for
0 4 : 4 5 : 1 7 19 hexane, right?

0 4 : 4 5 : 1 9 20 A. No, I don't believe -- I'm trying to remember. Again, I
0 4 : 4 5 : 2 7 21 looked at a tremendous amount of data in there. I don't think
0 4 : 4 5 : 3 1 22 OSHA included naphthalene in their set of samples.

0 4 : 4 5 : 3 5 23 Q. OSHA had 24 sample results for coal tar pitch volatiles,
0 4 : 4 5 : 3 8 24 right?

0 4 : 4 5 : 4 0 25 A. That's correct.

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- 0 4 : 4 5 : 4 0 1 Q. None of those -- those samples were collected starting
0 4 : 4 5 : 4 6 2 about a month after the well was capped, right?
- 0 4 : 4 5 : 4 8 3 A. Yes.
- 0 4 : 4 5 : 5 2 4 Q. Let's talk about the NIOSH sampling for a moment. NIOSH
0 4 : 4 5 : 5 5 5 did not begin its air sampling and monitoring until June 4,
0 4 : 4 5 : 5 8 6 2010, correct?
- 0 4 : 4 6 : 0 1 7 A. That's correct.
- 0 4 : 4 6 : 0 2 8 Q. And isn't it true that NIOSH only collected air monitoring
0 4 : 4 6 : 0 6 9 samples on 12 days in June of 2010 and one day in August of
0 4 : 4 6 : 1 0 10 2010?
- 0 4 : 4 6 : 1 1 11 A. Once again, I can't remember what days individual samples
0 4 : 4 6 : 1 5 12 were collected on.
- 0 4 : 4 6 : 1 7 13 Q. You reviewed the deposition transcript of Dr. John Howard,
0 4 : 4 6 : 2 0 14 director of NIOSH, correct?
- 0 4 : 4 6 : 2 3 15 A. I did.
- 0 4 : 4 6 : 2 3 16 Q. You reviewed the NIOSH air monitoring data, correct?
- 0 4 : 4 6 : 2 6 17 A. I did review their data, yes.
- 0 4 : 4 6 : 2 8 18 Q. You reviewed 115 NIOSH sample results for naphthalene,
0 4 : 4 6 : 3 3 19 correct?
- 0 4 : 4 6 : 4 4 20 A. That's correct.
- 0 4 : 4 6 : 4 6 21 Q. NIOSH detected naphthalene in 57 percent of those samples,
0 4 : 4 6 : 5 0 22 right?
- 0 4 : 4 6 : 5 0 23 A. That's correct.
- 0 4 : 4 6 : 5 2 24 Q. You reviewed 17 NIOSH sample results for hexane, correct?
- 0 4 : 4 6 : 5 6 25 A. Yes.

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0 4 : 4 6 : 5 8 1 Q. NIOSH detected hexane in 76 percent of those samples,
0 4 : 4 6 : 5 8 2 right?

0 4 : 4 6 : 5 9 3 A. Yes.

0 4 : 4 7 : 0 0 4 Once again, for both of these, I think you have to
0 4 : 4 7 : 0 2 5 look at -- the NIOSH dataset had very, very low detection
0 4 : 4 7 : 0 7 6 levels. So, for example, for naphthalene, their median value
0 4 : 4 7 : 1 1 7 was 0.9 parts per billion and for hexane it was 0.87 parts per
0 4 : 4 7 : 2 0 8 billion. Yes, they detected it; but those are incredibly low
0 4 : 4 7 : 2 5 9 levels, and they are essentially consistent with background
0 4 : 4 7 : 2 8 10 levels of those chemicals in the atmosphere.

0 4 : 4 7 : 3 1 11 Q. Dr. Cox, NIOSH had 37 sample results for coal tar pitch
0 4 : 4 7 : 3 8 12 volatiles, right?

0 4 : 4 7 : 4 0 13 A. That's correct.

0 4 : 4 7 : 4 0 14 Q. The OSHA permissible exposure limit for coal tar pitch
0 4 : 4 7 : 4 1 15 volatiles is .2 milligrams per cubic meter, correct?

0 4 : 4 7 : 4 7 16 A. Yes.

0 4 : 4 7 : 5 0 17 Q. And the NIOSH recommended exposure limit, or REL, for coal
0 4 : 4 7 : 5 3 18 tar pitch volatiles is .1 milligrams per cubic meter, correct?

0 4 : 4 8 : 0 0 19 A. That's correct, but it's a different test.

0 4 : 4 8 : 0 1 20 Q. And because it's a different test, you weren't able to
0 4 : 4 8 : 0 3 21 compare the NIOSH and OSHA sampling results to -- coal tar
0 4 : 4 8 : 0 8 22 pitch volatiles to that NIOSH REL, right?

0 4 : 4 8 : 1 3 23 A. That's right, because the test that NIOSH's REL is -- was
0 4 : 4 8 : 2 0 24 developed for was not performed.

0 4 : 4 8 : 2 1 25 Q. Dr. Cox, let's talk about detection levels for a moment.

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0 4 : 4 8 : 2 1 1 Nondetect doesn't necessarily mean zero, does it?

0 4 : 4 8 : 2 6 2 A. No. That's why it's very important to look at the

0 4 : 4 8 : 2 9 3 detection limits for those substances.

0 4 : 4 8 : 3 4 4 Q. So if you are using equipment with a detection limit of

0 4 : 4 8 : 3 7 5 .4 milligrams per cubic meter, any concentration below

0 4 : 4 8 : 4 4 6 .4 milligrams per cubic meter would show up as a nondetect,

0 4 : 4 8 : 4 9 7 right?

0 4 : 4 8 : 4 9 8 A. If that were this case, yes.

0 4 : 4 8 : 5 1 9 Q. One of the reasons that you did not conduct a risk

0 4 : 4 8 : 5 3 10 assessment for benzene based on the personal breathing zone

0 4 : 4 8 : 5 8 11 monitoring of response workers is that the detection limits for

0 4 : 4 9 : 0 1 12 the methods used in that monitoring were not good enough to

0 4 : 4 9 : 0 6 13 capture low levels; isn't that right?

0 4 : 4 9 : 0 8 14 A. I'm sorry, would you maybe kind of repeat that? I didn't

0 4 : 4 9 : 1 1 15 follow the whole thing.

0 4 : 4 9 : 1 2 16 Q. Sure. One of the reasons that you did not conduct a risk

0 4 : 4 9 : 1 6 17 assessment for benzene based on the personal breathing zone

0 4 : 4 9 : 2 0 18 monitoring of response workers is that the detection limits for

0 4 : 4 9 : 2 4 19 the methods used in that monitoring were not good enough to

0 4 : 4 9 : 2 9 20 capture low levels; isn't that right?

0 4 : 4 9 : 3 1 21 A. I did conduct a risk assessment for benzene. I compared

0 4 : 4 9 : 3 4 22 it to the occupational exposure limits.

0 4 : 4 9 : 3 8 23 If we are talking for workers, that's comparing it to

0 4 : 4 9 : 4 2 24 the occupational exposure limits for NIOSH, OSHA, and ACGIH.

0 4 : 4 9 : 4 7 25 So I did do one.

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04:49:49 1 MS. PENCAK: Charles, could you please call up
04:49:50 2 Dr. Cox's deposition at page 97, line 5, through page 98,
04:50:01 3 line 5. And if you can't get the two pages in one, we can
04:50:11 4 start with the first page and then move on to the next.

04:50:14 5 BY MS. PENCAK:

04:50:26 6 Q. Starting with line 5:

04:50:29 7 "QUESTION: Did you calculate a risk assessment for
04:50:30 8 benzene based on the personal breathing zone monitoring of
04:50:34 9 response workers?

04:50:36 10 "ANSWER: I didn't for two reasons. Number one, the
04:50:38 11 detection limits for the methods they used were not good
04:50:42 12 enough to get low levels."

04:50:45 13 Does that refresh your recollection in answering my
04:50:48 14 question about the limits of detection in the personal
04:50:51 15 breathing zone monitoring?

04:50:53 16 A. It does, but let me say we're talking about two different
04:50:56 17 things here. There was a risk assessment done for benzene for
04:51:01 18 the workers based on occupational exposure limits.

04:51:05 19 I think what you're talking about, here, again, is
04:51:08 20 trying to apply EPA's risk assessment methodology for
04:51:14 21 carcinogens to an occupational exposure; and that's something
04:51:18 22 that you really should not be doing. And I tried to explain
04:51:21 23 some of the reasons here that you should not be doing that.

04:51:26 24 Q. Dr. Cox, you reviewed and cited to BP's Material Safety
04:51:30 25 Data Sheet, or MSDS, for MC 252 weathered crude oil, didn't

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04:51:38 1 you?

04:51:38 2 A. Yes.

04:51:39 3 MS. PENCAK: Charles, can you please bring up
04:51:41 4 TREN-13110.

04:51:44 5 BY MS. PENCAK:

04:51:48 6 Q. Dr. Cox, is this the MSDS for MC 252 weathered oil that
04:51:53 7 you reviewed and cited to in your report?

04:51:56 8 A. Is there a way to make this any larger?

04:51:59 9 MS. PENCAK: Charles, can you pull up maybe just the
04:52:01 10 first -- yeah.

04:52:03 11 THE COURT: They can blow up part of it.

04:52:05 12 THE WITNESS: Thank you. Okay. I can read it now,
04:52:07 13 yes.

04:52:07 14 BY MS. PENCAK:

04:52:08 15 Q. And it says here, the second line is that "The primary
04:52:11 16 exposure hazard of weathered crude oil is by physical contact
04:52:14 17 with the skin"?

04:52:15 18 A. Yes.

04:52:17 19 Q. Dr. Cox, your dermal exposure characterization is based on
04:52:21 20 your review of data summaries produced by OSAT-1 and OSAT-2 and
04:52:28 21 your review of data posted to EPA's website regarding
04:52:33 22 53 samples of weathered oil that were analyzed for PAHs,
04:52:35 23 correct?

04:52:37 24 A. I did do those things.

04:52:38 25 The first part of your question, again, was?

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0 4 : 5 2 : 4 0 1 Q. That your dermal exposure characterization is based on the
0 4 : 5 2 : 4 4 2 data summaries produced by OSAT-1 and 2 and those 53 samples
0 4 : 5 2 : 5 2 3 that were posted to EPA's website of PAH analysis in weathered
0 4 : 5 2 : 5 8 4 oil?

0 4 : 5 2 : 5 9 5 A. I don't think that's all of it that we just went through
0 4 : 5 3 : 0 1 6 under the direct. The first thing was looking at the toxicity
0 4 : 5 3 : 0 5 7 of crude oil, the changes from crude oil going to weathered
0 4 : 5 3 : 1 0 8 oil, and the loss of some of the toxic components, primarily
0 4 : 5 3 : 1 4 9 the PAHs, and then looking at, for the workers, the chances
0 4 : 5 3 : 2 4 10 that you should not have very much exposure with that. And
0 4 : 5 3 : 2 8 11 then I believe we are going to the final step that you are
0 4 : 5 3 : 3 0 12 referring to, which is the OSAT analysis?

0 4 : 5 3 : 3 4 13 Q. I'm talking about the data, the numbers. Any data that
0 4 : 5 3 : 3 7 14 you reviewed in your dermal exposure characterization that was
0 4 : 5 3 : 4 1 15 OSAT-1, OSAT-2, and those 53 samples from EPA, correct?

0 4 : 5 3 : 4 6 16 A. Yes.

0 4 : 5 3 : 4 7 17 Q. OSAT-1 was chartered in August 2010 to assess the presence
0 4 : 5 3 : 5 2 18 or absence of subsurface oil and/or dispersants to determine if
0 4 : 5 3 : 5 8 19 ongoing removal actions were necessary, correct?

0 4 : 5 4 : 0 1 20 A. Yes.

0 4 : 5 4 : 0 3 21 Q. So the purpose of OSAT-1 was not to assess dermal risk to
0 4 : 5 4 : 0 9 22 cleanup workers, was it?

0 4 : 5 4 : 1 0 23 A. No, not of OSAT-1, but OSAT-1 was looking at -- there were
0 4 : 5 4 : 1 6 24 human health risk standards that EPA developed for the things
0 4 : 5 4 : 2 2 25 that OSAT-1 was looking for.

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0 4 : 5 4 : 2 4 1 Q. OSAT-1 determined, as of December 2010, that "Ongoing
0 4 : 5 4 : 2 8 2 removal actions should continue where oil remained in the
0 4 : 5 4 : 3 2 3 nearshore sediments and shorelines," correct?

0 4 : 5 4 : 3 7 4 A. I would have to go back and review what OSAT-1 said about
0 4 : 5 4 : 4 0 5 the oils and sediments.

0 4 : 5 4 : 4 1 6 Q. But you did review the OSAT-1 report, correct?

0 4 : 5 4 : 4 4 7 A. I did.

0 4 : 5 4 : 4 4 8 Q. OSAT-2 also wasn't designed to assess potential dermal
0 4 : 5 4 : 5 0 9 risk to cleanup workers, was it?

0 4 : 5 4 : 5 1 10 A. Not the cleanup workers.

0 4 : 5 4 : 5 2 11 But, again, I think we're going -- we keep going back
0 4 : 5 4 : 5 4 12 and forth here between cleanup workers and Gulf shore
0 4 : 5 4 : 5 8 13 residents. They're two different things and two different
0 4 : 5 5 : 0 1 14 datasets.

0 4 : 5 5 : 0 2 15 Q. The purpose of OSAT-2 was to provide the FOSC, or Federal
0 4 : 5 5 : 0 5 16 On-Scene Coordinator, with a net environmental benefits
0 4 : 5 5 : 0 9 17 analysis associated with "removing remnant oil from the
0 4 : 5 5 : 1 3 18 nearshore, surf zone, and shoreline sandy beach areas," in
0 4 : 5 5 : 2 0 19 February 2011, correct?

0 4 : 5 5 : 2 1 20 A. That's correct.

0 4 : 5 5 : 2 2 21 Q. Dr. Cox, your conclusions regarding dermal exposure are in
0 4 : 5 5 : 2 5 22 part premised on your opinion that response workers wore
0 4 : 5 5 : 3 0 23 appropriate PPE; is that right?

0 4 : 5 5 : 3 1 24 A. That's correct.

0 4 : 5 5 : 3 2 25 Q. But it's not your opinion that every single response

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0 4 : 5 5 : 3 7 1 worker wore their prescribed PPE exactly as directed every time
0 4 : 5 5 : 4 1 2 they wore it, right?

0 4 : 5 5 : 4 3 3 A. No, and I think I said that.

0 4 : 5 5 : 4 4 4 I think all and all, the PPE was used appropriately
0 4 : 5 5 : 4 9 5 and did its job. Once again, with something of this magnitude
0 4 : 5 5 : 5 3 6 and this scope, there are always situations where some
0 4 : 5 5 : 5 7 7 individual wasn't using it as it was supposed to be used.

0 4 : 5 6 : 0 2 8 But I think, once again, we have to look at the big
0 4 : 5 6 : 0 5 9 picture here, and the big picture is everything was used
0 4 : 5 6 : 0 8 10 appropriately -- for the most part, not 100 percent.

0 4 : 5 6 : 1 2 11 Q. Dr. Cox, you discussed the weathering of oil as it
0 4 : 5 6 : 1 5 12 traveled from the point in the Gulf where it was first -- where
0 4 : 5 6 : 1 9 13 it first surfaced to shorelines throughout the Gulf Coast
0 4 : 5 6 : 2 2 14 region, correct?

0 4 : 5 6 : 2 2 15 A. That's correct.

0 4 : 5 6 : 2 3 16 Q. You cite to some peer-reviewed published articles in
0 4 : 5 6 : 2 6 17 support of your opinions about the weathering of the oil,
0 4 : 5 6 : 2 8 18 correct?

0 4 : 5 6 : 2 9 19 A. Yes.

0 4 : 5 6 : 3 0 20 MS. PENCAK: Charles, can you please pull up
0 4 : 5 6 : 3 1 21 TREN-240164. And then just perhaps pull out the top bit of it
0 4 : 5 6 : 4 3 22 since it's a little hard to read.

0 4 : 5 6 : 4 6 23 BY MS. PENCAK:

0 4 : 5 6 : 4 6 24 Q. But, Dr. Cox, is this the article by Middlebrook and
0 4 : 5 6 : 5 0 25 colleagues that you cited to in your August 15 report?

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04:56:52 1 A. Yes.

04:56:53 2 Q. In this document these authors state that "The air quality
04:56:56 3 issues arising from the oil spill are different for workers at
04:57:00 4 the site than for the population along the coast."

04:57:03 5 Do you agree with that statement?

04:57:05 6 A. I'm sorry, could you show me on here where -- I need to
04:57:07 7 see kind of where that statement is coming from.

04:57:11 8 Q. Sure.

04:57:11 9 MS. PENCAK: If you could back out of this, Charles,
04:57:13 10 and then pull up the first paragraph.

04:57:28 11 THE COURT: It must be in another paragraph.

04:57:31 12 MS. PENCAK: It must be in another. I apologize.

04:57:32 13 BY MS. PENCAK:

04:57:32 14 Q. Dr. Cox, this is an article you relied on; is that
04:57:34 15 correct?

04:57:35 16 A. It is.

04:57:37 17 MS. PENCAK: Charles, can you call up TRES-232479,
04:57:41 18 please. Then again, just pull out the top.

04:57:51 19 BY MS. PENCAK:

04:57:51 20 Q. Dr. Cox, is this the article by Reyerson and colleagues
04:57:54 21 you cited to in your Round 1 report?

04:57:57 22 A. It is.

04:57:57 23 Q. This article addresses the weathering process for oil and
04:58:01 24 its implications for air quality?

04:58:05 25 A. It discusses the movement of oil from when it was released

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0 4 : 5 8 : 1 1 1 on the ocean floor to the surface.

0 4 : 5 8 : 1 3 2 Q. Dr. Cox, you did not review the expert reports of BP's
0 4 : 5 8 : 1 7 3 expert, Dr. Damian Shea, did you?

0 4 : 5 8 : 1 9 4 A. No.

0 4 : 5 8 : 2 0 5 Q. You did not review the expert reports of the United States
0 4 : 5 8 : 2 2 6 expert, Dr. Stanley Rice, did you?

0 4 : 5 8 : 2 4 7 A. I did. A portion of that report that was Shea and Boesch;
0 4 : 5 8 : 3 1 8 is that correct?

0 4 : 5 8 : 3 1 9 Q. Yes, that's correct.

0 4 : 5 8 : 3 2 10 A. Yes.

0 4 : 5 8 : 3 3 11 Q. Good memory. The portion that was included in Dr. Clapp's
0 4 : 5 8 : 3 6 12 report?

0 4 : 5 8 : 3 7 13 A. No. Well, I saw that he mentioned in his report that --
0 4 : 5 8 : 4 3 14 he said that the oil, as it weathered, was more toxic; and he
0 4 : 5 8 : 4 9 15 quoted that report from Rice and Boesch.

0 4 : 5 8 : 5 4 16 However, I went back and read those paragraphs from
0 4 : 5 8 : 5 7 17 the report, and I pulled the articles that they were using.
0 4 : 5 9 : 0 1 18 They were not talking about human toxicity; they were talking
0 4 : 5 9 : 0 4 19 about toxicity to benthic organisms and little things in the
0 4 : 5 9 : 1 2 20 ocean and so forth. That is completely different and was --
0 4 : 5 9 : 1 6 21 just trying to relate that to human toxicity was way off base.

0 4 : 5 9 : 2 2 22 Q. Dr. Cox, at the time that you wrote your expert reports
0 4 : 5 9 : 2 4 23 and at the time of your deposition, you had not reviewed the
0 4 : 5 9 : 2 7 24 expert reports of Dr. Stanley Rice other than those paragraphs
0 4 : 5 9 : 3 1 25 that were contained in Dr. Clapp's report, correct?

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0 4 : 5 9 : 3 4 1 A. Other than those paragraphs.

0 4 : 5 9 : 3 4 2 But, again, the other thing I did is I looked at
0 4 : 5 9 : 3 8 3 those paragraphs that they had. And I was able to pull their
0 4 : 5 9 : 4 2 4 references out, and I went back and read all their references.
0 4 : 5 9 : 4 6 5 This was not talking about human toxicity. This was toxicity
0 4 : 5 9 : 4 9 6 of little microorganisms that live in the sediments.

0 4 : 5 9 : 5 4 7 Q. Dr. Cox, you talked on direct a bit about seafood safety,
0 4 : 5 9 : 5 9 8 right?

0 4 : 5 9 : 5 9 9 A. I did.

0 5 : 0 0 : 0 0 10 Q. In preparing your expert reports, you did not make any
0 5 : 0 0 : 0 4 11 efforts to determine whether or not subsistence fishermen ever
0 5 : 0 0 : 0 9 12 ignored fisheries closures and ate fish that came from closed
0 5 : 0 0 : 1 3 13 areas during the response, did you?

0 5 : 0 0 : 1 5 14 A. I think you asked me that in my deposition. I have seen
0 5 : 0 0 : 1 9 15 no information on that.

0 5 : 0 0 : 1 9 16 Q. So you haven't reviewed any information about subsistence
0 5 : 0 0 : 2 4 17 fishing, have you?

0 5 : 0 0 : 2 6 18 A. Once again, I looked at a huge quantity of information
0 5 : 0 0 : 2 9 19 here, and I did not see anything about people fishing when they
0 5 : 0 0 : 3 4 20 weren't supposed to be.

0 5 : 0 0 : 3 5 21 Q. You have no information one way or another?

0 5 : 0 0 : 3 8 22 A. I have none, no.

0 5 : 0 0 : 3 9 23 Q. Dr. Cox, you discussed on direct the NIEHS long-term
0 5 : 0 0 : 4 6 24 study, didn't you?

0 5 : 0 0 : 4 6 25 A. I did.

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05:00:46 1 Q. That's a cohort study following 33,000 response workers
05:00:51 2 over 10 years, isn't it?

05:00:52 3 A. Yes.

05:00:53 4 Q. Isn't it true that preliminary observations from that
05:00:56 5 study have indicated that cleanup workers are about 30 percent
05:00:58 6 more likely to have moderate to severe depression than
05:01:02 7 residents who did not do cleanup work?

05:01:07 8 A. I have not seen the information on depression.

05:01:10 9 And once again, the other thing I would say with that
05:01:13 10 is the word you just mentioned, a "cohort study." A cohort
05:01:18 11 study by design cannot show causation; it can only show an
05:01:29 12 association. And I think that's very important because if you
05:01:31 13 look at where we live, Mississippi is the most unhealthy state
05:01:36 14 in the country.

05:01:37 15 **THE WITNESS:** And unfortunately, Your Honor, I don't
05:01:39 16 think Louisiana -- Louisiana and Alabama are right in back of
05:01:43 17 us. So I have no doubt they are going to find instances of
05:01:46 18 diabetes, of heart disease, of strokes in that study, but that
05:01:53 19 study even by design cannot show causation.

05:01:58 20 **MS. PENCAK:** Charles, could you please call up
05:01:59 21 TREX-231743. Just call out the top part of this. Sorry. One
05:02:12 22 more paragraph below that.

05:02:13 23 **BY MS. PENCAK:**

05:02:17 24 Q. So, Dr. Cox, you did not review these preliminary
05:02:21 25 observations from The Gulf Study?

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05:02:23 1 A. No, I have not seen these preliminary observations.

05:02:28 2 Q. Dr. Cox, you're also aware that BP has funded the Gulf of
05:02:31 3 Mexico Research Initiative, also known as GoMRI, for 10 years,
05:02:37 4 aren't you?

05:02:38 5 A. I am aware that BP put a lot of money into a number of
05:02:41 6 initiatives, both from our local universities as well as
05:02:46 7 healthcare initiatives, to try to help healthcare along the
05:02:48 8 Gulf Coast.

05:02:49 9 Q. Public health is one of the GoMRI research areas, isn't
05:02:54 10 it?

05:02:55 11 A. I'm not familiar with what their exact research areas are
05:02:58 12 in GoMRI.

05:02:59 13 Q. Dr. Cox, you're aware that the Center for Gulf Coast
05:03:00 14 Environmental Health Research is studying the effects of the
05:03:05 15 *Deepwater Horizon* spill on human health by examining real and
05:03:09 16 perceived exposures in reproductive-age women, correct?

05:03:13 17 A. Once again, I don't know exactly what GoMRI is -- what
05:03:16 18 type of study they are conducting.

05:03:18 19 Q. Are you aware of the study that the University of Texas
05:03:20 20 Medical Branch at Galveston is conducting, researching the
05:03:25 21 long-term health effects of those who consumed Gulf seafood?

05:03:29 22 A. No.

05:03:31 23 Once again, there's research being done all over the
05:03:35 24 United States. I don't know what -- I couldn't start to begin
05:03:38 25 to tell you what various studies are doing that -- that's not

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05:03:43 1 what I was doing here.

05:03:44 2 I was looking at actual data that we had and using
05:03:50 3 science to draw conclusions about potential health effects.
05:03:55 4 I'm by no means claiming that I know what studies are going on
05:03:59 5 throughout the country.

05:04:00 6 Q. Dr. Cox, you agree that the latency period for development
05:04:04 7 of leukemia due to benzene exposure can be up to 20 or
05:04:10 8 30 years, don't you?

05:04:11 9 A. Once again, for those benzene exposures in those
05:04:14 10 occupational workers, we're talking about levels that were
05:04:20 11 between 5,000 and 50,000 times a higher concentration than the
05:04:28 12 concentrations that were measured along the Gulf Coast. And
05:04:32 13 so, yes, I'm aware that occupational workers that were exposed,
05:04:37 14 number one, to those concentrations and, number two, for years,
05:04:41 15 there are some that develop cancer. And the latency period
05:04:46 16 there is 20 to 30 years for most cancers.

05:04:50 17 Q. Dr. Cox, isn't it true that EPA uses a linear slope factor
05:04:54 18 for benzene?

05:04:54 19 A. That is true.

05:05:02 20 MS. PENCAK: No further questions, Your Honor.

05:05:03 21 THE COURT: Mr. Jarrett, redirect?

05:05:06 22 MR. JARRETT: I don't think so, Your Honor.

05:05:07 23 THE COURT: All right. You're done. Thank you.

05:05:10 24 Where is Brandon, Mississippi?

05:05:12 25 THE WITNESS: Brandon is about 15 minutes due east of

05:05:16 1 Jackson.

05:05:16 2 **THE COURT:** So it's a suburb of Jackson?

05:05:19 3 **THE WITNESS:** Suburb, yes, sir.

05:05:22 4 This is yours. Thank you.

05:05:28 5 **MS. HIMMELHOCH:** I have a small housekeeping matter
05:05:29 6 when you have a moment, Your Honor.

05:05:31 7 **THE COURT:** Go ahead.

05:05:32 8 **MS. HIMMELHOCH:** I understand, for entirely
05:05:34 9 reasonable reasons, that BP may be shuffling some of its
05:05:37 10 witness order. We would ask that they update us tonight by
05:05:41 11 about 8:00 if they have any news as to what different witnesses
05:05:46 12 may be coming tomorrow and the next day so that we can plan our
05:05:49 13 resources accordingly.

05:05:52 14 **MR. BROCK:** I think I can give the Court an update
05:05:54 15 now.

05:05:55 16 **THE COURT:** Okay. Good.

05:05:57 17 **MR. BROCK:** Mike Brock for BP. Tomorrow morning we
05:05:59 18 will start with Richard Morrison, a fact witness, a BXP
05:06:06 19 witness. He will be followed by Dr. Shea, who is an
05:06:10 20 environmental expert.

05:06:11 21 **THE COURT:** Okay.

05:06:13 22 **MR. BROCK:** Dr. Tunnell was originally scheduled to
05:06:19 23 be here on Wednesday. We are trying to see if we can get him
05:06:22 24 here tomorrow afternoon. I will probably need a call or two
05:06:26 25 when I get back to the office. If Dr. Tunnell is not available

05:06:29 1 tomorrow afternoon, we would move Dr. Taylor up into
05:06:32 2 Dr. Tunnell's slot.

05:06:35 3 **THE COURT:** When will you be able to tell everyone?

05:06:38 4 **MR. BROCK:** I can tell them within an hour of getting
05:06:41 5 back. I just need to do a little checking with folks back at
05:06:46 6 the office.

05:06:47 7 **THE COURT:** Okay.

05:06:48 8 **MR. BROCK:** Then I do have one situation, Your Honor,
05:06:49 9 that I would like to speak with you about either in chambers or
05:06:52 10 at sidebar. I do have a witness with a significant health
05:06:55 11 issue that I have advised the United States and Anadarko about,
05:06:59 12 where I would like to request an accommodation. And I can do
05:07:04 13 that at any time that's convenient to the Court.

05:07:08 14 **THE COURT:** You all can come up. You can do that as
05:07:11 15 soon as we recess the trial for the day.

05:07:14 16 Anything else that we need to put on the record?

05:07:17 17 **MS. HIMMELHOCH:** Your Honor, my only question is they
05:07:18 18 have notably omitted a witness who would have fallen in the
05:07:22 19 order, Dr. Bonnano.

05:07:25 20 **MR. BROCK:** Thank you for that reminder. We will not
05:07:26 21 be calling Dr. Bonnano.

05:07:28 22 **THE COURT:** Dr. Bonnano is off?

05:07:31 23 **MR. BROCK:** Yes, sir.

05:07:31 24 **THE COURT:** Well, the list I had, you had Dr. Tunnell
05:07:37 25 and then Daines?

05:07:39 1 **MR. BROCK:** Yes. Daines is also an issue. He cannot
05:07:42 2 be here until Wednesday, so I'm going to try to fill the day
05:07:49 3 tomorrow with Morrison, Shea, Taylor --

05:07:54 4 **THE COURT:** And then you have another fact witness,
05:07:56 5 Robertson?

05:07:58 6 **MR. BROCK:** Robertson, and we would likely call him
05:08:01 7 tomorrow if that's --

05:08:02 8 **THE COURT:** Why don't you do this. As soon as you're
05:08:04 9 able to this evening, let opposing counsel know, and e-mail Ben
05:08:10 10 also. Okay?

05:08:10 11 **MR. BROCK:** Yes, sir, will do.

05:08:11 12 We have served the -- I don't know if they've
05:08:13 13 received them or not, but we have served the Taylor
05:08:16 14 demonstratives. In case we need to call him, we went ahead and
05:08:20 15 served those after lunch. So whenever they can get objections
05:08:24 16 in to those, we will work with them on that.

05:08:26 17 **MS. HIMMELHOCH:** I believe we've received them,
05:08:27 18 Your Honor. I do think that we need to talk with BP. In the
05:08:31 19 interest of not being cumulative, there were some documents I
05:08:33 20 intended to introduce through Dr. Bonnano that I could have
05:08:37 21 introduced through Dr. Austin. He was still on their list when
05:08:41 22 Dr. Austin testified. He has now been pulled down.

05:08:44 23 I may need to talk with BP about whether I need
05:08:47 24 a couple additional orphans to address the fact that I don't
05:08:50 25 have the witness I expected to have to get those documents in.

05:08:54 1 **THE COURT:** Why don't you all discuss that and see if
05:08:56 2 you can work that out this evening. Okay?

05:08:58 3 **MS. HIMMELHOCH:** Absolutely, Your Honor.

05:08:59 4 **THE COURT:** Anything else we need to put on the
05:09:01 5 record? If not, we will recess until 8:00 a.m. tomorrow.

05:09:06 6 You all can come up here to discuss the witness
05:09:10 7 problem.

05:09:10 8 (Proceedings adjourned.)

05:09:10 9 * * *

10 **CERTIFICATE**

11 I, Toni Doyle Tusa, CCR, FCRR, Official Court
12 Reporter for the United States District Court, Eastern District
13 of Louisiana, certify that the foregoing is a true and correct
14 transcript, to the best of my ability and understanding, from
15 the record of proceedings in the above-entitled matter.

16
17
18 *s/ Toni Doyle Tusa*
19 Toni Doyle Tusa, CCR, FCRR
20 Official Court Reporter
21
22
23
24
25

| | | | |
|---|---|--|--|
| . | 1446/4 1488/16 1506/5 1507/6 1507/9 1507/10 1512/17 1513/1 | 35113 [1] 1464/25 35115 [1] 1472/18 35117 [1] 1448/7 35118 [1] 1483/6 35133 [1] 1476/16 35137 [1] 1480/5 35139.2 [1] 1494/20 35139.4 [1] 1493/22 35140 [1] 1456/6 35141 [1] 1478/9 35142 [1] 1467/23 35144 [1] 1488/24 35145 [1] 1470/8 35146 [1] 1480/17 35270 [1] 1449/24 355 [1] 1377/23 36 [1] 1385/15 37 [1] 1508/11 370 [1] 1497/20 3:30 [4] 1419/24 1420/4 1420/20 1421/16 | |
| .1 [1] 1508/18 .1 milligrams [1] 1508/18 .2 [1] 1508/15 .2 milligrams [1] 1508/15 .4 [2] 1509/5 1509/6 .4 milligrams [2] 1509/5 1509/6 | 2011 [5] 1384/6 1422/3 1446/17 1476/23 1513/19 2012 [3] 1383/14 1393/24 1489/7 2013 [3] 1384/13 1384/15 1425/6 2015 [2] 1375/8 1380/2 2020 [1] 1377/19 | | |
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