

# Deposition Testimony of:

## **Richard Heron**

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Page 7:09 to 7:15

00007:09 Q. Good morning, Dr. Heron.  
10 A. Good morning.  
11 Q. My name is Erica Pencak and this is my  
12 colleague, Anna Cross. We're with the Department of  
13 Justice and we represent the United States in this case.  
14 Do you understand the oath that you've just been given?  
15 A. I do.

Page 8:13 to 8:25

00008:13 Q. Did you do anything to prepare for this  
14 deposition?  
15 A. I've been in the offices with Kirkland & Ellis  
16 this week.  
17 Q. Okay.  
18 A. Since Monday.  
19 Q. Did you review any documents?  
20 A. Yes. A few documents.  
21 Q. What types of documents?  
22 A. Things I've either presented myself or I had a  
23 look at the NIOSH HHE summary.  
24 Q. And HHE, is that Health Hazard Evaluation?  
25 A. That's correct.

Page 9:04 to 10:13

00009:04 Q. I'd like to take a minute to walk through your  
05 education, so starting with college or university. Could  
06 you tell me where you attended, the dates, and what  
07 degree you received?  
08 A. I went to conventional high school in the UK  
09 and attended Birmingham -- Birmingham UK University  
10 medical school from 1980 to 1985. At the end of that  
11 time, I would be qualified as a doctor. You then have a  
12 pre-registration year before being fully registered with  
13 the General Medical Council in the UK to practice. I  
14 then trained for a number of years in both the UK and a  
15 short spell in New Zealand. That was in a rotation of  
16 different medical specialties towards becoming an  
17 internist or an internal medicine physician. During  
18 that time, I took physician exams to become a member of  
19 the Royal College of Physicians in London, MRCP.  
20 In 1991 I decided to specialize in  
21 occupational medication. The way that works in the UK  
22 is there's a four-year period of training whilst in a  
23 job. So -- and much of the training in occupational  
24 medicine is done in industrial settings. So I worked  
25 for a chemical company at that time.  
00010:01 Q. What was the name of that chemical company?  
02 A. It was called Imperial -- ICI was the name of  
03 the company. It no longer exists. And whilst I was  
04 there, I attended day release to take the qualifications  
05 to become an accredited specialist. So that involves

06 examination, dissertation, and some feedback from a  
 07 trainer over the four-year period.  
 08 At the end of that you become something  
 09 called MFOM, Member of the Faculty of Occupational  
 10 Medicine. And that is -- you're then on a specialist  
 11 register as a accredited specialist in occupational  
 12 medicine. So that's broadly similar to being a  
 13 board-certified occupational physician in the U.S.

Page 14:17 to 15:05

00014:17 Q. And just to make sure we're on the same page.  
 18 I'm sure you can speak quite a lot on this topic but  
 19 could you just briefly tell us what occupational medicine  
 20 is?  
 21 A. Okay. Occupational medicine is a clinical  
 22 medical specialty, so it doesn't involve direct patient  
 23 contact compared to something like some public health  
 24 specialties where you're dealing with populations only.  
 25 But the nature of the specialism is to -- it is the  
 00015:01 science of the impact of health on ability to work and  
 02 impact of work on people's health, largely.  
 03 I would say it has evolved somewhat. So  
 04 it's quite common now for people to look after all  
 05 aspects of employee health and well-being.

Page 15:12 to 15:22

00015:12 Q. Okay. And when you joined BP in 2006, what was  
 13 your title?  
 14 A. In BP?  
 15 Q. Yes.  
 16 A. Vice president health and chief medical  
 17 officer.  
 18 Q. And what specific BP entity did you work for?  
 19 A. Goodness. I'm not -- I think -- I think my  
 20 employer's called BP International Limited.  
 21 Q. Is that the role you're currently in?  
 22 A. It is.

Page 16:23 to 17:15

00016:23 Q. Sorry. Can you explain your roles and  
 24 responsibilities in this position?  
 25 A. Right. The -- the role is one where I provide  
 00017:01 advice to the company on health. It's health strategy.  
 02 Say, that health strategy -- the scope of that health  
 03 strategy would extend from employee health and wellness,  
 04 occupational health and industrial hygiene matters for  
 05 approximately now 80,000 employees worldwide.  
 06 And also advising or providing access to  
 07 sources of advice around matters of public health  
 08 inasmuch as that is relevant in the countries which BP  
 09 operates.

10 Q. And who's your supervisor?  
11 A. I currently work for Dr. Stephen Flynn, who is  
12 the group head of health safety security. Actually,  
13 health safety environment risk and learning. Again, I  
14 think there's a common tendency to change the names of  
15 roles pretty frequently.

Page 17:19 to 22:24

00017:19 And do you know, does he work for BP  
20 International Limited as well?  
21 A. I don't know specifically.  
22 Q. Okay.  
23 A. I suspect that he does.  
24 Q. Are there other medical officers within BP  
25 International Limited, or are you the only one?  
00018:01 A. No. I'm not -- I'm not terribly personally  
02 interested in, you know, which bits of the company  
03 people might be working for. But if I just give you a  
04 bit of an overview.  
05 Q. Sure.  
06 A. I'm the most senior medical person in the  
07 company. And the company regard me as such. I have a  
08 number of doctors who work directly for me, and  
09 industrial hygienists who work directly for me.  
10 Q. Can you explain what an industrial hygienist is?  
11 A. Yeah. An industrial hygienist -- I'm not an  
12 industrial hygienist so I don't want to undervalue in  
13 any way what they might be doing. But their role really  
14 is very complementary to an occupational physician in  
15 that they identify -- they participate in the  
16 identification of potential hazards in workplaces,  
17 assess the risks of those hazards as they may affect  
18 human health and then advise on steps which may be taken  
19 to remove those hazards completely or to minimize them,  
20 advising management within the company how to do that.  
21 What they also then become involved in is  
22 the oversight or delivery of monitoring evaluation  
23 programs to ensure, to check that the advices that's  
24 been given are successful.  
25 So those are just sort of things that --  
00019:01 removal of things. Engineering containment. Provision  
02 of personal protective equipment, training requirements.  
03 Those would all be pieces of advice the hygienist might  
04 give to a worker or a work group or a company to prevent  
05 something from happening.  
06 The -- the occupational doctor may then  
07 get involved at a later time in accessing somebody  
08 personally. Other groups, health surveillance, be  
09 checking groups to ensure the health effects that could  
10 potentially occur from the hazards identified at the  
11 beginning were not present, or that the early  
12 indications of those weren't present so they could be  
13 dealt with.  
14 Q. And approximately how many industrial hygienists

15 work for you -- report to you?  
16 A. Oh, goodness. About half a dozen --  
17 Q. Okay.  
18 A. -- work directly for me. There's about 60 or  
19 70 working across the company in hygiene positions, but  
20 it's quite common -- and that changes all the time,  
21 obviously, with people coming and going.  
22 But there are often hygienists who are  
23 working in safety positions so they may be qualified,  
24 they may be certified industrial hygienists in  
25 accordance with the American board. But they may have  
00020:01 taken a safety role so I don't -- I don't know exactly  
02 how many are working.  
03 Q. Okay. Approximately how many occupational  
04 physicians work for you?  
05 A. So I have more two senior physicians and then I  
06 have a regional structure. So, again, it's about half a  
07 dozen --  
08 Q. Okay.  
09 A. -- working for me. Slightly more.  
10 Q. Do you directly supervise anyone other than the  
11 occupational doctors and the industrial hygienists?  
12 A. Yes, I do. I have a lady working in the U.S.  
13 who looks after health systems and epidemiology. The  
14 health systems are on computer systems for databases to  
15 try and help collect the right data around the company.  
16 Q. And --  
17 A. Or to provide those two different working units  
18 to be able to do that.  
19 Q. And what's her name?  
20 A. Delya Somerville.  
21 Q. Anyone else?  
22 A. So I have a Colombian lady who's now working in  
23 Houston and she looks after policy and capability for  
24 me. Policies and standards. And her name is Claudia  
25 Gnecco, spelled G-n-e-c-c-o.  
00021:01 Q. Anyone else who you supervise directly?  
02 A. The industrial hygienist lead. Senior  
03 hygienist, whose name is Leslie Burgess. She's based in  
04 Norfolk, Virginia, at home.  
05 Q. Are any of the other physicians or industrial  
06 hygienists you supervise located in the U.S.?  
07 A. Claudia. Claudia is a physician. Delya is  
08 a -- she has a master's in public health. She's not a  
09 doctor. They're both in the U.S. Leslie's in the U.S.  
10 Claudia just moved to the U.S. from the UK. And the two  
11 other doctors are based in the UK, one of whom is from  
12 Georgia near Azerbaijan. A diverse team.  
13 Q. Yeah. Very. So on April 20th, 2010, when the  
14 Macondo well blew and the explosion --  
15 A. Yes.  
16 Q. -- occurred on the DEEPWATER HORIZON, you were  
17 in this current position that you're in now?  
18 A. I was. Yes.  
19 Q. Okay. What was your role in the response to the  
20 DEEPWATER HORIZON incident?

21 A. The company pretty quickly formed something  
22 called the business support team. And the aim of that,  
23 really, was to draw on, I think, the capabilities within  
24 leadership positions in the company to support the local  
25 response by the Gulf of Mexico organization to the  
00022:01 disaster.  
02 Q. And by Gulf of Mexico organization, what are you  
03 referring to?  
04 A. The people based probably in West Lake,  
05 Houston.  
06 Q. Okay.  
07 A. Who were -- I guess they were looking after  
08 that piece of offshore business directly.  
09 Q. And those were BP employees?  
10 A. Yes.  
11 Q. Okay. And so were you part of that business  
12 support team?  
13 A. Yes, I was.  
14 Q. Okay. From about what date did you begin?  
15 A. Well, I began thinking about what to do about  
16 this within a few days of -- I can't remember the  
17 specific day, but within a few days of the event. I  
18 can't remember the precise date, but I was actually in  
19 the U.S. at an American College of Occupational  
20 Environment Medicine meeting in Los Angeles that year  
21 when -- as I heard the unfolding of events. It was  
22 probably the last week in April.  
23 Q. Okay.  
24 A. Maybe early May.

Page 23:03 to 26:19

00023:03 Q. So were you ever on the ground in -- in Houston  
04 during the response?  
05 A. Yes, I was.  
06 Q. How often?  
07 A. I couldn't be absolutely precise, but we -- I  
08 think it would have been several weeks, probably a  
09 couple of months overall. Maybe slightly longer.  
10 What I did was rotate in and out of that  
11 team so that I could actually carry on with some of my  
12 other duties back in UK. I have to say, though, while I  
13 was in the UK I wasn't -- I was still working on the  
14 same things --  
15 Q. Okay.  
16 A. -- throughout.  
17 Q. Do you recall who you rotated with locally?  
18 A. Well, the two people who were working directly  
19 for me, the other doctors I mentioned.  
20 Q. Okay.  
21 A. They -- they would rotate in and out for me.  
22 Yeah. One of them has left, actually, since then.  
23 Yeah.  
24 Q. Okay. And Claudia was the other --  
25 A. No. David Flower was one.

00024:01 Q. And what was the name of the other who had left?  
02 A. Alison Martin.  
03 Q. Okay. So while you were on the ground, what  
04 were your responsibilities with regard to the response?  
05 A. I would say my responsibilities would be  
06 described as providing an overview, an oversight, again,  
07 of the health strategy in that context of that event.  
08 I would say I've never limited myself to  
09 only standing and offering advice from the sidelines.  
10 Q. So what did that mean in the context of this  
11 response?  
12 A. Well, if I saw something that I thought could  
13 or should be improved, I would make it known and then I  
14 would make sure it got done.  
15 Q. What types of things did you see that could or  
16 should be approved?  
17 A. I'm sure there are many things. I'm just  
18 recalling one particular situation where I was down at  
19 the incident command center in Houma. You'd have to  
20 picture the scene. It was like an aircraft hangar with  
21 lots of trestle tables, people working for NIOSH, OSHA,  
22 U.S. Coast Guard, FDA, Health and Human Services,  
23 contractors, BP, all doing lots of things.  
24 And they were talking about a form for  
25 investigating accidents being created. This would have  
00025:01 been in May -- early May, I would say.  
02 And there was an OSHA representative  
03 there. And I was suggesting that that form could be  
04 improved by adding occupational illnesses to the scope  
05 of the investigation. Everything -- the old policies,  
06 though, were really a tripartite decision as to what  
07 happened. So they had something called Unified Area  
08 Command.  
09 Q. Right.  
10 A. Where OSHA, BP, and the Coast Guard would agree  
11 that this was the policy. So it was a joint effort, a  
12 collaborative effort to produce things and then they  
13 would put the policy in place. So they were just  
14 actually ready to sign off this form for accident  
15 investigation, and I told them I didn't think they  
16 should do that. Which I think they may have found a bit  
17 irritating to begin with, but they changed the form.  
18 Q. So they changed the form by adding  
19 occupational --  
20 A. Yes.  
21 Q. -- illnesses to the form?  
22 A. Yes.  
23 Q. And what is an occupational illness?  
24 A. Well, an occupational illness would be an  
25 illness that may be associated with or caused by  
00026:01 exposure to a harmful circumstance in a workplace  
02 setting. And OSHA would define -- would define that in  
03 the U.S., have a definition for that.  
04 Q. Okay. And you said that you were on the ground  
05 there in the Gulf starting from about the last week of  
06 April or very early May, correct?

07 A. Yes.  
08 Q. Who from BP associated with health was on the  
09 ground before you?  
10 A. Before me. There were a number of people who  
11 were in health and safety positions who would have been  
12 actually in the Gulf organization.  
13 Q. Okay.  
14 A. So there'll be health and safety officers. You  
15 know, I couldn't possibly list the names of these people  
16 who had health and safety responsibilities. There were  
17 nurses involved. And I know that they were also taking  
18 advice from doctors outside the company as well at that  
19 time.

Page 26:22 to 28:07

00026:22 Q. You mentioned a little earlier that there was a  
23 tripartite decision-making. What were the three parts of  
24 that tripartite?  
25 A. Well, as I said, I think -- I recall it's  
00027:01 defined in terms of major incidents that they set up  
02 this thing called the Unified Area Command. And I think  
03 it's somehow related to national incident response.  
04 Yeah. In terms of the way it's structured. And the  
05 idea is that the party concerned, which would be BP --  
06 Q. Uh-huh.  
07 A. -- would work directly with OSHA, Occupational  
08 Safety and Health Administration. And because it was  
09 offshore, the U.S. Coast Guard. I think OSHA's  
10 responsibilities are limited to about three miles  
11 offshore, something like that.  
12 So that -- that effectively was the  
13 management structure to managing the responses, managing  
14 the event. So as I say, it became very, very quickly, a  
15 team effort, to be honest.  
16 Q. Uh-huh.  
17 A. So all the time there was to-ing and fro-ing  
18 between different parties and, really -- well, quite  
19 quickly we actually became people who were trying to  
20 solve problems and do things, not people who were  
21 concerned particularly about who you're working for. We  
22 were all really focused on preventing harm to anybody in  
23 that situation of -- of conducting a response.  
24 Q. Who at BP had ultimate responsibility for  
25 industrial hygiene-related decisions during the response?  
00028:01 A. Well, I would have provided advice and  
02 oversight from that -- from that team, from that  
03 business support team. And then there would have been  
04 industrial hygienists actually embedded within the local  
05 structure based either in one of the -- in some of the  
06 incident command posts who were participating in those  
07 decision-making processes.

Page 31:08 to 31:22



00031:08 Q. Do you still have a role -- I know the response  
 09 has ended. Do you still have a role in the aftermath,  
 10 I'll say, of the DEEPWATER HORIZON incident?  
 11 A. Yes. I think I do.  
 12 Q. What's that role now?  
 13 A. Well, to be honest, my primary role is as a  
 14 physician to myself before anything else. And one of  
 15 the things that is ongoing is research into major  
 16 incidents and outreach, things like that. And -- so I  
 17 continue to have conversations with professional  
 18 colleagues and others to really enhance human health  
 19 where I can. That's what I consider my primary  
 20 position.  
 21 Q. Is BP conducting any of the research you  
 22 mentioned?

Page 31:24 to 32:14

00031:24 that the question calls for any privileged information.  
 25 Just caution the witness on that.  
 00032:01 A. Well, the research that I'm aware of  
 02 involved -- involve is too strong a word, to be honest.  
 03 The -- the -- well, I'd have to go back to the  
 04 beginning. There are -- there's something called the  
 05 Gulf of Mexico Research Institute.  
 06 Q. GoMRI?  
 07 A. GoMRI. Yes. And there is a large amount of  
 08 money that is managed by others, wholly arm's length.  
 09 So it's not researched by BP at all, to answer your  
 10 question. But I was very keen to make sure really good  
 11 research got done. And I've continued to keep an  
 12 interest in those -- in that research.  
 13 Q. Did you take any steps to ensure that good  
 14 research was getting done by the GoMRI?

Page 32:16 to 33:16

00032:16 A. No. I could only really -- I could only really  
 17 take you back to very shortly after the -- my -- my  
 18 initial involvement. I wanted to make sure really good  
 19 answers -- people could get really good answers to the  
 20 questions they may have, whether they were members of  
 21 the public, responders, or others about anything to do  
 22 with health. And I felt the best way to do that was for  
 23 independent credible scientists of the highest degree of  
 24 trust and integrity in the United States should lead  
 25 that.  
 00033:01 So just like I said, you know, I didn't  
 02 limit myself to things. So I made it my business to set  
 03 up an appointment with Harvey Fineberg, who is the head  
 04 of the Institute of Medicine in Washington, and implore  
 05 him to do -- to set something up just like that. And  
 06 that was in the first week in June, 2010.  
 07 Q. Okay.  
 08 A. And shortly after that, workshops and other

09 things took place which ultimately, I think, led to  
 10 research being done.  
 11 Q. Were you involved in the approvals of any GoMRI  
 12 projects?  
 13 A. No.  
 14 Q. Are you aware of any BP research into the human  
 15 health impacts of the spill that you considered to be  
 16 privileged?

Page 33:25 to 34:11

00033:25 A. Could you just repeat that again?  
 00034:01 Q. Sure. Are you -- without getting into the  
 02 nature of any such research, if there is any --  
 03 A. Yeah.  
 04 Q. -- are you aware of any BP research into the  
 05 human health impacts of the spill that you consider to be  
 06 privileged?  
 07 A. Not specifically, no. I don't think.  
 08 Q. During the response, who were you reporting to  
 09 directly?  
 10 A. I would say I reported in to Steve Flynn, who  
 11 was on that BST. That would be the formal reporting.

Page 34:15 to 34:16

00034:15 Q. Did you work on any internal lessons learned  
 16 processes after the spill?

Page 34:18 to 36:04

00034:18 A. I -- as I said, one of the things I wanted to  
 19 do was to make sure people got the best understanding of  
 20 what happened. Or what -- or what we did in terms of  
 21 the response from a health perspective. So I have  
 22 shared, really, a sort of description of what we did at  
 23 a number of meetings of doctors like me who were also  
 24 advising other companies.  
 25 So that was basically what I did -- what  
 00035:01 I've done. I've done a couple of those, a few of those.  
 02 Q. And did you generate any documents out of that  
 03 process? Did you write any documents?  
 04 A. Yes. I produced a PowerPoint presentation.  
 05 Q. Okay. All right. Let's turn to a couple of  
 06 documents. If you take a look in your binder, the one  
 07 that's marked Volume 1. And if you turn to the document  
 08 behind Tab 1. We're going to mark these for the court  
 09 reporter. So I'm going to hand you a sticker that is  
 10 marked with Exhibit Number 12011.  
 11 And for the record, this is the document  
 12 with Bates number BP-HZN-2179 MDL 05192919.  
 13 (Exhibit Number 12011 marked.)  
 14 Q. We've got to use shorter Bates numbers.  
 15 Could you take a look at this document for

16 a moment, Dr. Heron?  
 17 A. Yes.  
 18 Q. Are you familiar with this document?  
 19 A. I'm certainly familiar with something that  
 20 looks like that.  
 21 Q. Okay.  
 22 A. It's not surprising.  
 23 Q. Is this an organizational chart of the BP HSE  
 24 technical safety team support?  
 25 A. Yes. This is what I was referring to as a  
 00036:01 business support team.  
 02 Q. Okay. So this is the business support team as  
 03 it was in June 2010?  
 04 A. I -- wait. It says June 2010 on the slide.

Page 36:16 to 36:20

00036:16 Q. And is this a rotating position, this team lead  
 17 position?  
 18 A. I can't recall whether it was rotating all the  
 19 time, whether they were both there sometimes, but I  
 20 think they both took on that role from time to time.

Page 37:10 to 37:23

00037:10 Q. All right. And going down from there, the chief  
 11 of staff position looks like it was held by Tyron Kalpee  
 12 and Styron Powers?  
 13 A. Yes.  
 14 Q. Do you know those individuals?  
 15 A. I do.  
 16 Q. Did you interact with them during the response?  
 17 A. I'm sure I did, yeah.  
 18 Q. Okay. Do you know either of their titles?  
 19 A. Well, do you mean like chief of -- they're  
 20 called chief of staff.  
 21 Q. Sorry. Their -- their role or -- their role or  
 22 their title in the company, not during the response?  
 23 A. Okay.

Page 37:25 to 38:18

00037:25 A. Just as a kind of -- perhaps to help. I  
 00038:01 recognize quite a number of names on this chart.  
 02 Q. Okay.  
 03 A. But they came from all over the place. Some of  
 04 them from roles in -- I think Tyron Kalpee is from  
 05 Trinidad --  
 06 Q. Okay.  
 07 A. -- for example. And he would have been working  
 08 in a role in a business in Trinidad.  
 09 I think Styron Powers was a U.S. citizen  
 10 working in some part of business of BP's business in the  
 11 U.S.

12 Q. Okay.  
13 A. And I could almost say the same about a number  
14 of names on here. I got to know them as people because  
15 we talked about -- we talked about -- we talked in the  
16 context of this. But I couldn't really recall exactly  
17 what role people were drawn from into in the -- in the  
18 overall context of this generic diagram.

Page 39:02 to 40:08

00039:02 Q. Okay. Let's go to the left of this chart.  
03 A. Yes.  
04 Q. It says health and medical lead, Dr. Richard  
05 Heron, Dr. David Flower and Dr. Alison Martin.  
06 A. Yeah.  
07 Q. And you had already discussed that you rotated  
08 with Dr. Flower and Dr. Martin, correct?  
09 A. Correct.  
10 Q. And then below you is health coordination?  
11 A. Yes.  
12 Q. And the name there?  
13 A. Falyaz Rasheed.  
14 Q. What was the health coordination role during the  
15 response?  
16 A. Well, again, I think he was very much an  
17 administrative support person.  
18 Q. And then below that, human toxicologist, Mark  
19 Saperstein?  
20 A. Mark Saperstein. Yes.  
21 Q. Do you know Mark?  
22 A. I do know Mark.  
23 Q. What was the human toxicologist role during the  
24 response?  
25 A. Well, I wanted him to ensure that the best  
00040:01 available information around toxicology from a human  
02 perspective was made available from the business support  
03 team. And he's -- his -- he's a toxicologist who is  
04 currently and then, I think, was working in BP's  
05 toxicology section. And so I asked for that position to  
06 be put in this chart for that reason.  
07 Q. Okay. Was he overseeing any monitoring during  
08 the response?

Page 40:10 to 41:14

00040:10 A. I don't know. I don't -- I don't know he was  
11 doing any particular human health -- the monitoring  
12 outside was really with industrial hygienists.  
13 Q. Okay. And let's go below the human  
14 toxicologist. We have public health, Gary Krieger?  
15 A. Yes.  
16 Q. Who's Gary Krieger?  
17 A. Gary Krieger doesn't work for BP. He's an  
18 external person. He works -- he's a doctor. He's a  
19 medical doctor.

20 Q. Do you know what company or organization he  
 21 works for?  
 22 A. Yeah. He works for a company called New  
 23 Fields.  
 24 Q. Was he a contractor to BP during the response?  
 25 A. Yeah. I think he must have been. Yeah.  
 00041:01 Q. And then --  
 02 A. That was part of what Falyaz was doing, was  
 03 setting up contracts and things that we needed to do.  
 04 Q. In that health coordination role?  
 05 A. In that health coordination role.  
 06 Q. All right. Moving one box down. Occupational  
 07 health, Kevin O'Shea on call?  
 08 A. Yeah.  
 09 Q. Who's Kevin O'Shea?  
 10 A. Kevin O'Shea is a doctor and he's an  
 11 occupational physician.  
 12 Q. Does he work for BP?  
 13 A. He does.  
 14 Q. Do you know what entity of BP he worked for?

Page 41:16 to 43:11

00041:16 A. Well, I don't know what entity -- I don't know  
 17 what entity he works for. He works up in Indiana.  
 18 Q. Okay. And what role was he fulfilling during  
 19 the response?  
 20 A. Okay. So he was the immediate medical advisory  
 21 person, I would say. Yeah. As I say, my role was more  
 22 strategic oversight.  
 23 Q. Okay.  
 24 A. I would say his was little more operational  
 25 support.  
 00042:01 Q. Was he providing advice to the industrial  
 02 hygienists?  
 03 A. He would -- I think we would have all  
 04 contributed advice to industrial hygienists in that  
 05 group from time to time.  
 06 Q. And then below him it says IMT medical officer,  
 07 Diana Haines and deployed staff?  
 08 A. Yes.  
 09 Q. What's an IMT medical officer?  
 10 A. So, you know, I can't remember what these  
 11 acronyms stand for.  
 12 Q. That's fine.  
 13 A. Diana Haines works -- worked in the Gulf of  
 14 Mexico business. And she was a nurse. She still works  
 15 there, I think. And she's a nurse.  
 16 Q. Okay. And then we're not going to go through  
 17 this whole chart, but just moving one more column over to  
 18 the left.  
 19 The industrial hygiene lead?  
 20 A. Yes.  
 21 Q. What was the difference between your role as  
 22 medical lead and the industrial hygiene lead?

23 A. Okay. Well, I think -- I would reiterate the  
 24 kind of description of what industrial hygiene is and  
 25 what occupational medicine is. They are unique  
 00043:01 disciplines but they are very complementary inasmuch  
 02 as -- as is toxicology, too -- in understanding hazards,  
 03 accessing risks and managing them and accessing and  
 04 managing people and making sure that they have access to  
 05 medical treatment should they need it.  
 06 So there's a sort of complementary  
 07 discipline. So there's lots of interplay in terms of  
 08 discussion between those groups.  
 09 Q. So it's fair to say that the -- the medical team  
 10 and the industrial hygiene team communicated quite a bit  
 11 with each other?

Page 43:13 to 46:04

00043:13 A. I think it's true that the medical -- that I  
 14 communicated quite frequently with people in -- with  
 15 John and Kate.  
 16 Q. Okay. And you're referring to John Dobbie and  
 17 Kate Murray?  
 18 A. Kate Murray, yeah.  
 19 Q. And just below them, IH support, industrial  
 20 hygiene support?  
 21 A. Yeah.  
 22 Q. Do you know what that role was?  
 23 A. Really in the same way as the roles under me  
 24 were supporting my activity, those two roles would be  
 25 supporting the lead role in industrial hygiene.  
 00044:01 Q. And the two names here are Chantal  
 02 Lalla-Maharaj?  
 03 A. Correct.  
 04 Q. Is she a BP employee?  
 05 A. She's -- I think she's -- still is. She  
 06 certainly was then.  
 07 Q. Okay.  
 08 A. Again, I think she's from Trinidad.  
 09 Q. And May Chow?  
 10 A. May Chow is misspelled. Actually, it's  
 11 C-h-o-u.  
 12 Q. Okay.  
 13 A. Chau. A-u, rather. And she is an industrial  
 14 hygienist who is currently -- she's a BP employee.  
 15 Q. Okay. Do you know who selected people for these  
 16 positions?  
 17 A. No. I don't know exactly who selected --  
 18 Q. Okay.  
 19 A. -- for those positions.  
 20 Q. All right. If you can turn in your binder to  
 21 the next document, the document behind Tab 2. For the  
 22 record, this is marked BP-HZN-2179 MDL 01790324. And I'd  
 23 ask you to mark this with Exhibit Number 12012.  
 24 (Exhibit Number 12012 marked.)  
 25 Q. Could you take a moment and familiarize yourself

00045:01 with this document?  
 02 I'll just let you know that behind some of  
 03 those tabs there are blue sheet dividers, and that's just  
 04 to indicate that there's an e-mail with some attachments  
 05 behind it. So if you could just sort of take a moment to  
 06 familiarize yourself with the -- all of the documents  
 07 that are behind Tab 2 there.  
 08 I'll represent to you that I think that  
 09 first attachment might be a little hard to read. I think  
 10 it's a spreadsheet chopped up on to a number of pages.  
 11 A. That go across like that.  
 12 Q. Yeah. Are you generally familiar with this  
 13 document?  
 14 A. I'm generally familiar with this.  
 15 Q. Okay. So if you can turn to the first page, the  
 16 e-mail that's right there behind Tab 2.  
 17 A. This one?  
 18 Q. Yes. The e-mail from Maria Estrada-Stockton?  
 19 A. Yes.  
 20 Q. And we saw in the previous exhibit she was in an  
 21 administrative support role?  
 22 A. Yes. I saw that.  
 23 Q. Okay. And do you know Maria?  
 24 A. Yeah. I know her a little, yeah.  
 25 Q. Did you interact with her during the response?  
 00046:01 A. I'm sure I did, yeah.  
 02 Q. Okay. And could you take a look at who this  
 03 e-mail is sent to? Are all these BP employees and a BP  
 04 contractor?

Page 46:06 to 47:01

00046:06 A. I don't know what their -- all of their  
 07 individual statuses are.  
 08 Q. Did you receive this e-mail?  
 09 A. My name's on the e-mail.  
 10 Q. Okay. What's the subject of the e-mail?  
 11 A. It says daily HSE technical coordination  
 12 meeting.  
 13 Q. Do you recall having daily HSE technical  
 14 coordination meetings during the response?  
 15 A. I recall having multiple meetings, so I'm  
 16 sure -- I'm sure -- yeah. Multiple meetings.  
 17 Q. Okay. And the date of this e-mail is June 4th.  
 18 Do you recall when the HSE technical coordination  
 19 meetings began?  
 20 A. I do not.  
 21 Q. Okay. Do you recall when they ended?  
 22 A. I do not.  
 23 Q. All right. And do you recall generally what was  
 24 discussed during these meetings?  
 25 A. A wide range of things in those meetings, I  
 00047:01 would say. Yeah. In that sort of meeting.

Page 47:11 to 47:22

00047:11 Q. Okay. If you flip a few pages forward to the  
 12 page that's marked in the bottom corner with the Bates  
 13 number BP-HZN and then it ends with 326. So 2179 MDL  
 14 01790326.  
 15 Are you there?  
 16 A. Could you just repeat that number?  
 17 Q. Sure. It's 2179 MDL 01790326.  
 18 A. Yeah.  
 19 Q. And are you familiar with this document?  
 20 A. I can't remember seeing it.  
 21 Q. Okay.  
 22 A. It looks like a document I might have seen.

Page 53:10 to 53:20

00053:10 Q. Do you recall determining a need for an MSDS for  
 11 weathered crude?  
 12 A. Well, I -- I do recall that there were  
 13 conversations around material safety datasheets. That  
 14 would be an area that a toxicologist like Mark would be  
 15 knowledgeable in. And I do recall conversations around  
 16 the fact that the -- there wasn't -- I think -- well,  
 17 that the -- that weathered crude was different to crude.  
 18 So that's sort of the nature of the conversation, which  
 19 ultimately, I think, there was an MSDS produced for  
 20 weathered crude.

Page 54:15 to 55:11

00054:15 Q. All right. Let's move forward to Tab 3 in your  
 16 binder. For the record, this is BP-HZN-2179 MDL  
 17 08471672.  
 18 Are you there?  
 19 A. I'm there.  
 20 Q. Okay. I'm going to ask you to mark that with  
 21 Exhibit 12013.  
 22 (Exhibit Number 12013 marked.)  
 23 Q. Can you take a moment to familiarize yourself  
 24 with this document?  
 25 A. Okay.  
 00055:01 Q. Are you familiar with this document?  
 02 A. Yes, I think so.  
 03 Q. Is this the PowerPoint that you testified  
 04 earlier that you drafted?  
 05 A. It's -- it is a PowerPoint that I drafted.  
 06 Q. Okay. And for the record, it's entitled  
 07 DEEPWATER HORIZON Response: Protecting Health?  
 08 A. That's correct.  
 09 Q. And then the byline there is yours, Dr. Richard  
 10 J. L. Heron?  
 11 A. That's me.



Page 59:19 to 59:20

00059:19 Q. Okay. Did you consider the DEEPWATER HORIZON  
20 response an unprecedented situation?

Page 59:22 to 60:02

00059:22 A. I considered the situation that I was involved  
23 in one which I considered unprecedented.  
24 Q. And it says here, "It was a daunting set of  
25 challenges." Do you agree with that statement?  
00060:01 A. It does say that.  
02 Q. Do you agree with that statement?

Page 60:04 to 60:06

00060:04 A. I believe I wrote that statement.  
05 Q. Do you agree with that statement?  
06 A. I agree with that statement.

Page 61:07 to 61:08

00061:07 Q. What are the hazards associated with exposure to  
08 oil at above a safe limit?

Page 61:10 to 61:18

00061:10 A. The -- the hazards are -- well, the hazard  
11 itself is -- is the oil. And the risk is that exposure  
12 above a safe limit may cause an effect. And -- well,  
13 you -- you -- you could list from general to specific  
14 potential -- potential outcomes from exposure to oil.  
15 So, yeah. Just a wide variety of potential hazards,  
16 potential risks.  
17 Q. Could you list some of them?  
18 A. Okay.

Page 61:20 to 62:03

00061:20 A. Well, let me see. And again, it -- it's  
21 important to qualify the word "oil" is a very general  
22 statement. This was a presentation to a group of  
23 doctors, not to do with the actual thing itself.  
24 But it does depend on the nature of the  
25 oil. So weathered crude oil, for example, you'd have  
00062:01 to -- you'd have to touch it a lot and often to have a  
02 harmful effect from it on your skin, for example.  
03 Q. If you did, what would some of the effects be?

Page 62:05 to 62:07

00062:05 A. You could -- you could have a skin rash.

06 Q. Any others?  
07 A. I'm --

Page 62:09 to 62:12

00062:09 A. I'm sure there may be, but I don't have a list  
10 in my head or otherwise.  
11 Q. So you can't think of any other potential  
12 effects of touching oil with your hands than a skin rash?

Page 62:14 to 62:19

00062:14 A. No. I was giving an example of touching a --  
15 weathered crude and skin.  
16 Q. Okay.  
17 A. Yeah.  
18 Q. So there are no other effects you can think of  
19 from touching weathered crude other than a skin rash?

Page 62:21 to 63:01

00062:21 A. No. I didn't say that. I said you'd have to  
22 touch weathered crude frequently and often, or often,  
23 to -- to have an effect like a skin rash.  
24 Q. If you touch weathered crude frequently and  
25 often, can you think of any other effects other than a  
00063:01 skin rash?

Page 63:03 to 63:04

00063:03 A. I couldn't possibly speculate because the  
04 circumstances may vary.

Page 63:09 to 63:18

00063:09 Q. In this presentation, you're talking about the  
10 DEEPWATER HORIZON oil spill response, correct?  
11 A. Correct.  
12 Q. And you note here that potential hazards  
13 included exposure to oil and certain other chemicals,  
14 correct?  
15 A. Correct.  
16 Q. During the DEEPWATER response, were you  
17 concerned with the potential hazard of exposure to oil  
18 and certain other chemicals?

Page 63:20 to 64:02

00063:20 A. I was concerned to make sure that any potential  
21 hazards we could think of, including oil and other  
22 chemicals, were considered and that the risks of that  
23 exposure were accessed where possible, prevented or

24 minimized.  
25 Q. If you weren't able to prevent or minimize those  
00064:01 risks, what would some of the outcomes be that you might  
02 see?

Page 64:04 to 64:05

00064:04 A. Well, I believe we were able to prevent or  
05 minimize those risks.

Page 67:16 to 67:18

00067:16 Q. Do you consider benzene to be a carcinogen?  
17 A. I'm aware that benzene is classified as  
18 something which may cause cancer.

Page 71:09 to 71:14

00071:09 Q. Why don't we -- just for the sake of  
10 completeness, why don't we mark the native version of the  
11 PowerPoint as Exhibit 12014.  
12 (Exhibit Number 12014 marked.)  
13 Q. This is the version of the PowerPoint that does  
14 not include the speaker notes.

Page 73:02 to 73:24

00073:02 Q. Why did you choose to depict this OSHA action  
03 level and ACGIH TLV for benzene of .5 ppm on this chart?  
04 A. When I selected this data, I would have done it  
05 in discussion with some of our industrial hygienists. I  
06 can't recall exactly who. And the audience that I'm  
07 speaking to, as a nontechnical, non-hygiene group, I  
08 would have certainly expected them to be familiar with  
09 the OSHA action limit and also to be as aware as I am,  
10 roughly speaking, that there was something else by ACGIH  
11 or some American hygiene body that sets limits.  
12 So as it says, it's really a summary. And  
13 it's to represent -- it's a representation to -- to  
14 illustrate there. That was what the aim of this was, to  
15 illustrate the number of samples and where they fell.  
16 Q. Are you aware of the NIOSH recommended exposure  
17 level for benzene?  
18 A. I believe it's half the OSHA permissible  
19 exposure limit.  
20 Q. Okay.  
21 A. And point -- it's also -- I think it's also .5.  
22 Q. You think the -- the NIOSH recommended exposure  
23 limit is .5 ppm?  
24 A. I think it is .

Page 74:04 to 74:07

00074:04 Q. You express here the OSHA action level and the  
05 ACGIH TLV for benzene .5 ppm. Was that level determined  
06 to be the safe level for exposure to benzene during the  
07 response?

Page 74:09 to 77:20

00074:09 A. It wasn't my role to determine the safe level.  
10 I -- I -- I mean, I -- it's not -- it's not me that  
11 determines safe level. As I kind of mentioned, I think,  
12 in the beginning, decisions around the response were  
13 joint decisions in something called Unified Area Command  
14 between OSHA, BP and the Coast Guard. And they together  
15 determined what levels would be appropriate.  
16 Q. And do you recall what level was determined to  
17 be appropriate for benzene?  
18 A. I don't exactly recall. I do recall that that  
19 was -- no. I don't exactly recall.  
20 Q. Okay. If you move on to page -- the page that  
21 ends in Bates Number 1688. I'm not seeing a slide number  
22 here.  
23 A. Yes.  
24 Q. Could you read the -- the paragraph starting  
25 with, we had to carefully?  
00075:01 A. "We had to carefully evaluate sometimes  
02 competing considerations posed by different risks, e.g.,  
03 for workers on the beach, personal protective equipment  
04 would help minimize risks of chemical exposure but could  
05 increase risks of heat exhaustion. Both risks needed to  
06 be carefully considered in the selection of personal  
07 protection equipment and the development of a heat  
08 stress management plan." Stop.  
09 Q. So was personal protective equipment used by  
10 workers during the DEEPWATER HORIZON oil spill response?  
11 A. Yes, it was.  
12 Q. What types of -- can we call it PPE?  
13 A. Yes.  
14 Q. What types of PPE were used?  
15 A. I'm not an expert in defining what exactly the  
16 PPE was. That is -- that is something that industrial  
17 hygienist is competent to do. So what -- what they  
18 basically would do, again, working very closely with  
19 OSHA and the Coast Guard, would be to determine whether  
20 personal protective equipment, PPE, was necessary to  
21 prevent or minimize exposure. And what type of PPE, how  
22 long it might be worn for, and other -- a range of  
23 things about how you might use PPE, if needed. So they  
24 can make many different considerations about what and  
25 how on PPE.  
00076:01 Q. During the response, do you recall what types of  
02 PPE were used by the workers?  
03 A. Well, yes. I mean, I could give you some  
04 examples, if that helps -- if that's helpful. So  
05 certainly forms of respiratory protective equipment may  
06 have been provided -- well, were provided, to my

07 knowledge. Gloves would have been provided in certain  
08 circumstances. And Tyvek overalls or suits may have  
09 been provided for certain circumstances. Those would be  
10 two or three examples of the -- there's sort of broad  
11 categories of PPE that may be provided.

12 Q. And what's the purpose of the respiratory PPE?

13 A. Well, largely what you would be doing with  
14 respiratory PPE -- again, I couldn't give a specific  
15 answer about all -- you're given a very generic  
16 respiratory protective equipment. That can range from a  
17 whole range of things, some of which may be for comfort  
18 and others which would be to provide a source of clean  
19 air.

20 Now, I wasn't involved in the  
21 specification of what within that range might be  
22 selected, but I do know that when they went through a  
23 very detailed methodical review of the hazards, the  
24 potential hazards, and assessed the potential for those  
25 hazards to present effect and exposure and what PPE  
00077:01 might be appropriate for that.

02 So I was satisfied that those activities  
03 were being conducted.

04 Q. Do you recall what types of respiratory PPE were  
05 selected for use during this response?

06 A. No, I do not.

07 Q. Okay. You mentioned gloves?

08 A. Yes.

09 Q. What's the purpose of gloves as PPE?

10 A. Well, again, there are a variety of different  
11 types of gloves. They may be provided for all sorts of  
12 different reasons, some of which may be just hygiene,  
13 and others may be to stop something getting on your  
14 skin.

15 Q. During this response, do you know what the  
16 purpose was of wearing gloves as PPE?

17 A. I suspect there may have been -- both of those  
18 reasons may have been reasons to provide gloves.

19 Q. Hygiene and preventing contact with hazardous  
20 substances?

Page 77:22 to 78:03

00077:22 A. Well, contact with anything. I mean, again,  
23 you could have -- gloves can just protect the hands from  
24 injuries, too, you know, like what you might wear in the  
25 garden type of gloves. So there's a variety of  
00078:01 different reasons why one might be provided gloves for  
02 different jobs that one might do that could be conducted  
03 within a response.

Page 78:06 to 79:01

00078:06 Q. During this response, were gloves provided to  
07 any response workers for the purpose of minimizing  
08 contact with hazardous substances?

09 A. I would have thought so.  
 10 Q. But you don't know for sure?  
 11 A. Well, I'm aware that there were -- that's the  
 12 sort of thing hygienists will do. So I'm aware that  
 13 they will have accessed that risk. And where there was  
 14 a risk potentially of somebody touching something that  
 15 they should take care not to touch, then they may well  
 16 have been provided with gloves. And that would have  
 17 been to reduce any potential risk of a hazard presenting  
 18 a true risk.  
 19 So I think all the effort, really, is to  
 20 take the potential and -- you know, to -- to reduce that  
 21 potential as low as possible. It doesn't mean to say  
 22 you believe the risk to actually likely to occur. I  
 23 think that's why I'm having a bit of difficulty  
 24 answering you in a direct way. So you're trying to  
 25 prevent something from potentially happening, not  
 00079:01 necessarily expecting it to do so.

Page 79:25 to 81:03

00079:25 Q. Okay. Would you agree with the statement that  
 00080:01 personal protective equipment can increase the risks of  
 02 heat exhaustion?  
 03 A. I would agree that -- that wearing a personal  
 04 protective equipment, one needs to consider the  
 05 potential impact of that on a person's health at the  
 06 same time if you have a similar -- a different risk,  
 07 like exposure to heat. So your -- what you do to  
 08 prevent both of those risks or either of those potential  
 09 risks from happening needs to take account to the fact  
 10 that they're both there.  
 11 Q. Okay. If you could turn to the next page of the  
 12 presentation.  
 13 For the record, this is the page ending in  
 14 1689.  
 15 A. Yeah.  
 16 Q. Could you read the last paragraph there on that  
 17 page?  
 18 A. "We worked closely with certified industrial  
 19 hygienists and technicians to comprehensively monitor  
 20 the work environment. This included (1) real-time  
 21 workplace exposure monitoring that provided immediate  
 22 results so that we could promptly identify potential  
 23 issues regarding work practices, personal protective  
 24 equipment, and the like; (2), personal full shift worker  
 25 monitoring for a wide variety of tasks, including oil  
 00081:01 skimming, burning, and source control; and (3),  
 02 shoreline monitoring for a variety of potential chemical  
 03 pollutants." Stop.

Page 82:15 to 82:16

00082:15 Q. Can you describe BP's monitoring efforts during  
 16 the response?

Page 82:19 to 83:16

00082:19 A. I -- I couldn't possibly begin to do that and  
20 do it justice. I'm not a -- I'm not a specialist in --  
21 in the hygiene monitoring approaches.  
22 Q. In an earlier response you mentioned personal  
23 breathing zone monitoring, correct?  
24 A. That's correct.  
25 Q. That was conducted during the response?  
00083:01 A. I believe it was.  
02 Q. What does personal breathing zone monitoring  
03 entail?  
04 A. Well, again, I'm not an expert, but generally  
05 speaking it involves taking samples of the atmosphere or  
06 around the breathing zone, personal breathing zone of a  
07 person over a defined period to assess what they  
08 might -- amongst other things, to assess what they might  
09 be -- might be -- what potentially they could breathe.  
10 Potentially. Because they may not actually be breathing  
11 it. It's just measuring what might be in their personal  
12 breathing zone. That's my understanding of what  
13 personal breathing zone.  
14 As I say, I'm not an industrial hygienist.  
15 I'm sure there are very well-defined definitions of  
16 exactly how that works.

Page 84:05 to 85:15

00084:05 Q. Did you have any role in determining what  
06 methods would be used to monitor the concentrations of  
07 chemicals in the work environment?  
08 A. No, I didn't.  
09 Q. Were you made aware of BP's monitoring efforts  
10 with regard to worker safety during the response?  
11 A. Well, I was made aware as of things like  
12 personal breathing zone monitoring that was done. And  
13 in conversation or being -- being involved in places  
14 like the aircraft tank. There were conversations going  
15 on all the time about things like that so I may have  
16 been involved in it. I have no specific skills to be  
17 able to determine what monitoring was appropriate or how  
18 that was set up.  
19 Q. Were you made aware of any monitoring that was  
20 being conducted by BP other than the personal breathing  
21 zone monitoring?  
22 A. I may well have been. I may well have been. I  
23 can't recall specifically.  
24 Q. Sitting here today, do you recall any monitoring  
25 that BP conducted other than the personal breathing zone  
00085:01 monitoring?  
02 A. Yes. I mean, I remember there were some  
03 real-time -- there's some things I've mentioned in this  
04 paragraph here. Real-time exposure monitoring.  
05 Real-time exposure monitoring is another thing that --

06 Q. What is real-time?  
07 A. And again, I'm -- I'm speaking as a  
08 nonspecialist here. I need you to speak very clear  
09 about that. So I know there are machines or pieces of  
10 equipment that can create some kind of alert if they  
11 detect something. So they're kind of real-time, I would  
12 believe. Quite what they are detecting or the  
13 sensitivity or the specificity of those, I would have  
14 really no specific knowledge of. But I think equipment  
15 like that was also used. Yeah.

Page 85:20 to 86:02

00085:20 Q. Okay. If you could turn to the next tab, which  
21 is Tab 4 in your binder. For the record, this is  
22 BH-HZN-2179 MDL 08471948.  
23 Is that where you are?  
24 A. Yes.  
25 Q. I'm going to ask you to mark that with Exhibit  
00086:01 Number 12015.  
02 (Exhibit Number 12015 marked.)

Page 86:16 to 86:24

00086:16 Q. Okay. Do you know who Cheryl Metzler is?  
17 A. I do know Cheryl Metzler.  
18 Q. Who is she?  
19 A. She is an industrial hygienist and she works  
20 for BP. Or she was working -- yeah. I think she still  
21 works for BP.  
22 Q. Did she work on the DEEPWATER HORIZON oil spill  
23 response?  
24 A. Yes.

Page 87:03 to 87:10

00087:03 Q. Do you recall what her role was during the  
04 response?  
05 A. I don't recall her specific role. I do recall  
06 that she's a certified industrial hygienist and would  
07 have been part of the overall approach to determining  
08 what was done in industrial hygiene.  
09 Q. Okay.  
10 A. Yeah. I know of her.

Page 88:18 to 88:22

00088:18 Q. Dr. Heron, we're looking at Tab 5 of your  
19 binder, which is a document we've just marked as  
20 Exhibit 12016 ending with Bates Number 15661. Are you on  
21 that document?  
22 A. I'm on that document.



Page 89:02 to 90:23

00089:02 Q. Let's turn to the first page.  
 03 A. Of the e-mail?  
 04 Q. Yes. The e-mail.  
 05 A. I have that. Yeah.  
 06 Q. Okay. This is an e-mail from Kal A. Johnson?  
 07 A. It is.  
 08 Q. Do you know who Kal Johnson is?  
 09 A. I do know Kal Johnson.  
 10 Q. Does he work for BP?  
 11 A. I'm not sure whether he currently works for BP.  
 12 I believe he was working for BP at the time of the  
 13 response.  
 14 Q. Okay. Do you recall what his role is -- was in  
 15 the response?  
 16 A. I don't recall his specific role. I recall he  
 17 had a role in a safety area.  
 18 Q. Okay.  
 19 A. Yes.  
 20 Q. And this e-mail was sent on Thursday, June 17th,  
 21 to a number of recipients, and you're one of those  
 22 recipients?  
 23 A. That's what the e-mail says. Yeah.  
 24 Q. I know it was a long time ago. Do you recall  
 25 receiving this e-mail?  
 00090:01 A. I do not.  
 02 Q. Okay. The subject of this e-mail is HSE stats  
 03 June 15th?  
 04 A. Yes.  
 05 Q. And HSE there stands for?  
 06 A. Health, safety environment.  
 07 Q. Okay. Do you recall receiving health, safety  
 08 and environment statistics during the response?  
 09 A. Yes, I do.  
 10 Q. Okay.  
 11 A. Yes, I do.  
 12 Q. Let's turn to the attachment, then. For the  
 13 record, this begins on the page with the Bates number  
 14 ending in 15662. And at the top is titled DEEPWATER  
 15 HORIZON Incident Response, Recordable Injury and Illness  
 16 Data, April 22nd, 2010, to June 15th, 2010; is that  
 17 correct?  
 18 A. That's what it says in front of me, yes.  
 19 Q. What is recordable injury and illness data?  
 20 A. Well, I think in the context of this, there are  
 21 data that OSHA considered to be reportable --  
 22 recordable. And this is describing -- this is  
 23 describing that data, I believe. Recordability.

Page 91:10 to 91:20

00091:10 Q. This log covers occupational injuries and  
 11 vehicle accidents that incident response workers have  
 12 reported in the course of their work to respond to the

13 DEEPWATER HORIZON incident?  
14 A. Incident, yeah.  
15 Q. Correct?  
16 A. Yeah.  
17 Q. Do you know who those workers were reporting  
18 these injuries and vehicle accidents to?  
19 A. I do not know specifically who they were  
20 reporting it to.

Page 91:25 to 92:01

00091:25 Q. Let's mark this for the record as Exhibit 12017.  
00092:01 (Exhibit Number 12017 marked.)

Page 92:07 to 93:10

00092:07 Q. Okay. If you want to turn back to the e-mail  
08 there at the first page.  
09 A. Yes.  
10 Q. Are you familiar with this e-mail?  
11 A. No, I'm not.  
12 Q. Okay. You did receive this e-mail?  
13 A. My name's on the circulation list of the  
14 e-mail.  
15 Q. And the e-mail was sent by Mary Kay Bradbury?  
16 A. It appears to be from her, yes.  
17 Q. Who is Mary Kay Bradbury?  
18 A. You know, I don't recall who she exactly is.  
19 Q. Okay. She's got a bp.com e-mail address; is  
20 that correct?  
21 A. Well, she does. She has an address -- she has  
22 a title within the e-mail. HSSE analyst.  
23 Q. And what's an HSSE analyst?  
24 A. I don't know exactly what it is. I suspect she  
25 has some form of administrative role.  
00093:01 Q. Okay. It says there, BP MC 252 response team?  
02 A. Yeah.  
03 Q. And it says here in the e-mail, "Please note  
04 that this week's report includes an influx about -- of  
05 about 1,100 incidents from June and July that had  
06 previously not been reported."  
07 Do you see that?  
08 A. I -- I see that.  
09 Q. Do you recall receiving weekly reports of HSE  
10 statistics during the response?

Page 93:12 to 93:15

00093:12 A. I -- I recall receiving reports. I can't  
13 recall how often and exactly which reports I received.  
14 Q. Do you recall receiving reports like this during  
15 the response?

Page 93:17 to 93:18

00093:17 A. This -- this format of report doesn't look  
18 unfamiliar to me.

Page 94:23 to 95:25

00094:23 Q. Okay. And if you could please mark that with  
24 Exhibit Number 12018.  
25 A. Thank you. Okay.  
00095:01 (Exhibit Number 12018 marked.)  
02 Q. Okay. For the record, this is another e-mail  
03 from Mary Kay Bradbury; is that correct?  
04 A. It is.  
05 Q. Hold your finger in this Tab 7, or remember  
06 Tab 7, and flip back to Tab 1 for a moment.  
07 A. Tab 1.  
08 Q. Yes. This is the exhibit that we had previously  
09 marked with Exhibit Number 12011.  
10 A. Oh, yes. Yeah.  
11 Q. This is the organizational chart we looked at at  
12 the beginning of the deposition?  
13 A. Yes.  
14 Q. And do you see that -- just about in the middle  
15 of the chart it says, incidents and investigation data  
16 entry, Mary Kay Bradbury?  
17 A. Whereabouts, you say?  
18 Q. Under the safety lead, one, two, three bubbles  
19 down.  
20 A. Yes. Incidence and investigation data entry,  
21 Mary Kay Bradbury. I see that.  
22 Q. So I think you said previously you thought she  
23 was in an administrative role in the response?  
24 A. Well, I think data entry, I would have termed  
25 it as administrative activity.

Page 96:10 to 96:25

00096:10 All right. If you can turn back to Tab 7.  
11 A. Yeah.  
12 Q. So this is a -- an e-mail from Mary Kay  
13 Bradbury. Did you receive this e-mail?  
14 A. My name is on the e-mail circulation list.  
15 Q. And for the record, the subject is HSE stats,  
16 11-19-10, correct?  
17 A. Correct.  
18 Q. And if you can turn to the attachment there,  
19 that begins on Bates numbers 0 -- that ends with Bates  
20 Number 058991.  
21 A. Yes.  
22 Q. This one's titled DEEPWATER HORIZON Incident  
23 Response Recordable Injury and Illness Data, April 22nd,  
24 2010, to November 19th, 2010; is that correct?  
25 A. That's correct.

Page 98:08 to 99:10

00098:08 Q. Let's turn one more tab in the binder to Tab 8.  
 09 For the record, this document ends with the Bates number  
 10 US\_PP\_USCG 059059, correct?  
 11 A. That's correct.  
 12 Q. Would you mark that as Exhibit 12019?  
 13 (Exhibit Number 12019 marked.)  
 14 A. Okay.  
 15 Q. So this is another e-mail from Mary Kay  
 16 Bradbury?  
 17 A. Yes. It does appear to be.  
 18 Q. And her role in the response, as we saw in the  
 19 organizational chart, was incident and investigations  
 20 data entry, correct?  
 21 A. That's what it says on the organizational  
 22 chart.  
 23 Q. This one's dated November 20th, 2010, correct?  
 24 MS. DESANTIS: You're referring to the  
 25 e-mail?  
 00099:01 MS. PENCAK: Yes, to the e-mail.  
 02 A. November 21st.  
 03 Q. Okay.  
 04 A. 2010.  
 05 Q. And the subject line is HSE stats 11-20-10,  
 06 correct?  
 07 A. That's correct, yes.  
 08 Q. And then the attachment is DEEPWATER data,  
 09 November 20th.pdf, correct?  
 10 A. Yes, that's correct. I think.

Page 100:13 to 102:18

00100:13 Q. Okay. Flip forward one more tab in your binder  
 14 to Tab 9.  
 15 A. Yeah.  
 16 Q. For the record, this is a document that begins  
 17 with Bates number US\_PP\_USCG 059338. Is that where you  
 18 are?  
 19 A. I'm there, yes.  
 20 Q. Okay. Could you mark this with Exhibit  
 21 Number 12020?  
 22 (Exhibit Number 12020 marked.)  
 23 A. Yeah.  
 24 Q. Just take a moment to familiarize yourself with  
 25 this document.  
 00101:01 A. Okay.  
 02 Q. For the record, is this another e-mail from Mary  
 03 Kay Bradbury?  
 04 A. Sorry.  
 05 Q. Beginning -- at the beginning of Tab 9?  
 06 A. Yes. It looks to be another e-mail from Mary  
 07 Kay Bradbury.  
 08 Q. And you're on the distribution list of this

09 e-mail as well?  
 10 A. I am, yes.  
 11 Q. Its title -- the subject of the e-mail is HSE  
 12 stats, 12-3-10?  
 13 A. That's correct.  
 14 Q. And the attachment is DEEPWATER data,  
 15 December 3rd.pdf?  
 16 A. Correct.  
 17 Q. Let's turn to that attachment, then, which  
 18 begins on Bates number that ends with 059339.  
 19 Are you there?  
 20 A. Could you just repeat that number, please?  
 21 Q. Sure. 059339.  
 22 A. Thank you. Yes.  
 23 Q. You're there?  
 24 A. I'm on that page.  
 25 Q. Okay. It says at the top, "Set forth herein is  
 00102:01 classification and preliminary cause data for the Unified  
 02 Command response of the DEEPWATER HORIZON Gulf of Mexico  
 03 incident. This data covers a period from the beginning  
 04 of the response on April 22nd, 2010, up to the present."  
 05 Do you see that?  
 06 A. I do.  
 07 Q. And at the bottom we've got a date range here of  
 08 April 22nd, 2010, to December 3rd, 2010, correct?  
 09 A. Correct.  
 10 Q. Okay. And the second paragraph, "This  
 11 information covers occupational illnesses and injuries  
 12 that incident and hours for response workers, (BP,  
 13 contractors, federal/state/local and volunteers) that  
 14 have reported in the course of their work in response to  
 15 the DEEPWATER HORIZON incident, as reported from field  
 16 personnel and/or medical personnel."  
 17 Do you see that?  
 18 A. I see that.

Page 107:17 to 108:10

00107:17 Q. (By Ms. Pencak) Dr. Heron, are you familiar with  
 18 a database called the injury and illness database?  
 19 A. Is that this -- this information you've just  
 20 shown me in these reports?  
 21 Q. Let me -- let me say the question again.  
 22 Are you familiar with a database called the  
 23 injury and illness database?  
 24 A. That -- that does ring a bell, yeah.  
 25 Q. Okay. Can you describe the data that's  
 00108:01 contained in that database?  
 02 A. Not entirely. I'd need to see it, probably.  
 03 Q. Okay. The document that you're looking at now,  
 04 is that Tab 9 in your binder?  
 05 A. Yes, it is.  
 06 Q. Okay. And for the record, that was marked as  
 07 Exhibit 12020?  
 08 A. Yes. I think so.

09 Q. Does this look to you to be a summary of data  
10 from the injury and illness database?

Page 108:12 to 108:18

00108:12 A. So I don't -- I don't recall what they call the  
13 database, but I do recall there were data from injury  
14 and illness reports collected together.  
15 Q. Okay.  
16 A. Yeah. Like this.  
17 Q. And do you think that data is shown here in this  
18 exhibit?

Page 108:20 to 109:01

00108:20 A. I don't exactly know that. As I said, I think  
21 there are -- there were people who were recording what  
22 they saw in the field in terms of people who were going  
23 to see somebody medical or somebody like a nurse or a  
24 first aider for any kind of medical intervention or  
25 advice. And that information was all collected together  
00109:01 and looked at.

Page 109:10 to 110:09

00109:10 Q. Did you look at that data?  
11 A. Well, I looked at data like this. I looked at  
12 data about and talked about data to do with what people  
13 were seeing in terms of what people were being treated  
14 with who actually were working the response.  
15 Q. And by data like this, you're referring to the  
16 data that's contained in Exhibit 12020?  
17 A. Yes. I think so.  
18 Q. Okay.  
19 A. The data describing generally incident details  
20 in places where people worked and what happened to them  
21 in terms of treatment received. That sort of data.  
22 Q. Are you familiar with a database called the  
23 medical encounters database?  
24 A. Again, I'm aware of a -- that there was a  
25 medical encounters database. I can't recall seeing that  
00110:01 database as such. But discussing medical encounters,  
02 again, encounters between people who were working or  
03 just people who were there, actually, in the area of  
04 coastal strip or other. And medical attendance of some  
05 sort, anything from a first aid or otherwise, who were  
06 also there.  
07 Q. And so to your knowledge, the data of those  
08 medical encounters was recorded in the medical encounters  
09 database?

Page 110:11 to 110:25

00110:11 A. I don't know exactly that. But again, I'm  
12 trying to be accurate and helpful. But I believe that  
13 the people who were assigned to provide some form of  
14 medical advice were recording the things that they saw  
15 and the people that they saw that about. And then those  
16 data were then pulled together to -- well, aggregated.  
17 That presumably constitutes a database, some sort.  
18 Q. Okay. Let's move on to Tab 13 of your binder.  
19 For the record, the Bates number is US\_PP\_USCG053894. Is  
20 that the document you're looking at?  
21 A. It is, yeah.  
22 Q. Could you mark that as Exhibit 12021?  
23 (Exhibit Number 12021 marked.)  
24 Q. Feel free to familiarize yourself with the  
25 document, but I'm only going to ask you questions about

Page 112:01 to 113:19

00112:01 Q. Okay. Who's Cherie Duddridge?  
02 A. Well, it says that she's operations director,  
03 western suburbs Chicago area facilities. Yeah. That's  
04 what it says she is. I remember her name.  
05 Q. Okay.  
06 A. I'm not even sure whether I actually met her or  
07 not, but I do remember having dialogue with her of some  
08 sort.  
09 Q. Okay. And as far as you know, does she work for  
10 BP, or did she at the time?  
11 A. Well, even I'm not entirely sure. What I  
12 recall was that she had some -- I recall she had some  
13 connection with food and food preparation --  
14 Q. Okay.  
15 A. -- in her role somewhere else in BP. Maybe --  
16 I -- I can't be absolutely certain. She had some other  
17 role.  
18 Q. And, here, she's sending you the status of food  
19 safety audits to date?  
20 A. So it would seem. Yes.  
21 Q. We talked a little bit about this at the  
22 beginning of your deposition?  
23 A. That's correct.  
24 Q. When did BP begin conducting food safety audits  
25 during the response?  
00113:01 A. I don't exactly recall when we started doing  
02 that, when BP started doing that.  
03 Q. Do you know how long into the response those  
04 audits took place?  
05 A. No. I'm -- no, I don't. No, I don't.  
06 Q. And what was the purpose of the audits?  
07 A. Well, in exactly the same sort of philosophy  
08 that I've been describing right through, I was trying to  
09 imagine what potential risks might -- or potential  
10 hazards might exist. So this -- I did mention I felt  
11 that this was an unprecedented response.  
12 And that if people were going to be

13 provided with food, that it would be a good idea to make  
 14 sure -- to ask for an independent and credible view of  
 15 how that food was being made available to people.  
 16 I think that's a theme I've taken all the  
 17 way through, really, to try and find the best and most  
 18 credible person -- or people -- to help assess and  
 19 prevent any harms from happening.

Page 113:22 to 114:06

00113:22 Q. You said that you thought about what potential  
 23 hazards might exist during the response, correct?  
 24 A. That's correct.  
 25 Q. What potential hazards exist with respect to  
 00114:01 improper food safety?  
 02 A. Well, simply speaking, if you go to a  
 03 restaurant and they haven't prepared the food  
 04 appropriately or maybe stored it or things like that,  
 05 it's possible you could get gastrointestinal upset.  
 06 That might be something people would potentially get.

Page 117:09 to 117:19

00117:09 Q. Okay. And it says here, "Corrective actions  
 10 could not be taken at the time of the audit for hot  
 11 holding. This site does not have any equipment in which  
 12 food could be reheated."  
 13 Do you see that?  
 14 A. I see that.  
 15 Q. Okay. Do you know if corrective actions were  
 16 taken at this site after the audit?  
 17 A. From -- from this document and my specific  
 18 recollection, I do not know that. I don't know whether  
 19 it was or it wasn't.

Page 119:04 to 119:06

00119:04 Q. Okay. We're going to mark this with Exhibit  
 05 Number 12022.  
 06 (Exhibit Number 12022 marked.)

Page 120:01 to 121:02

00120:01 Q. Do you know Steven Briggs?  
 02 A. You know, I recognize his name. I'm sure I --  
 03 well, I would probably recognize him.  
 04 Q. Okay. It says he's a senior industrial  
 05 hygienist?  
 06 A. Yes. Yeah.  
 07 Q. Okay.  
 08 A. I'm sure -- well, I think I may well have met  
 09 Steven Briggs.  
 10 Q. Was he working on the DEEPWATER HORIZON



11 response?  
12 A. I don't specifically know from this except that  
13 the e-mail does suggest that to be the case.  
14 Q. Okay. Do you know John Gallucci?  
15 A. Joe. Joe Gallucci.  
16 Q. I'm sorry. Joe Gallucci?  
17 A. Yes, I do know Joe Gallucci.  
18 Q. Was he working on the response?  
19 A. I believe that he was.  
20 Q. Do you know what his role was during the  
21 response?  
22 A. Well, I believe he's a certified industrial  
23 hygienist and also a certified safety practitioner --  
24 safety professional. So I -- I imagine that he was --  
25 'cause I can't recall exactly, but I imagine he was well  
00121:01 probably working amongst the other hygienists. He may  
02 also have been contributing to the safety response.

Page 122:04 to 123:11

00122:04 Q. All right. And this is going to be marked as  
05 Exhibit 12023.  
06 A. Okay. Okay.  
07 Q. Okay. Are you familiar with this document?  
08 A. The e-mail?  
09 Q. Yes. Let's start with the e-mail.  
10 A. I'm -- I don't specifically recall receiving  
11 this e-mail, but I'm obviously on the circulation list.  
12 It was copied to me.  
13 Q. And it was sent by May Chau?  
14 A. May Chau.  
15 Q. And we spoke about her a little bit earlier in  
16 the deposition, correct?  
17 A. We did.  
18 Q. Her name was spelled wrong in the org chart?  
19 A. Yeah. Spelled correctly here, but.  
20 Q. And in general, what was her role during the  
21 response?  
22 A. Actually, she had a number of roles. I think  
23 the role in the context of this was that she's an  
24 industrial hygienist. I should point out that she's  
25 also Vietnamese and she was really, really -- I have to  
00123:01 say she was brilliant because she was able to spot, when  
02 some of the training materials were being reviewed, the  
03 dialect of Vietnamese, making sure that inadvertently  
04 people hadn't translated something, perhaps into north  
05 Vietnamese rather than south, which could have been  
06 culturally not a good thing. So she -- she went over  
07 and above her normal role, I would say.  
08 Q. Okay. So here she's forwarding to a group of  
09 people, yourself included. It looks like a health  
10 monitoring summary report?  
11 A. It does.

Page 123:22 to 124:19

00123:22 Q. If you look a few lines down in her e-mail, she  
23 says the summary report was written and written by Fred  
24 Tremmel, Stan Burt, Jim Pickett and May Chau?  
25 A. Yes.  
00124:01 Q. May Chau we just spoke about?  
02 A. Yes.  
03 Q. Are you familiar with the other people she lists  
04 here?  
05 A. Yes. Well, I'm familiar with them to a lesser  
06 or greater extent the three of them, yes.  
07 Q. Did Fred Tremmel have a role in the response?  
08 A. Yes, he did.  
09 Q. What was his role?  
10 A. Again, he was an industrial hygienist and his  
11 role, he was involved in advising on hygiene in the  
12 incident response in the -- in the response. Stan Burt,  
13 also an industrial hygienist for BP. I don't recall  
14 exactly what his role was but, again, providing  
15 industrial hygienist advice. And Jim Pickett is a -- I  
16 think he's a -- I think he's a lawyer. I'm sure he's a  
17 lawyer. But he's particular familiar with OSHA  
18 regulations and requirements. In conversations I've  
19 ever had with Jim Pickett.

Page 124:22 to 127:06

00124:22 Q. Okay. Let's turn to the attachment. There's  
23 a -- a slip sheet that says the document was produced  
24 natively.  
25 A. Okay.  
00125:01 Q. And that's at the Bates number ending 22630?  
02 A. Yes.  
03 Q. And then if you flip the page?  
04 A. Yes.  
05 Q. I'll represent to you that that's the document  
06 that was produced natively.  
07 A. Okay.  
08 Q. So do you -- do you recall receiving this  
09 document, which is entitled Personal Exposure Monitoring  
10 Result Summary?  
11 A. I don't recall this specific document. I do  
12 recall conversations around the substances that were  
13 looked at and the fact that, well, well over 90  
14 something percent were below limits or well below any  
15 defined safety limit. And these look to be a  
16 representation of results like that for a number of  
17 different substances.  
18 Q. During the response, did you personally review  
19 the exposure monitoring results that were measured during  
20 the response?  
21 A. I would say review might be -- might suggest  
22 that I was involved in how those results are generated  
23 and how the future programs are set up. I was certainly

24 made aware that the -- the results were not showing  
25 any -- any measurements that were of concern in those  
00126:01 discussions. And when I'm saying of concern, excursions  
02 above those safe limits that we were talking about  
03 earlier.

04 Other than I recall one or two which were  
05 later identified to be due to things like a motor  
06 vehicle idling or something like that, rather than  
07 anything specific.

08 Q. So throughout the response, there were only one  
09 or two exposure monitoring results that concerned you?

10 A. To my recollection, yeah. The -- the --  
11 because I -- I'm talking -- I'm recalling now more  
12 about, say, personal breathing zone results in my mind.  
13 So I'm sure they would have conducted other forms of  
14 monitoring for other purposes to establish how to  
15 construct their program.

16 But the information brought to me was of  
17 no significant exceedances that might reflect a safety  
18 risk to those personnel.

19 Q. Okay. You said in your testimony that I'm sure  
20 they would have conducted other forms of monitoring for  
21 other purposes to establish how to construct their  
22 program. Who are you --

23 A. Yes.

24 Q. -- referring to when you say "they"?

25 A. Well, so hygienists, yes, who determined what  
00127:01 should be in the hygiene monitoring program would need  
02 to look at what -- what was measurable to be able to do  
03 that.

04 Q. And do you know what was looked at during the  
05 exposure monitoring program for the BP -- the DEEPWATER  
06 HORIZON spill response?

Page 127:08 to 127:08

00127:08 A. Not specifically.

Page 127:14 to 127:20

00127:14 Q. The personal breathing zone monitoring, that is  
15 one aspect of personal exposure monitoring that was  
16 conducted during the response, correct?

17 A. Yes. Conducting personal breathing zone  
18 measurements was one aspect of assessing any risks.  
19 Yeah.

20 Q. Do you know what other measurements were taken?

Page 127:22 to 127:22

00127:22 A. Not exactly, no.

Page 128:08 to 128:14

00128:08 Q. Sure. Do you know if BP's personal exposure  
09 monitoring program included blood sampling or urine  
10 sampling?

11 A. I do not know that to be the case. No.

12 Q. Do you know if any blood sampling or urine  
13 sampling was conducted during the response for the  
14 purpose of measuring potential exposures?

Page 128:16 to 128:20

00128:16 A. I -- I couldn't know whether anybody took any  
17 measurements by any way.

18 Q. Do you recall in your role in the response  
19 reviewing the results of any blood work or urine samples  
20 taken from response workers?

Page 129:11 to 129:13

00129:11 A. I don't personally know of any blood tests or  
12 urine tests that were conducted for exposure assessment  
13 purposes by -- by BP people.

Page 129:16 to 129:18

00129:16 Q. Are you aware -- aware of any conducted by  
17 anyone other than BP people?

18 A. Not --

Page 129:20 to 129:22

00129:20 A. I'm not specifically aware of who might have  
21 done what with their own blood or urine or any  
22 particular person may have done something.

Page 131:03 to 131:05

00131:03 Q. Okay. And then the next one over says, .1 to  
04 .49 ppm. In parens, NIOSH REL 0.1 ppm. Do you see that?

05 A. I see that.

Page 131:17 to 131:24

00131:17 Q. Do you see here that it says NIOSH REL is .1  
18 ppm?

19 A. .1 to .5. Yes, I do. Yeah. As I said, there  
20 were several limits but the ACGIH one was .5. Yeah. I  
21 can see that.

22 Q. Okay. But it says here in this parentheses  
23 NIOSH REL, .1 ppm?

24 A. It does say that, yes.

Page 132:19 to 133:23

00132:19 Q. Let's mark this as Exhibit 12024.  
20 A. Yeah. Okay.  
21 (Exhibit Number 12024 marked.)  
22 Q. At the top of this document, it looks like this  
23 is an e-mail that is forwarded from John Howard to John  
24 Snawder. Do you see that?  
25 A. I do see that, yes.  
00133:01 Q. Do you know who John Howard is?  
02 A. Yes, I do.  
03 Q. Who is John Howard?  
04 A. He was the -- well, the director of NIOSH.  
05 Yeah. Or is the director of NIOSH.  
06 Q. Was he involved in the response?  
07 A. Involved in the response. Well, he was head of  
08 NIOSH, and NIOSH were involved in -- in aspects of the  
09 response.  
10 Q. Did you communicate with him during the  
11 response?  
12 A. I certainly communicated with him. I can't  
13 remember exactly the timing that I communicated with him  
14 but it was on a number of occasions. It may well have  
15 been through the response and beyond. Certainly beyond.  
16 Q. And do you know who John Snawder is?  
17 A. I don't recall John -- the only other name I  
18 recall on there is Margaret Kitt in that list of e-mail.  
19 Q. Who's Margaret Kitt?  
20 A. She is somebody who worked for John Howard.  
21 Q. Okay. Did you communicate with her during the  
22 response?  
23 A. I did.

Page 134:24 to 136:10

00134:24 Q. Were you aware that this laboratory was doing  
25 benzene biomonitoring in the Gulf?  
00135:01 A. No. I -- no. I -- I don't recall that they  
02 were. But putting this in front of me, I have some  
03 recollection that there was some biomonitoring done on  
04 some people on a Norwegian vessel.  
05 Q. The VIKING POSEIDON?  
06 A. Presumably that vessel. It certainly wasn't at  
07 my instigation, particularly.  
08 Q. Do you remember ever reviewing any of the  
09 results of that biomonitoring?  
10 A. I don't remember reviewing it, no.  
11 Q. Do you know if BP ever considered conducting  
12 biomonitoring during the response?  
13 A. Yes. Yes.  
14 Q. Did you consider doing biomonitoring during the  
15 response?  
16 A. I did consider it.  
17 Q. Okay. Why?  
18 A. Well, I was considering a whole range of steps

19 that might be valuable or not in terms of assessing what  
20 the hazards were, what the risks were and whether those  
21 risks were being controlled. Yeah.

22 Q. And to your knowledge, BP did not conduct any  
23 biomonitoring during the response?

24 A. Not to my recollection, no. I don't recall  
25 that.

00136:01 Q. Do you know why the decision was made not to  
02 conduct that biomonitoring?

03 A. I don't know all the why about that. What I do  
04 know was we were constantly working to assure that what  
05 was being done was on the prevention aspect. And as  
06 you -- and the monitoring reports that were coming back  
07 were not showing any evidence of exposure levels. And  
08 we were acting on those results. Yeah.

09 Q. And by -- and were those air monitoring results  
10 you were acting on?

Page 136:12 to 137:15

00136:12 A. A variety of different pieces of information.

13 Q. Okay.

14 A. Of which monitoring would be just one piece of  
15 the results.

16 Q. I think in response to my question you said that  
17 you didn't remember all of the reasons why BP decided not  
18 to conduct biomonitoring?

19 A. Yes.

20 Q. Do you remember some of the reasons?

21 A. Do I remember some of the reasons. I'm just  
22 trying to -- literally just trying to recall back. I  
23 can't remember the specific reasons. I do know that  
24 logistically it would be a challenge to do  
25 biomonitoring across quite a strip like that. That may

00137:01 have been one of the reasons why we were discussing it.

02 Q. Did you make any recommendations during the  
03 response regarding biomonitoring?

04 A. I don't recall whether I made any specific  
05 recommendations.

06 Q. Okay. Were you aware of any proposals made to  
07 BP by individuals outside of BP to conduct biomonitoring?

08 A. I -- I can't recall specific proposals, but I  
09 do -- as I say, I do recall that we were having  
10 discussions about whether this would add to our ability  
11 to prevent harm. And at that time, we didn't go and do  
12 biomonitoring.

13 Q. Do you think biomonitoring could have given you  
14 more data about what response workers were being exposed  
15 to?

Page 137:17 to 138:01

00137:17 A. No. No, I don't. I think it wouldn't give any  
18 information -- well, additional information upon which  
19 to act about what they were being exposed to.

20 Q. Okay. And why is that?  
21 A. Well, we believe we knew what they were being  
22 exposed to or not. Doing biomonitoring program would  
23 not add to that -- that determination.  
24 Q. So you feel like you had enough information to  
25 determine the impact of any exposures on the human  
00138:01 workers?

Page 138:03 to 138:06

00138:03 A. No. I didn't say that. I just said I didn't  
04 think that adding a biomonitoring program would give us  
05 any further information about what potential exposures  
06 people might potentially be -- see.

Page 138:11 to 138:11

00138:11 Q. Did you consider doing any other monitoring?

Page 138:13 to 138:20

00138:13 A. I -- I can't recall all the things we may or  
14 may not have considered. I do think we went through a  
15 very thorough process of hazard identification,  
16 assessment of potential risk, what to do to reduce any  
17 risk of exposure, what more to do to prevent over and  
18 above that. And what to do to have people available for  
19 whatever health conditions may arise, general or not.  
20 That was how I was trying to approach this.

Page 141:06 to 141:13

00141:06 Q. In your experience, have you come across  
07 instances where workers were not using PPE properly?  
08 A. Well, in -- in life, yes, I have. Yeah.  
09 Q. During the response?  
10 A. Okay. Not specifically.  
11 MS. DESANTIS: Objection to form.  
12 A. I didn't -- I wasn't watching anybody putting  
13 on or taking off their PPE.

Page 141:24 to 142:19

00141:24 Q. Did BP take any steps to ensure that workers  
25 were using PPE correctly?  
00142:01 A. Well, I would be aware of some steps that they  
02 were taking.  
03 Q. What are you aware of?  
04 A. Well, for example, when I was visiting Venice  
05 Beach, there were rest stations for heat protection  
06 every 200 meters or so. And there were health and  
07 safety workers -- health and safety people walking the  
08 beach, talking to people about how they were doing their

09 job, asking how they were and having general  
10 conversations with them.  
11 I know those people also would be persons  
12 who would have some understanding of PPE. I can imagine  
13 they would have conversations about any number of  
14 things. It's possible they could have done it.  
15 Q. Are you aware of any formal assessments that BP  
16 conducted to determine whether or not workers were  
17 properly -- properly using their PPE?  
18 A. I'm not aware of formal, or certainly don't  
19 recall that specifically, either way.

Page 142:24 to 143:01

00142:24 Q. All right. Let's mark this with Exhibit  
25 Number 12025.  
00143:01 (Exhibit Number 12025 marked.)

Page 143:06 to 143:11

00143:06 Q. Okay. So halfway down the page there's an  
07 e-mail from John Howard?  
08 A. Yes.  
09 Q. Who we spoke about earlier, the director of  
10 NIOSH?  
11 A. Yes.

Page 144:13 to 144:21

00144:13 Q. Okay. Looking at this e-mail, which you did not  
14 receive, Dr. Howard writes, "Exposure monitoring by means  
15 of air sampling is subject to several limitations when  
16 used episodically in an outdoor dynamic environment."  
17 Do you see that?  
18 A. I see that.  
19 Q. Do you agree with that statement?  
20 A. Largely, I do. It's not the form of words I  
21 would have used.

Page 147:05 to 147:06

00147:05 Q. Did you have any recommendations about the air  
06 sampling programs?

Page 147:08 to 147:13

00147:08 A. Not specifically, no. No. My -- as I say, my  
09 goal was to make sure that there were people there who  
10 could make the right determination and support the  
11 Unified Area Command to make good decisions.  
12 Q. But you personally didn't have any  
13 recommendations?



Page 147:15 to 147:17

00147:15       A.    I -- as I say, I'm not an industrial hygienist  
16    so I don't make advice about hygiene monitoring  
17    programs.

Page 149:03 to 149:05

00149:03   Turning to the next tab, Tab 20, which is  
04   Exhibit Number 12026.  
05                   (Exhibit Number 12026 marked.)

Page 149:24 to 150:10

00149:24       Q.    Dr. Howard writes, "Folks, as a result of IOM  
25    and other conversations and reading, I am concerned that  
00150:01   we may not -- that we maybe not have a comprehensive  
02    approach to exposure monitoring for Gulf workers."  
03                   Do you know what he's referring to by IOM?  
04       A.    I don't know specifically what he was re -- no.  
05    I don't know what -- I have an understanding of  
06    something which has the initials IOM, Institute of  
07    Medicine, but I don't know what he specifically said in  
08    his -- if that's the same one.  
09       Q.    Was there an IOM conference on June 22nd and  
10    23rd, 2010, about the DEEPWATER HORIZON response?

Page 150:12 to 150:19

00150:12       A.    I can't recall the date, but there was an IOM  
13    conference. And I have no reason to suggest that you  
14    aren't giving me the right date for that conference.  
15       Q.    We can establish the date a little bit later on.  
16       A.    Yeah.  
17       Q.    Did you attend an IOM conference in June of  
18    2010?  
19       A.    I did.

Page 152:22 to 153:13

00152:22       Q.    Are you aware that workers, during the response,  
23    reported symptoms such as eye irritation?  
24       A.    I've certainly seen copies of reports where eye  
25    irritation, nausea and headache were attributed to  
00153:01   workers.  
02       Q.    Skin reactions?  
03       A.    I don't know about skin reaction, specifically.  
04       Q.    Nose and throat discomfort?  
05       A.    And again, issues to do with their nose and  
06    throats, including things like runny nose, I've seen  
07    those reports. Yeah.  
08       Q.    Going on, the next sentence reads, "These can be  
09    signs of volatile organic compound exposure."

10                   Would you agree that eye irritation, nose  
11 and throat discomfort, headache, allergic skin reaction,  
12 and nausea can be signs of volatile organic compound  
13 exposure?

Page 153:15 to 153:22

00153:15       A.   I haven't got a full list, but I know that --  
16 well, the issue with these symptoms is they're very  
17 common symptoms that can be from any number of reasons.  
18 Clearly, what was being referred to here was to -- to  
19 make sure that there wasn't any evidence of any VOC  
20 exposure. I think that's what they're referring to.  
21       Q.   I'm just asking you whether those symptoms there  
22 can be signs of volatile organic compound exposure.

Page 153:24 to 155:16

00153:24       A.   Okay. Well, any -- you know, basically, any  
25 symptoms that somebody might complain of would have to  
00154:01 be above a level sufficient. It's all about the dose,  
02 really. So you'd need a sufficient dose of anything to  
03 be able to even consider whether certain symptoms were  
04 related to something else. Yeah.  
05       Q.   Could a sufficient dose of volatile organic  
06 compound exposure result in eye irritation?  
07       A.   I think some volatile organic compound, if  
08 you're exposed to it at sufficient level, could cause a  
09 headache, could give you a headache, yes. And some of  
10 these other symptoms that are here.  
11       Q.   Which other symptoms here?  
12       A.   Well, certainly eye irritation and nausea.  
13 Yeah.  
14       Q.   Skin reaction?  
15       A.   You know, I can't recall exactly whether that  
16 is a specific -- volatile organic compound is a very  
17 generic term for many different things, so I don't know  
18 quite exactly what they're referring to in this -- what  
19 they meant when they were writing this e-mail.  
20       Q.   The next sentence is, "Polycyclic aromatic  
21 hydrocarbons (PAHs) can cause irritation to eyes and  
22 skin."  
23 Would you agree that exposure to a  
24 sufficient amount of PAHs can cause irritation to eyes  
25 and skin?  
00155:01       A.   Well, yeah. Like I said before, I think  
02 with -- with many of these things, many things can cause  
03 eye irritation and skin. And you would need sufficient  
04 and, probably, in this case, perhaps, repeated prolonged  
05 exposures to cause some of these symptoms.  
06       Q.   I heard you say that many things can cause  
07 irritation to eyes and skin?  
08       A.   Yes.  
09       Q.   Is exposure to PAHs at a sufficient level one  
10 thing that can cause irritation to eyes and skin?

11 A. Again, I think PAH is a very generic term about  
 12 a number of different chemicals. I -- I haven't got  
 13 specifically what they have in their heads here, but I  
 14 imagine there will be chemicals in that class where if  
 15 you're exposed to sufficient amounts of that, that you  
 16 could experience those symptoms. Yes.

Page 155:25 to 156:01

00155:25 Q. Okay. Let's mark that as Exhibit 12027.  
 00156:01 (Exhibit Number 12027 marked.)

Page 156:09 to 157:21

00156:09 Q. Do you see there there's an e-mail from Margaret  
 10 Kitt dated 2 July 2010 to you? At the very bottom of the  
 11 page.  
 12 A. The bottom. Yes. Yes.  
 13 Q. So there's just the header there?  
 14 A. Yeah. Just the header.  
 15 Q. Right. So from Margaret --  
 16 A. To me.  
 17 Q. -- to you with a CC to John Howard?  
 18 A. I do see that. Yes.  
 19 Q. And then on the next page, she writes HHE  
 20 expansion and biomonitoring?  
 21 A. Okay. Yes. I see that:  
 22 Q. "Hi, Richard: I just wanted to update you on  
 23 NIOSH's plan to extend response worker exposure  
 24 characterization and quantification by incorporating a  
 25 feasibility study on biomonitoring as part of the  
 00157:01 expanded HHE efforts BP has asked NIOSH to do."  
 02 Do you see that?  
 03 A. I see that.  
 04 Q. Do you recall that BP asked NIOSH to do expanded  
 05 HHEs during the response?  
 06 A. I do recall that, yeah.  
 07 Q. Were you part of the decision to do an expanded  
 08 HHE?  
 09 A. I suspect I was part of the decision to do  
 10 that.  
 11 Q. Ultimately, was it your decision to do that?  
 12 A. I think -- I'm not sure whether the ultimate  
 13 decision would have been through the Unified Area  
 14 Command to do that, for BP to request it. But certainly  
 15 I had no -- I welcomed an extension of the HHEs to be  
 16 expanded, as I think -- yeah. I welcomed it.  
 17 Q. And attached to this e-mail is Margaret Kitt  
 18 forwarding you a proposal to expand that HHE?  
 19 A. Well, certainly that's what this looks like.  
 20 DEEPWATER HORIZON Response Health Assessment Protocol is  
 21 attached to that document. Yeah.

Page 159:02 to 160:07

00159:02 Q. Do you know if any limitations were placed on  
03 the financing available for conducting HHEs?  
04 A. I'm not aware of any.  
05 Q. Okay. Let's go back to this e-mail from  
06 Margaret to you on the page that ends with 67825.  
07 A. Yes.  
08 Q. And she writes in the next sentence, "In light  
09 of air sampling yielding undetectable levels of toxins or  
10 levels far below established limits, we are concerned  
11 about making sure the dermal route of exposure is  
12 well-characterized."  
13 Do you see that?  
14 A. I see that.  
15 Q. Were you concerned during the response about  
16 making sure the dermal route of exposure was well  
17 characterized?  
18 A. I was concerned to make sure that any exposure  
19 to a hazard that we -- that was identified was assessed  
20 and that steps were taken to either prevent or minimize  
21 that. That was -- that was always going to be a  
22 combination of qualitative and quantitative judgments  
23 made. And of course dermal skin contact would have been  
24 one of our considerations.  
25 Q. What steps were taken to characterize any levels  
00160:01 of dermal exposure?  
02 A. Again, I don't -- I don't know specifically  
03 what those were or whether there were any specific steps  
04 taken by industrial hygienists to characterize that.  
05 What I do know is that it was considered as something  
06 that should be prevented. So, yeah, it was considered  
07 something we should -- that should be prevented.

Page 162:08 to 162:09

00162:08 Q. Are you aware of any logistical challenges  
09 associated with conducting biomonitoring?

Page 162:11 to 162:17

00162:11 A. Yes. Biomonitoring is -- there are many  
12 logistical challenges to biomonitoring, not least that  
13 the confounders to results. And it's often used as a  
14 research tool rather than a risk assessment, risk  
15 management tool. And it was my belief in the -- in this  
16 that there were alternative means of assessing risk and  
17 making judgments about how to prevent those.

Page 164:16 to 164:21

00164:16 Q. Is this the first oil spill response that you  
17 worked on in your position at BP?  
18 A. Yes. Yes.  
19 Q. Have you ever -- did you work on any oil spill

20 responses before you came to BP?  
21 A. Not to my knowledge, no.

Page 166:16 to 166:18

00166:16 Q. Okay. Are you aware of the types of  
17 toxicological analyses that Mark Saperstein conducted  
18 during the spill?

Page 166:20 to 166:20

00166:20 A. Not specifically.

Page 167:15 to 168:05

00167:15 Q. And you said that was different than the type of  
16 spill we had here?  
17 A. Well, my recollection, that there would be  
18 differences in the -- in that and a subsurface spill.  
19 Q. What are those differences?  
20 A. I don't know all of them. But I do know  
21 that -- well, I understood that many of the short, low  
22 molecular weight hydrocarbons would have potentially  
23 been absorbed either -- would have not been available to  
24 workers because of the nature of -- because of the  
25 different nature of this spill. It was something like  
00168:01 5,000 feet below the surface, which means that the --  
02 that the oil is different from when it's at the bottom.  
03 And also, I think there are differences in  
04 the types of -- in types crude oil, all of which would  
05 be expertise of a toxicologist and not me.

Page 170:23 to 170:24

00170:23 Q. Okay. Let's flip really quickly to the first  
24 page of the e-mail.

Page 171:01 to 172:12

00171:01 Q. This might help with it.  
02 A. Yeah.  
03 Q. Looking at the top of the e-mail.  
04 A. Yeah.  
05 Q. This is an e-mail from -- from you?  
06 A. Yeah.  
07 Q. To David Flower, Alison Martin, Fred Tremmel,  
08 May Chau?  
09 A. Yeah.  
10 Q. John Dobbie, Kevin O'Shea, Kate Murray and Mark  
11 Saperstein. I think we've spoken about all of these  
12 folks here today, correct?  
13 A. I think we -- I think we probably did.  
14 Q. Okay. And they were BP employees working on the

15 response?  
 16 A. They're all -- I think they are all BP  
 17 employees that are in that list with the exception of  
 18 Gary Krieger.  
 19 Q. And he, you said, was the consultant from  
 20 New Fields?  
 21 A. New Fields. Yes. That's right.  
 22 Q. Still working on the response?  
 23 And you write, "All, please do not  
 24 circulate but do comment. I have managed to secure early  
 25 release of significant funding from GRI. This is to  
 00172:01 enable baselines to be set."  
 02 Do you see that?  
 03 A. Yes, I do.  
 04 Q. Okay. Does that help you to determine at all  
 05 what you meant in your earlier e-mail to Margaret, saying  
 06 some progress here on funding for baseline and basic  
 07 science studies, at least?  
 08 A. Not really, no. I think what I was trying to  
 09 do here was to say I think it'd be a good idea to get  
 10 good science done. And I -- I believe that to also be  
 11 something that John Howard and Margaret Kitt came to do.  
 12 And I thought, well, I can try and get funding for that.

Page 172:22 to 173:06

00172:22 Q. But in general, you thought that Margaret Kitt  
 23 and John Howard were trying to do good science?  
 24 A. I did think that, yes.  
 25 Q. Okay. And so you circulate their proposal to  
 00173:01 others within BP; is that correct?  
 02 A. Yeah. Well, a fairly sort of specific or  
 03 narrow group of others.  
 04 Q. Okay.  
 05 A. Yeah. Or who've had some health, hygiene or  
 06 toxicology background.

Page 173:11 to 173:17

00173:11 Q. The Bates number at the bottom of that document  
 12 should be 01936015.  
 13 You can just set that one to the side.  
 14 A. 36015. Yeah.  
 15 Q. Let's mark that as Exhibit 12028.  
 16 A. Yeah.  
 17 (Exhibit Number 12028 marked.)

Page 173:24 to 174:03

00173:24 Q. So in -- in reviewing this document, does this  
 25 appear to be comments you received from some of the  
 00174:01 people you sent the proposal that we looked at in the  
 02 last exhibit?  
 03 A. It does seem to be.

Page 174:06 to 174:11

00174:06 Q. Let's look on the -- the first page here. The  
07 comments from May Chau?  
08 A. Yes.  
09 Q. And we've spoken about her role in the response,  
10 correct?  
11 A. Yes.

Page 175:24 to 176:23

00175:24 Q. -- "To date, air sampling has demonstrated  
25 undetectable levels or levels far below established safe  
00176:01 levels" --  
02 A. Yes.  
03 Q. -- "for toxic chemical."  
04 Do you see that there?  
05 A. I see that. Yes.  
06 Q. And did May Chau suggest removing the words  
07 "undetectable levels" and "far" from that sentence?  
08 A. "Consider to remove the word 'undetectable  
09 levels' and 'far' in this sentence."  
10 Yes. I do see that.  
11 Q. And the reason she gives is, "We are beginning  
12 to see numbers above the detectable levels. A small  
13 numbers meeting the NIOSH recommended exposure limits."  
14 Do you see that there?  
15 A. I do see that there, yes. I do.  
16 Q. And she also says, "However, all validated  
17 exposures have been below the OSHA occupational exposure  
18 limits."  
19 Correct?  
20 A. I can see that there, too.  
21 Q. So the NIOSH recommended exposure limit is less  
22 than the OSHA occupational exposure limit, correct?  
23 A. Correct.

Page 176:25 to 177:01

00176:25 A. Well, it depends on the substance, but for the  
00177:01 same substance, yeah.

Page 178:04 to 178:06

00178:04 Q. And how did BP determine what the safe level was  
05 here in this response, given that there are different  
06 published exposure levels?

Page 178:08 to 178:12

00178:08 A. So what I would say is that the Unified Area  
09 Command, which was BP, Coast Guard and OSHA, came to a

10 determination about what level was appropriate and what  
11 they would use to measure exposures against. That's how  
12 that determination was made.

Page 179:17 to 179:19

00179:17 Q. In order to prevent harm to people, were there  
18 set actions that would be taken if levels were detected  
19 in a certain concentration? Say, benzene?

Page 179:21 to 179:24

00179:21 A. I can't know exactly what actions might be  
22 taken for what particular circumstances in -- in the  
23 totality of the response. No. I -- I don't know  
24 exactly that.

Page 182:17 to 183:04

00182:17 Q. Okay. And there's an e-mail here from David  
18 Flower?  
19 A. Yeah.  
20 Q. And we talked about him before.  
21 He writes, "Richard, some additional  
22 thoughts: Page 2. Training relies on step one  
23 (rostering) but also relies on all organizations  
24 performing the training and employees taking it. The  
25 info we have had over the last few days of non-legitimate  
00183:01 training being delivered makes this simple intent more  
02 complex."  
03 Do you see that?  
04 A. I do see that.

Page 183:23 to 184:06

00183:23 Q. He also says, "Additional suggestion - tag  
24 workers on the census database so that cancer cases can  
25 be tracked to see if there is an excess over the next 20  
00184:01 plus years."  
02 Do you see that?  
03 A. I do see that, yes.  
04 Q. In your experience, with your education, do you  
05 think that cancer can take 20 plus years to develop after  
06 exposure to a carcinogen?

Page 184:08 to 184:13

00184:08 A. Certain cancers can take over 20 years to  
09 occur, yes.  
10 Q. Do you know if there's currently any census data  
11 being tracked so that cancer cases can be tracked to see  
12 if there's an excess of them in the general area of the  
13 response?



Page 184:15 to 184:16

00184:15       A.    I don't -- I don't know exactly what studies  
16    are being done.

Page 185:04 to 185:14

00185:04       Q.    We are going to mark this as Exhibit 12029.  
05                   (Exhibit Number 12029 marked.)  
06       Q.    Have you seen this document before?  
07       A.    I don't -- I don't recall seeing it.  
08       Q.    Okay.  This is the GoM HSSE Safe Practices  
09   Manual?  
10       A.    That's what it says.  2008.  
11       Q.    And what does HSSE stand for; do you know?  
12       A.    Well, I'm assuming it stands what it would  
13   normally stand for, which is health, safety, security  
14   environment.

Page 187:22 to 187:24

00187:22       Q.    Yeah.  Sorry.  Let me -- let me try that again.  
23                   To your knowledge, do any BP employee  
24   exposure records include biological monitoring records?

Page 188:01 to 189:12

00188:01       A.    I suspect that they do somewhere in BP.  
02       Q.    Let's move to the next binder.  Binder 2 of 2.  
03   And if you could, turn to Tab 23, please.  
04                   And are you at the document that ends in  
05   Bates Number 15963?  
06       A.    Yes, I am.  
07       Q.    Okay.  Can we mark this 12030?  
08                   (Exhibit Number 12030 marked.)  
09       Q.    Sorry.  
10       A.    Yeah.  
11       Q.    Take a minute and familiarize yourself with this  
12   document and the document that follows behind the blue  
13   sheet.  
14       A.    Okay.  
15       Q.    Okay.  So this is an e-mail chain with a lot of  
16   the e-mails redacted out; is that correct?  
17       A.    Yes.  It looks -- well, it's got privileged  
18   written all over it.  
19       Q.    Let's turn to the page that ends in 15966.  
20       A.    66.  Yes.  
21       Q.    And there is an e-mail about two-thirds of the  
22   way down from Kevin O'Shea.  Do you see that there, sent  
23   Wednesday, May 12th?  
24       A.    I do see that, yes.  
25       Q.    Sent to Mark Saperstein, Fred Tremmel, Robert

00189:01 Bourgeois?  
02 A. Yes.  
03 Q. Maria Bradshaw?  
04 A. Yeah.  
05 Q. Jean Martin?  
06 A. Yeah.  
07 Q. James Nolan and May Chau?  
08 A. I see that.  
09 Q. Are any of those people attorneys?  
10 A. I don't know. I think that Jean Martin may be  
11 an attorney. I don't know what James Nolan is. And the  
12 other names, I do not believe to be attorneys.

Page 189:24 to 190:09

00189:24 Q. But there's an attachment here behind the blue  
25 sheet.  
00190:01 A. Yes.  
02 Q. Have you seen this document before?  
03 A. Well, this appears to be a copy -- a draft copy  
04 of a material safety data sheet. So I'm not sure I've  
05 seen this copy before.  
06 Q. Do you recall ever seeing a copy of a draft MSDS  
07 for Mississippi Canyon 252 weathered crude oil?  
08 A. I don't recall seeing a draft. It's quite  
09 possible that I may have seen a draft.

Page 192:14 to 192:15

00192:14 Q. And do you recall -- sorry. Was it decided that  
15 an MSDS for weathered crude was needed?

Page 192:17 to 192:19

00192:17 A. A weathered crude material safety data sheet  
18 was produced. And I recall it was made publicly  
19 available.

Page 193:12 to 193:16

00193:12 Q. Okay. Let's move on to Tab 24. This should be  
13 the document that ends in Bates Number 20359.  
14 A. 20359, yes.  
15 Q. Let's mark this as Exhibits 12031.  
16 (Exhibit Number 12031 marked.)

Page 199:20 to 200:01

00199:20 Q. (By Ms. Pencak) Dr. Heron, if you could turn to  
21 Tab 28 in your binder.  
22 A. Yeah.  
23 Q. This document ends in Bates Number 01857927?  
24 A. I have that.

25 Q. Could you mark that with Exhibit Number 12032?  
00200:01 (Exhibit Number 12032 marked.)

Page 201:13 to 203:02

00201:13 Q. Do you recall going to a meeting in September of  
14 2010 in Tampa regarding the protocol of the NIH cohort  
15 worker study?

16 A. I can recall going to a meeting in Tampa. I've  
17 never been there before or since. And I can recall  
18 going to meetings where people were talking about the  
19 protocols for the NIH. I couldn't say. It looks like  
20 it was at that meeting. I have no reason to doubt that,  
21 but I -- I don't specifically recall that meeting, that  
22 agenda.

23 Q. What is the NIH cohort worker study?

24 A. Well, again, I think what I'm looking at here  
25 is a piece of correspondence associated with efforts to  
00202:01 conduct independent research by scientists of the  
02 highest order, which is what I was talking about earlier  
03 in terms of my -- my wish to go and meet with Harvey  
04 Fineberg of IOM, Institute of Medicine, which is part of  
05 National of Academy of Science.

06 There were a whole series of meetings  
07 after that point where -- many of them public, the  
08 public access to those meetings. And I made no secret  
09 that I was looking to support good science. I like to  
10 see this is an invitation for me to come along and be at  
11 that meeting.

12 Q. Going back to my question. What is the NIH  
13 cohort worker study?

14 A. As I said, I'm not entirely sure what that  
15 title refers to, but the NIH is the National Institute  
16 of Health. My understanding is that NIEHS is part of  
17 the NIH.

18 Q. I believe that's correct.

19 A. And that there's currently a study being led by  
20 NIEHS whose genesis is somewhere in that journey I've  
21 just tried to describe in terms of what they were trying  
22 to put together and how they were trying to do it and  
23 how they were sharing it openly with people to make sure  
24 it did what -- what was needed. Or what people wanted.

25 Q. Have you heard the NIEHS study also referred as  
00203:01 the Gulf long-term study?

02 A. Yeah. I think that's probably the same.

Page 203:08 to 204:01

00203:08 Are you aware of the status of that study?

09 A. Not precisely where it's at. I do know that  
10 the principal investigator, Dale Sandler, for that study  
11 and a number of other people have presented updates of  
12 that study. Or talked about where they are at, so to  
13 speak, with that study.

14 I'm not sure that they've actually

15 published anything formally yet in the context of what  
 16 they've -- what they're generating within that study.  
 17 And in that respect, it's very important to be very  
 18 cautious about interpreting -- as they would say, too,  
 19 and I think they have said -- preliminary or interim  
 20 updates on studies.

21 Q. Is it your understanding that that study is not  
 22 yet complete?

23 A. Yes. It is my understanding that that -- well,  
 24 and I'm not sure it's entirely one study. It's a number  
 25 of pieces within that study, and I don't think they're  
 00204:01 complete. No.

Page 208:14 to 209:22

00208:14 Q. What is the Gulf of Mexico Research Initiative?

15 A. Okay. I'll give my simple understanding of  
 16 that.

17 Q. That's fine.

18 A. So I may not have it entirely accurate.

19 But I recall that a -- an announcement was  
 20 made to make available a sum of money which was  
 21 \$500 million, which I've seen here. And I believe that  
 22 was over a -- over a ten-year period, I recall. I think  
 23 it was a ten-year period. May have been five. I think  
 24 it was ten.

25 And it was to facilitate research in  
 00209:01 association with the -- the DEEPWATER HORIZON incident.  
 02 So that's what the -- that's what this initiative was.  
 03 Yeah.

04 Q. Has that GoMRI research been completed?

05 A. Not to my knowledge, no. I think this part of  
 06 that, it's an ongoing initiative. So I think it was  
 07 over ten years.

08 Q. Does the GoMRI-funded research include research  
 09 into the potential impacts of the spill on human health?

10 A. Yes, it does. Yes, it does.

11 Q. Are you aware of any of the studies that are  
 12 being conducted under GoMRI with respect to human health?

13 A. I'm aware that they're going on. I'm aware --  
 14 I'm not aware of all the specifics of those studies.  
 15 But as I say, I have attended workshops after this.

16 And I know there are -- I know there are  
 17 presentations of people who are conducting research who  
 18 put -- I think they responded to requests for proposals  
 19 that that initiative was set out to review. My  
 20 understanding was that their -- the decisions on what  
 21 research are entirely independent of BP as to what  
 22 research actually gets conducted.

Page 211:03 to 211:08

00211:03 Q. Are you aware of any ongoing studies looking at  
 04 long-term health effects of the spill other than the  
 05 NIEHS study that we've been referring to as the Gulf

06 long-term study?  
07 A. I'm not aware of any specific study. I would  
08 not be surprised if studies are being conducted.

Page 211:18 to 211:20

00211:18 At this time, four years after the spill,  
19 is it possible to draw conclusions about the long-term  
20 impacts of the spill on human health?

Page 211:22 to 212:05

00211:22 A. I think it is possible to make some comments  
23 inasmuch as to date there's not been any significant  
24 evidence for exposure to levels that would be expected  
25 to cause harm. And that -- that has been agreed -- that  
00212:01 has been endorsed by members of OSHA and NIOSH and U.S.  
02 Coast Guard. And generally speaking, it's not likely  
03 that you would get effects if there's no exposure.  
04 Q. Has BP published any conclusions about the  
05 long-term effects of the spill on human health?

Page 212:07 to 213:07

00212:07 A. I don't know.  
08 Q. When -- in the last couple of questions I was  
09 asking about effects of the spill on human health.  
10 A. Yes.  
11 Q. Do you consider mental health to be an aspect of  
12 human health?  
13 A. I do.  
14 Q. So would you say that it's possible to determine  
15 at this point in time whether or not the spill has any --  
16 will have any long-term effects on mental health?  
17 A. I don't think that I can -- I can form a  
18 judgment on that right now.  
19 Q. Why's that?  
20 A. There are so many variables at play in terms of  
21 the -- where this took place, who was there, and all  
22 sorts of things which make it quite difficult to -- to  
23 fully understand that issue. I certainly heard -- well,  
24 yeah. To fully understand that issue at this point in  
25 time.  
00213:01 Q. Let's turn to the document behind Tab 32. Do  
02 you see a document there with the Bates number ending in  
03 2058?  
04 A. I do.  
05 (Exhibit Number 12033 marked.)  
06 Q. Let's mark that with Exhibit Number 12033.  
07 A. Thank you. Okay.

Page 213:14 to 213:18

00213:14 Q. Looking at the first page of the e-mail that  
 15 ends in Bates Number 2058, do you see that the e-mail  
 16 chain, you are sending the chain to Dave Rainey, David  
 17 Nagel, Tom Pennington and Michele Davis?  
 18 A. I do.

Page 215:25 to 216:04

00215:25 Q. Did you feel on July 16th when you sent this  
 00216:01 e-mail that it would be appropriate to run a workshop to  
 02 educate those in the media that a minimal health risk  
 03 exists from working as a member of the oil spill response  
 04 cleanup?

Page 216:06 to 216:22

00216:06 A. Well, I can't remember what I felt at the time.  
 07 But my -- my general sense was -- which, again, going  
 08 back to why I went to the Institute of Medicine National  
 09 Academy of Science was that in terms of research and  
 10 communication about these sorts of things, if it were  
 11 done by independent, credible scientists, involved  
 12 highly trusted people and involved community workers in  
 13 terms of how that was -- how that was shaped and  
 14 communicated, which is what the IOM workshops were set  
 15 out to do, then those to whom those messages were being  
 16 made would be much more likely to take them and  
 17 understand them and receive them.  
 18 I -- I personally didn't -- I didn't feel  
 19 that me doing that, or us doing that would add to the  
 20 process that they were trying to steer from IOM, which  
 21 had that independence and credibility which I had  
 22 sought.

Page 218:17 to 219:05

00218:17 Q. Sitting here today, do you think that you have  
 18 reviewed enough data and analyses to say that minimal  
 19 health risks exist from working as a member of the oil  
 20 spill response cleanup?  
 21 A. Well, what I do know is that the -- the  
 22 measures looking at potential exposure have not shown,  
 23 to me, evidence of exposure at levels above which one  
 24 might see harmful effects. And that's what I'm seeing  
 25 right now with the information that I'm -- that I've  
 00219:01 seen to date.  
 02 Q. Based on the information that you've seen to  
 03 date, what can you say about any health risks that exist  
 04 from working as a member of the oil spill response  
 05 cleanup?

Page 219:08 to 220:02

00219:08 A. It -- I mean, it's a bit too general. I'll  
09 just say what I've seen to date is that the data that  
10 I've seen about exposure does not suggest exposures that  
11 would be above those limits. And in that context, one's  
12 not seeing -- one would not expect the effects to be  
13 present if there's no exposure. I said earlier, if you  
14 have no exposure to something, then it's hard to imagine  
15 how one might have an effect.  
16 Q. And what is the data that you have reviewed?  
17 A. Well, it's the data that you're showing me  
18 around and I've seen about hygiene monitoring data, the  
19 conclusions based on that.  
20 Q. Any of --  
21 A. And -- and also, the comments made by people  
22 like David Michaels and John Howard from OSHA, which  
23 also seem to suggest that there's no evidence of any  
24 significant exposures above the limits -- limits that  
25 would be expected to be harmful.  
00220:01 Q. Have you reviewed any data other than air  
02 monitoring data?

Page 220:04 to 220:08

00220:04 A. I've -- I'm sure I must have seen data on any  
05 number of things, including what you've showed me to  
06 come to that conclusion at the moment. But as I say, if  
07 there's no significant exposure, then one shouldn't  
08 expect to see any -- any effect.

Page 221:03 to 221:04

00221:03 Q. Let's mark the first page as Exhibit 12034.  
04 (Exhibit Number 12034 marked.)

Page 222:06 to 223:07

00222:06 Q. Do you recall there being incidents on response  
07 vessels where industrial hygiene monitoring was showing  
08 concentrations above action levels?  
09 A. What I do recall is that in -- in the data you  
10 showed me earlier from a presentation, that the -- any  
11 exceedances were explained by things like motor vehicle  
12 or engine -- engine running and things like that, rather  
13 than any specific exposures to -- to specific  
14 circumstances to do with the actual response itself.  
15 That was my understanding.  
16 So you're showing me a thing here which is  
17 talking about exceeding the action levels, I think you  
18 said. I recall some of -- I don't recall specifically,  
19 but I do recall discussions about where -- where that  
20 may have been the case, generic reasons for that were  
21 determined.  
22 For example, I also know that BP offered  
23 to put in HVAC air conditioning in some of the vessels

24 to help with air quality and things like that.  
25 Generically.  
00223:01 Q. During the response, if a worker was standing on  
02 a boat next to the diesel exhaust and it was determined  
03 that the -- some of the components of that diesel exhaust  
04 rose to above action levels and that worker was exposed  
05 to chemicals of concern above an action level, would you  
06 say that that exposure had nothing to do with the oil  
07 spill response?

Page 223:09 to 223:13

00223:09 A. No. I wouldn't say -- I wouldn't say it like  
10 that. No.  
11 Q. Would you say that that worker had been exposed  
12 to a concentration above an action level during their  
13 work as part of the response?

Page 223:15 to 223:19

00223:15 A. I couldn't say that, either, because I really  
16 don't know what the monitoring -- what was actually  
17 done. I don't know what the monitoring was done and  
18 whether it was truly relevant to personal exposure or  
19 not.

Page 223:22 to 224:12

00223:22 Q. Okay. Let's mark this exhibit, the first page  
23 ending in Bates Number 6674, as Exhibit Number 12035.  
24 (Exhibit Number 12035 marked.)  
25 Q. This is generally a -- a chain of e-mails  
00224:01 regarding foul odors reported on two fixed platforms in  
02 the response area?  
03 A. It appears to be, yes.  
04 Q. And if you look at -- on the first page ending  
05 in 6674, about a third of the way down the page there's  
06 an e-mail that you send --  
07 A. Yes.  
08 Q. -- on Wednesday, May 12th, to Fred Tremmel and  
09 others. The subject line is foul odor and nausea  
10 reported on fixed platforms MP 153 and SP 155; is that  
11 correct?  
12 A. Yes, that's correct.

Page 226:09 to 227:05

00226:09 Q. Have you done any research into the health  
10 effects of those dispersants?  
11 A. Not specifically. But again, I was made aware  
12 that the dispersants were used with approval of the EPA,  
13 I think, and that certain steps were put in place to  
14 prevent likelihood of any exposure to dispersants by



15 people either on vessels or platforms.

16 Q. But you personally have not done any research  
17 into the health effects of dispersants?

18 A. I haven't done any research.

19 Q. Have you done any research into the health  
20 effects of the combination of oil and dispersants?

21 A. I personally not conducting -- I'm not a  
22 researcher myself. I don't conduct specifically  
23 research of this nature. That's not what I normally do.

24 Q. Are you aware of any research done into the  
25 combined affects -- I'm sorry. The health effects of the  
00227:01 combination of oil and dispersants?

02 A. I can't recall. It's quite possible I may have  
03 read something in the past about that.

04 Q. But sitting here today, you're not aware?

05 A. I don't recall specifically, no.

Page 229:17 to 229:18

00229:17 Q. Do you think that the spill had an impact on  
18 human health?

Page 229:20 to 230:05

00229:20 A. Well, I think that there were people who were  
21 working the response who had injuries and illnesses,  
22 that's for sure. There is some mixed pictures around  
23 behavioral health, which you mentioned before. So I --  
24 I'm sure there must be some people who certainly feel  
25 that their health has been affected.

00230:01 Q. Do you think the spill had an impact on human  
02 health?

03 A. I think that even as much as some people had  
04 accidents when they were working on the response, that's  
05 an impact on their health.

Page 230:22 to 231:05

00230:22 BY MS. DESANTIS:

23 Q. Now, Dr. Heron, on direct examination, counsel  
24 for the U.S. reviewed with you some of your prior  
25 background, your education and your experience. I'd like  
00231:01 to talk briefly about some of your additional  
02 qualifications just so that the Court has a full  
03 understanding of the caliber of the medical professional  
04 that was brought in to oversee BP's human health response  
05 to the DWH incident.

Page 231:07 to 232:13

00231:07 Q. You are a member of the Royal College of  
08 Physicians by examination; is that correct?

09 A. That is correct.

10 Q. Have you also been awarded a fellowship in Royal  
 11 College of Physicians?  
 12 A. Yes, I have.  
 13 Q. Have you been awarded a fellowship in the  
 14 Faculty of Occupational Medicine in the United Kingdom?  
 15 A. Yes, I have.  
 16 Q. And in fact, now, are you president of the  
 17 Faculty of Occupational Medicine by election?  
 18 A. Yes, I am.  
 19 Q. And are you currently serving a three-year term?  
 20 A. Yes, I am.  
 21 Q. And Dr. Heron, are you a fellow of the American  
 22 College of Occupational and Environmental Medicine?  
 23 A. Yes, I am.  
 24 Q. And Doctor, do you serve on the faculties of two  
 25 universities in the United Kingdom?  
 00232:01 A. Yes. Yes, I do.  
 02 Q. And Doctor, do you lecture around the world on  
 03 issues pertaining to work and health?  
 04 A. Yes, I do.  
 05 Q. And Doctor, do you publish on issues pertaining  
 06 to work and health?  
 07 A. Yes. I have.  
 08 Q. And Doctor, you have described your  
 09 responsibilities as chief medical officer for BP and as  
 10 vice president for health. Can you please provide us  
 11 with a brief description of your overall responsibilities  
 12 as chief medical officer for the company in the context  
 13 of the DEEPWATER HORIZON response?

Page 232:15 to 235:01

00232:15 A. My -- my role, as I said earlier, was to be --  
 16 provide medical advice on the business support team. I  
 17 would say that really extended across about five  
 18 different areas through the response.  
 19 So firstly, I was looking to prevent harm  
 20 to responders that would be around, helping to make sure  
 21 that were in place the right capability to understand  
 22 hazards to assess risks and decide on the right PPE,  
 23 contribute to, perhaps, the training that was being done  
 24 and make sure that access to medical treatment as was  
 25 needed was present across a fairly large piece of  
 00233:01 geography. So I think that would be the first thing I  
 02 was doing.  
 03 I think the second thing would be around  
 04 contributing to information and actions to protect  
 05 public health and to assist in public health. That sort  
 06 of thing included working to set up or to shape a help  
 07 line so that people with concerns, members of the public  
 08 or responders with concerns could have those concerns  
 09 answered by people who really understood the nature of  
 10 the issues.  
 11 And again, a theme going through, that  
 12 they were independent and credible and best served to do

13 that. Not my direct responsibility, but I was aware  
14 that there was extensive monitoring going along across  
15 the coastal strip in terms of environmental monitoring.

16 And also, I guess acting as a bridge, as I  
17 said earlier, between people making requests for  
18 support. So there were a number of requests for support  
19 around behavioral health in the region during the early  
20 part of the response, which I took back and facilitated.

21 I think the third area that I would  
22 describe is contributing to research. Again, same idea,  
23 really, which was to try and find the most independent,  
24 credible scientists and help them to make the best  
25 judgments about what research was appropriate and have  
00234:01 to deal with that.

02 And I think the next one would be around  
03 outreach. So, again, I guess it's building on the  
04 public health stuff in the beginning. But I was  
05 personally pleased that when I saw elements of the  
06 public communication of our medical settlement, that it  
07 got within it a component around building capacity for  
08 primary care, public health and environmental awareness  
09 and navigation of the health system in the region.

10 I think sort of finally, just sort of  
11 trying to put a bit of a shape around it, I've always  
12 tried to assist others to hear about what we did and  
13 trying to get a factual account and contribute to  
14 information to help people make good decisions if  
15 they're ever in some circumstance, that this may help  
16 them to address.

17 So I was -- I worked with people from  
18 government, HHS, NIOSH, and others since to help them  
19 with some of their plans for preparedness for future  
20 events and disasters. So I think that's kind of the  
21 spectrum of -- generic spectrum of work that I felt I  
22 was contributing to this -- this situation.

23 Q. And looking at that broad spectrum of work that  
24 you just described, Dr. Heron, would you characterize  
25 that spectrum of work as part of BP's effort to mitigate  
00235:01 or minimize any human health impact of the spill?

Page 235:03 to 235:15

00235:03 A. Well, I would. I would say that it was -- my  
04 contribution was contribution to BP's contribution.  
05 BP's contribution was also through this, you know,  
06 Unified Area Command and some parts of that. It was  
07 around other people with other health accountabilities,  
08 either inside or outside the company. I wasn't  
09 particularly precious about who they were working for.  
10 It was more about what was the -- what was a good  
11 outcome, what was a good thing to do.

12 Q. And as you have said before, BP was working in  
13 collaboration with a number of people in the U.S.  
14 government; is that correct?

15 A. Yes. Yes. On many different levels.

Page 237:03 to 238:02

00237:03 Q. So -- so you were working to identify hazards  
04 through these activities?  
05 A. Well, as I say, my role was really to say, you  
06 know, let's get the best person in each one of these  
07 areas or the best people we can and constantly try to  
08 sort of help to do that. And then the same thing in  
09 the -- in the, you know, available of treatment.  
10 So -- well, I say it's hard to describe,  
11 but it -- and I don't liberally use the word  
12 "unprecedented" -- but up to 48,000 people at some stage  
13 across five states and about 600 miles of coastline -- I  
14 think it was six and a half thousand vessels in the  
15 space and making sure -- that's the size of a small  
16 village, a small town. And people have health issues,  
17 no matter what population of a small town you might  
18 have.  
19 You know, so some of this area was nature  
20 reserve or beaches without immediate access to shops, to  
21 pharmacies to get a headache tablet or to whatever. So,  
22 again, working with HHS to look at how do we very  
23 quickly get access to really good opportunities for  
24 treatment. So they were using the FEMA trailers that I  
25 think we used in Katrina before to make some of the  
00238:01 stations available for people to access treatment. That  
02 was the sort of thing for that.

Page 239:17 to 240:12

00239:17 Q. Okay. Did you become familiar, Doctor, in the  
18 course of your work with any of the training requirements  
19 for response workers that were put in place?  
20 A. I know there were extensive training programs  
21 going on. They weren't my specific area of  
22 responsibility, but I was aware that training was going  
23 on. And I was aware that OSHA was working very closely  
24 with BP to determine what that training was and that it  
25 was sufficient.  
00240:01 Q. Okay. Doctor, I'm going to hand you -- I  
02 believe this is the next exhibit sticker -- what I've  
03 marked as Exhibit 12036. And this is a document that is  
04 Bates numbered BP-HZN-2179 MDL 05001702.  
05 (Exhibit Number 12036 marked.)  
06 A. Yeah.  
07 Q. Do you recognize that particular document,  
08 Dr. Heron?  
09 A. I've seen a document that looks like this, yes.  
10 Q. All right. And does that document summarize  
11 minimum training requirements for response workers who  
12 were working in a variety of different categories?

Page 240:14 to 240:21

00240:14       A.    What -- what the document is called is  
 15    minimum -- MC 252 Minimum Training Requirements For  
 16    Response Workers. It appears to describe a set of  
 17    training modules along one axis and a set of work  
 18    locations or activities across the other axis type of  
 19    work. And by reading across, one looks to see what --  
 20    what training might be appropriate for those -- those  
 21    relevant work spaces.

Page 241:05 to 241:10

00241:05       Q.    Okay. And Doctor, I'm going to hand you a  
 06    document that I'm going to mark as Exhibit 12037.  
 07                   (Exhibit Number 12037 marked.)  
 08       Q.    Okay. And this is a document -- although this  
 09    copy isn't Bates numbered -- and we will provide a Bates  
 10    numbered copy that is Bates numbered HCG 935-011250.

Page 241:16 to 242:03

00241:16       Q.    Have you seen that document before?  
 17       A.    I have seen that.  
 18       Q.    And this document says at the top, General PPE  
 19    Matrix?  
 20       A.    It does.  
 21       Q.    And what is your understanding of this document?  
 22       A.    Well, my understanding is this -- this document  
 23    looks to be the sort of document where tasks have been  
 24    analyzed and then the particular recommended personal  
 25    protective equipment is listed across the horizontal  
 00242:01   axis. And again, it's trying to make it very simply  
 02    clear which -- which personal protective equipment is  
 03    recommended for each task.

Page 244:23 to 245:09

00244:23       Q.    Were you familiar with what has become known as  
 24    the -- and I will use the acronym first -- the GRHOP  
 25    program, which stands for the Gulf Regional Health  
 00245:01   Outreach Program?  
 02       A.    The Gulf -- the Gulf Region Health Outreach  
 03    Program, yes.  
 04       Q.    Are you familiar with that?  
 05       A.    I'm familiar with it to a degree, yes.  
 06       Q.    All right. And were you -- are you aware of  
 07    some of the particular programs within the Gulf Reach  
 08    Health Outreach Program -- Gulf Region Health Outreach  
 09    Program that protected public health?

Page 245:11 to 245:25

00245:11       A.    Well, I'm aware of that program. It's ongoing.  
 12    And it's part of the overall medical settlement, I

13 understand. Now, within the -- there's a -- sums of  
14 money that are there to build -- to build capacity to  
15 help people to be able to access general medical care.  
16 So there's federally qualified medical health clinics, a  
17 part of that program. I think the program has got  
18 access to support for mental health resiliency,  
19 training, that sort of thing.  
20 I know it's also got some component to do  
21 with environmental health literacy, understanding  
22 environmental health issues. And it's also got another  
23 component which is really community work based which is  
24 trying to help people to navigate what can be quite  
25 complex healthcare systems.

Page 246:23 to 247:01

00246:23 Q. In the course of your work on the DEEPWATER  
24 HORIZON response, were you ever made aware of any  
25 exposures to the public at levels sufficient to cause  
00247:01 injury?

Page 247:03 to 247:12

00247:03 A. Well, certainly I was not made aware of -- I  
04 don't recall being made aware of any exposure. I mean,  
05 if you're talking about oil and hydrocarbon exposures, I  
06 certainly wasn't made aware of anything like that that  
07 was associated with exposures to the public of a harmful  
08 nature.  
09 Q. And with respect to any worker exposure levels,  
10 were you ever made aware of any worker level exposures to  
11 any toxins at levels sufficient to cause injury in the  
12 course of the response?

Page 247:14 to 247:22

00247:14 A. Again, I think I was satisfied that the hygiene  
15 monitoring strategies that were put in place did not  
16 demonstrate significant excursions or exposure to  
17 suggest that there were exposures to responders at  
18 levels that could be considered to be harmful.  
19 Q. And were you aware of any exposures of any  
20 workers to either oil or its constituents or to  
21 dispersants or its constituents at levels that could be  
22 harmful?

Page 247:24 to 248:20

00247:24 A. Well, as I said, there were one or two -- one  
25 or two excursions that I did refer to earlier which were  
00248:01 investigated and attributed to what you might call more  
02 generic activities, like an idling engine or something  
03 like that.

04 I think, also, that the -- the -- one of  
05 the HHEs did refer to an investigation where they didn't  
06 think that the symptoms were specifically related to  
07 hydrocarbon exposure.

08 Q. And that was respect to an individual, Doctor?

09 A. It was a group -- it was the group -- a group  
10 of fishermen that we may have referred to earlier where  
11 I -- I recall they thought it was more likely to be due  
12 to cleaning solvents that they may have used are not  
13 diluted, that sort of thing.

14 Q. All right. Doctor, you referred in your  
15 description of your broader work in the course of the  
16 response to research?

17 A. Yeah.

18 Q. Can you describe the research in which you were  
19 involved or that you oversaw in the course of the  
20 response?

Page 248:22 to 250:05

00248:22 A. I don't think I actually oversaw any research  
23 personally. I think I've been very clear earlier on. I  
24 was anxious to make sure that the people deciding what  
25 research should be conducted, how it should be done,  
00249:01 should be the most credible, the most highly respected  
02 scientists of the highest quality. And that the public,  
03 the responders, the public, other professionals in the  
04 communities would -- would deserve that.

05 So that's why very early on I went to the  
06 National Academy to make that request to meet with  
07 Harvey Fineberg.

08 Q. And when you say the National Academy, you mean  
09 the National Academy of Scientists?

10 A. Yes. The National Academy of Scientists.

11 Q. And you requested to meet with Harvey Fineberg?

12 A. I did.

13 Q. And for what purpose?

14 A. And that was the purpose, to say -- to really,  
15 to implore him -- and there were others present from --  
16 I can't recall exactly which bits of the National  
17 Academy was present -- but just to say that I thought  
18 that there was going to be a need to -- to -- there was  
19 going to be a value in doing the best research.

20 I didn't feel that my leadership of that  
21 research would be appropriate for lots of different  
22 reasons. But I felt that -- that it would be good that  
23 somebody was making that determination.

24 There was a lot of speculation in the  
25 media and in all sorts of bases. So it was important  
00250:01 that some -- some credible source was made available for  
02 people to be able to trust the information coming.

03 Q. All right. And Dr. Heron, were you also  
04 involved in any support of the National Institute of  
05 Health for some early release grants for research?

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00250:07 A. Well, I can describe to some extent my  
08 involvement in that, which was, yes. The -- the -- we  
09 talked earlier about the GoMRI process. And I did speak  
10 with Ellen Williams, who's the chief scientist at BP at  
11 the time. I said I thought it was important that there  
12 was a section of that overall piece that was  
13 specifically around human health.

14 They had got other bits around  
15 environmental research. And I -- I felt it would be  
16 helpful if immediate funds could be made available to  
17 get that process going. But of course I was also very  
18 aware that BP should not be seen to be determining what  
19 science should be done or how it should be done, and  
20 that's why I went to National Academy. And that's why I  
21 went to National Academy. And I believe \$10 million was  
22 made available from that \$500 million sum.

23 Q. All right. With respect to funding, you  
24 mentioned the 10 million granted to NIH; am I correct?

25 A. Well, it did go to NIH in the end, yes.

00251:01 Q. All right. Are you aware of any other funding  
02 by -- by BP that supported efforts pertaining to human  
03 health?

04 A. Yes. I mean, I see what I would probably say  
05 is the \$10 million -- one of the important things,  
06 again, in my involvement in that was to say, you know,  
07 it's important that local community stakeholders and  
08 academic institutions in that region are engaged in --  
09 in that determination. Because I felt that if local  
10 people want to know what's happening, it's important  
11 that they're engaged in it.

12 Sometimes there's a tendency for large  
13 organizations from out of town to come and do research,  
14 and that's not always what local communities want. And  
15 certainly that was something that came up in  
16 conversations I had with other people about -- about  
17 that.

18 Q. Okay. So in addition to the 10 million, were  
19 there other grants that were made or other funding that  
20 was done by BP pertaining to human health?

21 A. Yeah. Well, as I say, in the GoMRI process,  
22 there are now requests for proposals each -- each year  
23 or each period of time. There may be more than one in a  
24 year where people can actually put in for funding for  
25 research, and I believe that's going on.

00252:01 Q. And are you aware of any funding that was given  
02 to an organization called SAMHSA?

03 A. Yeah. I'm not sure that was for research  
04 specifically. I think that -- that was the conversation  
05 I was referring to earlier where I was talking to people  
06 in community affairs about what -- I recall there was a  
07 figure of something like 52 million to -- to provide  
08 support to local public services quite early on in the  
09 response. And I think about \$10 million of that was  
10 specifically allocated to SAMHSA.



11 Q. Okay. Are you aware how much funding was given  
12 to the -- the GRHOP program?  
13 A. Yes. I've seen a figure -- well, I've seen a  
14 figure of \$105 million to do with that program.

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00252:18 Q. Now, Doctor, you talked earlier in questioning  
19 by counsel for the U.S. about any mental health effect of  
20 the oil spill in Gulf Coast communities. If there is a  
21 behavioral or mental health effect of the oil spill in  
22 Gulf Coast communities, do you expect that effect to  
23 persist in the years ahead?

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00252:25 A. I think there's -- I was asked a question  
00253:01 similar for earlier. I think there's quite a lot of  
02 variety of information and studies about this. I have  
03 no doubt that if there was a major incident, people  
04 would be worried, people would be worried about that.  
05 And that's also why I felt, you know, it was reasonable  
06 to, as a responsible employer working in the region,  
07 that's not a bad thing to acknowledge that would be  
08 worth funding without making any particular judgment  
09 about attribution, et cetera.

10 I think there have been studies done in  
11 all sorts of different places where -- like I've said  
12 before, I think there's so many variables. Who was  
13 working there, what kind of jobs they had, what was the  
14 economy like. And there have been -- there was a -- an  
15 update in the -- the GoMRI update -- there was a meeting  
16 in January where certainly, I think, some information  
17 was presented to say that there had been some suggestion  
18 of effects in some responders, and other information  
19 said that there were effects that were turning towards  
20 normal.

21 So -- and neither of those things have  
22 been published so I haven't seen what the statistics are  
23 or any of the -- they haven't been peer reviewed. So I  
24 think it -- I still retain quite an open mind about  
25 that. But it isn't to say it isn't a real issue for  
00254:01 people if they have mental problems to have access to  
02 support, no matter what their generation.

03 Q. And funding has been made available, has it not,  
04 by BP to actually fund some outreach programs that  
05 protect mental health in Gulf Coast communities?

06 A. Well, that's part of that GRHOP program that  
07 you described. There was a particular piece around  
08 providing access to behavioral health and resiliency  
09 training was one of the lend in that point.

10 Q. Doctor, in the course of your work on the  
11 response, you were working as part of the Unified Command  
12 structure; is that right? Unified Area Command  
13 structure?

14       A.    Supporting them, yes.  Yes.  
15       Q.    And within that collaborative group, was BP  
16 initiating any initiatives that would protect the public  
17 health, or was BP simply following the lead of others  
18 within the Unified Area Command?

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00254:20       A.    I think probably both.  This was -- to me, this  
21 was an absolute team approach where very quickly we,  
22 people, were focused on trying to solve problems  
23 together.  And that meant that ideas were coming from  
24 us, which you could call leadership, about what to do,  
25 what more could we do on a whole range of things.  And  
00255:01 ideas were coming from other people and those were being  
02 processed real-time and adopted.  
03               And I've given some examples but I think  
04 it was a very iterative process going on all the time  
05 where we were always looking, you know, what more could  
06 we do, how could we -- what in addition could we do.  
07 That wasn't necessary saying we were seeing things, it  
08 was just saying are there more things we could do that  
09 may be helpful.

## SIGNATURE PAGE

I, RICHARD HERON, have read the foregoing deposition and hereby affix my signature that same is true and correct, except as noted on the correction page.

Richard Heron (Jdha)

RICHARD HERON

THE STATE OF )  
COUNTY OF )

Before me \_\_\_\_\_ on this day  
personally appeared \_\_\_\_\_ known to me [or  
proved to me on the oath of \_\_\_\_\_ or through  
\_\_\_\_\_ (description of identity card or  
other document)] to be the person whose name is  
subscribed to the foregoing instrument and acknowledged  
to me that he/she executed the same for the purposes and  
consideration therein expressed.

Given under my hand and seal of office this  
\_\_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
NOTARY PUBLIC IN AND FOR  
THE STATE OF

My Commission Expires:  
\_\_\_\_\_

WITNESS NAME: Richard Heron

DATE TAKEN: June 20, 2014

IN RE: OIL SPILL BY THE OIL RIG "DEEPWATER HORIZON" IN THE GULF OF MEXICO, ON APRIL 20, 2010

CORRECTIONS:

PAGE: 10	LINE: 16	CHANGE: remove "The"
PAGE: 11	LINE: 14	CHANGE: replace "spoof" with "spell"
PAGE: 11	LINE: 21	CHANGE: remove "was"
PAGE: 11	LINE: 23	CHANGE: insert "time" after "the"
PAGE: 11	LINE: 25	CHANGE: remove "with"
PAGE: 12	LINE: 14	CHANGE: replace "on" with "in"
PAGE: 12	LINE: 17	CHANGE: replace "But" with "They"
PAGE: 12	LINE: 20	CHANGE: replace "position" with "positions"
PAGE: 13	LINE: 6	CHANGE: delete "the"
PAGE: 13	LINE: 17	CHANGE: replace "going merges and demerges" with "undergoing merges and demergers"
PAGE: 19	LINE: 8	CHANGE: insert "would" before "be"
PAGE: 20	LINE: 5	CHANGE: remove "more"
PAGE: 34	LINE: 10	CHANGE: remove "in"
PAGE: 44	LINE: 11	CHANGE: remove "in"
PAGE: 84	LINE: 14	CHANGE: replace "tank" with "hangar"
PAGE: 85	LINE: 8	CHANGE: replace "speak" with "be"
PAGE: 98	LINE: 3	CHANGE: replace "medically" with "medical"
PAGE: 106	LINE: 10	CHANGE: replace "cast" with "care"
PAGE: 126	LINE: 4	CHANGE: insert "that," after "than"
PAGE: 226	LINE: 21	CHANGE: insert "was" after "personally"
PAGE: 232	LINE: 21	CHANGE: insert "there" before "were"
PAGE: 243	LINE: 25	CHANGE: insert comma after "to"
PAGE: 243	LINE: 13	CHANGE: replace "core" with "call"
PAGE: 244	LINE: 9	CHANGE: insert "had" after "things"
PAGE: 248	LINE: 8	CHANGE: insert "with" after "was"
PAGE: 248	LINE: 12	CHANGE: replace "are" with "and"
PAGE: 249	LINE: 25	CHANGE: replace "bases" with "places"
PAGE: 255	LINE: 14	CHANGE: remove "any"
PAGE: 256	LINE: 16	CHANGE: replace "serve" with "use"

SIGNATURE: \_\_\_\_\_



DATE: \_\_\_\_\_

July 28<sup>th</sup> 2014