

NORTH CAROLINA  
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE  
SUPERIOR COURT DIVISION  
13-CVS-11032

STATE OF NORTH CAROLINA *ex rel.* )  
NORTH CAROLINA DEPARTMENT OF )  
ENVIRONMENT AND NATURAL RESOURCES, )  
 )  
Plaintiff, )

V. ) DEPOSITION OF MEGAN  
 ) MARIA DAVIES, M.D.

SIERRA CLUB, WATERKEEPER ALLIANCE, )  
NEUSE RIVERKEEPER FOUNDATION, )  
WINYAH RIVERS FOUNDATION, ROANOKE )  
RIVER BASIN ASSOCIATION, and CAPE )  
FEAR RIVER WATCH, INC., )  
 )  
Plaintiff-Intervenors, )

v. )  
 )  
DUKE ENERGY CAROLINAS, LLC, )  
 )  
Defendant. )

and

NORTH CAROLINA  
COUNTY OF MECKLENBURG

IN THE GENERAL COURT OF JUSTICE  
SUPERIOR COURT DIVISION  
13-CVS-14661

STATE OF NORTH CAROLINA *ex rel.* )  
NORTH CAROLINA DEPARTMENT OF )  
ENVIRONMENT AND NATURAL RESOURCES, )  
 )  
Plaintiff, )

V. )  
 )  
CATAWBA RIVERKEEPERS FOUNDATION, )  
INC., APPALACHIAN VOICES, YADKIN )  
RIVERKEEPER, MOUNTAINTRUE, DAN )  
RIVER BASIN ASSOCIATION, ROANOKE )

RIVER BASIN ASSOCIATION, SOUTHERN )  
ALLIANCE FOR CLEAN ENERGY, and )  
WATERKEEPER ALLIANCE, )  
 )  
Plaintiff-Intervenors, )  
 )  
v. )  
 )  
DUKE ENERGY CAROLINAS, LLC, )  
 )  
Defendant. )

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WEDNESDAY, MAY 4, 2016

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ROOM 148  
NORTH CAROLINA DEPARTMENT OF JUSTICE  
114 WEST EDENTON STREET  
RALEIGH, NORTH CAROLINA  
8:56 A.M.

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A P P E A R A N C E S

ON BEHALF OF THE PLAINTIFF:

ROY A. COOPER, III  
ATTORNEY GENERAL FOR THE STATE OF NORTH CAROLINA  
BY: ANITA LeVEAUX, SPECIAL DEPUTY ATTORNEY GENERAL  
ENVIRONMENTAL DIVISION  
GERALD ROBBINS, SPECIAL DEPUTY ATTORNEY  
GENERAL  
PUBLIC SAFETY SECTION  
JOHN P. BARKLEY, ASSISTANT ATTORNEY GENERAL  
HEALTH AND PUBLIC ASSISTANCE SECTION  
NORTH CAROLINA DEPARTMENT OF JUSTICE  
POST OFFICE BOX 629  
RALEIGH, NORTH CAROLINA 27602-0629  
919/716-6500  
  
DREW HARGROVE, ASSISTANT GENERAL COUNSEL  
NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL  
QUALITY  
217 WEST JONES STREET  
RALEIGH, NORTH CAROLINA 27603  
919/707-8613

ON BEHALF OF THE PLAINTIFF-INTERVENORS:

FRANK S. HOLLEMAN, III, SENIOR LITIGATOR  
MYRA BLAKE, STAFF ATTORNEY  
NICHOLAS S. TORREY, STAFF ATTORNEY  
LESLIE GRIFFITH, ASSOCIATE ATTORNEY  
SOUTHERN ENVIRONMENTAL LAW CENTER  
601 WEST ROSEMARY STREET, SUITE 220  
CHAPEL HILL, NORTH CAROLINA 27516-2356  
919/967-1450

ON BEHALF OF THE DEFENDANT DUKE ENERGY:

BRENT A. ROSSER, ESQUIRE  
HUNTON & WILLIAMS, LLP  
BANK OF AMERICA PLAZA  
101 TRYON STREET, SUITE 3500  
CHARLOTTE, NORTH CAROLINA 28280  
704/378-4700

A P P E A R A N C E S  
(CONTINUED)

LAUREN LLAMAS  
SENIOR COUNSEL, OFFICE OF THE GENERAL COUNSEL  
DUKE ENERGY  
DEC45A  
550 SOUTH TRYON STREET  
CHARLOTTE, NORTH CAROLINA 28202  
980/373-3698

COURT REPORTER:

MICHAEL B. CARTER  
PRECISION REPORTING & TRANSCRIBING, INC.  
POST OFFICE BOX 1659  
SPRING HOPE, NORTH CAROLINA 27882  
252/478-6968  
FAX: 252/478-6984  
CELL: 919/215-3501

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S T I P U L A T I O N S

PRIOR TO EXAMINATION OF THE WITNESS, COUNSEL FOR THE PARTIES STIPULATED AND AGREED AS FOLLOWS:

1. OBJECTIONS TO QUESTIONS AND MOTIONS TO STRIKE ANSWERS NEED NOT BE MADE DURING THE TAKING OF THIS DEPOSITION, BUT MAY BE MADE FOR THE FIRST TIME DURING THE PROGRESS OF THE TRIAL OF THIS CASE OR ANY PRE-TRIAL HEARING HELD BEFORE THE JUDGE FOR THE PURPOSE OF RULING THEREON OR AT ANY OTHER HEARING OF SAID CASE AT WHICH SAID DEPOSITION MIGHT BE USED, EXCEPT AN OBJECTION AS TO THE FORM OF A QUESTION MUST BE MADE AT THE TIME SUCH QUESTION IS ASKED OR OBJECTION IS WAIVED AS TO THE FORM OF THE QUESTION;
2. THAT THE WITNESS DOES NOT WAIVE READING AND SIGNING OF THE TRANSCRIPT.

P R O C E E D I N G S

(WHEREUPON,

MEGAN MARIA DAVIES, M.D.

WAS CALLED AS A WITNESS, DULY SWORN, AND TESTIFIED AS  
FOLLOWS:)

D I R E C T E X A M I N A T I O N 8:56 A.M.

BY MR. HOLLEMAN:

Q. Dr. Davies, we met a few minutes ago. My name is Frank Holleman, I am an attorney with the Southern Environmental Law Center. And we represent conservation groups who have intervened in this State Enforcement Action, where we are seeking the clean up of coal ash pollution around North Carolina. Have you ever been in a deposition before?

A. I have not.

Q. I am sure you have been told this by your attorneys, but just for the record, I am going to be asking you a series of questions. And if you don't understand me or if you can't hear me, or if I get confused, let me know and I will try to clarify the question.

Also, when you are answering questions from me, you need to say "yes" or "no" for the court reporter, because he gets frustrated by head shaking. And the other thing I wanted to make sure you are aware of, we



1 are of course in a conference room here in a government  
2 building in a -- perhaps a less formal setting. But the  
3 testimony you are giving today is under oath. And it is  
4 as though you were in an official courtroom; do you  
5 understand that?

6 A. I do understand that.

7 Q. Great. Well, first, could you state your full  
8 name for the record?

9 A. Megan Maria Davies.

10 Q. And Dr. Davies, I understand you are an  
11 official of the North Carolina Department of Health and  
12 Human Services, is that correct?

13 A. Yes.

14 Q. And what is your position?

15 A. I am the State Epidemiologist and Epidemiology  
16 Section Chief.

17 Q. And are you in a department or some  
18 sub-portion of HHS?

19 A. Yes.

20 Q. And what is that?

21 A. The Division of Public Health.

22 Q. And to whom do you report?

23 A. I report to Danny Staley, the Division  
24 Director.

25 Q. And is that a man or a woman?

1 A. Man.

2 Q. And to whom does he report?

3 A. He reports to Dr. Randall Williams.

4 Q. And what is Dr. Randall Williams' position?

5 A. He is the Health Director and the Deputy  
6 Secretary for Health.

7 MR. ROSER: I am sorry. One second. Just  
8 speak up just a little bit. I can barely hear you over  
9 here.

10 THE WITNESS: All right, sorry.

11 MR. ROSSER: Thank you.

12 BY MR. HOLLEMAN:

13 Q. And sometimes I drop my voice, too ---

14 A. (Interposing) That is all right. I will  
15 try ---

16 Q. --- so if it is a problem from me, you just  
17 let me know.

18 A. --- little more. My voice is ---

19 Q. And who reports to you, Dr. Davies?

20 A. Matt Kimmer, Evelyn Faust, Mina Shehee, Julie  
21 Cassani and Brenda Horne.

22 Q. Now, we are here today, among other things, to  
23 ask you questions concerning the Health Screening Levels  
24 for hexavalent chromium and vanadium. I guess you are  
25 aware of that, correct?

1 A. Yes.

2 Q. Which of those people you just identified  
3 played any role in setting the Health Screening Levels  
4 for those two substances?

5 A. Mina Shehee.

6 Q. And the others did not?

7 A. No.

8 Q. Now, as I understand it, is it correct that  
9 your agency has set a Health Screening Level for  
10 hexavalent chromium in drinking water of 0.07 parts per  
11 billion?

12 A. Yes.

13 Q. I believe -- and correct me if this is wrong,  
14 but I believe that is based on a statutory criteria of a  
15 one in a million cancer risk, is that correct?

16 MS. LeVEAUX: Objection.

17 MR. ROSSER: Object to form.

18 MR. ROBBINS: Objection.

19 MR. BARKLEY: Objection. You can answer.

20 THE WITNESS: No, I was just trying to  
21 think.

22 BY MR. HOLLEMAN:

23 Q. Well, tell me what criteria is that based on?  
24 What does that represent, 0.07 parts per billion of  
25 hexavalent chromium. What does that represent?

1 A. That criterion is an Administrative Code.

2 Q. Yes, and what kind of criterion is that? I  
3 mean, what is the substance of the criterion and what  
4 does it mean?

5 A. It is a one in one million risk of --  
6 increased risk of cancer.

7 Q. Now, if it is -- if you have -- instead of .07  
8 parts per billion of hexavalent chromium in your water,  
9 you have 0.7, that is ten times as much hexavalent  
10 chromium; is that correct?

11 MS. LeVEAUX: Objection.

12 MR. ROBBINS: Objection.

13 THE WITNESS: Yes.

14 BY MR. HOLLEMAN:

15 Q. And does that mean, then, that your drinking  
16 that has 0.7 parts per billion of hexavalent chromium is  
17 less safe than drinking water that has the Health  
18 Screening Level of 0.07.

19 MS. LeVEAUX: Objection.

20 MR. ROBBINS: Objection.

21 MR. ROSSER: Object to the form.

22 THE WITNESS: It is associated with a risk  
23 of one in a hundred thousand of cancer.

24 BY MR. HOLLEMAN:

25 Q. So it would be riskier -- drinking the water

1 would be riskier if it has 0.7?

2 MS. LeVEAUX: Objection.

3 MR. ROSSER: Objection to form.

4 THE WITNESS: It is associated with a higher  
5 risk.

6 BY MR. HOLLEMAN:

7 Q. Of cancer?

8 A. Of cancer.

9 Q. And what kind of cancers are we talking about  
10 here for hexavalent chromium?

11 A. Stomach tumors for ingestion.

12 Q. What about liver cancer; is that one of the  
13 issues for hexavalent chromium?

14 A. Not to my knowledge.

15 Q. It is not? I mean, not to your knowledge?

16 A. Not to my knowledge.

17 Q. And you said stomach tumors. Is that  
18 sometimes referred to as stomach cancer?

19 A. Yes.

20 Q. And I believe you have been a practicing  
21 physician, is that right?

22 A. Yes.

23 Q. What symptoms does someone have who has  
24 stomach cancer?

25 A. I have never diagnosed someone with stomach

1 cancer, and I -- I would be speculating on the symptoms.

2 Q. Did you study that in medical school at all?

3 A. Yes.

4 Q. Okay. From your studies in medical school,  
5 what are the symptoms of someone who has stomach cancer?

6 A. I guess what I am trying to say is I don't  
7 remember everything I studied in medical school, and I  
8 don't know for sure what the symptoms of stomach cancer  
9 are.

10 Q. Are you telling me you don't remember that? I  
11 mean, you don't have to know with absolute certainty, as  
12 though you read it this morning. I am just asking you  
13 based on your general medical knowledge what are the  
14 symptoms of stomach cancer?

15 A. So, I guess the problem I am having in  
16 answering this is just -- I -- I could tell you what I  
17 think they are. I don't remember ever reviewing the  
18 symptoms of stomach cancer specifically. So as a doctor,  
19 I am a little uncomfortable when I am giving official  
20 testimony about what the symptoms of a disease are when I  
21 am not certain.

22 Q. Can you tell me what you think they are?

23 A. Yes.

24 Q. Okay.

25 A. I think they would be weight loss, abdominal

1 pain, possibly blood in the stool, fatigue.

2 Q. Would nausea be a symptom?

3 A. It could be.

4 Q. And do people normally survive stomach cancer?

5 MR. ROSSER: Object to the form.

6 MS. LeVEAUX: Objection.

7 MR. ROBBINS: Objection.

8 THE WITNESS: I don't know.

9 BY MR. HOLLEMAN:

10 Q. And what is the treatment for stomach cancer?

11 A. I don't know.

12 Q. Did you ever have a patient with liver cancer?

13 A. I don't think so.

14 Q. Do you know the symptoms of liver cancer?

15 A. I know some of them.

16 Q. And what are they?

17 A. Abdominal pain. They can also have loss of  
18 appetite, nausea. As it advances, you can have problems  
19 with bleeding disorders and liver malfunction.

20 Q. And what are the consequences of liver  
21 malfunction?

22 A. So severe liver malfunction results in hepatic  
23 encephalopathy. The brain is affected by the chemicals  
24 that the liver cannot transform for you to excrete  
25 anymore.

1 Q. So you can have a build up of ammonia that  
2 causes your brain to be confused?

3 A. Yes.

4 Q. And do people normally survive liver cancer?

5 A. I don't know the statistic on liver cancer  
6 survival, but it has a -- generally has a poor prognosis.

7 Q. Now, you all sent out "do not drink" letters  
8 to people around some of the coal ash sites because of  
9 the level of hexavalent chromium in their drinking water  
10 wells, is that correct?

11 A. No.

12 Q. How is that not correct?

13 A. We didn't send them out on the -- all of the  
14 materials were sent by DEQ.

15 Q. But you were aware that DEQ was sending out  
16 "do not drink" letters to people who lived around coal  
17 ash sites because of the levels of hexavalent chromium in  
18 their well drinking water?

19 MS. LeVEAUX: Objection.

20 MR. ROSSER: Object to the form.

21 BY MR. HOLLEMAN:

22 Q. Is that correct?

23 MR. ROSSER: Objection.

24 MS. LeVEAUX: Objection.

25 THE WITNESS: I was aware that DEQ was



1 sending out an HRE -- Health Risk Evaluation -- form that  
2 had a recommendation not to use water for drinking or  
3 cooking based on a level above 0.7 -- sorry, 0.07.

4 Q. Do you remember when that was sent out?

5 A. I think they started being sent out in March  
6 of 2015.

7 Q. Of 2015? Now, later, your Department and DEQ  
8 sent a letter to well owners who had received the "do not  
9 drink" advisories rescinding the "do not drink" advisory  
10 and telling them it was safe to drink their water, is  
11 that correct?

12 A. Yes.

13 Q. And when did that go out?

14 A. I think it was October of 2016. I mean, 2015.  
15 No, wait, what year are we in, 2016?

16 Q. We are in 2016.

17 A. Okay. Sorry, October 2016 [sic]. Maybe  
18 September.

19 Q. Let me show you what has previously been  
20 marked Exhibit 276.

21 MR. ROSSER: Frank, do you have copies of  
22 that -- 276?

23 MR. HOLLEMAN: That is a past exhibit.

24 MR. ROSSER: So did you all bring extra  
25 copies of the past exhibits?

1 MR. HOLLEMAN: I did not. This is the court  
2 reporter's exhibit. This is a "do not drink " -- this is  
3 the "do drink" letter.

4 MR. ROSSER: What is the date on that?

5 MR. HOLLEMAN: 276 and it is ---

6 THE WITNESS: March 11<sup>th</sup>, 2016. Yes, I was  
7 thinking of a different letter.

8 BY MR. HOLLEMAN:

9 Q. So, now, just for the record, looking at 276  
10 -- Exhibit 276, does that refresh your recollection that  
11 the "do drink" letters went out in March of 2016?

12 A. Yes.

13 Q. Now, why -- let me back up for a minute. Has  
14 the 0.07 Health Screening Level for hexavalent chromium  
15 changed?

16 A. No.

17 Q. And did you all obtain different testing  
18 results for the wells of people who received the "do  
19 drink" letter?

20 A. No.

21 Q. So why was the "do drink" letter sent, given  
22 you had previously -- or DEQ had previously sent these  
23 notices to well owners that they should not drink their  
24 water because of their hexavalent chromium level?

25 MR. ROSSER: Object to the form.

1 MS. LeVEAUX: Objection.

2 MR. ROBBINS: Objection.

3 THE WITNESS: I believe it was for the  
4 reasons stated in the letter.

5 BY MR. HOLLEMAN:

6 Q. And what do you believe those reasons are?

7 A. That they were updated after extensive study  
8 of how other cities, states and Federal Government  
9 managed the elements hexavalent chromium and vanadium in  
10 drinking water.

11 Q. Did you participate in those studies?

12 A. To me, the word "studying" means a research  
13 project.

14 Q. Yes. Well, I don't know what it means. I --  
15 well, I know what it means in the English language. The  
16 letter says "extensive study." Did you participate in  
17 that extensive study referred to in the letter?

18 A. Yes.

19 Q. And what did you do?

20 A. Reviewed Federal Standards and documents  
21 around those, reviewed levels that other states have for  
22 groundwater or drinking water. And that is basically  
23 what I did. And I was briefed by my staff on their  
24 meetings and ---

25 Q. Did you conduct any study of how other cities

1 manage hexavalent chromium and vanadium in drinking  
2 water?

3 A. No.

4 Q. Which members of your staff participated in  
5 this study?

6 A. So in -- in reviewing documentation -- that  
7 was the essence of what the study is, reviewing  
8 documentation and practices in other settings. Dr.  
9 Shehee, Kennedy Holt, is his last name, who is a Health  
10 Risk Evaluator ---

11 MR. ROSSER: I am sorry. I am still kind  
12 of struggling to hear you.

13 THE WITNESS: I am sorry. Kennedy Holt --  
14 and I am just hesitating on the last name. And I don't  
15 know if Ken Rudo did, also. I am sure about Mina and  
16 Kennedy.

17 BY MR. HOLLEMAN:

18 Q. All right. Did anyone else at HHS participate  
19 in this study?

20 A. I think Dr. Williams also reviewed  
21 information.

22 Q. And did anyone else outside of HHS -- anyone  
23 outside of HHS participate in the study or was it only  
24 done in HHS?

25 A. It was done in discussion with DEQ.

1 Q. Did DEQ do any of the study, or did you just  
2 discuss it with them?

3 A. DEQ shared their understanding of the same  
4 documentation that we were reviewing. And DEQ provided a  
5 formal report to the General Assembly regarding water  
6 standards for these constituents.

7 Q. And who at DEQ did what you just described?

8 A. Tom Reeder, Jay Zimmerman, Evan -- Evan Kane?  
9 I believe he is a geologist.

10 Q. Are those all of the people at DEQ that you  
11 know of?

12 A. Those are the people we had technical  
13 discussions. Secretary van der Vaart also engaged in  
14 some of the technical discussions.

15 Q. Anyone else in government, other than the  
16 people you have listed, to your knowledge -- was anyone  
17 else in government, other than the people you have  
18 listed, to your knowledge, participants in the study?

19 A. I am going to ask John a question, to  
20 clarify ---

21 MR. BARKLEY: You can't ask -- sorry.

22 THE WITNESS: I can't ask you a question? I  
23 am just ---

24 MR. BARKLEY: You need to ask him to clarify  
25 it.

1 BY MR. HOLLEMAN:

2 Q. If you are not clear about the question, let  
3 me know.

4 MR. BARKLEY: You can ask him.

5 THE WITNESS: I guess I keep stumbling on  
6 what you mean by "study." I know the language of the  
7 letter says, "after extensive study." To me, that  
8 doesn't mean -- it just means after reviewing the  
9 literature.

10 BY MR. HOLLEMAN:

11 Q. Well, who else participated in that?

12 A. In reviewing the literature?

13 Q. In what you mean -- what you interpret  
14 "extensive study" to mean?

15 A. I think -- those are the people I know of who  
16 participated in that.

17 Q. And did anyone outside of government  
18 participate in the study, to your knowledge?

19 A. No.

20 Q. Now, did you agree with the decision to send  
21 out this letter?

22 A. No.

23 Q. Okay. And why did you not agree with it?

24 A. I was concerned -- let's see. The timing  
25 wasn't what I recommended. And I felt that water in

1 public water systems were safer.

2 Q. In other words, that municipal public water  
3 systems were safer than the well water?

4 MS. LeVEAUX: Objection.

5 MR. ROBBINS: Objection.

6 THE WITNESS: In terms of the levels of  
7 hexavalent chromium detectable, yes.

8 BY MR. HOLLEMAN:

9 Q. Yes. And who did you express that concern to?

10 A. Dr. Williams.

11 Q. And what was his response?

12 A. We had multiple discussions about that there  
13 isn't a clear, one way to handle this, and that in the  
14 absence of regulations that all water suppliers were  
15 answerable to, that making a specific recommendation to  
16 this subset of people was not something he felt  
17 comfortable with.

18 Q. Did he give you any other reason why he wanted  
19 to send the letter out?

20 A. Yes.

21 Q. What was that?

22 A. There was -- there were reports of efforts in  
23 the General Assembly to construct legislation that would  
24 restrict the Division of Public Health's ability to work  
25 in the area of wells, in general. And I need to say, I

1 -- this is what was discussed in meetings around  
2 (inaudible).

3 MR. ROSSER: I am sorry, Dr. Shehee [sic]  
4 -- or Dr. Davies, I still am struggling to hear you over  
5 here.

6 MS. LeVEAUX: And I am, too.

7 THE WITNESS: I am sorry, I just -- I don't  
8 know what to do about it. Maybe you can turn off the air  
9 thing. But if I have to spend several hours at the top  
10 of my voice, I am not going to do well in this. So what  
11 I said was -- can somebody else -- what I said was that I  
12 was in discussions that included Dr. Williams about a  
13 concern that there was an -- I don't know the right noun  
14 -- effort -- there was discussion in the General Assembly  
15 about passing legislation to restrict the Division of  
16 Public Health's ability to work in the area of well  
17 water.

18 BY MR. HOLLEMAN:

19 Q. So was Dr. Williams concerned that if you did  
20 not send out a "do not drink" letter, that members of the  
21 General Assembly might restrict the administrative  
22 authority of the Department of Public Health?

23 MS. LeVEAUX: Objection.

24 MR. ROBBINS: Objection.

25 MR. ROSSER: Objection to form.



1 THE WITNESS: I don't -- I don't know how  
2 specific -- I can't speak to his specific concerns.

3 BY MR. HOLLEMAN:

4 Q. Did he express that concern?

5 MR. ROSSER: Same objection.

6 MR. ROBBINS: Objection.

7 THE WITNESS: Yes.

8 BY MR. HOLLEMAN:

9 Q. Now, did he give any other reason why the "do  
10 not [sic] drink" letters should go out?

11 MR. ROBBINS: "Do drink."

12 BY MR. HOLLEMAN:

13 Q. "Do drink" letters should go out. The "do  
14 drink" letters, excuse me.

15 A. He expressed a lot of concern about the stress  
16 that the people who had received the recommendation not  
17 to use water for drinking or cooking were experiencing as  
18 a result, and that while there is risk in the well water,  
19 there is countervailing risk in not using your well  
20 water, and having to use either bottled water or some  
21 other source.

22 Q. Well, what is the countervailing risk in using  
23 other water sources that don't have as much hexavalent  
24 chromium in them?

25 MR. ROSSER: Objection to form.

1 MS. LeVEAUX: Objection.

2 MR. ROBBINS: Objection.

3 BY MR. HOLLEMAN:

4 Q. What is the countervailing risk he was  
5 referring to?

6 A. In our discussions, we both were concerned  
7 that people were experiencing a high degree of stress in  
8 their everyday lives, that they were -- they were  
9 changing the practices of how they ate and how they did  
10 sanitation. And those are pretty fundamental public  
11 health issues.

12 Q. Did you know that was happening?

13 A. There were reports in the media.

14 Q. Did you ask any of the -- did you or others in  
15 your department, or Dr. Williams ask people in the  
16 community who had received the letters if they had made  
17 any of those kind of changes?

18 A. I did not. I don't know -- I can't speak to  
19 Dr. Williams.

20 Q. Now, did you express your objections to Dr.  
21 Williams' decision to send out the "do drink" letter in  
22 writing?

23 A. No.

24 Q. On e-mail?

25 A. No.

1 Q. Only verbally, is that correct?

2 A. Yes.

3 Q. Did anyone else at HHS object to the "do  
4 drink" letter being sent out?

5 A. Yes.

6 Q. Who else?

7 A. Mina Shehee. Let me think. Mina is the one I  
8 am sure.

9 Q. Do you know if anyone else expressed  
10 objection, other than Ms. Shehee and yourself?

11 A. I don't know of anybody who expressed  
12 objection to sending this letter besides Mina and myself.

13 Q. Do you know -- was there anyone else who  
14 objected to telling the well owners that it was  
15 acceptable to drink their water?

16 A. Not that I know of.

17 Q. Did Dr. Rudo express objections to this course  
18 of action?

19 A. Not that I know of.

20 Q. Did anyone else express concern -- well, let  
21 me back up. Did anyone else in HHS express concern about  
22 either sending out this letter or about telling well  
23 owners it was acceptable to drink the water?

24 A. Yes.

25 Q. Who else?

1 A. Danny Staley.

2 Q. Danny Staley?

3 A. Yes.

4 Q. And what is his job?

5 A. He is the Director of the Division of Public  
6 Health.

7 MR. ROSSER: The Director of the Division  
8 of ---

9 THE WITNESS: Public Health.

10 BY MR. HOLLEMAN:

11 Q. And he is the gentleman to whom you report, is  
12 that correct?

13 A. That is correct.

14 Q. And what were his objections or concerns?

15 A. Similar to mine, that we both felt it made  
16 more sense to wait on source determination, because once  
17 a source was determined, we would have a sense of if this  
18 -- the hexavalent chromium was a contaminant versus  
19 naturally occurring. That is relevant because if it were  
20 a contaminant, there might be ongoing contamination of  
21 wells with the increase in levels. So we felt we should  
22 wait until all the information was in and DEQ had made a  
23 determination, and then communicate with the well owners  
24 in that full context.

25 Q. And when you communicated with the well owners

1 in that full context, did you -- were you in favor of  
2 telling them it was all right to drink their water?

3 A. I was in favor of telling them what their risk  
4 level of the water was, that it isn't regulated anywhere  
5 in North Carolina, and what they could do to treat their  
6 water or reduce their risk if they chose to pursue that.

7 Q. But you wouldn't have told them "it is safe to  
8 drink water with hexavalent chromium above .07" ?

9 MS. LeVEAUX: Objection.

10 MR. ROBBINS: Objection.

11 MR. ROSSER: Objection.

12 THE WITNESS: No, I would not have.

13 BY MR. HOLLEMAN:

14 Q. Now did you express your objection to this  
15 letter and this course of action to anyone in government,  
16 outside of HHS?

17 A. No.

18 Q. Were you or your staff ever asked by anyone to  
19 raise the Health Screening Level for hexavalent chromium  
20 above .07?

21 A. No.

22 Q. Now, did you ever meet with Duke Energy about  
23 the hexavalent chromium and vanadium levels prior to this  
24 letter going out?

25 A. Yes.

1 Q. And when did you meet with them?

2 A. There were two meetings: one by phone sometime  
3 between March and June, and one in person, which was in  
4 June of 2015.

5 Q. '15? Well let's start with the first one --  
6 the phone conference. Who was on the conference call?

7 A. The -- I can't remember what they are  
8 called. It -- like, the legislative liaisons for Duke.

9 Q. Lobbyist?

10 MR. ROSSER: Object to the form.

11 THE WITNESS: Yes.

12 BY MR. HOLLEMAN:

13 Q. And what were their names?

14 A. I don't remember.

15 Q. Were they men or women?

16 A. Women.

17 Q. More than one?

18 A. Two.

19 Q. Two. And who else was on the call?

20 A. A Duke Energy environmental policy person  
21 whose last name is McIntyre, I think.

22 Q. McIntyre? And that was a man?

23 A. Yes.

24 Q. And who else from Duke?

25 A. There were some lawyers, but I don't know

1 their names.

2 Q. Were they men or women or both?

3 A. I remember men.

4 Q. And who was on the call from the government?

5 A. I was, Danny Staley, Mina Shehee, Chris Hoke.

6 Q. Who is Chris Hoke?

7 A. Chris Hoke is in the Division of Public  
8 Health. I think his title is Policy -- something about  
9 policy.

10 Q. Is he a man?

11 A. Yes.

12 Q. And who else from the government was on the  
13 call?

14 A. I think -- I think that was it. I am not -- I  
15 really don't remember.

16 Q. And why was the call held?

17 A. Duke Energy requested to speak with Public  
18 Health about our recommendations.

19 Q. And how did you learn of that request; who  
20 told you?

21 A. Mr. Staley.

22 MR. ROSSER: I am sorry, Dr. Davies?

23 THE WITNESS: Mr. Staley.

24 MR. ROSSER: Thank you.

25 BY MR. HOLLEMAN:

1 Q. So Mr. Staley was contacted by Duke Energy  
2 about the call, is that your understanding?

3 A. I believe so.

4 Q. Or was he contacted by somebody else in  
5 government that Duke Energy wanted the call?

6 MS. LeVEAUX: Objection.

7 THE WITNESS: My memory is he said he was  
8 contacted by the legislative representatives, or the  
9 lobbyists for Duke.

10 BY MR. HOLLEMAN:

11 Q. And why did Duke want to meet and talk with  
12 you?

13 A. They wanted to understand why we had made the  
14 Health Risk Evaluation recommendations that we were  
15 making.

16 Q. And what did you and the staff from HHS tell  
17 them?

18 A. We reviewed our rationale for the approach we  
19 were taking, which was that CAMA -- the Coal Ash  
20 Management Act -- directed the use of the North Carolina  
21 Administrative Code 2L Standards in reviewing the well  
22 water tested under CAMA. And so when we were asked by  
23 DEQ, which was then DENR, to do the Health Risk  
24 Evaluations for those water samples, we used 2L  
25 Standards, IMACs and levels calculated according to the



1 2L Rule to set the Health Screening Standard. It is not  
2 a standard, but a Health Screening Level. And that is  
3 why we used the levels we used.

4 Q. And what did the Duke Energy people say to  
5 you?

6 A. I don't really remember.

7 Q. Did they explain the point of why they wanted  
8 a call with you all?

9 MR. ROSSER: Objection.

10 THE WITNESS: In general, the questions  
11 were, you know, "Why are we looking at hexavalent  
12 chromium and vanadium when public water is not held to  
13 that standard?"

14 BY MR. HOLLEMAN:

15 Q. And your answer was?

16 A. To review our rationale, which we ---

17 Q. As you stated earlier?

18 A. As I stated earlier.

19 Q. And what else did the Duke Energy people say?

20 A. I don't remember.

21 Q. Do you remember any other concerns they  
22 raised?

23 A. No.

24 Q. How did the call end?

25 A. It just ended.

1 Q. So there was no resolution and no request from  
2 Duke Energy?

3 A. I don't remember.

4 Q. So tell me about the meeting with Duke. When  
5 did that occur?

6 A. That was in June.

7 Q. Of 2015?

8 A. 2015.

9 Q. And where did that occur?

10 A. That occurred at DEQ, the Green Square  
11 Building, in a conference room.

12 Q. And who was at the meeting?

13 A. Harry Sideris.

14 Q. Who is from Duke Energy?

15 A. Who is from Duke Energy -- Mr. McIntyre, the  
16 Policy -- the Environmental Policy person for Duke  
17 Energy, and several lawyers whose names I do not recall.

18 Q. Do you remember if they were men or women?

19 A. I think they were all men.

20 Q. And who else was there from -- let's start  
21 with HHS. Who was there from HHS?

22 A. Danny Staley and me.

23 Q. And who was there from DEQ?

24 A. Secretary van der Vaart, John Evans, Tom  
25 Reeder. Actually, I think there might have been

1       communications people there. So, I am sorry, I didn't  
2       review all of my notes, but there were a lot of meetings  
3       and discussions over a year and a half. So I think at  
4       this meeting, the communications person from DHHS was  
5       there -- Kendra Gerlach, and then a communications person  
6       from DEQ was there. But I am not positive.

7             Q.    Was there anybody else from the government  
8       there?

9             A.    No.

10            Q.    Was there anybody else there at all,  
11       government or not government, beyond the people you have  
12       listed?

13            A.    Not that I can think of.

14            Q.    Now, how did you learn about the meeting?

15            A.    I don't remember. Somebody in my chain of  
16       command said there was a meeting being organized.

17            Q.    Were you told or did you learn why the meeting  
18       was being held or who had requested it?

19            A.    That Duke Energy had requested it. They --  
20       there was a letter -- actually, yes. I think the letter  
21       was addressed to me and Tom Reeder from Mr. Sideris  
22       requesting explanation of our levels.

23            Q.    And what was -- what did the people from Duke  
24       Energy say?

25            A.    The main concerns that they expressed in the

1 meeting were around the levels we were using for Health  
2 Screening Levels for hexavalent chromium and vanadium,  
3 the issuing of recommendations not to use the water to  
4 drink or cook, and a specific concern about a vanadium  
5 screening level that was used in a situation about a year  
6 before that was higher -- it was 18 I believe, parts per  
7 billion -- and wanting to know why that was used in that  
8 circumstance, and .3 micrograms per liter was used for  
9 the CAMA wells.

10 Q. Did one person at Duke -- was one person from  
11 Duke the primary spokesperson for the company?

12 MR. ROSSER: Object to form.

13 THE WITNESS: Mr. Sideris did most of the  
14 talking.

15 BY MR. HOLLEMAN:

16 Q. Now, did Mr. Sideris or anyone else at Duke  
17 ask you all to rescind the "do not drink" advisories?

18 A. I don't remember. He said he didn't think  
19 they were reasonable, but I don't remember if he  
20 specifically asked us to do that.

21 Q. Why was Duke concerned about these levels?

22 MR. ROSSER: Object to form.

23 MS. LeVEAUX: Objection.

24 MR. ROBBINS: Objection.

25 BY MR. HOLLEMAN:

1 Q. Do you know?

2 MR. ROSSER: Objection.

3 THE WITNESS: No.

4 BY MR. HOLLEMAN:

5 Q. Do you know why you all were meeting with  
6 Duke, of all people or companies, relating to these  
7 levels?

8 A. Because they requested a meeting.

9 Q. Now, do you know if any Duke company  
10 facilities drink from well water that was tested in  
11 connection with this CAMA project?

12 A. I don't know.

13 Q. Did that come up in the discussions with Mr.  
14 Sideris, or on the conference call?

15 A. I don't remember it.

16 Q. Well, do you have any idea, if Duke isn't  
17 drinking the water, why would they have a say on what the  
18 contamination level is appropriate in other people's  
19 drinking water?

20 MS. LeVEAUX: Objection.

21 MR. ROBBINS: Objection.

22 MR. ROSSER: Objection to form.

23 THE WITNESS: I don't know.

24 BY MR. HOLLEMAN:

25 Q. You referred to the vanadium level at one time

1 perhaps being 18. When did that -- do you know when that  
2 happened?

3 A. That was the Summer of 2014.

4 Q. And could you explain what happened?

5 A. It was before CAMA was passed, or written.  
6 Some people in, I want to say, Gaston County -- but it  
7 was in an area near somewhere around a coal ash pond had  
8 their water tested by a private laboratory and had  
9 elevated vanadium. And DEQ consulted with the  
10 toxicologists in the Occupational and Environmental  
11 Epidemiology Branch that Dr. Shehee directs on what  
12 recommendation to give those well owners.

13 Q. And what is the relevance of the 18 level to  
14 this event?

15 A. The relevance is it is different than the  
16 level -- oh, to that?

17 Q. Was it used? What happened?

18 A. To that?

19 Q. Right. What happened?

20 A. To that?

21 Q. Right.

22 A. Yes, it was used as the screening level. It  
23 was calculated by the toxicologists in the Division of  
24 Waste Management and Occupational and Environmental  
25 Epidemiology Branch of the Division of Public Health,

1 based on existing literature as the Health Screening  
2 Level.

3 Q. And I believe that there is a so-called IMAC,  
4 interim standard for vanadium, correct?

5 A. Yes.

6 Q. And it is 0.3 parts per billion, is that  
7 right?

8 A. Yes.

9 Q. And was that -- I believe that was established  
10 in 2010, is that right?

11 A. I don't know.

12 Q. Was it in effect when the 2014 event occurred,  
13 do you know?

14 A. Yes.

15 Q. So why did they not use the IMAC in that  
16 situation?

17 A. When I asked my staff about it, they explained  
18 that DEQ was considering updating the IMAC, and -- based  
19 on literature. And so they, in partnership with the  
20 toxicologists in DEQ, calculated the level at that time  
21 and used it.

22 Q. Now, for reviewing the wells around the coal  
23 ash sites you all, as I understand, used the IMAC as the  
24 Health Screening Level, is that correct?

25 A. Yes.

1 Q. And that is 0.3?

2 A. Yes.

3 Q. Now, why are you using that instead of 18?

4 A. Because the 2L Standard or the 2L Rule was  
5 referenced in CAMA, and so we understood that to be our  
6 direction.

7 Q. Do you know if your staff has determined that  
8 use of 18 was a mistake?

9 MR. ROSSER: Object to form.

10 THE WITNESS: I asked my staff to relook at  
11 vanadium when this was brought to my attention. And the  
12 toxicologists on my staff re-reviewed the literature and  
13 calculated a lower level.

14 BY MR. HOLLEMAN:

15 Q. And was that lower level 0.3?

16 A. No.

17 Q. Do you know what it was?

18 A. It was 2.4 something.

19 Q. But in the end, following the statute, you  
20 used 0.3, is that correct?

21 A. Yes.

22 Q. Now, when the 0. -- oh, let me ask you this.  
23 During your conversations with Duke Energy, either on the  
24 phone or in person, did anyone in those meetings raise  
25 this possibility of the legislature changing the Public



1 Health Section's authority over wells?

2 MR. ROSSER: Object to form.

3 MS. LeVEAUX: Objection.

4 MR. ROBBINS: Objection.

5 THE WITNESS: No.

6 BY MR. HOLLEMAN:

7 Q. Now, after the meeting with Duke in June of  
8 2015, did you have any other meetings or conversations or  
9 e-mail communications with Duke?

10 A. I received a letter from Mr. Sideris  
11 summarizing his understanding of the meeting, and I  
12 responded with a letter making some clarifications.

13 Q. And have you received any other communications  
14 from Duke Energy?

15 A. No.

16 Q. Do you know if Dr. Williams has met with Duke  
17 Energy?

18 A. No.

19 Q. You don't know?

20 A. I don't know.

21 Q. Do you know if anyone else at HHS has met with  
22 or talked with Duke Energy, other than the one phone call  
23 and the one meeting in which you participated?

24 A. Yes.

25 Q. And who was that?

1 A. Secretary Brajer.

2 Q. And -- Secretary who?

3 A. Rick Brajer.

4 Q. And he is the Secretary of the Department,  
5 HHS?

6 A. Yes.

7 Q. And when did he meet with Duke?

8 A. Sometime -- sometime between when he came on  
9 board as the Secretary, which I think was the Summer of  
10 2015, and -- sometime between summer and fall.

11 Q. And when did the meeting occur? When did the  
12 meeting with the Secretary and Duke occur?

13 A. Like -- can you clarify? Are you asking the  
14 time of day or ---

15 Q. I mean, do you know more than between those  
16 two time periods?

17 A. No, I -- I don't. I wasn't present. I wasn't  
18 invited, so I don't know the date.

19 Q. Do you know who else was at the meeting?

20 A. No.

21 Q. Do you know where the meeting occurred?

22 A. No.

23 Q. Do you know who from Duke attended?

24 A. No.

25 Q. And how did you learn of the meeting?

1 A. Secretary Brajer mentioned it in a meeting.

2 Q. And what did he say about it?

3 A. That he had met with them and -- really, I  
4 don't recall much more.

5 Q. Did he say they had discussed the hexavalent  
6 chromium or vanadium issues?

7 A. I don't remember.

8 Q. Did he say if they discussed the well water  
9 issue in general?

10 A. Yes.

11 Q. Did he say what Duke had said to him?

12 A. I don't remember.

13 Q. Do you remember if this was a dinner at the  
14 Governor's Mansion where he met with Duke?

15 A. I don't know.

16 Q. Now, have you ever met with the Governor or  
17 anyone from the Governor's staff concerning the issue of  
18 the wells or well water around coal ash sites?

19 A. I have not met with the Governor. I have  
20 spoken by phone with staff.

21 Q. And which of his staff have you spoken with?

22 A. Josh Ellis, Communications Office. Matt  
23 McKillip.

24 Q. And what is Matt's role?

25 A. I don't know his title in the office of the

1 Governor. He was at DHHS as a policy advisor.

2 Q. Well, let's start with the first person. I  
3 think his name was Josh, is that right?

4 (Witness nods affirmatively.)

5 Q. And how many times did you talk with Josh?

6 A. I can't give you an exact number, but several  
7 times.

8 Q. And what -- did you call him or did he call  
9 you?

10 A. It was usually a conference call that got  
11 arranged that I was invited to.

12 Q. It included him, obviously?

13 (Witness nods affirmatively.)

14 Q. You need to say "yes," for the record.

15 A. Yes.

16 Q. And of course it included you. Who else was  
17 on the conference calls with Josh?

18 A. Kendra Gerlach.

19 Q. And who is he?

20 A. She is a Communications Director in the  
21 Department of Health and Human Services.

22 Q. And who else?

23 A. There were several calls, so there were  
24 different people at different times. And I can't  
25 distinguish them all in my memory. Some of those calls

1 probably had -- some of those calls had Danny Staley also  
2 on the call. That is what I am sure of.

3 Q. Over what time period did the calls take  
4 place?

5 A. Several in early 2015. I think probably  
6 March, mostly, of 2015.

7 Q. Did any of the calls deal with the "do drink"  
8 letter that was issued in March of 2016?

9 A. No.

10 Q. Did the calls deal with the "do not drink"  
11 advisory that went out in -- around June of 2015?

12 A. Yes.

13 Q. And what was expressed to you by Josh at the  
14 Governor's Office?

15 A. Concern over wording on the Health Risk  
16 Evaluation form.

17 Q. And which part of the wording?

18 A. The main issue was wanting to have wording on  
19 there that reflected that Safe Drinking Water Act  
20 Standards were not exceeded.

21 Q. Well, that -- that is true because there  
22 aren't any for hexavalent chromium and vanadium, is that  
23 right?

24 MR. ROSSER: Object to the form.

25 MR. ROBBINS: Objection.

1 MS. LeVEAUX: Objection.

2 THE WITNESS: Yes.

3 BY MR. HOLLEMAN:

4 Q. And, in fact, when the letter was sent out,  
5 people were told in the letter that "your well water has  
6 been determined to meet all the criteria of the Federal  
7 Safe Drinking Water Act for Public Drinking water"; is  
8 that correct?

9 A. Yes.

10 Q. But they were not told, however, there were no  
11 Federal Standards for vanadium or hexavalent chromium?

12 MR. ROSSER: Object to the form.

13 BY MR. HOLLEMAN:

14 Q. That was not included in the letter, was it?

15 MR. ROSSER: Objection.

16 MR. BARKLEY: Objection.

17 MS. LeVEAUX: Objection.

18 MR. ROBBINS: Objection.

19 THE WITNESS: I think not.

20 BY MR. HOLLEMAN:

21 Q. And did you all -- or did someone at HHS -- or  
22 at DEQ, rather -- did someone at DEQ, did they change the  
23 wording of the letter in response to the concerns of the  
24 Governor's Office?

25 MS. LeVEAUX: Objection.

1 MR. ROBBINS: Objection.

2 MR. ROSSER: Same objection.

3 THE WITNESS: So I need to step back and add  
4 something about the calls. Some of those calls had a  
5 communications person from DEQ. And I don't remember --  
6 I think it was a man. And DEQ was advocating for having  
7 that language on the HRE.

8 BY MR. HOLLEMAN:

9 Q. Did anybody suggest, "Well, we should tell  
10 these people, too, there aren't any Federal Standards for  
11 the two substances that is in their water"?

12 MR. ROSSER: Object to the form.

13 MS. LeVEAUX: Objection.

14 MR. ROBBINS: Objection.

15 THE WITNESS: Yes.

16 BY MR. HOLLEMAN:

17 Q. And who said that or suggested that?

18 A. I did.

19 Q. And what did the Governor's Office say about  
20 that?

21 A. There was a lot of general conversation on  
22 these calls. And I don't remember what the Governor's  
23 Office -- what Josh Ellis said.

24 Q. Did Josh Ellis object to having that  
25 information in the letter?

1           A.    I don't remember.

2           Q.    Did DEQ -- the DEQ person object to having it  
3    in the letter?

4           A.    Yes.

5           Q.    And why did they object to telling the people  
6    that?

7           MS. LeVEAUX:    Objection.

8           THE WITNESS:    So, again, I just want to be  
9    clear that there were a series of phone calls.  And I  
10   can't distinguish every single call and say specifically  
11   who said exactly what, when.  This is a memory that spans  
12   several conversations.  And they were very similar  
13   circular conversations.

14                    So the conversation with DEQ about especially  
15   hexavalent chromium and the Safe Drinking Water Act  
16   Standards included -- had as a component of it that  
17   several of the folks at DEQ felt that the total chromium  
18   standard should serve as the hexavalent chromium  
19   standard.  And so that was part of the argument about  
20   why ---

21           BY MR. HOLLEMAN:

22           Q.    But why wouldn't they want to tell the people  
23   who received this notice the full information?  Did they  
24   tell you -- give a reason for that?

25           MR. ROBBINS:    Objection.



1 MS. LeVEAUX: Objection.

2 MR. ROSSER: Object to the form.

3 THE WITNESS: No.

4 BY MR. HOLLEMAN:

5 Q. During these calls, did anybody raise any  
6 concerns of Duke Energy in the calls?

7 A. No.

8 Q. Do you remember anything else that was  
9 discussed about the "do not drink" advisories that went  
10 out?

11 A. No.

12 Q. Now, I believe you said you talked with  
13 someone else in the Governor's Office, and his name  
14 is ---

15 A. Matt McKillip.

16 Q. And when did you talk with him?

17 A. So most of the time when I talked with -- when  
18 Matt McKillip was part of conversations, he was in DHHS.  
19 More recently, he was on one short conference call prior  
20 to DEQ giving an update to the environmental -- the Coal  
21 Ash Committee at the General Assembly. So DEQ had been  
22 asked to give an update to that committee.

23 And in preparation, we had a very short phone  
24 call. And at that call, DEQ requested that I be present  
25 to speak to the levels. So Matt was on that call.

1 Q. And when he was on the call, was he at the  
2 Governor's Office at that time?

3 A. Yes.

4 Q. And what was his role in the call?

5 A. He didn't really say much.

6 Q. What did he say, or what was the content of  
7 what he said?

8 A. That he thought it would be good if DPH had  
9 spoke specifically to the levels in the update.

10 Q. And did he say why?

11 A. No.

12 Q. I believe you said -- do you have notes of  
13 your conversations? You referred to notes earlier --  
14 that you didn't review your notes. What notes are those?

15 A. I have very limited notes. And, yes, I have  
16 some limited notes.

17 Q. Now, if I could draw your attention back to  
18 Exhibit 276, do you know who this letter went to? And  
19 that is the "do drink" letter. And by that I mean, does  
20 HHS know who it was mailed to?

21 A. Yes.

22 Q. And so you all have a list of people?

23 A. Yes.

24 Q. Now, did it go to every well owner who had  
25 received the "do not drink" advisory?

1 A. No.

2 Q. And how did the agency distinguish between who  
3 got the "do drink" letter and who didn't get the "do  
4 drink" letter?

5 A. This letter went to people who had levels  
6 above the Screening Level for hexavalent chromium or  
7 vanadium or both.

8 Q. So everybody who had levels above for  
9 vanadium, hexavalent chromium or both, got the "do drink"  
10 letter?

11 A. No.

12 Q. Okay. Who didn't get it?

13 A. It was not sent to anyone who had those  
14 levels, plus something else that exceeded the 2L  
15 Standard. So if you also had ---

16 Q. (Interposing) Iron for example?

17 A. Elevated, yes, then we didn't send the letter.

18 Q. Why did you make that distinction?

19 A. The letter was specific to hexavalent chromium  
20 and vanadium.

21 Q. Well, who made that -- who made the decision  
22 to make that distinction on the letters?

23 A. I don't know.

24 Q. How did you learn about that distinction?

25 A. We had conversations with Dr. Williams and

1 with the Communications Office about who should receive  
2 the letter. So I learned about it as the conversations  
3 evolved.

4 Q. You didn't make the decision to make that  
5 distinction, is that correct?

6 A. Yes, that is correct.

7 Q. And no one who reports to you made that  
8 decision, is that right?

9 A. That is correct.

10 Q. So it would either be -- am I correct to say  
11 it would either be Mr. Daily [sic] or Mr. Williams or  
12 someone above them?

13 A. Probably.

14 Q. Who wrote the letter? Oh, before we get to  
15 that, does that distinction make sense to you?

16 A. It does.

17 Q. Well, isn't -- hexavalent chromium and  
18 vanadium are more serious health concerns than iron,  
19 aren't they; is that true?

20 MR. ROSSER: Object to form.

21 MS. LeVEAUX: Objection.

22 MR. ROBBINS: Objection.

23 THE WITNESS: No.

24 BY MR. HOLLEMAN:

25 Q. Is that true in this context of these people?

1 MR. ROSSER: Same objection.

2 THE WITNESS: Yeah. Yes.

3 BY MR. HOLLEMAN:

4 Q. So tell me how that distinction makes sense,  
5 that we will send it to people who have hexavalent  
6 chromium and vanadium exceedances, but if they also have  
7 iron, we are not going to send it to them?

8 MS. LeVEAUX: Objection.

9 THE WITNESS: One of the concerns we always  
10 have is the interaction of chemicals. And so when I was  
11 part of discussions, I was concerned that we not  
12 inadvertently send a letter to a well owner who might  
13 have an elevation of something like lead.

14 BY MR. HOLLEMAN:

15 Q. I understand something like lead, but what  
16 about something like iron?

17 A. So I think the logistics of doing this the  
18 approach was to send this letter out to the people who  
19 had only vanadium and/or hexavalent chromium, and then we  
20 examine the other wells.

21 Q. Have any of the wells who were excluded from  
22 the first round of letters subsequently gotten "do drink"  
23 letters?

24 A. No.

25 Q. So no more "do drink" letters have gone out,

1 is that correct, since the first round on March of 2016?

2 A. Yes.

3 Q. Now, who wrote it?

4 A. It was dictated by Dr. Williams.

5 Q. And who did he dictate it to?

6 A. Well, I was present, and Mina Shehee did the  
7 typing.

8 Q. Now, when he dictated it was anybody else  
9 present other than you three?

10 A. Danny Staley.

11 Q. And after he dictated it, was it sent for  
12 review by anyone?

13 A. Yes, I think so.

14 Q. To whom?

15 A. I don't know.

16 Q. And tell me why you think that?

17 A. Because this isn't exactly what he dictated.  
18 It is very close. So it obviously got reviewed.

19 Q. Somewhere?

20 A. Yes. It certainly was reviewed by our  
21 Communications Office, because they review all letters  
22 that go out.

23 Q. Do you know of anyone who approved it before  
24 it went out, other than Dr. Williams?

25 A. Well, presumably Mr. Reeder, since he signed

1 it.

2 Q. Yes. Other than Mr. Reeder and Mr. Williams?

3 A. I don't know of anybody else.

4 Q. Now, the 0.07 limit for hexavalent chromium,  
5 as you said, that was calculated or determined by your  
6 staff and your section. Did DEQ also do a calculation of  
7 its own?

8 MS. LeVEAUX: Objection.

9 THE WITNESS: DEQ did a calculation in  
10 discussion with -- after discussion with my toxicologist  
11 on my staff, and then sent that to the Occupational  
12 Environmental and Epidemiology Branch toxicologist to  
13 review and see if they agreed with it.

14 Q. And did they reach -- did DEQ reach the same  
15 conclusion as HHS, 0.07?

16 A. It is the opposite of what you are saying.  
17 The DEQ toxicologist did the calculation and sent it to  
18 DPH toxicologist to review. And the DPH toxicologist  
19 agreed.

20 Q. So both agencies agreed with the 0.07, is that  
21 correct?

22 MR. ROSSER: Object to form.

23 THE WITNESS: Yes.

24 BY MR. HOLLEMAN:

25 Q. Now do you remember what changed in the "do

1 drink" letter between Dr. Williams' dictation and this  
2 final version?

3 A. No.

4 Q. If we could look at the first sentence, that  
5 first sentence says "We have withdrawn the do not drink  
6 usage recommendation because we have determined your  
7 water is as safe to drink as water in most cities and  
8 towns across the state and country." Do you see that  
9 sentence?

10 A. Yes.

11 Q. Is that true?

12 A. I don't know.

13 Q. Tell me why you have doubts about the truth of  
14 that sentence?

15 MR. ROBBINS: Objection.

16 MS. LeVEAUX: Objection.

17 MR. ROSSER: Objection to form.

18 THE WITNESS: I think that sentence is in  
19 reference to hexavalent chromium and vanadium. And I  
20 haven't reviewed the hexavalent chromium levels in most  
21 cities and towns in North Carolina.

22 BY MR. HOLLEMAN:

23 Q. Now, are you aware that some of the people who  
24 had hexavalent chromium tested in their wells had levels  
25 of 20 or more?



1 A. Yes.

2 Q. Are you aware of any town in North Carolina  
3 that has been found to have hexavalent chromium at the  
4 level of 20 or greater in its public drinking water  
5 supply for hexavalent chromium?

6 A. No.

7 Q. Do you know, did Dr. Williams survey all of  
8 the cities and towns across the state to determine the  
9 levels of hexavalent chromium in their drinking water?

10 A. I don't know.

11 Q. Are you aware of anyone at HHS surveying the  
12 levels of hexavalent chromium in their drinking water --  
13 in the drinking water supplies of public drinking water  
14 facilities across the state?

15 MS. LeVEAUX: Objection.

16 THE WITNESS: No, I am not aware.

17 BY MR. HOLLEMAN:

18 Q. So when he was dictating this letter, did you  
19 or Dr. Shehee or Dr. Williams himself raise a concern  
20 about making that statement in the absence of evidence  
21 supporting it?

22 MR. ROSSER: Objection to form.

23 MS. LeVEAUX: Objection.

24 MR. ROBBINS: Objection to form.

25 THE WITNESS: I expressed a concern based on

1 levels I had seen for Charlotte and Raleigh.

2 BY MR. HOLLEMAN:

3 Q. Which are very low, is that correct?

4 MR. ROSSER: Objection to the form.

5 THE WITNESS: They are, on average, lower  
6 than those measured in the drinking -- in the wells under  
7 -- in the drinking wells under the CAMA sampling.

8 BY MR. HOLLEMAN:

9 Q. And so what did he say? What did Dr. Williams  
10 say about that?

11 A. I don't remember what Dr. Williams said.

12 Q. Do you remember the general content of his  
13 response?

14 A. He expressed confidence in the information Mr.  
15 Reeder had given him, and that Mr. Reeder had said  
16 publically multiple times.

17 Q. And Mr. Reeder had said this multiple times?  
18 Is that what you said? I didn't quite hear the ---

19 A. (Interposing) He had said that public water  
20 supplies have levels as high or higher than those in the  
21 drinking wells.

22 Q. Mr. Reeder said that, according to Dr.  
23 Williams?

24 A. Yes.

25 Q. And so when Dr. Williams wrote this, he was

1 relying on what Mr. Reeder told him?

2 MR. ROSSER: Object to the form.

3 THE WITNESS: He referenced what Mr. Reeder  
4 told him.

5 BY MR. HOLLEMAN:

6 Q. To your knowledge, did he refer to anything  
7 else he was relying on, other than what Reeder said?

8 A. No.

9 Q. Now, I guess you know a lot of the wells that  
10 got the "do not drink" advisory were around this facility  
11 called Buck in Salisbury, is that right?

12 (Witness nods affirmatively.)

13 Q. You need to say "yes" for the ---

14 A. Yes.

15 Q. And the nearby drinking water supply for that  
16 community would be Salisbury, correct -- would be the  
17 public drinking water system?

18 A. I don't know.

19 Q. Well, you know Buck is in Salisbury, right?

20 A. Yes.

21 Q. Do you know, did Dr. Reeder -- I am sorry.  
22 Did Mr. Reeder or did Dr. Williams look at the Salisbury  
23 report before they made this statement in the first  
24 sentence, and sent it to people who lived in Buck [sic]?

25 VOICE: Objection.

1 THE WITNESS: I don't know.

2 BY MR. HOLLEMAN:

3 Q. Let me show you -- this has previously been  
4 marked in Dr. Shehee's deposition, so this is nothing  
5 new ---

6 MS. LeVEAUX: Mr. Holleman, which Exhibit is  
7 that?

8 MR. HOLLEMAN: This is Exhibit 278.

9 MS. LeVEAUX: Thank you.

10 BY MR. HOLLEMAN:

11 Q. And if you look on the second page -- I am  
12 going to show it to you -- it is a Drinking Water Supply  
13 Report from the town of Salisbury. And if you look at  
14 that next to the bottom blue box, do you see the levels  
15 there for hexavalent chromium?

16 (Witness peruses document.)

17 A. Yes.

18 Q. And they are all under one, correct? They are  
19 all less than one?

20 A. Yes.

21 Q. Now, would you think, when sending this letter  
22 to people who live in Salisbury, that the relevant water  
23 system for them to compare themselves to is the  
24 neighboring drinking water system? Would you agree with  
25 that statement?

1           A.    Yes.

2           Q.    So do you believe, to have been truthful to  
3   the people who lived around Buck, they should have been  
4   informed that, in fact, the level of hexavalent chromium  
5   in their wells is several hundred or thousands times  
6   higher than what is in the neighboring public water  
7   supply?

8           MR. BARKLEY:    Objection.

9           MS. LeVEAUX:    Objection.

10          MR. ROBBINS:    Objection.

11          MR. ROSSER:     Object to the form.

12          THE WITNESS:    I think it would have been  
13   ideal to have sent communications that were more specific  
14   to location.

15          BY MR. HOLLEMAN:

16          Q.    And do you think those communications should  
17   have included specific information about the neighboring  
18   drinking water supply?

19          A.    Yes.

20          Q.    Do you know if Dr. Williams, since he sent  
21   this letter out, has actually checked to see if it is  
22   true that the hexavalent chromium levels in the drinking  
23   water in most cities and towns across North Carolina ---

24          A.    (Interposing) I don't know.

25          Q.    --- are comparable to these in these wells?

1           A.    I don't know.

2           Q.    The second sentence says, "It is appropriate  
3   to return to drinking and using your water for cooking,  
4   bathing and other household uses." Do you agree with  
5   that sentence?

6           A.    That is not how I would say it.

7           Q.    What would you have said?

8           A.    I would have said something about, while there  
9   is an elevated risk for -- associated with -- I am sorry.  
10   I always say things really technically. That is one of  
11   my limitations in communication. While there is an  
12   elevated -- I would say something along the lines of  
13   while there is an elevated risk (see attached chart)  
14   associated with levels of hexavalent chromium above .07,  
15   you can make a choice about that risk and how you use  
16   your water. And please consult your local health  
17   department to discuss further.

18          Q.    So you would not have told them it is  
19   appropriate to return to drinking the water; you would  
20   have given them information and let them make that  
21   decision?

22                   MS. LeVEAUX:    Objection.

23                   MR. ROBBINS:    Objection.

24                   THE WITNESS:    Yes.

25                   BY MR. HOLLEMAN:

1           Q.    Now, let me show you Exhibit 279.  As you can  
2    see, it previously was in Dr. Shehee's deposition.  That  
3    is one of the "do not drink" advisories that was sent to  
4    a family in Salisbury; do you see that?

5                   (Witness peruses document.)

6           A.    Yes.

7           Q.    And if you turn back to the first page,  
8    please, so I can reference this.  Do you see the chromium  
9    -- hexavalent chromium in his well is 21, is that  
10   correct?

11          A.    It is 21.8 micrograms per liter.

12          Q.    All right.  Now, that is a significant  
13   multiple of .07, would you agree?

14          A.    Yes.

15          Q.    And I am using what I call Seneca math -- that  
16   is where I went to high school -- so just correct me if I  
17   have got it wrong, but that is -- seven would be a  
18   hundred times more than .07, is that correct?

19          A.    Yes.

20          Q.    And so 21 would be, like, 300 times, is that  
21   right?

22          A.    Yes.

23          Q.    Would you agree that this gentleman's well  
24   water is less safe than the well water in Salisbury?

25                   MR. ROBBINS:    Objection.

1 MS. LeVEAUX: Objection.

2 MR. ROSSER: Object to form.

3 BY MR. HOLLEMAN:

4 Q. Than drinking water in the Salisbury well?

5 A. This well water has more hexavalent chromium  
6 in it, and therefore a higher associated risk for the  
7 adverse health effects of hexavalent chromium.

8 Q. Which is cancer, right?

9 A. Yes.

10 Q. And would you agree, therefore, the water in  
11 this gentleman's well is not as safe as the drinking  
12 water at the Salisbury Public Water System, which has  
13 less than one parts per billion?

14 MS. LeVEAUX: Objection.

15 MR. ROBBINS: Objection.

16 MR. ROSSER: Object to form.

17 THE WITNESS: Based on the hexavalent  
18 chromium level, yes.

19 BY MR. HOLLEMAN:

20 Q. Now, would you regularly drink drinking water,  
21 yourself, that has 21 parts of hexavalent chromium?

22 A. No.

23 Q. Would you recommend that -- when you were once  
24 a physician -- a personal physician, would you recommend  
25 to a patient that a patient regularly drink drinking



1 water that has a hexavalent chromium level of 21 parts  
2 per billion?

3 A. No.

4 Q. Would you recommend someone drink drinking  
5 water regularly that has hexavalent chromium above .07,  
6 the Health Screening Level?

7 A. That depends.

8 Q. Depends on what?

9 A. On what their options are.

10 Q. Let's assume they have the option to obtain  
11 drinking water at less than .07 hexavalent chromium from  
12 another source. Would you recommend they use that water  
13 and not drink the water with above .07?

14 A. If all of the other parameters were also  
15 favorable, yes.

16 Q. Now, would you recommend to a patient that  
17 they regularly drink drinking water that has 10 parts per  
18 billion of hexavalent chromium?

19 A. No.

20 Q. What about five parts?

21 A. No.

22 Q. One part?

23 (Pause.)

24 A. So I wouldn't recommend they regularly drink  
25 water -- are you asking would I tell that person not to

1 drink their water, or are you asking would I recommend  
2 that they drink that water?

3 Q. Well, let's start would you recommend they  
4 regularly drink water above -- at one part per billion?

5 MR. ROSSER: Object to form.

6 THE WITNESS: No.

7 BY MR. HOLLEMAN:

8 Q. Now, the standard .07, is that for vulnerable  
9 people or is that just for an adult?

10 A. It is an adult.

11 Q. Would you be more careful with a pregnant  
12 woman?

13 A. Yes.

14 Q. Would you be more careful with children?

15 A. Yes.

16 Q. Would you be more careful with infants?

17 A. Yes.

18 Q. So you would be more concerned -- you would  
19 look, perhaps, at a lower level for pregnant women or  
20 small children, is that correct?

21 A. I would consult a toxicologist for the  
22 calculation, but, yes.

23 Q. Before Dr. Williams sent out this letter, did  
24 he determine whether any of these households had small  
25 children or pregnant women in them?

1 MR. ROBBINS: Objection.

2 THE WITNESS: Not that I know of.

3 BY MR. HOLLEMAN:

4 Q. What about if you had pre-existing illness,  
5 would you be more careful?

6 A. Depending on the illness, possibly.

7 Q. What kind of illnesses would you be more  
8 careful with?

9 A. Gastrointestinal or renal.

10 Q. If you look at the second paragraph, he has  
11 the sentence about "in an extensive study." And we have  
12 already discussed that, I think. But then it says,  
13 "Based on this review, as well as our own independent  
14 assessments, we have now concluded the water out of your  
15 well is as safe as a majority of the public water systems  
16 in the country."

17 What was Dr. Williams' independent assessment,  
18 apart from what Mr. Reeder told him and the study you  
19 described earlier?

20 A. I don't know.

21 Q. Now, this letter says, again, "All public  
22 water systems are required to meet or exceed federal  
23 standards for safe drinking water." It does not point  
24 out, though, that there is no federal standard for either  
25 vanadium or hexavalent chromium, is that right? This

1 letter doesn't say that?

2 MS. LeVEAUX: Objection.

3 MR. ROSSER: Objection to form.

4 MR. ROBBINS: Objection.

5 MR. BARKLEY: Objection.

6 (Witness peruses document.)

7 THE WITNESS: It does not say that.

8 BY MR. HOLLEMAN:

9 Q. When the letter was being drafted, did you or  
10 Dr. Shehee suggest to Dr. Williams that he should put  
11 that in this letter?

12 A. I did not. I don't remember if Dr. Shehee  
13 did.

14 Q. The next sentence says -- not the next  
15 sentence, the next paragraph says, "Now we have had time  
16 to study and review more data." Do you know of any study  
17 or review of data, apart from what you have already  
18 described?

19 A. No.

20 Q. Now, the next to the last sentence says, "Our  
21 mission at the Department of Health and Human Services  
22 and the Department of Environmental Quality is to protect  
23 the health and safety of all North Carolinians." Do you  
24 believe this letter supported that mission or was  
25 consistent with that mission?

1 MS. LeVEAUX: Objection.

2 MR. ROBBINS: Objection.

3 MR. ROSSER: Object to form.

4 THE WITNESS: No.

5 BY MR. HOLLEMAN:

6 Q. The final paragraph says, "During the next  
7 several weeks, we will issue new forms that reflect this  
8 updated usage recommendation." Did that happen?

9 A. No.

10 Q. And why did it not happen?

11 A. Dr. Shehee, Mr. Staley and I recommended  
12 strongly against it.

13 Q. And why is that?

14 A. It didn't feel right.

15 Q. How didn't it feel right, or why didn't it  
16 feel right?

17 A. The Health Risk Evaluation was the same, and  
18 this letter already changed the recommendation.

19 Q. Could you explain that further?

20 A. It wasn't necessary.

21 Q. What kind of form was Dr. Williams and Mr.  
22 Reeder contemplating?

23 MS. LeVEAUX: Objection.

24 THE WITNESS: Dr. Williams asked us to  
25 revise the Health Risk Evaluation form that we had

1 originally used to reflect the new recommendations.

2 BY MR. HOLLEMAN:

3 Q. So he was asking you to come up with a higher  
4 number than .07?

5 MS. LeVEAUX: Objection.

6 THE WITNESS: No.

7 BY MR. HOLLEMAN:

8 Q. What did he mean by "revise"?

9 A. To change the recommendation on the form.

10 Q. And the form -- is that what is attached to  
11 Exhibit 279?

12 A. That is the Well Water Information and Use  
13 Recommendations for Inorganic Chemical Contaminants.

14 Q. And those of you who recommended against it  
15 were not willing to issue a new form with those -- with  
16 the changes Dr. Williams requested, is that right?

17 MS. LeVEAUX: Objection.

18 THE WITNESS: Yes.

19 BY MR. HOLLEMAN:

20 Q. Now, Dr. Rudo -- what is his role at your  
21 department?

22 A. He is a toxicologist in the Occupational and  
23 Environmental Epidemiology Branch.

24 Q. And what was his role with respect to  
25 determining the .07 Health Screening Level for hexavalent

1 chromium?

2 A. He worked with the toxicologist at DEQ, and  
3 the other toxicologists in DHHS for -- not DHHS, but OEE,  
4 the Occupational and Environmental Epidemiology, on what  
5 Cancer Slope Factor to use in the equation in the 2L  
6 Rule, and reviewed the results and agreed with them.

7 Q. Now correct me if I am wrong, but I believe  
8 after it was determined, Dr. Rudo also appeared for the  
9 Department at various public meetings to explain the  
10 Health Screening Levels, is that correct?

11 A. That is correct.

12 Q. Now, is it correct that Dr. Rudo is now on  
13 leave?

14 A. That is correct.

15 Q. And why is Dr. Rudo on leave?

16 MR. ROBBINS: Objection.

17 MR. BARKLEY: Objection.

18 THE WITNESS: He requested leave. I -- I am  
19 not sure what is appropriate for me to say ---

20 MR. ROBBINS: I have to object and direct  
21 her not to answer. Leave information, under Chapter 126  
22 of the General Statutes, is confidential information.

23 MR. HOLLEMAN: Well, let me ask this  
24 question, and you can tell me if she can answer it. Does  
25 his leave have anything to do with the change to the "do

1 drink" letter?

2 MR. ROBBINS: I would contend that anything  
3 concerning his leave is confidential information under  
4 Chapter 126.

5 MR. HOLLEMAN: And you would instruct her not  
6 to answer?

7 MR. ROBBINS: And I would instruct her not  
8 to answer.

9 BY MR. HOLLEMAN:

10 Q. Let me do this: have you heard government  
11 officials in North Carolina raise questions about whether  
12 bottled water that is being provided to these residents  
13 contains hexavalent chromium or vanadium?

14 A. Yes.

15 Q. Who have you heard raise those issues?

16 A. Tom Reeder, Bob Midgette, Jessica Godreau.

17 Q. And who is Bob Midgette?

18 A. He works in DEQ in the Public Water Supply --  
19 I think it is called the Public Water Supply Branch.

20 Q. And who is the third person?

21 A. Jessica Godreau.

22 Q. And who is she?

23 A. She directs the Public Water Supply Branch.

24 Q. Are you aware of any testing of bottled water  
25 done by DEQ or HHS to determine the hexavalent chromium



1 levels in it?

2 A. No, I am not aware of any.

3 Q. Or vanadium levels?

4 A. No.

5 Q. Are you aware that the people at DEQ have any  
6 factual basis to raise that issue?

7 MS. LeVEAUX: Objection.

8 MR. ROSSER: Objection.

9 MR. ROBBINS: Objection.

10 THE WITNESS: I don't know. You really  
11 would have to ask them.

12 BY MR. HOLLEMAN:

13 Q. But you don't know of any facts to indicate  
14 there is hexavalent chromium or vanadium in the bottled  
15 water that is being provided by Duke Energy to these  
16 people?

17 MS. LeVEAUX: Objection.

18 THE WITNESS: I do not.

19 BY MR. HOLLEMAN:

20 Q. And, in fact, they could just go and fill the  
21 bottles at the Salisbury Public Water System and know  
22 they had low levels, couldn't they?

23 MR. ROSSER: Object to form.

24 MS. LeVEAUX: Objection.

25 MR. ROBBINS: Objection.

1 THE WITNESS: They would know they had the  
2 levels published.

3 BY MR. HOLLEMAN:

4 Q. Are you familiar with -- and this is in an  
5 exhibit that was in Ms. Shehee -- Dr. Shehee's  
6 deposition, so I will show it to you. It refers to an  
7 EPA screening level for hexavalent chromium in tap water.  
8 This is a report prepared by Duke Energy's expert. It is  
9 Exhibit 277. I just wanted to ask you have you ever  
10 heard of what they are referring to there?

11 (Witness peruses document.)

12 A. Can you repeat the question?

13 Q. I am really just trying to find out what is  
14 being referred to there when it talks about the EPA  
15 screening level for hexavalent chromium in tap water. Do  
16 you know what they are referring to?

17 A. Yes.

18 Q. What is that?

19 A. It is a Health Goal that EPA set for  
20 hexavalent chromium of .3 micrograms -- no, I am sorry.  
21 .03 micrograms -- .03 parts per billion.

22 Q. And that is approximately half of the Health  
23 Screening Level that DEQ and HHS ultimately adopted, is  
24 that correct?

25 A. Correct.

1 Q. Now, when you review how state and federal  
2 governments dealt with hexavalent chromium, did you  
3 discover this standard?

4 A. Yes.

5 Q. And did you report it to Dr. Williams?

6 A. Yes.

7 Q. So when he refers in the "do drink" letter to  
8 HHS's study of state and federal practices regarding  
9 hexavalent chromium, that includes the fact that the EPA  
10 has a Health Goal that is half of the Health Screening  
11 Level for chromium ---

12 MS. LeVEAUX: Objection.

13 MR. ROBBINS: Objection.

14 MR. ROSSER: Objection.

15 BY MR. HOLLEMAN:

16 Q. --- for hexavalent chromium?

17 A. Yes.

18 Q. And when you were doing the study of -- survey  
19 of state practices, did you come across the California  
20 Public Health Goal?

21 A. Yes.

22 Q. And how much is it?

23 A. .02 micrograms per liter.

24 Q. Which is less than the EPA Goal, as well, is  
25 that correct?

1 A. Yes.

2 Q. And did you report that to Dr. Williams?

3 A. Yes.

4 Q. Now, have you heard any government officials  
5 say publically that the water that people drink in  
6 Raleigh has as much hexavalent chromium in it as in these  
7 wells?

8 MR. ROSSER: Object to form.

9 THE WITNESS: Yes, I think so.

10 BY MR. HOLLEMAN:

11 Q. And who said that?

12 A. Tom Reeder.

13 Q. Okay. Let me hand you this, if we can mark  
14 this as an Exhibit, please.

15 (PLAINTIFF-INTEVENOR EXHIBIT 283  
16 WAS MARKED FOR IDENTIFICATION.)

17 And I am showing you what is Exhibit 283,  
18 which, as you can see on the cover, is the City of  
19 Raleigh 2014 Consumer Confidence Report. Did you review  
20 the Raleigh Public Water System data in connection with  
21 the study for the "do drink" letter?

22 (Witness peruses document.)

23 A. No, not for the "do drink" letter.

24 Q. All right. Did you ever review it?

25 A. Yes.

1 Q. And when did you review it?

2 A. After Mr. Reeder and I presented to the  
3 Legislative Committee.

4 Q. And what did you discover?

5 A. That most Raleigh city water hexavalent  
6 chromium levels were, for the most part, mostly below  
7 .07, and there were some that -- I looked at several  
8 years. There were some that were a little above it. And  
9 there was no vanadium detected.

10 Q. So did your review indicate to you that what  
11 Mr. Reeder said was not true?

12 MR. BARKLEY: Objection.

13 THE WITNESS: Yes.

14 BY MR. HOLLEMAN:

15 Q. Did you ever tell him that?

16 A. No, not Mr. Reeder.

17 Q. Did you tell Dr. Williams that?

18 A. Yes.

19 Q. And what did Dr. Williams say?

20 A. I don't remember.

21 Q. Did he communicate it to Mr. Reeder?

22 A. I don't know.

23 Q. Do you know if Mr. Reeder ever looked at the  
24 actual data for the city of Raleigh?

25 MS. LeVEAUX: Objection.

1 VOICE: Objection.

2 THE WITNESS: I don't.

3 BY MR. HOLLEMAN:

4 Q. And did you look at the reports for other  
5 major public water systems in the state of North  
6 Carolina?

7 A. I looked at the reports for Charlotte and one  
8 other. And I think it was Fayetteville, but I am not ---

9 Q. And what did you learn when you looked at the  
10 Charlotte one?

11 A. The hexavalent chromium levels were mostly  
12 below our screening level; some were above it.

13 Q. But they were not large numbers, is that  
14 correct? They were close to your screening levels?

15 A. Yes.

16 Q. I am sorry. This has been marked as an  
17 exhibit before in Dr. Shehee's deposition as Exhibit 282.  
18 I just want to see if you can tell us what that is, if  
19 you know?

20 (Witness peruses document.)

21 A. I actually haven't seen this before.

22 Q. Okay. All right, thank you. If you could  
23 just give it back to the court reporter.

24 (Pause.)

25 Could I see that again? It has got a second

1 page to it.

2 A. Yes. And I am going to need a break in a few  
3 minutes.

4 MR. HOLLEMAN: Why don't we just take a break  
5 now.

6 MR. HOLLEMAN: OFF THE RECORD. 10:43 A.M.

7 (A BRIEF RECESS WAS TAKEN.)

8 MR. HOLLEMAN: ON THER RECORD. 10:53 A.M.

9 BY MR. HOLLEMAN:

10 Q. Have there been any -- are there any plans to  
11 change the vanadium Health Screening Level from the 0.3?

12 A. No.

13 Q. And just to make sure I ask this, because I  
14 got caught up in my train of thought, at the June meeting  
15 -- in-person meeting with Duke, did Duke make any  
16 requests of HHS or DEQ?

17 A. I don't remember a request -- specific  
18 request.

19 Q. What about on the phone call that occurred  
20 before?

21 A. I don't remember.

22 Q. Are you aware, otherwise, of Duke making any  
23 requests of HHS?

24 A. No.

25 Q. Have you been told not to talk to the press?

1 A. No.

2 Q. Are you aware if anyone else at HHS has been  
3 told not to talk to the press?

4 A. No.

5 Q. Do you know how many people got the "do drink"  
6 letter?

7 A. I don't remember the number.

8 Q. But you all have that chart in HHS of who got  
9 it?

10 A. Yes.

11 Q. And are you all planning to send any more "do  
12 drink" letters out?

13 A. No.

14 Q. Let's introduce this. I want to show you two  
15 more examples of the "do not drink" advisory from June.

16 (PLAINTIFF-INTEVENOR EXHIBIT 284  
17 WAS MARKED FOR IDENTIFICATION.)

18 Let me show you what has been marked as 284,  
19 and ask you is that another example of one of the "do not  
20 drink" advisories?

21 (Witness peruses document.)

22 A. Yes.

23 (Witness peruses document.)

24 Okay.

25 (PLAINTIFF-INTEVENOR EXHIBIT 285)



1 WAS MARKED FOR IDENTIFICATION.)

2 Q. And I will show you what has been marked  
3 Exhibit 285, and ask you if that is another example of  
4 one of the "do not drink" advisories?

5 A. Yes.

6 Q. That Exhibit 282 which I showed you and you  
7 were not familiar with -- as I understand it, you don't  
8 know this document. It refers -- there is a second page  
9 that says "Next Steps - OEEB recommends a drinking water  
10 standard for Chrome 6 of 0.2 parts per billion. This  
11 represents a one in one hundred thousand lifetime cancer  
12 risk." Are you familiar with any discussion about that  
13 in HHS or in your section?

14 A. Only in reference to the California Health  
15 Goal.

16 Q. But you don't remember any talk about changing  
17 the .07 to .2 for a health screening level?

18 A. No.

19 Q. And when this says "a drinking water  
20 standard," is that the same as a Health Screening Level,  
21 or is that something different -- if you know? I mean, I  
22 know you have never seen this. But in your department or  
23 section, do those mean the same thing?

24 A. In DHHS, we have been in the habit of using  
25 those terms interchangeably. However, through this

1 experience in working with DEQ, we have been -- we have  
2 learned that a standard is a level that is promulgated  
3 through a very specific process. And so we are  
4 consciously trying to use that term carefully to reflect  
5 only those published standards.

6 Q. So would it be correct to say that, other than  
7 the fact that California has -- now, California's Goal is  
8 .02, is that correct?

9 A. That is correct.

10 MS. LeVEAUX: Objection.

11 THE WITNESS: That is correct.

12 BY MR. HOLLEMAN:

13 Q. Not 0.2? This refers to 0.2.

14 MS. LeVEAUX: Same objection.

15 THE WITNESS: Yes.

16 BY MR. HOLLEMAN:

17 Q. So you really just don't know what that is  
18 talking about, is that a correct statement?

19 A. I don't.

20 Q. Are you aware of anyone at DEQ or HHS who has  
21 received anything of value from Duke Energy?

22 A. No.

23 Q. Going on a trip with them or play golf with  
24 them or anything like that?

25 A. No.

1           Q.    When you all did the analysis -- or when you  
2 reviewed the analysis and reached the conclusion of 0.07  
3 for hexavalent chromium, did you all communicate with the  
4 United States -- that is, the federal Center for Disease  
5 Control, CDC?

6           A.    Yes.

7           Q.    And what was that communication?

8           A.    It was a consultation with CDC-ATSDR on -- to  
9 verify that we were using the correct Cancer Slope Factor  
10 in the calculation.

11          Q.    And is the Cancer Slope Factor a critical part  
12 of the calculation?

13          A.    Yes.

14          Q.    And what was CDC's response?

15          A.    They agreed that was the correct factor.

16          Q.    Now, Dr. Davies, do you feel bad about HHS  
17 having sent out those "do drink" letters with DEQ?

18               MR. ROBBINS:    Objection.

19               MS. LeVEAUX:    Objection.

20               MR. ROSSER:    Objection to form.

21               THE WITNESS:    I feel conflicted.

22               MR. HOLLEMAN:   No further questions.

23               MR. ROSSER:    I am sorry, I didn't get that  
24 last part.

25               THE WITNESS:    Conflicted.

1 MR. ROSSER: Thank you.

2 MR. HOLLEMAN: I don't have anything else.

3 MR. ROSSER: Can we take two minutes and we  
4 switch sides?

5 MR. ROSSER: OFF THE RECORD. 11:03 A.M.

6 (A BRIEF RECESS WAS TAKEN.)

7 MR. ROSSER: ON THE RECORD. 11:06 A.M.

8 D I R E C T E X A M I N A T I O N 11:06 A.M.

9 BY MR. ROSSER:

10 Q. Dr. Davies, I am Brent Rosser. We met earlier  
11 today.

12 A. Yes.

13 Q. I am with the law firm of Hunton & Williams,  
14 on behalf of Duke Energy. Thank you for your time today.  
15 I have got some questions to ask you. First of all, tell  
16 me about your areas of expertise -- your background,  
17 including your educational background.

18 A. I am a physician. I attended University of  
19 North Carolina Chapel Hill School of Medicine, graduated  
20 from UNC School of Medicine, and I did a residency in  
21 Family Practice. After practicing family medicine for a  
22 few years, I did a fellowship at the Centers for Disease  
23 Control and Prevention in epidemiology, and I have  
24 practiced as an epidemiologist since.

25 Q. And how long did you practice family medicine?

1 A. Four years after residency.

2 Q. How long have you been an epidemiologist?

3 A. My fellowship was from 1998 to 2000, and I  
4 have been practicing since then. So 16 years.

5 Q. Do you have any expertise in setting standards  
6 under the Federal Safe Water Drinking Act?

7 A. No.

8 Q. What about do you have any expertise in  
9 developing Maximum Contaminant Levels under the Federal  
10 Safe Water Drinking Act?

11 A. No.

12 Q. What about -- do you have any expertise in  
13 setting National Primary Drinking Water Standards?

14 A. No.

15 Q. Do you have any expertise in setting State  
16 Groundwater Standards?

17 A. No.

18 (DEFENDANT EXHIBIT 286 WAS  
19 MARKED FOR IDENTIFICATION.)

20 Q. Exhibit 286. I am going to show you a  
21 document here. Are you familiar with this document?

22 (Witness peruses document.)

23 A. Yes, I am.

24 Q. All right. What is this?

25 A. This document is frequently asked questions

1 that is on the DEQ website.

2 Q. If you could just take a look at the first  
3 page, at the bottom there it says, "according to the EPA,  
4 MCL's" -- this is the last paragraph, second sentence --  
5 "MCL's ensure that drinking water poses neither a  
6 short-term nor long-term health risk." Do you agree with  
7 that statement?

8 A. Yes.

9 Q. And then it goes on to say, "When the EPA  
10 looks at the health risks from drinking water  
11 consumption, it calculates the ingested amount as though  
12 individuals are drinking two liters of water per day for  
13 a 70 year lifetime." Do you agree with that statement?

14 A. Yes.

15 Q. If you could move to the next page, under the  
16 question, "What is a Health Risk Evaluation?" Do you see  
17 that?

18 A. Yes.

19 Q. The first sentence there states that, "A  
20 Health Risk Evaluation is a review by a toxicologist in  
21 the North Carolina Department of Health and Human  
22 Services to determine levels of risk associated with  
23 drinking, bathing and other uses of the water." Do you  
24 see that?

25 A. Yes.

1 Q. Do you agree with that statement?

2 A. Yes.

3 Q. Are you a toxicologist?

4 A. No.

5 Q. Do you believe you are qualified to issue a  
6 Health Risk Evaluation?

7 A. No.

8 Q. The following sentence says that, "In making  
9 this determination of risk, the department relies on  
10 available scientific information, including but not  
11 limited to, the same information that formed the basis of  
12 federal drinking water standards and North Carolina  
13 groundwater quality standards." Do you see that?

14 A. Yes.

15 Q. Do you agree with that?

16 A. Yes.

17 Q. Okay. What qualifies as available scientific  
18 information?

19 A. Generally published scientific papers and peer  
20 review journals.

21 Q. What would qualify as unavailable scientific  
22 information?

23 A. I don't know.

24 Q. What criteria are applied by DHHS in  
25 determining what qualifies as available scientific

1 information?

2 A. I don't -- we don't determine what available  
3 scientific information is. That is not our wording. We  
4 determine -- we evaluate the quality of scientific  
5 information based on methods and peer review.

6 Q. And just in general, how is that sort of  
7 assessment done?

8 A. In the context of the hexavalent chromium and  
9 vanadium, it is done by a toxicologist who has the  
10 education and training to assess the quality of the  
11 science.

12 Q. So that wouldn't be something you would  
13 undertake to do?

14 A. No.

15 Q. All right. It says here that "DHHS relies on  
16 the same information that formed the basis of federal  
17 drinking water standards." How does DHHS know that it  
18 has considered the same information that formed the basis  
19 of federal drinking water standards?

20 A. I can't answer that comprehensively, but in  
21 general, the information that forms the basis of safe  
22 drinking water standards is publicly available.

23 Q. So did DHHS consider that information as part  
24 of its evaluation of Screening Levels for hexavalent  
25 chromium and vanadium?



1           A. I don't know -- I don't know exactly what the  
2 toxicologist reviewed.

3           Q. It also says that the Department considers the  
4 same information that formed the basis for the North  
5 Carolina groundwater quality standards. Again, same  
6 question: how do you know that the department considered  
7 the exact same information in considering the groundwater  
8 quality standards?

9           A. Because they calculated it with the  
10 toxicologist in the Division of Waste Management.

11          Q. And so you know that they considered the exact  
12 same information?

13          A. No, I don't know that.

14          Q. So it says under the next question, the fourth  
15 sentence, "At levels of cancer risk greater than  
16 one-in-one million, for example, the department  
17 recommends you do not drink the water." Do you see that?

18          A. Yes.

19          Q. What is the basis for that standard?

20          A. It is a standard of practice in Health Risk  
21 Evaluation.

22          Q. And what is that standard of practice based  
23 upon?

24          A. I don't know.

25          Q. These -- the standard screening levels are

1 based upon, I think you testified earlier, that someone  
2 would drink two liters a day for a lifetime, is that  
3 right -- of water?

4 A. Yes, 70 years.

5 Q. 70 years? Do you know, just on a percentage  
6 basis, how many people in their life time drink two  
7 liters of water per day?

8 A. No.

9 Q. On a percentage basis, do you know how many  
10 people drink two liters of water per day for 70 years?

11 A. No.

12 Q. Would you expect a typical person to drink two  
13 liters of water a day for 70 years?

14 A. I don't know.

15 Q. The one in a million risk standard is higher  
16 than the lifetime odds of death from getting struck by  
17 lightning, a lethal dog bite, and a cataclysmic storm;  
18 correct?

19 A. Yes.

20 Q. And, in fact, if my math is correct, the one  
21 in a million standard is over seven times more likely --  
22 or I guess you are seven times more likely to get struck  
23 by lightning and be killed then to develop cancer under  
24 the one in a million standard. Does that sound right?

25 A. Approximately, yes.

1           Q.    And I looked this up on this National Safety  
2           Council's Risk Perspective Scale.  Apparently, there is a  
3           one in 111,000 chance that a human will die by lethal  
4           execution.

5           MR. HOLLEMAN:    I have to object.

6           MS. LeVEAUX:    Objection.

7           MR. HOLLEMAN:    I do have to object to the  
8           "walking encyclopedia" question.

9           BY MR. ROSSER:

10          Q.    Assuming that is correct, would you agree  
11          that, under that standard, that you are about nine times  
12          more likely to be lethally executed than develop cancer  
13          under the one in a million standard?

14          MR. HOLLEMAN:    Same objection.

15          MR. ROBBINS:    Objection.

16          THE WITNESS:    Can you repeat the numbers  
17          again?

18          BY MR. ROSSER:

19          Q.    Sure.  One in 111,000.

20          MR. HOLLEMAN:    Same objection.

21          MR. ROBBINS:    Objection.

22          THE WITNESS:    Approximately, yes.

23          BY MR. ROSSER:

24          Q.    How many Health Risk Evaluations have you been  
25          involved in since your time at the Department?

1           A.    I don't know exactly.  So -- I don't know  
2 exactly.

3           Q.    Can you guess?

4           A.    So what do you mean by "involved"?

5           Q.    Well how do you define involved?

6           A.    That I have been specifically consulted about  
7 that.

8           Q.    That is fine.

9           A.    I would say a handful.

10          Q.    So less than 10?

11          A.    Yes, probably.

12          Q.    Less than five?

13          A.    Probably more than five.

14          Q.    How many of those have resulted in the  
15 issuance of a "do not drink" letter?

16          A.    I don't know.

17          Q.    And so let me ask it this way: do you recall  
18 ever in your role at DHHS sending a "do not drink" letter  
19 before the letters we are talking about today?

20          A.    I recall being briefed about and agreeing to  
21 sending "do not drink" letters before this.

22          Q.    Before this?  And what was the context of  
23 that?

24          A.    We review testing results from new wells  
25 routinely.  And there have -- I can think of one time

1 when lead levels were elevated in some wells.

2 Q. These would have been private wells?

3 A. Yes.

4 Q. And private wells, under North Carolina law,  
5 are required to be tested, is that right?

6 A. Yes.

7 Q. Are they required to be tested for ---

8 A. (Interposing) Let me correct that.

9 Q. Sure.

10 A. They are required to be tested when they are  
11 new.

12 Q. When they are new, right. And so are they  
13 required to be tested for vanadium?

14 A. No.

15 Q. What about hexavalent chromium?

16 A. No.

17 Q. Do you know why?

18 A. No.

19 Q. What is the status of those "do not drink"  
20 advisories?

21 A. I don't know.

22 Q. Did you follow up with the well owners on  
23 that?

24 A. My staff always does, but I don't.

25 Q. Any other instances where you have issued "do

1 not drink" letters?

2 A. I personally don't issue them, so, no.

3 Q. Any other instances that you are aware of "do  
4 not drink" letters being sent by the Department?

5 A. In general, I am aware that when levels exceed  
6 the screening levels being used for new wells, that a  
7 Health Risk Evaluation recommending the water not be used  
8 for drinking or cooking is issued.

9 Q. And is the form you send similar to what we  
10 have looked at today?

11 A. Yes, it is similar.

12 Q. Do you recommend to those well owners who  
13 receive those "do not drink" letters to conduct  
14 re-sampling?

15 A. In some cases.

16 Q. Why is that?

17 A. Usually it is related to -- for instance, lead  
18 levels where we re-sample at different places and after  
19 letting the water run at different times. So it is  
20 sometimes related to -- it is related to discerning where  
21 the constituent is entering the water.

22 Q. And so why is it important to do more than one  
23 sample in that case?

24 A. In the case I am thinking of, it is because  
25 you are trying to determine if the lead is present in the

1 well itself, or whether it is in the pipes running from  
2 the well to the person's house.

3 Q. And why, in some cases, do you not recommend  
4 that re-sampling be undertaken?

5 A. So this is outside my area of expertise. And  
6 the decisions are -- on this granular level, are made by  
7 the toxicologists.

8 Q. Well, let me ask you based upon your role at  
9 the Department, why in some cases would the Department  
10 issue a "do not drink" letter, but at the same time not  
11 recommend that that well water be re-sampled?

12 A. When we issue the recommendation, we -- it  
13 actually comes -- I am sorry. I need to correct myself,  
14 because our procedures changed in the last year or two.  
15 So DHHS used to issue them directly, I think. And now  
16 the local health department issues them. And the intent  
17 is for the well owner to work with the local health  
18 department on a remediating the water. And at that  
19 point, it is re-sampled.

20 Q. And so it is resampled -- so you would expect  
21 that re-sampling occurred when a "do not drink" letter is  
22 received, is that right?

23 A. After some remediation efforts -- there is an  
24 attempt to remediate it. We recommend re-sampling.

25 Q. Did you -- when you issued the "do not drink"

1 letters for the hexavalent chromium and vanadium, did you  
2 recommend that the well owners re-sample their wells?

3 A. In some cases, yes.

4 Q. And why was that?

5 A. There -- some wells were tested at  
6 laboratories that couldn't detect hexavalent chromium at  
7 a low enough level, and so we couldn't assess the risk.

8 Q. And in cases where you did not recommend that  
9 the well was re-sampled, why was that?

10 A. It should have been because the water was  
11 tested at a lab with the ability to detect it at the  
12 necessary level.

13 (DEFENDANT EXHIBIT 287 WAS  
14 MARKED FOR IDENTIFICATION.)

15 Q. I will show you -- this is Exhibit 287. If  
16 you would turn to the last page of this exhibit.

17 (Witness peruses document.)

18 A. Go ahead.

19 Q. This is an e-mail that appears to be sent to  
20 you on July 27<sup>th</sup>, 2015, at 10:46 a.m. Do you see that?

21 A. Yes.

22 Q. Your name is listed as receiving this,  
23 correct?

24 A. Yes.

25 Q. Do you recall receiving this?



1 A. Not specifically.

2 Q. Do you see this appears to be a draft e-mail  
3 from Kelly -- I am sorry, from Alexandra -- excuse my  
4 pronunciation - Lefebvre.

5 A. Yes.

6 Q. Who is that?

7 A. Alexandra Lefebvre is a Press Assistant in the  
8 Office of Communications in the North Carolina Department  
9 of Health and Human Services.

10 Q. And this is in regards to an "Urgent Media  
11 Request," based upon the subject line, is that right?

12 A. Yes.

13 Q. And she is asking you to review this draft for  
14 any -- well, to determine if it is accurate/appropriate,  
15 correct?

16 A. She is asking all of the people, including  
17 myself, on that line to do that, yes.

18 Q. Did you review this draft e-mail?

19 (Witness peruses document.)

20 A. I don't remember reviewing it, but I probably  
21 did.

22 Q. Okay.

23 A. I generally review things from the  
24 Communication Office marked "Urgent."

25 Q. Do you see where the draft e-mail states that

1 "sampling of a well only provides a snapshot of the well  
2 conditions at the time of sampling"? Do you see that?

3 A. Yes.

4 Q. Do you agree with that statement?

5 A. Yes.

6 Q. "Groundwater constantly flows, resulting in  
7 potential changes in the chemical composition of the  
8 groundwater." Do you see that?

9 A. Yes.

10 Q. Do you agree with that?

11 A. Yes.

12 Q. And then it says, "Thus, if the contaminant  
13 exceeds levels set by regulation in certain cases, or  
14 exceeds Health Protective Levels, DHHS recommends  
15 re-sampling to ensure that the contaminant is actually  
16 present in the well." Do you see that?

17 A. I see that.

18 Q. Do you agree with that?

19 A. We can do that sometimes. We do that  
20 sometimes.

21 Q. Do you agree with the statement?

22 A. No.

23 Q. And why don't you agree with that?

24 A. Because we don't always recommend it.

25 Q. Do you sometimes recommend it?

1 A. Yes.

2 Q. To determine if the contaminant is actually  
3 present in the well, correct?

4 A. To determine the level at which the  
5 contaminant is present.

6 Q. Correct?

7 A. Yes.

8 Q. Have you ever authored any studies dealing  
9 with hexavalent chromium?

10 A. No.

11 Q. Have you ever authored any studies dealing  
12 with vanadium?

13 A. No.

14 Q. Have you ever reviewed any studies dealing  
15 with hexavalent chromium?

16 A. Yes.

17 Q. What studies?

18 A. I can't remember. I can -- I don't know the  
19 titles. I read some papers.

20 Q. And who were those papers authored by?

21 A. I don't remember.

22 Q. Can you tell me if they were authored by a  
23 government agency?

24 A. I read some of the material from EPA. I also  
25 read some academic papers. And I don't know the

1 affiliation -- I don't remember the affiliation of the  
2 authors.

3 Q. And how many of these studies have you  
4 reviewed?

5 A. I would say fewer than five.

6 Q. When did you review these studies?

7 A. Sometime between January 2015 and June, July  
8 2015.

9 Q. Have you reviewed any studies since June or  
10 July of 2015?

11 A. I don't think so.

12 Q. Before January of 2015, have you ever -- had  
13 you ever reviewed any studies dealing with hexavalent  
14 chromium?

15 A. No.

16 Q. Are you doing any ongoing studies -- you,  
17 yourself -- on hexavalent chromium?

18 A. No.

19 Q. Have you ever authored any studies on  
20 vanadium?

21 A. No.

22 Q. Have you ever reviewed any studies on  
23 vanadium?

24 A. Yes.

25 Q. And when -- how many studies have you

1 reviewed?

2 A. I definitely read one. I might have read two.

3 Q. Who authored those studies?

4 A. I don't know.

5 Q. Were those studies by any government agency?

6 A. I don't remember.

7 Q. And when were those reviewed?

8 A. The same time frame.

9 Q. So between January 2015 and June 2015?

10 A. Yes.

11 Q. Before January 2015, had you ever reviewed any  
12 studies about vanadium?

13 A. No.

14 Q. Since June of 2015, have you reviewed any  
15 studies dealing with vanadium?

16 A. No.

17 Q. And I assume you are not -- you, yourself,  
18 aren't conducting any studies related to vanadium?

19 A. No.

20 Q. And have never done so?

21 A. Correct.

22 Q. And have never conducted any studies related  
23 to hexavalent chromium -- you, yourself?

24 A. Correct.

25 (DEFENDANT EXHIBIT 288 WAS

1 MARKED FOR IDENTIFICATION.)

2 MR. ROSSER: This is 287?

3 REPORTER: 288.

4 BY MR. ROSSER:

5 Q. 288. Dr. Davies, are you familiar with what  
6 has been marked as Exhibit 288?

7 (Witness peruses document.)

8 A. Yes.

9 Q. What is this document?

10 A. It is the Interim Report on the study of  
11 Standards and Health Screening Levels for hexavalent  
12 chromium and vanadium.

13 Q. And this report refers to an Interdepartmental  
14 Work Group to conduct the study required by Section 4.8A.  
15 Are you familiar with that Interdepartmental Work Group?

16 A. Where does it say that?

17 Q. On the last page, first sentence of the last  
18 paragraph.

19 (Witness peruses document.)

20 A. So you are asking if I am familiar with the  
21 Work Group?

22 Q. Correct.

23 A. I am familiar with the statement that there  
24 would be one.

25 Q. Are you familiar with the Work Group?

1 A. I don't think the Work Group ever formed.

2 Q. And why is that?

3 A. DEQ was the lead agency. And after  
4 communicating our availability to participate in the Work  
5 Group, we didn't receive invitations to meet.

6 Q. When you say DEQ was the lead agency, what do  
7 you mean by that?

8 A. My understanding is that the -- was it a  
9 Special Provision that ---

10 (Witness peruses document.)

11 "Section 4.8A of S.L. 2015-286 directed the  
12 North Carolina Department of Environment and Natural  
13 Resources name change by 2015 legislation to North  
14 Carolina Department of Environmental Quality (DEQ) in  
15 conjunction with the Department of Health and Human  
16 Services to study the State's Groundwater Standards under  
17 15A NCAC 2L or state interim allowable maximum  
18 contaminant levels (IMAC) as applicable, as well as state  
19 Health Screening Levels for hexavalent chromium and  
20 vanadium" -- this is a long sentence -- "relative to  
21 other southeastern state standards for these contaminants  
22 and the federal maximum contaminate levels (MCL's) for  
23 these contaminants under the Safe Drinking Water Act, in  
24 order to identify appropriate standards to protect public  
25 heath, safety and welfare." I am going to stop at the

1       semicolon.

2                       So our understanding was DEQ was directed to  
3 do this in conjunction. And so we understood DEQ to be  
4 the lead agency -- the one with the responsibility to  
5 provide the report.

6                                       (DEFENDANT EXHIBIT 289 WAS  
7                                       MARKED FOR IDENTIFICATION.)

8               Q.    This is 289. Dr. Davies, are you familiar  
9 with the document in front of you that has been marked  
10 Exhibit 289?

11                       (Witness peruses document.)

12               A.    Yes.

13               Q.    Have you reviewed this document before?

14               A.    Yes.

15               Q.    The first sentence there reads that, "The  
16 current maximum contaminant level for chromium in all  
17 forms in drinking water is 100 parts per billion, which  
18 includes chromium-6." Do you see that there?

19               A.    Yes.

20               Q.    Do you agree with that statement?

21               A.    Yes.

22               Q.    And it says under the question, "Why doesn't  
23 EPA regulate chromium-6?" And the answer there given is,  
24 "EPA does regulate chromium-6 (or hexavalent chromium) as  
25 part of the total chromium drinking water standards since



1 1992." Do you agree with that statement?

2 A. No.

3 Q. Why not?

4 A. Because total chromium is composed of  
5 hexavalent chromium and trivalent chromium. So the total  
6 amount regulated is not just chromium-6.

7 Q. Then it says, "The current drinking water  
8 standard sets the maximum level of total chromium allowed  
9 in drinking water, and this standard addresses all forms  
10 of chromium, including chromium-6." Do you see that  
11 there?

12 A. Yes.

13 Q. Do you agree with that?

14 A. Yes.

15 Q. And then the next sentence says, "Since  
16 current testing does not distinguish what percentage of  
17 the total chromium is chromium-6 versus chromium-3, EPA's  
18 regulation assumes that the sample is 100 percent  
19 chromium-6." Do you see that there?

20 A. Yes.

21 Q. Do you agree with that?

22 A. If the EPA states that, I don't disagree with  
23 it.

24 Q. What role do background levels play in setting  
25 Health Screening Standards?

1 A. Could you clarify the question?

2 Q. Sure. When you are evaluating -- I know you  
3 are not -- you don't have the expertise to actually set  
4 screening levels, correct?

5 A. Correct.

6 Q. But what -- to your knowledge, how do  
7 background levels of constituents play into setting  
8 Health Screening Levels, if at all?

9 A. So for Health Screening Levels, they -- it  
10 doesn't matter whether the constituents are there in the  
11 background or if it was introduced in some other way.

12 Q. So as part of its setting screening levels for  
13 the various -- for chromium-6 and vanadium, there has  
14 been no assessment by your department as to whether or  
15 not Duke's various impoundments have impacted  
16 groundwater, correct?

17 A. Correct.

18 Q. How were -- let's start with hexavalent  
19 chromium. So how were these Screening Levels of .07  
20 developed?

21 A. They were developed in accordance with the  
22 North Carolina Administrative Code -- the 2L Rule.

23 Q. And are you familiar with that 2L Rule?

24 A. I have read it.

25 Q. And you, yourself, did not perform the

1 calculation, correct?

2 A. No.

3 Q. Who did that?

4 A. The toxicologists at DEQ and the toxicologists  
5 at DHHS.

6 Q. Okay. What were the names of the folks at DEQ  
7 who performed that calculation?

8 A. Hanna Assefa and Dave Lilley -- David Lilley.

9 (DEFENDANT EXHIBIT 290 WAS  
10 MARKED FOR IDENTIFICATION.)

11 Q. This is 290. Dr. Davies, this is a series of  
12 e-mails that has been marked Exhibit 290. Hanna Assefa  
13 is the author of the first e-mail in the chain. Is that  
14 the Ms. Assefa that you were referring to earlier?

15 (Witness peruses document.)

16 A. Yes.

17 Q. And she is with the North Carolina Division of  
18 Waste Management, is that right?

19 A. I believe so.

20 Q. Is David Lilley also with the North Carolina  
21 Division of Waste Management?

22 A. I believe so.

23 Q. Who asked them to, if you know, perform this  
24 particular calculation?

25 A. I don't know.

1 Q. It references the use of the California EPA  
2 Slope Factor for ingestion. Do you see that?

3 A. Yes.

4 Q. Are you familiar with that Slope Factor?

5 A. No.

6 Q. Do you know how that Slope Factor was reached?

7 A. No.

8 Q. Do you know what studies went out into the use  
9 of that Slope Factor?

10 A. No.

11 Q. Do you know if that Slope Factor is reliable?

12 A. We -- I believe it is reliable, because we  
13 consulted CDC-ATSDR and they confirmed that was the  
14 correct Slope Factor to use.

15 Q. Who at the CDC did you talk to?

16 A. I did not talk to them. I believe it was an  
17 e-mail communication between one of our toxicologists and  
18 a toxicologist at CDC-ATSDR.

19 Q. Who was the toxicologist ---

20 A. (Interposing) I don't know.

21 Q. --- at -- I am sorry?

22 A. I don't know the name. Oh, sorry.

23 Q. At DHHS?

24 A. I think it was Sandy Mort.

25 Q. Sandy -- I am sorry?

1 A. Mort, M-O-R-T.

2 Q. Was this -- have you seen this e-mail  
3 communication from the CDC?

4 A. Yes, I saw it.

5 Q. What did it say?

6 A. I don't remember.

7 Q. Did you see the e-mail communication, I guess,  
8 from Sandy to the CDC?

9 A. I don't remember exactly. I think I saw the  
10 -- the e-mail chain.

11 Q. Has the Department used the California EPA  
12 Slope Factor for other screening levels?

13 A. I don't know.

14 Q. Have other -- I am sorry. Have other states  
15 used the California EPA Slope Factor for setting Health  
16 Screening Levels?

17 A. I don't know.

18 Q. Did you consult with any other states?

19 A. No.

20 Q. Did you consult with EPA?

21 A. No.

22 Q. Did you contact the California EPA?

23 A. I did not.

24 Q. Did anybody in your department?

25 A. I don't know.

1 Q. What are Slope Factors?

2 A. They are a number that quantifies what the  
3 slope of a graph is.

4 Q. How are they derived?

5 A. I don't know. Specific to Cancer Slope  
6 Factors, I don't know how it is derived.

7 Q. How did California develop its Slope Factor  
8 for ingestion?

9 A. I don't know.

10 Q. Did California follow EPA's methodologies?

11 A. I don't know.

12 Q. What are the North Carolina methodologies for  
13 developing Slope Factors?

14 A. I don't know.

15 Q. I assume that if I asked you to perform the  
16 calculation, you couldn't, sitting here today ---

17 A. Correct.

18 Q. --- for screening levels? If you could go  
19 back to the frequently asked questions.

20 (Witness peruses document.)

21 On page 3 -- it is on the bottom last  
22 paragraph -- it says, "While North Carolina has a  
23 Groundwater Quality Standard of 10 parts per billion that  
24 is protective for chromium-6, the Department has  
25 developed a Health Screening Level for chromium-6, using

1 a method consistent with 15A NCAC 02L at 0.07 parts per  
2 billion based on its independent review of current  
3 literature corresponding to a one in a million lifetime  
4 cancer risk level." Do you see that?

5 A. Yes.

6 Q. What is the current literature referenced  
7 there?

8 A. I don't know. You would have to ask the  
9 toxicologists.

10 Q. What is the difference between an IMAC and a  
11 Health Screening Level?

12 A. An IMAC is an interim maximum allowable  
13 concentration that is -- applies to groundwater, and is  
14 set by the Director of the Division of Water Resources  
15 pending completion of the whole process to set a  
16 regulatory standard.

17 Q. If you could turn to the final report, which  
18 is what we previously marked. This is dated April 1<sup>st</sup>,  
19 2016.

20 MR. HOLLEMAN: What did you say you were  
21 referring to?

22 MR. ROSSER: The final report. This is the  
23 April 1<sup>st</sup>, 2016.

24 MR. HOLLEMAN: I don't think that is an  
25 Exhibit. We haven't talked about it.

1 MR. ROSSER: Okay.

2 (DEFENDANT EXHIBIT 291 WAS  
3 MARKED FOR IDENTIFICATION.)

4 BY MR. ROSSER:

5 Q. 291? Dr. Davies, are you familiar with the  
6 document that has been marked Exhibit 291?

7 A. Yes, I recognize it.

8 Q. Have you reviewed this before?

9 A. I have read through it before.

10 Q. If you could turn to page 3 at the bottom, it  
11 says -- and this is in the third sentence of that  
12 paragraph. It says, "The Department Health Screening  
13 Levels for vanadium and hexavalent chromium were  
14 calculated using methodology and toxicity values selected  
15 according to the precedence outlined in an agreement  
16 between the Department and DEQ Division of Waste  
17 Management for the development of Health Risk Evaluations  
18 for private well users." Do you see that statement  
19 there?

20 A. Yes.

21 Q. What methodology is referenced here?

22 A. The methodology is in some standard operating  
23 procedures at the DEQ Division of Waste Management.

24 Q. And who developed those standard operating  
25 procedures?



1 A. I don't know.

2 Q. Are you familiar with them?

3 A. I have seen them.

4 Q. What do they say?

5 A. I haven't read them thoroughly.

6 Q. What toxicity values are referenced in this  
7 statement?

8 A. I don't know.

9 Q. What precedence is referenced in this  
10 statement?

11 A. It is referencing a letter from Dexter  
12 Matthews, who was the Director of the Division of Waste  
13 Management, written to me as the Epidemiology Section  
14 Chief, laying out an agreement for the Division of Waste  
15 Management toxicologist and the Division of Public Health  
16 toxicologist to work together. That letter was sent in  
17 2014.

18 Q. So you all had reached an agreement to develop  
19 an approach to setting Health Screening Levels, is that  
20 right?

21 A. Yes.

22 Q. And what was the purpose of that agreement?

23 A. To attempt to have consistency around levels.

24 Q. Why was that?

25 A. We felt it was important to try to be

1 consistent in order to be able to communicate more  
2 clearly with affected people.

3 Q. And when you say "consistency," you mean  
4 consistency in communications both from the Department  
5 HHS and DEQ? Is that what you mean?

6 A. Yes.

7 Q. Was that agreement adhered to?

8 A. Yes.

9 (DEFENDANT EXHIBIT 292 WAS  
10 MARKED FOR IDENTIFICATION.)

11 Q. 292. Is Exhibit 292 -- is this the letter you  
12 were talking about?

13 A. Yes.

14 Q. And I assume you have read this letter, is  
15 that right?

16 A. Yes.

17 Q. The second paragraph states that,  
18 "Toxicologists in DENR and the Department have agreed to  
19 make recommendations on the private wells by comparing  
20 contaminant concentrations found in samples of the  
21 private wells to, first, the federal maximum contaminant  
22 levels adopted by EPA." Do you see that?

23 A. Yes.

24 Q. What is the federal maximum contaminant level  
25 for chromium?

1           A.    For total chromium? 100 micrograms per liter.

2           Q.    And that standard, you testified earlier,  
3 includes chromium-6, correct?

4           A.    Total chromium includes chromium-6 and  
5 chromium-3.

6           Q.    We can put that aside for now.

7           MR. ROSSER:     It is now noon. I probably  
8 will take you to 2:30, so if you want to take a break for  
9 a brief lunch, we can do that. If you want to forge  
10 ahead, I am comfortable with that as well.

11           THE WITNESS:     I am okay going ahead.

12           MR. ROSSER:     Do you want to take a break,  
13 five minutes then?

14                         (THE PROCEEDINGS WERE RECESSED AT 12:04 P.M.  
15                         TO RECONVENE AT 12:46 P.M. THIS SAME DAY.)

1                   F U R T H E R   P R O C E E D I N G S

2                   D I R E C T   E X A M I N A T I O N 12:46 P.M.

3                                   (RESUMED)

4                   BY MR. ROSSER:

5                   Q.   Dr. Davies, if I could turn your attention to  
6                   279. It is one of the "Do not drink" letters.

7                   A.   Yeah.

8                   Q.   The constituent that is identified as  
9                   chromium. I assume that is total chromium there; is that  
10                  what that refers to?

11                  A.   Yes.

12                  Q.   Why is that not listed as chromium 6, then?

13                  A.   Because this is the groundwater standard,  
14                  which is -- which are those levels that have gone through  
15                  that regulatory process.

16                  Q.   Which is listed here as 10 parts per billion,  
17                  correct?

18                  A.   Correct.

19                  Q.   You can correct me if I am wrong, but these  
20                  letters were sent, as I understand it, based upon the  
21                  screening level set by the Department of .07; is that  
22                  right?

23                  A.   No.

24                  Q.   These were sent based upon the groundwater  
25                  standard of 10 parts per billion?

1           A.    No.  And I am speaking to something that was  
2   being done at DEQ.  But my understanding is everybody  
3   received a set of -- a letter and the results.  So  
4   this -- it depended on what your levels were what  
5   specific HRE you got and what -- maybe what it said in  
6   this letter.

7           Q.    What was this -- this particular letter refers  
8   to the 10 parts per billion, correct?

9           A.    Yes.

10          Q.    And so was this particular letter sent not on  
11   the basis of the screening level?

12          A.    Everybody got a letter of some sort.  So I  
13   don't know how to answer that.

14          Q.    So you don't know the basis upon which this  
15   particular letter was sent?

16          A.    My understanding is everybody got a letter  
17   with their test results and other materials in it.

18          Q.    And when you say "everybody got a letter," who  
19   are you talking about?

20          A.    Yes.  People who had their well water tested  
21   under CAMA.

22          Q.    And so if this result equals -- indicates a  
23   21.8 total chromium standard; right?

24          A.    Yes.

25          Q.    And then there is a -- followed by well water

1 information and use recommendations. Do you see that?

2 A. Yes.

3 Q. Okay. And that indicates that the following  
4 substances -- hexavalent chromium and vanadium --  
5 exceeded the screening levels; correct?

6 A. Yes.

7 Q. But the front page only talks about total  
8 chromium, correct?

9 A. Correct.

10 Q. All right. If you turn to page 5 of the Pace  
11 Analytical report, total chromium is listed as 21.8,  
12 correct?

13 A. Yes.

14 Q. Which would be consistent with the first page,  
15 right ---

16 A. Yes.

17 Q. --- of the letter?

18 A. Yes.

19 Q. Then if you go down to hexavalent chromium,  
20 that is 22.3. Do you see that?

21 A. Yes.

22 Q. Explain to me how you would have a situation  
23 where you would have a total chromium parts per billion  
24 number that would be less than a chromium 6 number?

25 A. I don't know how they processed the samples in

1 the lab and ran the tests, but they could have used  
2 different methods that would give you different results.

3 Q. If chromium 6 includes -- well, total chromium  
4 includes all of chromium 6 -- you testified to that  
5 earlier today; right?

6 A. Yes.

7 Q. This wouldn't seem to make sense, would it?

8 A. I think there is some variability in lab  
9 results.

10 Q. Is that what your explanation is?

11 A. Yeah.

12 Q. And how do you account for that variability at  
13 issue in these letters?

14 A. That wasn't -- that wasn't addressed.

15 Q. Why not?

16 A. We issued the health risk evaluations, which  
17 is the only part of this that DHHS did, based on the  
18 measured level compared to a preset health screening  
19 level.

20 Q. So I guess -- let me ask it again, because I  
21 am not sure I got a clear answer. Does it make sense to  
22 you, in a lab report, to have a hexavalent chromium parts  
23 per billion number higher than a total chromium number?

24 A. Yeah.

25 Q. Why does that make ---

1 A. (Interposing) Yeah.

2 Q. --- sense to you?

3 A. Because laboratory measurements have  
4 variability in them.

5 Q. Have you ever operated a lab?

6 A. No.

7 Q. Have you ever tested for hexavalent chromium  
8 or ran tests for hexavalent chromium or chromium?

9 A. No.

10 Q. So what variability are you qualified to talk  
11 about here today?

12 A. I am speaking from my experience as a  
13 clinician who has reviewed a lot of clinical lab results  
14 that often have variability in them. But I am not  
15 qualified to comment on the methods of water chemistry  
16 analysis.

17 Q. Have you ever seen a lab report that contains  
18 higher levels of hexavalent chromium than total chromium?

19 A. Well, right now.

20 Q. Other than the one before you?

21 A. No.

22 Q. Dr. Davies, do you agree that municipal water  
23 supplies in North Carolina contain levels of hexavalent  
24 chromium in excess of the Department screening level?

25 A. Yes.



1 Q. And what studies did the Department undertake  
2 to evaluate those levels before issuing its screening  
3 levels?

4 A. None.

5 Q. If we could go back to ---

6 A. (Interposing) None that I know of.

7 Q. --- the frequently asked questions, page 4.

8 And do you see the chart there on page 4?

9 A. Yes, I do.

10 Q. Do you agree that the levels as indicated here  
11 in Atlanta are higher than the screening levels set by  
12 the Department for chromium 6?

13 A. Yes.

14 Q. Do you agree that there have been levels  
15 measured in North Carolina that exceed the screening  
16 levels for chromium 6 in Charlotte?

17 A. Yes.

18 Q. Do you agree that the screening levels for  
19 Chicago, Illinois exceed the screening levels -- or, I am  
20 sorry, the levels of chromium 6 in Chicago have exceeded  
21 the screening levels set by DHHS?

22 A. Yes.

23 Q. And in Greensboro, North Carolina, do you also  
24 agree that there has been measurements exceeding the  
25 chromium 6 levels set by the Department?

1 A. Yes.

2 Q. And in Honolulu, Hawaii, as well?

3 A. Yes.

4 Q. And Madison, Wisconsin?

5 A. Yes.

6 Q. And Norman, Oklahoma?

7 A. Yes.

8 Q. And Raleigh, North Carolina?

9 A. Yes.

10 Q. And Riverside, California?

11 A. Yes.

12 Q. 293.

13 (DEFENDANT EXHIBIT 293 WAS

14 MARKED FOR IDENTIFICATION.)

15 Dr. Davies, are you familiar with the document  
16 that has been marked Exhibit 293?

17 (Witness peruses document.)

18 A. No.

19 Q. If you could turn to page 10 of that document,  
20 do you see that chart there?

21 A. Yes.

22 Q. Do you see where it says, "California proposed  
23 safe limit"?

24 A. Yes.

25 Q. All right. And do you agree that this chart

1 shows that 24 of the 31 cities' tap water exceeded .07  
2 screening level for hexavalent chromium?

3 A. You have to be patient while I count.

4 MR. HOLLEMAN: What is the Exhibit Number?

5 REPORTER: 293.

6 THE WITNESS: 24 exceed .07.

7 BY MR. ROSSER:

8 Q. What is the Department doing to address  
9 hexavalent chromium levels above .07 in public water  
10 supplies?

11 A. What department?

12 Q. DHHS.

13 A. We are not working on public water supplies.

14 Q. So nothing?

15 A. Correct.

16 Q. How many private wells are there in North  
17 Carolina?

18 A. I don't know the number.

19 Q. Can you approximate?

20 A. I can approximate it is a lot.

21 Q. Any more specific than that?

22 A. No.

23 Q. What is the Department -- DHHS doing to  
24 address hexavalent chromium levels and vanadium levels in  
25 private wells throughout the state?

1           A.    We are not doing anything, with the exception  
2           of wells tested under CAMA.

3           Q.    And why is that?

4           A.    Actually, I need to restate that.  We are not  
5           doing that except for wells that have been tested for  
6           hexavalent chromium.  So most wells -- private wells, are  
7           not tested for it.

8           Q.    And so the Department is not doing anything to  
9           address private wells, other than those designated under  
10          CAMA; is that correct?

11          A.    No.

12          Q.    Let me rephrase that.  Other than those  
13          designated under CAMA, what is DHHS doing to address  
14          hexavalent chromium levels and vanadium levels in private  
15          wells in North Carolina?

16          A.    In those cases where a well was tested for  
17          hexavalent chromium and brought to the attention of DHHS,  
18          we either directly sent an HRE similar to the ones sent  
19          for wells tested under CAMA, or the local health  
20          department did.

21          Q.    So I will refer to these as ---

22                MR. HOLLEMAN:    (Interposing)  Well, what -- I  
23          am sorry, the answer?

24                THE WITNESS:    Or the local health department  
25          did.

1 BY MR. ROSSER:

2 Q. I will offer these as non-CAMA wells, which  
3 are -- you have testified that there is a lot of these  
4 wells throughout the state. How many of those wells are  
5 tested for hexavalent chromium?

6 A. Very few.

7 Q. How many of those wells are tested for  
8 vanadium?

9 A. Very few.

10 Q. And in the few instances those are tested,  
11 under what circumstances would that occur?

12 A. If the well owner specified that -- that  
13 testing.

14 Q. This would be a voluntary test?

15 A. Yes.

16 Q. Not one that is required under law?

17 A. Yes.

18 Q. And you have testified earlier that new wells  
19 do not even test for hexavalent chromium or vanadium,  
20 correct?

21 A. Correct.

22 Q. So if I have an existing well -- older well  
23 that I have already tested, do older wells in North  
24 Carolina have to be tested under law for hexavalent  
25 chromium or vanadium?

1 A. No.

2 Q. Why is that?

3 A. I don't know.

4 Q. So this .07 -- I just want to understand how  
5 this risk assessment works, because I am clearly not a  
6 toxicologist or epidemiologist. But if I -- so this  
7 level .07 is based upon increased risk of one in a  
8 million; correct?

9 A. Correct.

10 Q. For lifetime use?

11 A. Correct.

12 Q. So if this cup of water in front of me  
13 contains .08 parts per billion of chromium 6, if I take  
14 one sip of it, have I then increased my chance of getting  
15 cancer?

16 A. It depends.

17 Q. Okay. Depends on what?

18 A. On if that sip resulted in a change to your  
19 DNA that would set in progress progression to cancer.

20 Q. Okay. Assuming it does, would that one sip  
21 increase my risk of getting cancer?

22 A. If it altered your DNA, yes.

23 Q. At .08 parts per billion?

24 A. Yes.

25 Q. Okay. Same question for .06?

1 A. Yes.

2 Q. It would? It would -- if this contained  
3 hexavalent chromium at a level of .06, but below the  
4 screening level that DHHS set, and it altered my DNA  
5 somehow, that would increase my chance of getting cancer;  
6 is that right ---

7 A. Yes.

8 Q. --- based upon one sip?

9 A. It could.

10 Q. What about .01? If I took one sip of this  
11 water and it contained .01 parts per billion of  
12 hexavalent chromium, and it altered my DNA in some  
13 fashion, would that increase my chance of getting cancer?

14 A. Yes.

15 Q. Going back to the .08 parts per billion, if  
16 this cup of water contains .08 parts per billion of  
17 hexavalent chromium, is this water unsafe to drink? Just  
18 one -- just one sip?

19 A. It is above the screening level, and  
20 relatively less safe than a lower level.

21 Q. Is it unsafe?

22 A. I don't know.

23 Q. Why not?

24 A. Because I don't know whether that cup of water  
25 is safe for you to drink or not.

1           Q.   Well, assuming it has got a .08 parts per  
2 billion level of hexavalent chromium, is this water safe  
3 to drink?

4           A.   It does not meet the health risk evaluation  
5 standard.

6           Q.   Is that a "yes," it would be unsafe to drink?

7           A.   I am uncomfortable with the words "safe" and  
8 "unsafe." You would be at increased risk of cancer,  
9 which, you know, is not a desirable outcome.

10          Q.   Okay. Now let's go to .06, which is below the  
11 screening level. You already told me if I drink this  
12 water, it will increase my chances of getting cancer,  
13 correct?

14          A.   Right.

15          Q.   Is .06 unsafe to drink?

16          A.   A .06 has a risk associated with it of  
17 developing cancer. It is something less than one in a  
18 million.

19          Q.   And so let's go to .01. Is that water unsafe  
20 to drink?

21          A.   That drink also has a risk that is less than  
22 one in a million.

23          Q.   But there is still a risk, correct?

24          A.   Correct.

25          Q.   A risk of increased risk of getting cancer,



1 correct?

2 A. Correct.

3 Q. Well, let me ask you this. What are the  
4 standards for chromium 6 in bottled water?

5 A. I don't believe there are any standards.

6 Q. What are the standards for total chromium in  
7 bottled water?

8 A. I don't believe there are any standards.

9 Q. Do the federal drinking water standards apply  
10 to bottled water?

11 A. No.

12 Q. They do not?

13 A. I don't think so.

14 Q. Okay. So a company is free to put in whatever  
15 water it wants to, regardless of the amount of  
16 contaminants in bottled water?

17 A. So I am going by what I have heard Bob  
18 Midgette say at DEQ, that -- that bottled water isn't  
19 regulated the way public water supplies are. I don't  
20 know what regulation bottled water goes -- is under, from  
21 FDA or USDA or whomever might regulate that consumer  
22 product.

23 Q. Do you consider it unsafe to drink bottled  
24 water?

25 A. Generally, no.

1 Q. Do you, yourself, drink bottled water?

2 A. Sometimes.

3 Q. What is the basis of your view that bottled  
4 water is generally safe to drink?

5 A. So I am -- can you clarify that question?

6 Q. I asked you if you think bottled water is  
7 safe -- or unsafe, sorry, and you said, "generally, no."  
8 And I am asking for the basis for that opinion.

9 A. I haven't seen a lot of outbreaks associated  
10 with bottled water. I haven't seen studies correlating  
11 disease to bottled water.

12 Q. Anything else?

13 A. No.

14 Q. How does the .07 screening level for  
15 hexavalent chromium compare with other states?

16 A. Most states don't have established health  
17 screening level for hexavalent chromium.

18 Q. How many states do?

19 A. I only know of California having a regulatory  
20 level and a health goal.

21 Q. How about the other 48 states?

22 A. I don't know of them having a health screening  
23 level.

24 Q. Did you look into that?

25 A. Yes.

1 Q. What was your findings?

2 A. That there weren't -- we didn't find any  
3 others besides California.

4 Q. Other than -- I guess you testified that the  
5 CDC was consulted. Did you consult EPA on the hexavalent  
6 chromium screening level?

7 A. I don't know if my staff did.

8 Q. What about other states?

9 A. I don't think so.

10 Q. What is the current status of federal  
11 regulation of chromium 6?

12 A. It is being reviewed by the EPA.

13 Q. Do you have any other information?

14 A. Not that I can speak to authoritatively.

15 Q. How were the screening levels developed for  
16 vanadium?

17 A. We used the IMAC as referenced in CAMA.

18 Q. What is that level?

19 A. 0.3 micrograms per liter.

20 Q. If you would go back to the "Frequently Asked  
21 Questions" document, page 3. And in the footnote at the  
22 bottom says, "An IMAC is based upon the scientific  
23 information available at the time of its development, but  
24 is not the subject to the rigorous review associated with  
25 established groundwater standards." Do you see that?

1 A. Yes, I do.

2 Q. What is the difference -- I mean, talk to me  
3 about the levels of review when compared to setting  
4 groundwater -- let me ask that in a question. How are  
5 groundwater standards in North Carolina subject to more  
6 rigorous review than an IMAC?

7 A. This isn't my area of expertise. I don't  
8 promulgate those kinds of standards.

9 Q. You don't have expertise in setting IMAC  
10 standards?

11 A. That is correct.

12 Q. So you don't know the answer to my question?

13 A. I don't know it.

14 Q. What studies were considered in setting the  
15 screening levels for vanadium?

16 A. You would have to ask the toxicologist at  
17 DW -- DWM and DEQ.

18 Q. You don't know?

19 A. I don't know.

20 Q. What studies were rejected in setting levels  
21 for vanadium at the Department?

22 A. I don't know.

23 Q. There is no federal drinking water outstanding  
24 for vanadium; is that right?

25 A. That is correct.

1 Q. Why not?

2 A. I don't know.

3 Q. Have you looked into that?

4 A. No.

5 Q. How is the vanadium standard calculated?

6 A. I don't know.

7 Q. You couldn't perform the calculation?

8 A. No.

9 Q. How does the .3 parts per billion screening  
10 level compare with other states for vanadium?

11 A. I don't know.

12 Q. How many other states have screening levels  
13 for vanadium?

14 A. I don't know, but I think it is in the report  
15 to the General Assembly.

16 (Witness peruses document.)

17 So the report states that none of the  
18 Southeastern states have adopted vanadium criterion  
19 regulation. I am sorry, was -- can you repeat your  
20 question? I have lost track of it.

21 Q. Yes. How many other states have set screening  
22 levels for vanadium?

23 A. I don't know.

24 Q. How many of the states in the Southeast have  
25 set screening levels for vanadium?

1 A. Are you talking about health screening levels?

2 Q. Correct.

3 A. So I think the answer to that is none have  
4 established health screening levels.

5 Q. Do you know why?

6 A. No.

7 Q. Did you consult with the other states in the  
8 Southeast?

9 A. No.

10 Q. Vanadium appears in vitamins, correct?

11 A. Yes.

12 Q. At levels above the DHHS screening level?

13 A. Yes. At levels above the IMAC.

14 MR. HOLLEMAN: I am sorry. What did you say?

15 THE WITNESS: I said, "Yes. At levels above  
16 the IMAC."

17 BY MR. ROSSER:

18 Q. Back to the "Frequently Asked Questions," on  
19 page 3, "What is vanadium?" Do you see that question  
20 there?

21 A. Yes.

22 Q. It says, "Daily intakes of vanadium from food,  
23 ranging from 10 to 20 parts per billion have been  
24 reported." Do you see that?

25 A. Yes.

1 Q. Do you have any reason to disagree with that  
2 statement?

3 A. No.

4 Q. Do you agree with that statement?

5 A. And then it says, "National average of  
6 vanadium concentrations in tap water are approximately  
7 one part per billion; do you see that?"

8 A. Yes.

9 Q. Do you have any reason to disagree with that?

10 A. No.

11 Q. Who was consulted in connection with setting  
12 the screening level for vanadium?

13 A. Division of Public Health leadership and  
14 Department of Health and Human Services leadership were  
15 consulted in using the IMAC.

16 Q. Who, specifically?

17 A. Chris Hoke, in the Division of Public Health,  
18 and Danny Staley.

19 Q. Anyone else?

20 A. I think that is it for the Division of Public  
21 Health. In the Department of Health and Human Services,  
22 we met with Emory Milliken and discussed it.

23 Q. I believe you testified Staley is a  
24 toxicologist; is that ---

25 A. (Interposing) No.

1 Q. He is not?

2 A. He is the Director of the Division of Public  
3 Health.

4 Q. Is Mr. Hoke a toxicologist?

5 A. No. He is a lawyer.

6 Q. What about Mr. -- is it Mr. Milliken or Ms.?

7 A. Emory Milliken, it is a female. She is  
8 general counsel to the Department of Health and Human  
9 Services.

10 Q. And anyone else?

11 A. We had several discussions with leadership of  
12 the Department of Health and Human Services, including  
13 Dr. Aldona Wos, who was then the Secretary, Matt McKillip  
14 (phonetic). Those are -- there -- there probably were  
15 other people, but those are the ones I remember for sure.

16 Q. What about EPA? Did you consult with them at  
17 all?

18 A. No.

19 Q. What about other states?

20 A. No.

21 Q. What about CDC?

22 A. No.

23 Q. If you could go to the April 1<sup>st</sup>, 2016 report.

24 A. Okay. Oh, okay. That is fine.

25 Q. Have you seen this -- well, I asked you that,



1 but have you read this document before?

2 A. I have read through it.

3 Q. At the bottom of page 6 -- this is under the  
4 heading, "Survey of Other States' Criteria" -- do you see  
5 that?

6 A. Yes.

7 Q. It says, "None of the Southeastern States have  
8 adopted vanadium criteria in regulation." You -- I  
9 believe you testified to that earlier; correct?

10 A. Yes.

11 Q. Then it goes on to say, "North Carolina's IMAC  
12 was established at the request of DEQ in 2010." Is that  
13 the Department -- what does "DWM" stand for there?

14 A. On page 7?

15 Q. We are on still page 6.

16 A. Oh, Division of Waste Management.

17 Q. Then it says, "This IMAC of .3 parts per  
18 billion could be revised on the basis of published and  
19 peer-reviewed toxicity information that has become  
20 available since 2010"; do you see that?

21 A. Yes.

22 Q. Do you agree with that statement?

23 A. Yes.

24 Q. And tell me -- explain to me why you agree  
25 with that.

1           A.    Because the toxicologists in OEEB --  
2   Occupational Environmental Epidemiology Branch --  
3   calculated a health screening level -- you know, the IMAC  
4   could be revised because that is allowed for in the  
5   process.  Does -- that answers your actual question.  
6   Sorry.

7           Q.    And what peer-reviewed toxicity information is  
8   referenced there?

9           A.    Referenced here in this document?

10          Q.    Right.

11                   (Witness peruses document.)

12          A.    I don't see the reference.

13          Q.    All right.  Do you know, sitting here today,  
14   what peer-reviewed information is referenced there?

15          A.    I don't know what peer-reviewed information is  
16   referenced in this report.

17          Q.    And then it says that, "As a function of this  
18   report, staff have reviewed the newly available toxicity  
19   information for vanadium and can currently recommend a  
20   revised criterion of 20 parts per billion"; do you see  
21   that?

22          A.    Yes.

23          Q.    And is that the position of HHS?

24          A.    No.

25          Q.    What is the position of HHS?

1           A.    I don't think HHS has a position on the IMAC  
2    being revised.

3           Q.    So you are saying you don't agree with it, but  
4    you don't disagree with it?

5           MR. HOLLEMAN:    Object to the form.

6           MR. ROBBINS:     Objection.

7           MS. LeVEAUX:     Objection.

8           THE WITNESS:     Yeah.

9           BY MR. ROSSER:

10          Q.    That you are not taking a position?

11          A.    Yes.

12          MR. HOLLEMAN:    Object to the form.

13          MR. ROBBINS:     Objection.

14          MS. LeVEAUX:     Objection.

15          BY MR. ROSSER:

16          Q.    And why aren't you taking a position?

17          MR. HOLLEMAN:    Object to the form.

18          MR. ROBBINS:     Objection.

19          THE WITNESS:     Because you are asking about  
20    the establishment of an IMAC by DEQ.  And that is not a  
21    role I am engaged in.

22          BY MR. ROSSER:

23          Q.    Do you agree that municipal water supplies in  
24    North Carolina contain levels of vanadium in excess of  
25    the DHHS screening level of .3 parts per billion?

1           A. I agree that there are municipal water  
2 supplies that contain vanadium in excess of .3 micrograms  
3 per liter, or parts per billion.

4           Q. What was your involvement in issuing the "Do  
5 not drink" letters?

6           A. I was part of the Public Health Team that  
7 consulted or discussed with the Department appropriate  
8 action for wells that had a level above the screening  
9 levels.

10          Q. And did you have any involvement in actually  
11 drafting the letters?

12          A. In the Health Risk Evaluation form?

13          Q. In the -- that were sent to the well owners?

14          A. So I have a role in drafting the health risk  
15 evaluation form that was sent to the owner, but not the  
16 cover letter. So the well water information and use  
17 recommendations for inorganic chemical contaminants is  
18 the document I had a role in.

19          Q. That would be the document that has the title,  
20 "Well Water Information and Use Recommendations"?

21          A. Yes.

22          Q. You drafted this?

23          A. I reviewed drafts of it and had input.

24          Q. And it references, "inorganic chemical  
25 contaminants." What does "inorganic" mean?

1 A. Means it is not a carbon-based.

2 Q. It is carbon -- so, okay. So this is going to  
3 show my ignorance, but -- so if both hexavalent chromium  
4 and vanadium are naturally occurring, could they -- could  
5 that be considered an organic chemical?

6 A. Not in chemical terms, no.

7 Q. Why is that?

8 A. Because organic chemistry, all the chemicals  
9 are carbon-based -- or they have a carbon in their  
10 structure.

11 Q. Are hexavalent chromium -- I don't know this  
12 -- are they carbon-based?

13 A. No.

14 Q. Is vanadium carbon-based?

15 A. No.

16 Q. But they still are naturally occurring ---

17 A. Yeah.

18 Q. --- in soils, et cetera?

19 A. Yes.

20 Q. The letters were sent, it appears to be, based  
21 upon a single sample; is that accurate?

22 A. For the most part, yes.

23 Q. You say for the most part. Some were based on  
24 multiple samples?

25 A. Some wells were resampled because a lab was

1 used that didn't have sufficient sensitivity in their  
2 method to detect levels low enough.

3 Q. And I am looking at what has been marked as  
4 284, 285, and 279. The results for total chromium on  
5 these documents indicate 21.8, 22.1, and 17.1?

6 A. Yes.

7 Q. For purposes of the federal drinking water  
8 standards, would those levels comply with the standard  
9 for total chromium?

10 A. That -- those levels do not exceed the minimum  
11 contaminant level -- or maximum contaminant level -- the  
12 MCL of the -- under the Safe Drinking Water Act.

13 Q. So that would comply with those standards?

14 A. Correct.

15 Q. If you had a result of 99 for hexavalent  
16 chromium -- parts per billion -- would that comply with  
17 the standard for total chromium under the federal Clean  
18 Water Drinking Act?

19 A. The -- my understanding is it is two different  
20 things. So it would not be out of compliance with the  
21 Safe Drinking Water Act, because there is no standard for  
22 hexavalent chromium.

23 Q. Let's turn back to the April 1, 2016 report.  
24 If you could turn to page 11, there is a series of  
25 recommendations. Do you see those?

1 A. Yes.

2 Q. It says that DHHS should include improved risk  
3 communication plan for its health risk evaluations. Do  
4 you see that?

5 A. Yes.

6 Q. Does DHHS plan to follow that recommendation?

7 A. I don't think we have a specific plan.

8 Q. Let me ask my question again. Is DHHS  
9 planning to follow this recommendation?

10 A. Of an improved risk communication plan? I  
11 don't know.

12 Q. And then it says, "DHHS recommendations for  
13 public and private water well use should be uniformly  
14 based upon federal MCLs established by the Safe Drinking  
15 Water Act." Do you see that there?

16 A. I do.

17 Q. Is DHHS planning to follow that  
18 recommendation?

19 A. I don't know.

20 Q. And why don't you know?

21 A. Because I haven't been part of any of those  
22 conversations.

23 Q. Are those conversations happening?

24 A. I don't know.

25 Q. Would you expect to be involved in those

1 communications?

2 A. As state epidemiologist, I would expect to be.

3 Q. Have you done anything in response to these  
4 recommendations?

5 A. That is the only DHHS one. I don't think so.

6 Q. Are you planning to do anything in response to  
7 the recommendations?

8 A. I don't know what the Agency is planning to  
9 do.

10 Q. When you say "the Agency," who are you talking  
11 about?

12 A. DHHS.

13 Q. You don't know what they are planning to do?

14 A. Correct.

15 Q. Have you talked to anyone about these  
16 recommendations?

17 A. When they first came out, we were -- I was  
18 asked to -- well, before they -- I was asked to review  
19 them. But we -- I don't remember having a conversation  
20 about how we would respond to them.

21 Q. So you had an opportunity to review this  
22 before it was submitted to the legislation, right?

23 A. I had an opportunity.

24 Q. Okay. Did you have any specific comments on  
25 recommendation number one?



1 A. I did not have any specific comments.

2 Q. And this report was submitted pursuant to  
3 session law -- I am looking at the cover letter here --  
4 2015-286?

5 A. Yes.

6 Q. In conjunction with the Department of Health  
7 and Human Services, correct?

8 A. That is the wording of the session law.

9 Q. 294.

10 (DEFENDANT EXHIBIT 294 WAS  
11 MARKED FOR IDENTIFICATION.)

12 Dr. Davies, have you see Exhibit 294 before?

13 (Witness peruses document.)

14 A. Yes, I have.

15 Q. And what is this you are looking at?

16 A. It is a document with a title, "Well Owners in  
17 Disbelief about State's Decision to Lift Tainted Water  
18 Warning."

19 Q. And did you read this article around the time  
20 it was published?

21 A. Yes.

22 Q. And if you would turn to page -- this was  
23 published, according to this, on March 19<sup>th</sup> of 2016,  
24 correct?

25 A. That is what is on the paper.

1 Q. If you would look at page 5 of 6, at the  
2 bottom, it refers to spokeswoman Alexandra Lefebvre as  
3 the DHHS spokesman, correct?

4 A. Yes.

5 Q. She speaks on behalf of DHHS?

6 A. Yes, she does.

7 Q. And she says that, "It is important to  
8 understand that it was not one person who created the  
9 original levels for usage recommendation, nor was it one  
10 person who decided to update the recommendations." Do  
11 you see that?

12 A. Yes.

13 Q. Do you agree with that statement?

14 A. Yes.

15 Q. And then she says, "This was a Department  
16 Decision made after consulting with multiple experts  
17 across two agencies." Do you see that?

18 A. Yes.

19 Q. Do you agree with that ---

20 A. Yes.

21 Q. --- statement? And then there is a reference  
22 to a Nancy Holt?

23 A. Yes.

24 Q. Do you know Ms. Holt?

25 A. I do not.



1 at any health effects that might have -- to look to see  
2 if we could see any health outcomes in the populations in  
3 the area of the coal ash ponds.

4 Q. And who had made that -- or who had made that  
5 request; I am sorry?

6 A. Secretary of DHHS, Rick Brajer.

7 Q. And that request was made directly to you?

8 A. Yes.

9 Q. When was that request made?

10 A. In a meeting, probably -- based on how I  
11 normally operate, I called her Thursday, the 20<sup>th</sup>, to  
12 discuss this, I probably -- that is probably when I met  
13 with the Secretary. Earlier that day, probably. I am  
14 not absolutely certain about that, though.

15 Q. And how did the Secretary's request come to  
16 you?

17 A. In the course of the meeting.

18 Q. And what exactly did he say to you?

19 A. So it is not -- it can't possibly be a direct  
20 quote, since this -- we are talking about August 2015.  
21 In essence, he asks us to look to see if we saw any  
22 adverse health outcomes in people living around or near  
23 coal ash ponds that would be anticipated, based on the  
24 risks identified in the toxicologic literature.

25 Q. And what was your response to the request?

1           A. I indicated that there were severe limitations  
2 to attempting to characterize relationship between health  
3 outcomes and residents in that area -- current residents  
4 in that area to a specific exposure.

5           Q. And what are some of those severe limitations?

6           A. So ---

7           Q. (Interposing) Or what -- let me strike that.  
8 What are those severe limitations?

9           A. Studies of health outcomes from environmental  
10 exposures need to take into account a lifetime of  
11 exposure. So you need to know where people have lived,  
12 where they work, what their daily habits are that could  
13 potentially expose them to the substance you are  
14 concerned about. And to conduct that kind of study is  
15 extremely expensive. And technically, it is a  
16 complicated epidemiologic study more suited to an  
17 academic institution.

18          Q. Any other severe limitations?

19          A. It is an ecological study.

20          Q. How long would a study like that take?

21          A. Well, so what -- there is more than one kind  
22 of study you can do. An ecological study is usually what  
23 people start with. And the problem with that is that you  
24 look at measures of exposure in an area, and you look at  
25 measures of disease in a population, but you can't

1 analyze it down to the individual. Therefore, you cannot  
2 conclude that the individual outcome is the result of an  
3 individual exposure. It is called the ecological  
4 fallacy.

5 The other kinds of studies, where you can  
6 actually follow individual exposures and individual  
7 outcomes, the ideal way to do that is in a prospective  
8 cohort study. And that could -- when you are looking at  
9 outcomes like cancer, that could take decades.

10 Q. How many decades?

11 A. Many decades.

12 Q. 50 years, 40 years?

13 A. Yeah, on the order of 50 years.

14 Q. And any other severe limitations that you can  
15 think of?

16 A. Those are the main ones.

17 Q. And so would you ---

18 A. (Interposing) Actually, let me just add ---

19 Q. Sure.

20 A. --- the absence of biomarkers. Ideally, you  
21 would want to be able to measure persons exposed, you  
22 would want to be able to measure evidence of the  
23 substance in the person. That would be a biomarker of  
24 some sort, like a blood level, but for whatever chemical  
25 you were interested in, and then the health outcome.

1                   And that is how you can link one to the next  
2                   to the next. So we can't do that. We don't have the  
3                   resources or technology.

4                   Q. And so when you expressed the severe  
5                   limitations to the Secretary, what was his response to  
6                   you?

7                   A. He acknowledged those limitations, but was  
8                   interested to see what, at least, we could find from  
9                   looking at the cancer registry, reports of cancers of  
10                  people who reside in those areas.

11                  Q. When you say "those areas," what do you mean?

12                  A. I don't remember the geographic -- when we  
13                  made the actual request of the cancer registry, how they  
14                  broke down the geographic area. But people living "near"  
15                  -- sorry, I did air quotes -- near coal ash impoundments.

16                  Q. How close?

17                  A. That is what I -- I don't remember, off the  
18                  top of my head.

19                  Q. When it says within the e-mail that Rick will  
20                  provide locations to CCR," these are the locations, I  
21                  presume, where coal ash impoundments are in North  
22                  Carolina?

23                  A. Yes.

24                  Q. And "CCR" is a Cancer registry. Is that a  
25                  State-run registry?

1 A. Yes, it is.

2 Q. And then she says that, "vanadium is another  
3 leading contaminant. However, its non-cancer effects are  
4 really vague." Do you agree with that statement?

5 A. Yes.

6 Q. Is vanadium known to cause cancer?

7 A. No.

8 Q. And its non-cancer effects, you agree with,  
9 are really vague?

10 A. They are ---

11 Q. (Interposing) Explain that, what that means.

12 A. Vanadium health effects have been observed in  
13 toxicologic studies involving animal models and affect  
14 kidneys and blood cells.

15 Q. Have they been tested in human models?

16 A. No. We don't test in human models.

17 Q. Okay. That displayed my ignorance there.

18 Well, let me ask this in this way. Has there been any  
19 studies showing the effects -- cancer-related effects on  
20 humans as a result of vanadium?

21 A. No.

22 Q. If you would turn to page -- it is number 29  
23 on this exhibit, at the bottom. Do you see that?

24 A. Yes.

25 Q. Okay. Dr. Shehee's e-mail to Rick Langley



1 indicates that the -- essentially to go ahead and request  
2 the study, right?

3 A. Yes.

4 Q. Is that right? And she indicates that there  
5 is a very short deadline; is that right?

6 A. Yes.

7 Q. Why was there a short deadline?

8 A. Because it was requested by the Secretary of  
9 Health and Human Services.

10 Q. Did the Secretary request a short deadline?

11 A. I don't remember him specifically requesting a  
12 short deadline.

13 Q. And explain to me why a short deadline was  
14 imposed?

15 A. Because when the Secretary of the Department  
16 requests information for policymaking, people who work in  
17 the Department prioritize that over other work.

18 Q. But there was no specific direction from the  
19 Secretary to conduct this study on a very short deadline?

20 A. No.

21 Q. And then there was as deadline imposed of  
22 September 2<sup>nd</sup>; is that right?

23 A. That is in my e-mail.

24 Q. So despite your, I think you said, "severe  
25 limitations," as expressed to the Secretary, the

1 Secretary ultimately decided to go ahead with the study;  
2 is that right?

3 A. Yes.

4 Q. And have you seen a copy of the study?

5 A. I haven't.

6 Q. Let me ask you this. Why did the Secretary  
7 want this study conducted?

8 A. I don't know.

9 Q. Did you ask him?

10 A. I did not ask him why he wanted it.

11 Q. And he didn't tell you why?

12 A. He told me in a conversation he expressed  
13 curiosity as to whether we had seen any increase in  
14 cancer cases around -- in the areas around coal ash  
15 ponds.

16 Q. He said he is curious?

17 A. He was -- wanted to know if there were -- if  
18 we have seen increases in cancer cases. He put it in the  
19 context of, when I explained my caveats of performing a  
20 cancer cluster analysis, he expressed the desire to at  
21 least confirm that there were not strikingly high levels  
22 occurring that might need immediate action.

23 Q. And so this was -- this was outside DHHS's  
24 work under CAMA; is that right?

25 A. Correct.

1 Q. This was a separate request?

2 A. It came out of the issue -- these issues being  
3 raised.

4 Q. But it wasn't required under CAMA?

5 A. No, it wasn't required under CAMA.

6 (DEFENDANT EXHIBIT 296 WAS  
7 MARKED FOR IDENTIFICATION.)

8 Q. I have handed you Exhibit 295 -- 296.

9 A. Yes.

10 Q. Is this the study that you request or the  
11 Secretary requested?

12 A. Yes.

13 Q. And did you review this study once it was  
14 produced?

15 A. I read it, yes.

16 Q. What did the study find?

17 A. It found that, when comparing 95 percent  
18 confidence intervals for the five-year age adjusted  
19 rates, 2009 to 2013, incident rates for lung, bronchus  
20 cancer in Gaston, Rockingham, and Stokes Counties are  
21 significantly higher than the state rate. The incidence  
22 rate for prostate cancer in Robeson County is also  
23 significantly higher than the state rate.

24 Given the number of rates being compared, this  
25 may just reflect the random distribution of the cancer

1 incidence rates. Also noted that some of these 14  
2 counties had incidence rates significantly lower than the  
3 state rate. Additionally, when looking at cancers  
4 associated with environmental factors, which is a set of  
5 cancers they routinely look at in these requests, when  
6 comparing the 95 percent confidence intervals for the  
7 five-year age adjusted rates, 2009 to 2013, the incidence  
8 rate for liver cancer in Gaston County is significantly  
9 higher than the state rate. And the multiple myeloma  
10 incidence rate in Wayne County is significantly higher  
11 than the state rate.

12 Again, given the numbers of rates being  
13 compared, this may just reflect the random distribution  
14 of the cancer incidence rates, and that some of the  
15 counties had incidence rates significantly lower than the  
16 state rate.

17 Q. So both of the Table 1 and Table 2s have a  
18 caveat associated with them, that given the number of  
19 rates being compared, this may just reflect the random  
20 distribution of the cancer incidence rates. What is  
21 that? Explain what that means.

22 A. Statistically, what this -- what the cancer  
23 registry does is look for statistical anomaly: something  
24 that is higher or lower, although in cancer rates, you  
25 are looking for higher than an average. It could be

1 national, it could be state. It could be based -- they  
2 routinely use the state. Sometimes they use different  
3 time periods and compare the rates in the same geographic  
4 area.

5 So there are different ways that you compare  
6 one rate to another and do a statistical test of the  
7 probability that the difference between those rates is  
8 due to random chance. So if you do enough statistical  
9 comparisons, you will generate results that are  
10 statistically different. I am an epidemiologist, but I  
11 am not a statistician, so I don't explain this very well.  
12 I apologize.

13 Q. And I think you initially said that the study  
14 was based upon proximity to coal ash impoundments in  
15 North Carolina, whether or not they were near -- I think  
16 you used the word -- "near" the facilities?

17 MR. HOLLEMAN: Object to the form.

18 THE WITNESS: The study was based on  
19 proximity, current residents being somewhat near coal ash  
20 impoundments.

21 BY MR. ROSSER:

22 Q. Okay. When I look at the study, it appears  
23 that the study was performed on a calendar basis; is that  
24 correct?

25 A. That is correct.

1           Q.   And not necessarily proximity to a coal ash  
2 facility; is that right?

3           A.   Yes, I think that is right.

4           Q.   So when I look at this, the results -- and I  
5 look at Table 1 on page 3 of 6, the bottom table there,  
6 this refers to all cancers?

7           A.   Uh-huh.

8           Q.   And I see case -- the first column -- sorry.  
9 The second column is -- refers to cases. Does that refer  
10 to the number of all cancer cases within that county that  
11 have been reported to the registry?

12          A.   You are talking about Table 1, continued --  
13 the bottom table on page 3 of 6? Yeah.

14          Q.   Just the bottom table.

15          A.   Yeah. Yeah, so that is all cases of cancer  
16 reported in residents of that county to the cancer  
17 registry during the time frame analyzed.

18          Q.   And that time frame analyzed was from 2000 --  
19 or, I am sorry, during 2009 to 2013?

20          A.   That is correct.

21          Q.   And then the next column says, "Rate." What  
22 does that refer to?

23          A.   The rate is the number of cases in the first  
24 column, over the average population for that county in  
25 that time frame. And it is expressed -- I believe it is

1 expressed per 100,000. That is the usual convention.

2 Q. And if I am reading this table correctly, in  
3 all but one of the counties -- that would be Rockingham  
4 County -- with CCR impoundments in North Carolina, the  
5 overall cancer rates were lower than the state rate; is  
6 that correct?

7 MR. HOLLEMAN: Object to the form.

8 THE WITNESS: That is correct.

9 BY MR. ROSSER:

10 Q. If you go to page 2 of 6, on stomach cancer --  
11 do you see that?

12 A. Yes.

13 Q. In all but three of the counties -- Caswell,  
14 Person, and Cleveland -- with CCR impoundments in North  
15 Carolina, rates for stomach cancer were lower than the  
16 state rate. Is that correct?

17 (Witness peruses document.)

18 A. That is right.

19 Q. And then on page 3 of 6, for small intestine  
20 cancer -- do you see that?

21 A. I do.

22 Q. In all but one of the counties with CCR  
23 impoundments -- that being Gaston County -- rates for  
24 small intestine cancer were lower than the state rate; is  
25 that right?

1           A.    They are either lower or not calculated,  
2           because that was, I think -- because the numerator was  
3           too small.

4           MR. ROSSER:        We will take five minutes.  I  
5           am almost done.

6           MR. ROSSER:        OFF THE RECORD.        2:15 P.M.

7           (A BRIEF RECESS WAS TAKEN.)

8           MR. ROSSER:        ON THE RECORD.        2:18 A.M.

9           MR. ROSSER:        Dr. Davies, I have no further  
10          questions at this time.  One thing that I do want to do,  
11          though, is we have got a request outstanding to DEQ for  
12          documents related to communications between DEQ and DHHS.  
13          Those documents have not been made available as of yet.  
14          So what I will request is that this deposition be held  
15          open in case some of those documents for some -- for  
16          whatever reason, compel us to try to bring you back here  
17          for another session.

18                 I doubt that will occur, but I just want to  
19          leave open that possibility, in case we do discover  
20          something in those documents that we want to talk to you  
21          further about.

22          THE WITNESS:       I understand.

23          MS. LeVEAUX:       I don't have any questions.

24          MR. HOLLEMAN:      Do you have any?

25          MR. ROBBINS:       I have none.



1 MR. HOLLEMAN: I have some, following up on  
2 the new exhibits he introduced. It will probably take me  
3 30 minutes. And we have got ten minutes. Do you want me  
4 to go ahead and try to get through?

5 THE WITNESS: Yeah. I can -- I can go until  
6 2:45, but then I can't. Somebody will have to lead me  
7 out of the building.

8 R E D I R E C T E X A M I N A T I O N 2:19 P.M.

9 BY MR. HOLLEMAN:

10 Q. Duke's attorney gave you this study marked  
11 Exhibit 296, the cancer study and asking -- answering  
12 questions about it. And isn't it true that in terms of  
13 determining whether people who lived near coal ash  
14 impoundments are getting a higher rate of cancer, this  
15 study really is worthless as a scientific matter,  
16 correct.

17 MS. LeVEAUX: Objection to form.

18 THE WITNESS: It does not answer that  
19 question.

20 BY MR. HOLLEMAN:

21 Q. From this study, you can't tell one way or  
22 another -- I mean, not you. One cannot tell, one way or  
23 another, whether people who lived near Duke's coal ash  
24 impoundments are getting a higher rate of cancer or not;  
25 is that correct?

1           A.    Within the statistical limits of this study,  
2    you can say whether people who live in a county with one  
3    of these coal ash impoundments are ---

4           Q.    Go ahead.  I am sorry.

5           A.    --- are getting a higher level of ---

6           Q.    You can say what the people who live in the  
7    county are, but not the people who live near the  
8    impoundments; correct.

9           MR. ROSSER:       Object to the form.

10          BY MR. HOLLEMAN:

11          Q.    Within two miles of the coal ash sites?

12          A.    Correct.

13          Q.    And in addition, this doesn't -- this study  
14    doesn't tell you anything about whether people who drink  
15    the contaminated well water are getting a higher rate of  
16    cancer; correct?

17          A.    That is correct.

18          MR. ROSSER:       Object to the form.

19          BY MR. HOLLEMAN:

20          Q.    In fact, we saw earlier, Rowan County -- you  
21    know that county?  That is where Salisbury is located,  
22    right?

23          A.    I do know Rowan County.  I do know Rowan  
24    County, yes.

25          Q.    That is where Buck is; correct?

1 A. Yes.

2 Q. And we saw that where some of the people who  
3 live near the Duke coal ash impoundments have high levels  
4 of hexavalent chromium in their well water, exceeding  
5 one, five, ten, and even 20, the Town of Salisbury has  
6 very low levels of hexavalent chromium, correct ---

7 MR. ROSSER: Object to the form.

8 MS. LeVEAUX: Objection.

9 MR. ROBBINS: Objection.

10 BY MR. HOLLEMAN:

11 Q. --- in their water?

12 A. Did I look at the Salisbury water?

13 Q. Yes, you did.

14 A. Then, yes.

15 Q. And so since the people who -- most of the  
16 people -- the overwhelming majority of the people who  
17 live in Salisbury are drinking water with low levels of  
18 hexavalent chromium, it should come as no surprise that  
19 the people who live in that county as a whole may not be  
20 showing up with cancers traced to hexavalent chromium?

21 MS. LeVEAUX: Objection.

22 MR. ROSSER: Objection.

23 MR. ROBBINS: Objection.

24 THE WITNESS: I don't know what proportion  
25 of people living in Salisbury drink public water versus

1 well water.

2 BY MR. HOLLEMAN:

3 Q. No, I am talking about the well water right  
4 around the Buck coal ash pond. You do know how many  
5 drink that. It is less than 500?

6 A. Yes.

7 Q. Less than 200, perhaps -- or less than 500?

8 A. Yes.

9 MS. LeVEAUX: Objection.

10 THE WITNESS: Yes.

11 BY MR. HOLLEMAN:

12 Q. The whole county?

13 A. I don't know how many it is. Not everybody  
14 agreed to testing, but that number is known.

15 BY MR. HOLLEMAN:

16 Q. It in the hundreds?

17 MS. LeVEAUX: Objection.

18 MR. ROBBINS: Objection.

19 BY MR. HOLLEMAN:

20 Q. Would that be true?

21 A. I -- I just don't know. I ---

22 Q. But you do know it is a small portion of the  
23 population of Rowan County?

24 THE WITNESS: Yes.

25 MS. LeVEAUX: Objection.

1 BY MR. HOLLEMAN:

2 Q. Now, Duke's lawyer showed you this Exhibit  
3 293, which is "chromium-6 in U.S. Tap Water."

4 A. What was the number?

5 Q. 293.

6 A. Yes.

7 Q. I believe you said you had never seen that  
8 before; is that correct?

9 A. That is correct.

10 Q. So as far as you remember, it wasn't in the  
11 DHHS -- at least it wasn't part of the materials you saw  
12 at HHS related to chromium?

13 A. Correct.

14 Q. If you could then look at those "Frequently  
15 Asked Questions," Exhibit 286.

16 A. Yes.

17 Q. Now, do you know who prepared these  
18 "Frequently Asked Questions"?

19 A. Department of Environmental Quality.

20 Q. Who?

21 A. The Department of Environmental Quality.

22 Q. Did you or DHHS have any role in it that you  
23 remember?

24 A. We were sent copies to look at and comment on  
25 them.

1           Q.    Do you remember if you reviewed it and  
2           commented on it?

3           A.    If I reviewed it and commented on it?  See, it  
4           is hard to hear you, too.  I did review it.  I don't -- I  
5           don't know if I reviewed it before it went up on the  
6           website.

7           Q.    Did you submit any comments to DEQ about it?

8           A.    Yes.  And, actually, I am remembering that  
9           this came to me for review with a very short turnaround  
10          time before it was posted.  I was driving back from  
11          something, somewhere, and trying to review it on my  
12          i-Phone, or whatever kind of device I had at the time --  
13          SmartPhone.

14                 So I had some comments.  I don't know if they  
15          -- I can't recall the timing of -- or -- I actually don't  
16          remember what the comments were anymore.

17          Q.    I was going to ask you, you do not remember  
18          the substance of your comments?

19          A.    I don't.

20          Q.    Did you submit them in writing or orally?

21          A.    I might have sent an e-mail with comments in  
22          it.  I spoke by phone with the communications staff at  
23          Department of Health and Human Services.

24          Q.    Do you remember who you spoke to?

25          A.    I think it was Alex Lefebvre.

1 Q. Do you know who you sent the e-mail to?

2 A. I am not sure I sent an e-mail, so, no.

3 Q. No? Okay. Well, look at -- if you could,  
4 look at page 4 of the "Frequently Asked Questions." This  
5 is the chart that Duke's lawyer asked you about. Okay.  
6 And then look at page 10 of the report Duke's lawyer  
7 provided you. And if you look at that chart, on page 10  
8 of the report that Duke's lawyer provided you, you will  
9 see the four highest cities in America on that chart for  
10 hexavalent chromium are Norman, Oklahoma; Honolulu,  
11 Hawaii; Riverside, California; and Madison, Wisconsin.  
12 Do you see that?

13 A. Yes.

14 Q. And do you see those very cities somehow found  
15 their way into this chart in this "Frequently Asked  
16 Questions" provided to the public?

17 A. Yes.

18 MR. ROSSER: What is your question?

19 BY MR. HOLLEMAN:

20 Q. And those are the cities, are they not, that  
21 show some of the very high numbers?

22 MR. ROSSER: Object to form.

23 THE WITNESS: Yes.

24 BY MR. HOLLEMAN:

25 Q. Now, in fact, of course, people in North

1 Carolina don't drink water from Honolulu, Hawaii, do  
2 they, as a regular matter; correct?

3 A. Yes.

4 Q. So if you look just at the North Carolina  
5 cities in this chart, and not the cities pulled out of  
6 this report, the North Carolina numbers for hexavalent  
7 chromium are much lower; are they not?

8 A. Are you talking about the "Frequently Asked  
9 Questions" Table?

10 Q. Yeah -- yes, ma'am, on four. In other words,  
11 Charlotte, Greensboro, and Raleigh -- and they only put  
12 in three cities in North Carolina -- but they are all --  
13 they all had much lower levels of hexavalent chromium; do  
14 they not?

15 A. Lower than?

16 Q. Well, for example, Norman, Oklahoma, which for  
17 some reason was picked out for this chart?

18 A. The North Carolina cities' highest levels are  
19 much lower than the Normal, Oklahoma highest levels.

20 Q. And in fact, their lowest level in the  
21 range -- the bottom end of the range for all three North  
22 Carolina cities are below the health screening level, are  
23 they not?

24 A. Yes.

25 Q. And when this chart was put together, instead



1 of giving the mean or average amount of chromium-6 level,  
2 they put in a range that would include the highest  
3 measurement obtained, did they not?

4 MR. ROSSER: Object to the form.

5 MS. LeVEAUX: Objection.

6 MR. ROBBINS: Objection.

7 THE WITNESS: It would appear so.

8 BY MR. HOLLEMAN:

9 Q. And if you look again at this chart -- the  
10 chart in the report that Duke's lawyer gave you, at page  
11 10, you see some very well known cities -- New York, New  
12 York, Miami, Florida, Boston, Massachusetts, Cincinnati,  
13 Ohio, and Indianapolis, Indiana -- all have hexavalent  
14 chromium levels below your health screen level; isn't  
15 that correct.

16 MR. ROSSER: Object to the form.

17 THE WITNESS: They have lower levels on this  
18 chart.

19 BY MR. HOLLEMAN:

20 Q. But none of those well-known cities made it  
21 into the DEQ "Frequently Asked Questions" chart, did  
22 they?

23 MS. LeVEAUX: Objection.

24 THE WITNESS: They are not on the Frequently  
25 Asked Question chart.

1 BY MR. HOLLEMAN:

2 Q. Did you ever have any discussions with anyone  
3 at DEQ or elsewhere about why these particular places,  
4 such as Norman, Oklahoma, were picked out to be put into  
5 this chart for North Carolina residents to review about  
6 their risk from hexavalent chromium?

7 A. No.

8 MS. LeVEAUX: Objection.

9 BY MR. HOLLEMAN:

10 Q. Now, if you look, also, at the same frequently  
11 asked questions -- I am sorry, not that. Let me go back  
12 to something else. If you could look at this report,  
13 Exhibit 291, the April 2016 report ---

14 A. Yes.

15 Q. --- now, did you or others at HHS work in  
16 conjunction with DEQ to produce this report?

17 A. No.

18 Q. Did they ever meet with you about this report  
19 before it was written?

20 A. Not that I am aware of.

21 Q. Did they ask -- I believe you said earlier you  
22 provided them days where you would meet with them; is  
23 that correct?

24 A. That is not correct.

25 Q. Okay. Correct me on that.

1           A.    I didn't provide dates, but I said we were  
2   available for staff meetings.

3           Q.    And you never heard anything back from DEQ?

4           MS. LeVEAUX:    Objection.

5           THE WITNESS:    I don't remember any.

6           BY MR. HOLLEMAN:

7           Q.    Did they ever ask you for information to put  
8   into this report before it was submitted?

9           MS. LeVEAUX:    Objection.

10          THE WITNESS:    I don't think so.

11          BY MR. HOLLEMAN:

12          Q.    And before the report was issued, did you or  
13   HHS play any role in coming up with the recommendations  
14   that are in the report?

15          MS. LeVEAUX:    Objection.

16          THE WITNESS:    I don't know.

17          BY MR. HOLLEMAN:

18          Q.    But you did not?

19          A.    I did not.

20          A.    Now, I notice this report never says that HHS  
21   didn't participate in its preparation. Did you notice  
22   that?

23          A.    HHS reviewed it before it was submitted to the  
24   General Assembly. So in that sense, we participated.

25          Q.    So you reviewed it, but you didn't participate

1 in putting together the recommendations ---

2 MS. LeVEAUX: Objection.

3 MR. ROSSER: Objection.

4 BY MR. HOLLEMAN:

5 Q. --- is that correct?

6 A. I don't know if anyone else in HHS did.

7 Q. Did you raise an issue, or did anyone else at  
8 HHS raise an issue about whether this report should note  
9 the very limited role that HHS played in connection ---

10 MS. LeVEAUX: Objection.

11 MR. ROSSER: Objection to form.

12 THE WITNESS: I did not raise that issue.

13 BY MR. HOLLEMAN:

14 Q. Do you know if someone else did?

15 A. I don't know if someone else did.

16 Q. If you could look at page 4 of that report,  
17 it says that DEQ recommends that HHS include additional  
18 information that the EPA current limit for, they say,  
19 hexavalent chromium is 100 parts per billion; do you see  
20 that?

21 MS. LeVEAUX: Objection.

22 THE WITNESS: Is this the third  
23 paragraph ---

24 BY MR. HOLLEMAN:

25 Q. (Interposing) Yes, ma'am.

1 A. --- on page 4?

2 Q. Yes, ma'am.

3 A. "DEQ recommends that DHHS include additional  
4 clarifying information in the issuance of HREs that  
5 explains that both bottled water, regulated by the U.S.  
6 Food and Drug Administration, and water supply by Public  
7 Water Supply regulated by the U.S. EPA, may potentially  
8 and legally contain up to 100 micrograms of hexavalent  
9 chromium measured as total chromium." Yes, I see that.

10 Q. Now, this report does not recommend that the  
11 consumers of this water -- the public -- be informed,  
12 that EPA was reviewing that standard, does it?

13 MS. LeVEAUX: Objection.

14 THE WITNESS: I don't see that in here.

15 BY MR. HOLLEMAN:

16 Q. And nor does it recommend that the public be  
17 informed that EPA came up with this standard before they  
18 were aware that hexavalent chromium was a human  
19 carcinogen?

20 MR. ROSSER: Objection to form.

21 MR. ROBBINS: Objection.

22 THE WITNESS: That is not in there.

23 BY MR. HOLLEMAN:

24 Q. All right. And do you know that it is true  
25 that EPA came up with the chromium -- total chromium

1 standard of 100 before it was known that hexavalent  
2 chromium was a human carcinogen?

3 A. That sounds familiar, but I don't know that.

4 Q. Now, did you -- they say at the end, here,  
5 that "by providing the information -- only the  
6 information they suggest, that will allow for a more  
7 informed health risk conclusion by the private well  
8 owner." Do you agree with that statement?

9 A. Yes.

10 Q. Do you think it would be -- the private well  
11 owner would have more important information if he or she  
12 were told about the limitations on the EPA 100 parts per  
13 billion standard?

14 MS. LeVEAUX: Objection.

15 THE WITNESS: I think that if you are  
16 providing additional information to contextualize the  
17 homeowners' decision -- decision process for managing  
18 their risk, we should provide full additional  
19 information.

20 BY MR. HOLLEMAN:

21 Q. And that would include the explanations  
22 concerning the limitations on the EPA limit?

23 A. Yes.

24 MR. ROSSER: Objection to form.

25 MR. ROBBINS: Objection.

1 BY MR. HOLLEMAN:

2 Q. Now, are you aware that vanadium is considered  
3 to be a possible human carcinogen?

4 A. No.

5 Q. Just to clear this up, when you are doing  
6 research on the cancer-causing effects substances in  
7 humans, it is a recognized practice in science to do  
8 animal tests; is that correct?

9 A. Yes.

10 Q. And some of those tests are done on mice; is  
11 that correct?

12 A. Yes.

13 Q. And it is considered ethically prohibited to  
14 do tests on cancer-causing substances on human beings; is  
15 that correct?

16 A. Yes.

17 Q. Now, you are aware Mr. Reeder criticized the  
18 existing science on hexavalent chromium by pointing out  
19 that it was based on tests on mice? Do you remember him  
20 saying that?

21 MR. ROSSER: Objection to form.

22 MR. ROBBINS: Objection.

23 THE WITNESS: I don't remember him saying  
24 that.

25 BY MR. HOLLEMAN:

1 Q. Do you remember him saying something like that  
2 at the legislative hearing that you attended?

3 MS. LeVEAUX: Objection.

4 MR. ROSSER: Same objection.

5 MR. ROBBINS: Objection.

6 THE WITNESS: I don't remember that part.

7 BY MR. HOLLEMAN:

8 Q. Are you aware there are also so-called  
9 correlational studies of human populations that are  
10 sometimes done to see if there is an association between  
11 a substance and human cancers?

12 A. Yes.

13 Q. And are you aware that has been done with  
14 respect to hexavalent chromium in a community in Greece?

15 A. I am aware it has been done with hexavalent  
16 chromium. I didn't recollect Greece.

17 Q. And are you aware that those correlational  
18 human studies have shown a correlation between hexavalent  
19 chromium and human cancers?

20 MR. ROSSER: Object to the form.

21 THE WITNESS: I am aware that there are  
22 epidemiological studies that show a correlation between  
23 exposure to hexavalent chromium and human cancer.

24 BY MR. HOLLEMAN:

25 Q. If you look at page -- again, back to the



1 report, 291 -- that is not what I wanted to direct you  
2 to. If I could direct you to 294, and at the very end of  
3 that, Duke's attorney asked you some questions. And I  
4 just want to ask you a couple related to those.

5 A. Okay.

6 Q. He asked you about this phrase where the DHH  
7 spokeswoman said that it was not one person who decided  
8 to update recommendations. Do you see that phrase?

9 A. Yes.

10 Q. Now, was there more than one person in HHS who  
11 decided to update the recommendations? Other than  
12 Dr. Williams, was anyone else in HHS in favor of issuing  
13 the "Do Drink" letter?

14 A. I am not sure.

15 Q. But you don't know of anyone?

16 A. I don't -- don't know absolutely.

17 Q. So the other people were in DEQ; is that  
18 correct?

19 MS. LeVEAUX: Objection.

20 THE WITNESS: I don't know.

21 BY MR. HOLLEMAN:

22 Q. Well, I think -- I believe you said to Duke's  
23 attorney that it was correct that more than one person  
24 decided to update the recommendation. So who was the  
25 other person, other than Dr. Williams -- or was it only

1 Dr. Williams?

2 A. So I might -- I might need to correct what I  
3 said to the Duke attorney, in that I don't know.

4 Q. Of anyone other than Dr. Williams?

5 A. That is correct.

6 Q. Duke's attorney asked you if bottled water was  
7 regulated under the Safe Drinking -- federal Safe  
8 Drinking Water Act. And I believe you said, in general,  
9 no; is that correct?

10 A. Yes.

11 Q. However, if municipal -- water from a  
12 municipal system was used to fill the bottled water  
13 containers, then, in effect, the water contained in the  
14 bottle -- the bottles would be -- have been regulated by  
15 the Safe Drinking Water Act; is that correct?

16 MS. LeVEAUX: Objection.

17 MR. ROSSER: Objection.

18 MR. ROBBINS: Objection.

19 THE WITNESS: I don't know enough about  
20 either the legal or the manufacturing process to answer  
21 that.

22 BY MR. HOLLEMAN:

23 Q. Now, you said you -- he asked you if anybody  
24 regulates it. And you said you weren't sure, that it  
25 might be regulated by the Food and Drug Administration;

1 is that correct?

2 A. Yes.

3 Q. And by "it," I mean bottled water.

4 A. Yes. I am pretty sure it is regulated by the  
5 Food and Drug Administration.

6 Q. Now, he asked you about different levels of  
7 carcinogen. Isn't it true that no level of a human  
8 carcinogen is without risk to the human? In other words,  
9 every level of the human carcinogen has some risk if  
10 ingested by a human; is that true?

11 A. What I have -- what I understand from  
12 briefings from the toxicologist at Occupational and  
13 Environmental Epidemiology Branch, and from lectures I  
14 have attended, is that mutagenic carcinogens are not  
15 presumed to be safe at any -- not presumed to be without  
16 risk at any level.

17 Q. And hexavalent chromium is mutagenic  
18 carcinogen; is that correct?

19 A. Yes.

20 Q. The standard you used is the one in a million  
21 standard, which is the standard generally accepted in the  
22 field of toxicology and epidemiology; is that correct?

23 MR. ROSSER: Objection.

24 THE WITNESS: It is the standard laid out in  
25 the 2L Rule. And it is a generally accepted standard in

1 the field of health risk evaluation.

2 BY MR. HOLLEMAN:

3 Q. Now, there is also the possibility or -- not  
4 just possibility, recognized fact, that different  
5 carcinogens and different substances can interact with  
6 each other and cause what sometimes is referred to as a  
7 synergistic effect: that is, to make each of them more  
8 dangerous than they would be alone; is that right?

9 A. Yes.

10 Q. And this one in a million standard, is that  
11 one of the reasons why we have a one in a million  
12 standard, because your risk or someone else's risk from  
13 ingesting this may be much higher?

14 MS. LeVEAUX: Objection.

15 MR. ROSSER: Objection.

16 MR. ROBBINS: Objection.

17 THE WITNESS: My understanding of health  
18 risk evaluation principles -- and it has been established  
19 that I am not an expert in health risk evaluation -- my  
20 understanding of those principles is that there are  
21 uncertainty factors included in all the calculations to  
22 account for that kind of variation.

23 BY MR. HOLLEMAN:

24 Q. Now, if I could take you back to those  
25 "Frequently Asked Questions" Duke's attorney asked you

1 about, Exhibit 286, and look at page 2, and it recites  
2 that HHS used the one in one million standard; correct?

3 A. Where is that on the page?

4 Q. Under "What does it mean if HER or HHS suggest  
5 I do not drink the water?"

6 A. Yes.

7 Q. Okay. Now, this question as written addresses  
8 the people who have actually received the HRE; is that  
9 correct -- what you were reading?

10 A. Yes.

11 Q. Now, many of these people -- and you have seen  
12 some examples -- had hexavalent chromium in their  
13 drinking water at many multiples of one in a million risk  
14 level; isn't that correct?

15 MS. LeVEAUX: Objection.

16 MR. ROSSER: Objection.

17 THE WITNESS: There were results that are  
18 associated with a risk of more than on order of magnitude  
19 of one in a million.

20 BY MR. HOLLEMAN:

21 Q. So in other words, one in a million is .07.  
22 And we have seen -- you have two before you that are  
23 around 21 parts per billion?

24 A. Yes.

25 Q. And that is a one in -- roughly one in 3,000

1 risk?

2 A. So I just do it by order of magnitude.

3 Q. Sure.

4 A. So, yes, that is the correct order of  
5 magnitude.

6 Q. But there is nothing ---

7 MR. ROSSER: (Interposing) Excuse me.  
8 Sorry. We are at 2:49 now.

9 MR. HOLLEMAN: You have to run?

10 THE WITNESS: I do.

11 MR. HOLLEMAN: Can I ask you one more  
12 question?

13 THE WITNESS: Can I ask it walking out the  
14 door?

15 MR. ROSSER: She has got to go. We said  
16 2:30 originally.

17 MR. HOLLEMAN: Okay. Thank you. Well, let  
18 me review my material and see if I need to come back.

19 THE WITNESS: Thank you all.

20 (THE DEPOSITION WAS ADJOURNED AT 2:49 P.M.  
21 TO RECONVENE AT AN UNSPECIFIED LATER TIME AND  
22 DATE.)

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MY COMMISSION EXPIRES FEBRUARY 15, 2021

STATE OF NORTH CAROLINA

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